SULLIVAN, MO LANDFILL CLOSURE

FINAL CONSTRUCTION REPORT

VOLUME IV
APPENDIX F

Prepared for:

SULLIVAN LANDFILL PRP GROUP

Prepared by:

ABB Environmental Services, Inc.
Portland, ME

Project No. 8960-02

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VLDPE FINAL REPORT (Supplied by GCS)

Golder Construction Services, Inc.
Quality Assurance and Construction Management

CONSTRUCTION RECORD DOCUMENTATION

QUALITY ASSURANCE OF GEOMEMBRANE COVER INSTALLATION SULLIVAN LANDFILL CLOSURE PROJECT SULLIVAN, MISSOURI

Submitted to:

ABB Environmental Services, Inc.
110 Free Street
Portland, Maine 04112-7050

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HAZARDOUS WASTE PROGRAM
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NATURAL RESOURCES

STATE OF MISSOURI
JERALD L
CURLESS
NUMBER
E-24546
REGISTERED PROFESSIONAL ENGINEER

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February 1995

Project No. 947-6174

Golder Construction Services, Inc.
Quality Assurance and Construction Management

February 10, 1995

Project No. 947-6174

ABB Environmental Services, Inc.
110 Free Street
Portland, Maine 04101-7050

ATTN: Mr. Mark J. Stelmack, P.E.
Project Manager

**RE: QUALITY ASSURANCE OF GEOMEMBRANE COVER INSTALLATION
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI**

Dear Mr. Stelmack:

The accompanying report summarizes the construction quality assurance activities performed during installation of the flexible membrane cover at the Sullivan Landfill Closure Project in Sullivan, Missouri. This document presents a summary of the quality assurance monitoring services provided by Golder Construction Services, Inc. during the installation of the VLDPE membrane cover only. This report also contains a statement by Golder Construction Services confirming that installation of this component of the composite cover system was in substantial compliance with the project plans, specifications and as described in this report.

If you have any questions or comments please do not hesitate to contact us.

Very truly yours,

GOLDER CONSTRUCTION SERVICES, INC.

Tibebe Menkir
Resident CQA Manager

Jerald L. Curless, P.E.
Project Engineer

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1.0 INTRODUCTION

1.1 Purpose and Scope

The Sullivan Landfill, located on Emma Lane east of the City of Sullivan in Franklin County, Missouri is an inactive municipal solid waste landfill previously operated by the City of Sullivan. Figure 1 shows the location of Sullivan, Missouri. Figure 2 shows the location of the site with respect to the surrounding road patterns, and Figure 3 shows the location of the waste containment cell in relation to the site plan.

Golder Construction Services, Inc. (GCS) was retained by ABB Environmental Services, Inc. (ABB-ES) to provide third party Construction Quality Assurance (CQA) monitoring and testing services during the installation of the very low density polyethylene (VLDPE) geomembrane cover over the Sullivan Landfill. This report summarizes the quality assurance monitoring activities, observations and the results of the tests conducted by GCS during the installation of the flexible membrane cover.. A record drawing showing the geomembrane cover panel layout with respect to the site is presented as Figure 4. Destructive seam strength test locations are shown on Figure 5 and repair locations are shown on Figure 6. Also included in this report is a statement that the geomembrane used for the flexible membrane cover and the installation processes observed and tested by GCS, were in substantial compliance with the project plans and specifications. This report addresses only the installation of the flexible membrane cover component of the Sullivan Landfill Closure Project.

1.2 Project Team

The project specifications for construction of the geomembrane cover system at the Sullivan Municipal Landfill were prepared by ABB Environmental Services, Inc. of Portland, Maine. The installation of the flexible membrane cover was performed by SLT North America, Inc.

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(SLT) of Conroe, Texas, and installation activities were monitored by Golder Construction Services, Inc. (GCS) of Houston, Texas. A listing of the SLT installation personnel and GCS monitoring personnel is presented in Appendix A. Surveying services for the location of geomembrane panels, destructive test samples and repairs were performed by Stack and Associates, Inc. of St. James, Missouri.

The construction and installation activities for the flexible membrane cover system were monitored by Golder Construction Services, Inc. GCS's field personnel consisted of a resident CQA manager who was assisted by up to two other CQA monitors. The resident manager on site was Mr. Tibebe Menkir. Mr. Menkir (Staff Engineer and lead geosynthetic CQA Monitor), has a Bachelor of Science and Master of Science degrees in Civil Engineering, and has 16 years of experience with the construction industry, five of which are specifically related to CQA of geocomposite lining systems. Mr. Menkir was assisted by Mr. David Boles and Mr. Brian Hopp. Resumes which detail their experience are included in Appendix A. Two GCS monitors were on site full time during the installation of the flexible membrane cover. In addition to the presence of the CQA monitors, the professional of record was present on site for monthly visits during the course of the project.

The professional of record for the installation of the flexible membrane cover was Mr. Jerald L. Curless, P.E. Mr. Curless is a registered professional engineer in the state of Missouri (PE 24546), and has 10 years of civil engineering experience with extensive geotechnical and earthwork construction experience, having been directly involved with numerous major earthworks projects, as well as construction quality assurance projects for the waste industry. A resume detailing Mr. Curless' experience is presented in Appendix A. The lines of communication between Mr. Menkir and Mr. Curless were maintained regularly by telephone. Mr. Curless and Mr. Menkir were in attendance at the project preconstruction meeting held on August 25, 1994 and Mr. Curless visited the site to observe construction activities on October 10 and November 11, 1194.

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1.3 Project Work Schedule

Installation of the flexible membrane cover at the Sullivan Landfill took place between September 29 and November 11, 1994. When not delayed by weather, SLT personnel typically worked 10 hours per day, 5 days per week. GCS personnel were on-site continuously during the installation of the flexible membrane cover component of this closure.

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2.0 PROJECT DOCUMENTS AND DESCRIPTION

2.1 Project Specifications and Drawings

Golder Construction Services, Inc. monitored the installation of the flexible membrane cover for the Sullivan Landfill Closure Project based on specifications prepared by ABB Environmental Services, Inc. In addition, the following documents were referred to for guidance in the construction and quality assurance of the flexible membrane cover:

- Missouri Department of Natural Resources "Solid Waste Management Regulations", 10 CSR 80 - Solid Waste Management, reproduced January 10, 1994.

- Contract Documents, Sullivan Landfill PRP Group, Sullivan, Missouri, Landfill Closure Project, Section 02777, Very Low Density Polyethylene (VLDPE) Geomembrane; prepared by ABB Environmental Services, Inc.

- Sullivan Landfill Closure, Panels Layout, Sheet 1 of 2 and Sections & Details, Sheet 2 of 2; prepared by SLT North America, Inc., June 16, 1994.

- Minutes of Geomembrane Liner Preconstruction Meeting, Sullivan Landfill Closure, Sullivan, Missouri; prepared by Golder Construction Services, Inc., September 30, 1994.

Construction quality assurance testing was performed in general accordance with the requirements outlined in the documents listed above and in accordance with industry standards. Clarifications and minor modifications to the project specifications were incorporated during construction, following approval from the designer, ABB Environmental Services, Inc. These specification clarifications and modifications were documented and are presented in Appendix A.

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2.2 Project Description

The construction of the composite cover system for the Sullivan Landfill included installation of a flexible membrane cover over a compacted clay cover lining system. A cushion geotextile, granular drainage layer and top soil cover were components to be installed on top of the flexible membrane. This report addresses only the VLDPE flexible membrane component of the cover system.

The total projected area covered is approximately 1,035,218 square feet, or 23.8 acres. The project specifications required the installation of a flexible membrane cover system consisting of a very low density polyethylene (VLDPE) geomembrane with a nominal thickness of 40 mils. The geomembrane was placed on the surface of an 18 inch thick compacted clay cover. Approximately 156,200 square feet of 40 mil thick double sided textured VLDPE geomembrane and 879,000 square feet of 40 mil thick smooth VLDPE geomembrane was installed for the Sullivan Landfill cover. These areas are inclusive of the side slopes, panel overlaps, and anchor trenches, as measured in plan view.

2.3 Record Drawings

Information for the record drawings was gathered by Stack and Associates, Inc. in cooperation with GCS. A record drawing showing the layout of the geomembrane panels deployed is presented as Figure 4. The destructive seam strength test locations are shown on Figure 5, and the major geomembrane repair locations are shown on Figure 6.

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3.0 GEOMEMBRANE QUALITY ASSURANCE ACTIVITIES

The quality assurance monitoring and testing performed by Golder Construction Services for the flexible membrane cover installation consisted of the following activities:

- participation in the preconstruction meeting attended by the City of Sullivan, ABB Environmental Services, Inc., OBG Technical Services, Inc., SLT North America, Inc., and Golder Construction Services, Inc. prior to the installation of the flexible membrane cover;
- review of manufacturer's raw materials and geomembrane roll quality control documents;
- sampling geomembrane material for conformance testing;
- performance of conformance tests on the geomembrane materials and evaluation of the test results;
- observation of the soil liner surface to verify that the surface was generally free of irregularities, protrusions and loose soil prior to geomembrane deployment;
- observation of the anchor trench excavation to verify that the surface was free of loose soil;
- observation and documentation of geomembrane panel placement and verification of thickness during panel deployment;
- observation and documentation of trial seam procedures and quantitative/qualitative evaluation of test results;
- observation and documentation of field seams and seaming operations;
- observation and documentation of non-destructive seam continuity testing;
- identification and documentation of seam strength destructive test locations;

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- performance of destructive tests on geomembrane seams and evaluation of the test results;
- identification of geomembrane panel and seam defects;
- observation and documentation of repairs to defects and at destructive test locations; and
- observation and documentation of non-destructive continuity testing of repairs.

A description of the CQA activities, and a summary of the observations is presented in the following sections.

3.1 Geomembrane Material

The flexible membrane cover material installed at this site consisted of a nominal 40 mil thick, very low density polyethylene (VLDPE) manufactured in approximately 23.6 feet wide rolls by SLT. A total area of approximately 1,035,218 square feet of geomembrane was installed. Textured geomembrane was installed on the sideslopes and smooth geomembrane was installed on the top of the closure system. The location and alignment for the deployment of the textured geomembrane panels was determined by the resident engineer of ABB Environmental Services, Inc. The synthetic geomembrane material was inventoried by Golder Construction Services' personnel, and a complete inventory control list is presented in Appendix B. Copies of the geomembrane resin and roll quality control documents from SLT are included in Appendix C.

Conformance test samples of the geomembrane material were obtained by GCS personnel at the SLT plant yard (Houston, Texas) before the material was shipped to the site. Samples were obtained for testing at the frequencies specified in the project specifications. A summary of these conformance test results is presented in Appendix D.

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3.2 Soil Liner Surface

The compacted clay cover, over which the geomembrane was deployed, was constructed by OBG Technical Services, Inc. and was monitored and documented for quality assurance by ABB Environmental Services, Inc. Clay cover construction was completed prior to the commencement of geomembrane installation, however some sections of the anchor trench were excavated after deployment of the geomembrane. This was accomplished by pulling the deployed geomembrane back a sufficient distance to allow excavation of the anchor trench. Prior to geomembrane deployment, the subgrade area in consideration was rolled using a smooth drum roller and the surface was visually observed for compliance with the project requirements. Subgrade surface acceptance certificates were completed by SLT, GCS and ABB-ES and are presented in Appendix E.

3.3 Geomembrane Deployment

Geomembrane panels were deployed using a rubber tired front end loader (with a spreader bar) to unroll the geomembrane, and the panels were pulled into final position by man power. Panels were aligned with a minimum 4 inch overlap. Free edges of the geomembrane were temporarily secured with sand bags.

Each geomembrane panel was marked with a field identification number by Golder Construction Services' CQA personnel. These numbers indicate the order of panel deployment and can be correlated to the manufacturer's roll number using the panel deployment summary in Appendix F. A plan view of the geomembrane panel layout is shown on Figure 4.

Each panel was visually examined for manufacturing defects and installation damage. Defects were marked, recorded and subsequently repaired. Panel thickness measurements were taken by Golder Construction Services' CQA personnel with a micrometer at a minimum of five

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locations along the leading and trailing edges of each panel. All measured thickness values were within the range defined in the project specifications.

3.4 Geomembrane Trial Seams

The seaming methods used on this project were the automated dual track fusion welding process and the manual extrusion welding process. Geomembrane trial seams were made by SLT technicians to test the seaming apparatus (welding machines) and operator's performance under daily site conditions. Trial seams were made each time a welding machine was placed into operation, which was typically prior to the start of field seaming in the morning, and at five (5) hour intervals thereafter during seaming operations.

Specimens from each trial seam were quantitatively and qualitatively field tested by SLT: three (3) for peel adhesion (peel) and three (3) for bonded seam strength (shear) using a portable field tensile testing machine. The separation mode for each test specimen was classified and documented according to the codes shown on Figures 7 and 8. A summary of the trial seam test results is presented in Appendix G.

On a procedural basis, Golder Construction Services' personnel observed trial seaming procedures and the testing of specimens from the trial seams.

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3.5 Geomembrane Seaming

The principal seaming method used on this project was the automated dual track fusion welding process. The manual extrusion welding process was typically used for making repairs.

Golder Construction Services' personnel observed seaming operations on a procedural basis. Observations consisted of checking for proper sheet overlap, checking machine temperatures for consistency, and periodically checking the seam area to assure that the surface was prepared properly and that the surface area was kept free of moisture, dust, dirt and debris. All seams were examined for visual quality and seam completion. Visually detected imperfections were marked and subsequently repaired. A summary of the geomembrane seaming data collected by Golder Construction Services' CQA personnel is presented in Appendix H.

3.6 Seam Strength Destructive Testing

Geomembrane seam strength destructive test samples were taken at a frequency of at least one (1) per 500 linear feet of seam per welding machine. Test locations were selected by Golder Construction Services' CQA personnel based on the progress of each welding machine and observations of the welding operations. After the sample was obtained in the field, specimens were removed from a portion of each sample for preliminary tests and the remainder of the sample was held for subsequent testing. Preliminary tests were performed at the site by SLT on all of the destructive test samples. The specimens were tested in peel and shear in a similar manner to the trial seam procedures described in Section 3.4. If the field tests passed, the samples were sent to the GCS laboratory for additional testing. Portions of each destructive sample were retained by ABB-ES for their archives. From each of the samples transferred to the Golder Construction Services' laboratory, 10 specimens were removed for testing. Five specimens were tested for peel adhesion (peel) and five specimens were tested for bonded seam strength (shear). Both tracks of the fusion welds were tested for peel. The acceptance criteria for passing specimens were that:

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- four of the five specimens must pass the seam strength requirements and exhibit a film tear bond (FTB) with a peel separation of 10% or less.

For shear tests, a passing specimen had to exhibit yield strengths greater than 48 pounds per inch (ppi) and 30 ppi for smooth and textured geomembrane, respectively. Additionally, each passing specimen had to exhibit a film tear bond (FTB). For peel tests, a passing specimen had to exhibit peel strengths greater than 40 ppi and 20 ppi for smooth and textured geomembrane, respectively. Additionally, each passing specimen had to exhibit a film tear bond (FTB) with seam peel separation not greater than 10 percent. Separation modes for the test specimens were reported according to the modes shown on Figures 7 and 8.

The total length of fusion welded seams was approximately 50,800 feet, which corresponds to a minimum number of destructive seam strength tests of 102 at a frequency of one per 500 linear feet of seam. Golder Construction Services' personnel located 108 initial areas for destructive seam strength testing. The total length of primary extrusion welded seams and extrusion welds on repairs greater than 20 feet in length was approximately 2,250 feet, which corresponds to a minimum number of destructive seam strength tests of 5. GCS located 5 such tests. At least one destructive seam strength test was made for each welding machine used on the project.

All destructive seam strength samples were tested by Golder Construction Services' laboratory located in Mt. Laurel, New Jersey. The locations from which each destructive sample was obtained are shown on Figure 5 and the individual test results are presented in Appendix I. All failed seam lengths were bounded by passing destructive samples and the failed seam was repaired (capped).

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3.7 Non-Destructive Seam Continuity Testing

Geomembrane seams and seam repairs were non-destructively tested for continuity by SLT. The air pressure method was used for dual track fusion welds, and the vacuum box method was used for extrusion welds and for dual track fusion welded seam sections which could not be successfully tested by the air pressure method.

The Golder Construction Services' CQA personnel observed and documented non-destructive testing of seams and seam repairs. A summary of non-destructive testing of seams is included in the geomembrane seam summary presented in Appendix H.

3.8 Geomembrane Defects and Repairs

Each geomembrane panel and seam was visually observed for defects. The term "defect" loosely refers to manufacturing blemishes, installation damage including burns and creases, incomplete or failed seam lengths, wrinkles, and fishmouths. These observations were made on an on-going basis throughout the installation process.

Defects were logged by Golder Construction Services' personnel, who also observed repair operations performed by SLT and verified that all noted defects were repaired and documented. A summary of defects and repairs is contained in Appendix J and the locations of all major repairs are shown on Figure 6.

SLT placed patches and caps as repairs at the following locations: destructive seam strength sample locations, holes created during installation, areas of insufficient overlap for seaming, wrinkles and fishmouths. Spot welds were made by SLT to isolated manufacturing blemishes, creases and minor scratches on the geomembrane panels. Minor defects in extruded seams were repaired by grinding and rewelding these areas.

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3.9 Non-Destructive Testing of Defects and Repairs

Geomembrane repairs were non-destructively tested for continuity by SLT. The vacuum box method was used for all extrusion welded repairs and the pressure test method was used for repairs made with dual track fusion welds.

Golder Construction Services' CQA personnel observed and documented non-destructive testing of defects and repairs. A summary of non-destructive testing of defects and repairs is presented on the repair summary in Appendix J. Repairs made with dual track fusion welds are listed in the repair summary, and cross referenced to the seaming summary as presented in Appendix H.

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4.0 SUMMARY

Golder Construction Services, Inc., was retained by ABB Environmental Services, Inc. to provide third party construction quality assurance monitoring and testing services during the installation of the flexible membrane cover at the Sullivan Landfill Closure Project, Sullivan, Missouri. The installation of the geomembrane was monitored by GCS personnel from September 29 through November 11, 1994. The construction quality assurance monitoring consisted of observation and documentation of the following activities:

- participation in the preconstruction meeting;
- conformance sampling and testing of the geomembrane;
- soil liner surface inspection;
- geomembrane deployment;
- trial seaming;
- field seaming;
- destructive testing of the seams;
- non-destructive seam continuity testing; and
- geomembrane repair procedures.

Based on the observations and testing performed by GCS during installation of the flexible membrane cover at the Sullivan Landfill Closure Project in Sullivan, Missouri, Golder Construction Services, Inc. confirms that installation of this component of the composite liner system was performed in substantial compliance with the project specifications and drawings and as described in this text.

GOLDER CONSTRUCTION SERVICES, INC.

Tibebe Menkir
Resident CQA Manager

Jerald L. Curless, P.E.
Project Engineer

TM/DEP/JLC:sjs

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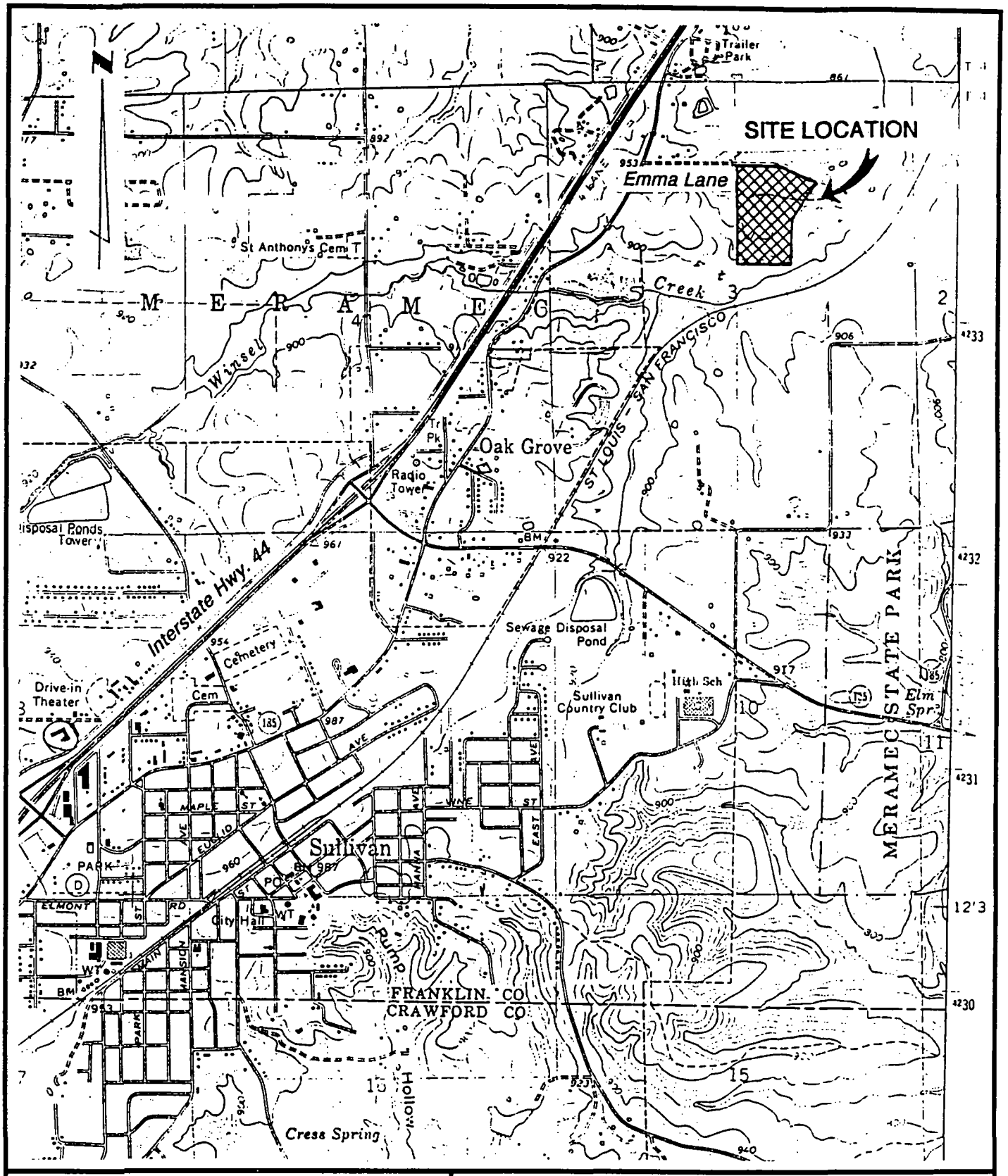
GCS
Golder Construction Services, Inc.

TITLE
LOCATION OF SULLIVAN MISSOURI

SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DRAWN	dhg	CHECKED		REVIEWED	
DATE	FEBRUARY 1995	SCALE	NONE	JOB NO.	947-6174
FILE NO.	947-6174	DWG NO.	001	FIGURE NO.	1



GCS

Golder Construction Services, Inc.

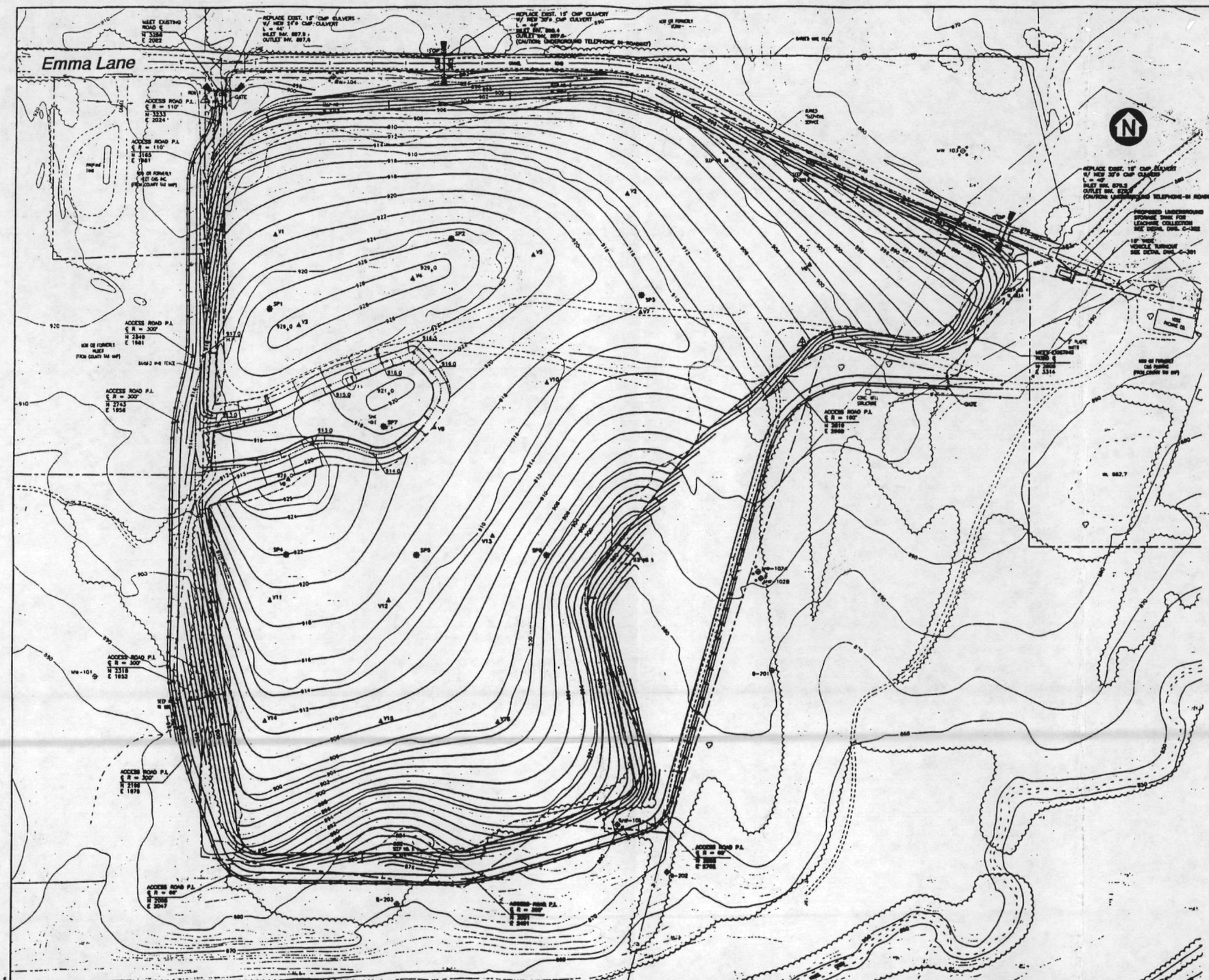
TITLE

SITE LOCATION MAP

SULLIVAN LANDFILL CLOSURE PROJECT

SULLIVAN, MISSOURI

DRAWN dhg	CHECKED	REVIEWED	
DATE FEBRUARY 1995	SCALE APPROX. 1"=2000'	JOB NO. 947-6174	
FILE NO. 947-6174	DWG NO. 002	FIGURE NO. 2	



PERMANENT SETTLEMENT PLATFORM LOCATIONS

SETTLEMENT PLATFORM	COORDINATES NORTH	COORDINATES EAST
SP1	2925.0	2110.0
SP2	3040.0	2410.0
SP3	2950.0	2725.0
SP4	2525.0	2140.0
SP5	2525.0	2385.0
SP6	2525.0	2570.0
SP7	2735.0	2300.0

LEGEND

- PROPERTY LINE
- SURFACE DRAINAGE SWALE
- TOP OF SLOPE AND PERIMETER DRAIN LOCATION AT EDGE OF FULL COVER
- PROPOSED PERMANENT SETTLEMENT PLATFORM
- PROPOSED GAS VENT
- PROPOSED CULVERT PIPE
- PROPOSED DITCH CENTERLINE
- PROPOSED SPOT GRADE
- PROPOSED CHAIN LINK FENCE
- PROPOSED CHAIN LINK FENCE GATE
- PROPOSED PERIMETER ACCESS ROAD
- PROPOSED FINISH GRADE CONTOUR
- PROPOSED STONE RIPRAP INLET/OUTLET PROTECTION
- PROPOSED PERIMETER DRAIN OUTLET

GAS VENTILATION RISER LOCATIONS

VENT	COORDINATES NORTH	COORDINATES EAST
V1	3047.0	2130.0
V2	3115.0	2700.0
V3	2900.0	2100.0
V4	2976.0	2347.0
V5	3014.0	2546.0
V6	3000.0	3000.0
V7	2923.0	2723.0
V8	2858.0	2144.0
V9	2735.0	2383.0
V10	2808.0	2560.0
V11	2452.0	2113.0
V12	2452.0	2310.0
V13	2508.0	2400.0
V14	2256.0	2105.0
V15	2256.0	2200.0
V16	2256.0	2400.0

NOTES:

1. SIDE SLOPES SHALL BE CONSTRUCTED AT 3:1 MAXIMUM, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. ALL PROPOSED CONTOURS ARE SHOWN AT FINAL GRADE ELEVATION.
3. FOR EROSION AND SEDIMENTATION CONTROL, REFER TO SUBGRADING PLAN, DWG. NO. C-101.
4. SEE TITLE SHEET FOR HORIZONTAL AND VERTICAL SURVEY CONTROL.
5. EXISTING TOPOGRAPHY AND SURVEY CONTROL TAKEN FROM "TOPOGRAPHIC MAP" DATED OCTOBER 4, 1992, PREPARED FOR MOORE AND ASSOCIATES, CONSULTING ENGINEERS, 6 FALLON, MISSOURI.
6. PERIMETER DRAIN OUTLETS SHALL BE INSTALLED AT ALL LOW POINTS IN THE PERIMETER DRAIN AND AT MAXIMUM 200 FOOT INTERVALS ALONG THE PERIMETER DRAIN.
7. SIDE SLOPE CONTOURS IN THE VICINITY OF THE SINK HOLE ARE SHOWN AT A 5 FOOT CONTOUR INTERVAL FOR CLARITY.
8. CLEARING LIMITS AND LIMIT OF CONSTRUCTION WILL GENERALLY BE THE CHAIN LINK FENCE LOCATED OUTSIDE THE PERIMETER ACCESS ROAD.

REV	DATE	STATUS	MF	BY	CHKD	APPD
B	3/24/94	SUBMITTED FOR BIDS		PWF	[illegible]	[illegible]
A	2/04/94	SUBMITTED FOR M.D.N.R. REVIEW		PWF	[illegible]	[illegible]

ABB Environmental Services, Inc.

CLIENT: SULLIVAN LANDFILL PRP GROUP
SULLIVAN, MISSOURI

DESIGN	R. REGFERN	2/94
DRAWN	P. FILLIGN	2/94
CHKD.	M. STELMACK	2/94
DEPT. HD.		
PROCESS		
PROJ. MGR.		
CLIENT		
SCALE	1" = 60'	

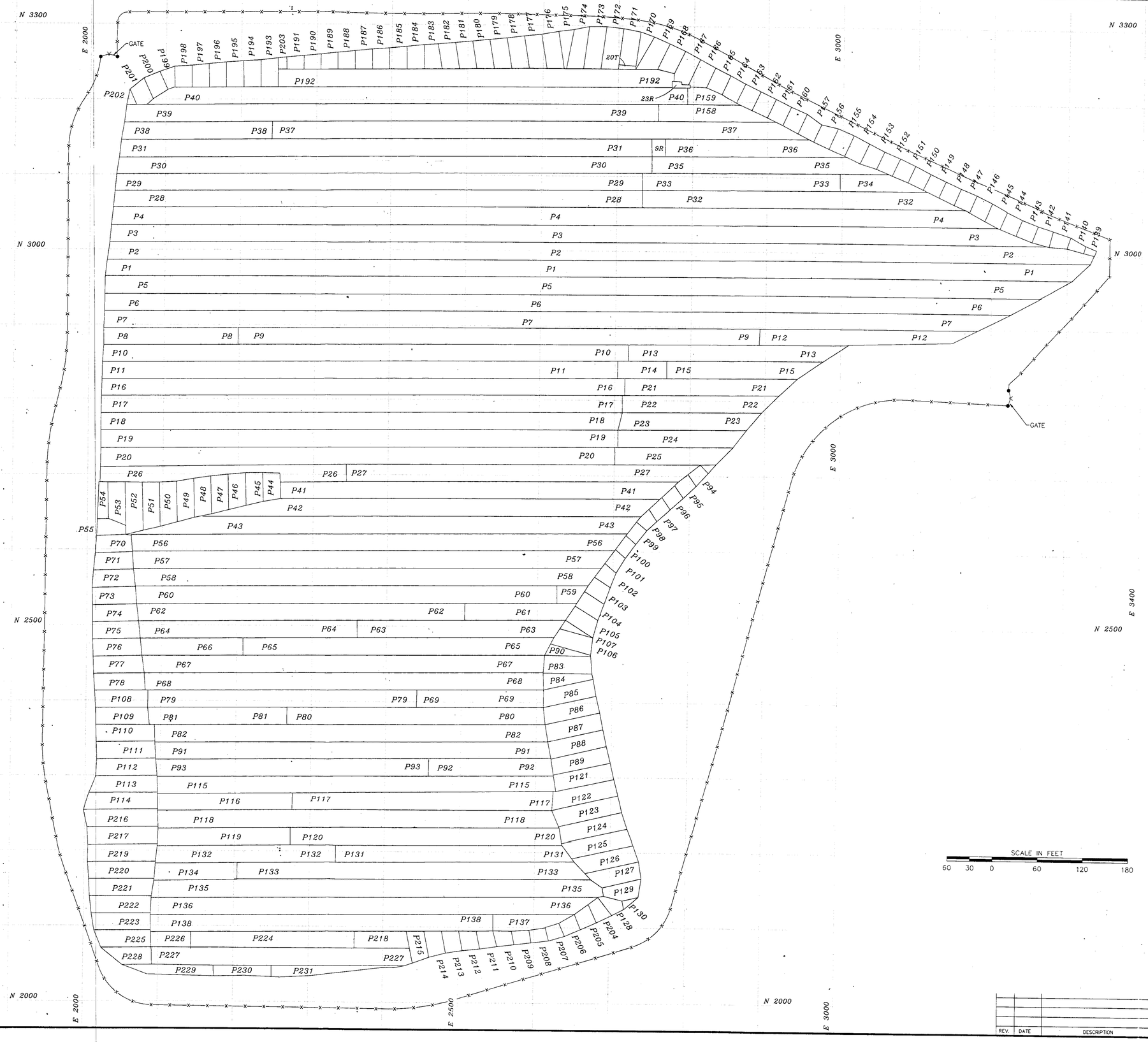
TITLE: SULLIVAN LANDFILL CLOSURE
SULLIVAN, MISSOURI

FINAL GRADING PLAN

PROJ. NO.

DWG. NO.

FIGURE 3



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NATURAL RESOURCES

LEGEND:

P56	GEOMEMBRANE PANEL w/ NUMBER

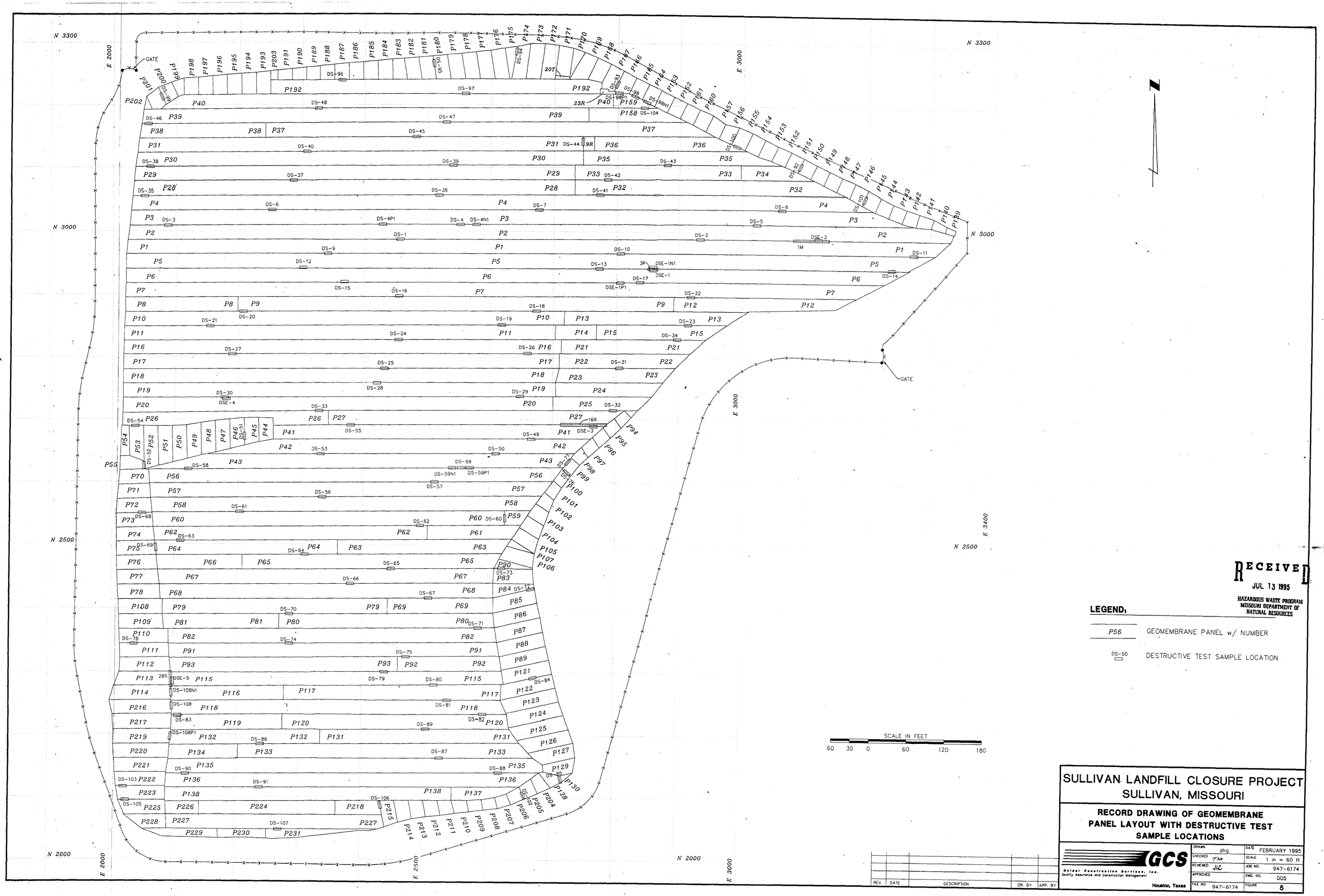
REV.	DATE	DESCRIPTION	DR. BY	APP. BY

SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

RECORD DRAWING OF GEOMEMBRANE PANEL LAYOUT

GCS
Golder Construction Services, Inc.
Quality Assurance and Construction Management
Houston, Texas

DRAWN	dhg	DATE	FEBRUARY 1995
CHECKED	TM	SCALE	1 in = 60 ft
REVIEWED	JLC	JOB NO.	947-6174
APPROVED		DWG. NO.	004
FILE NO.	947-6174	FIGURE	4



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MISSOURI DEPARTMENT OF NATURAL RESOURCES

LEGEND:

P56 — GEOMEMBRANE PANEL w/ NUMBER

DS-50 — DESTRUCTIVE TEST SAMPLE LOCATION

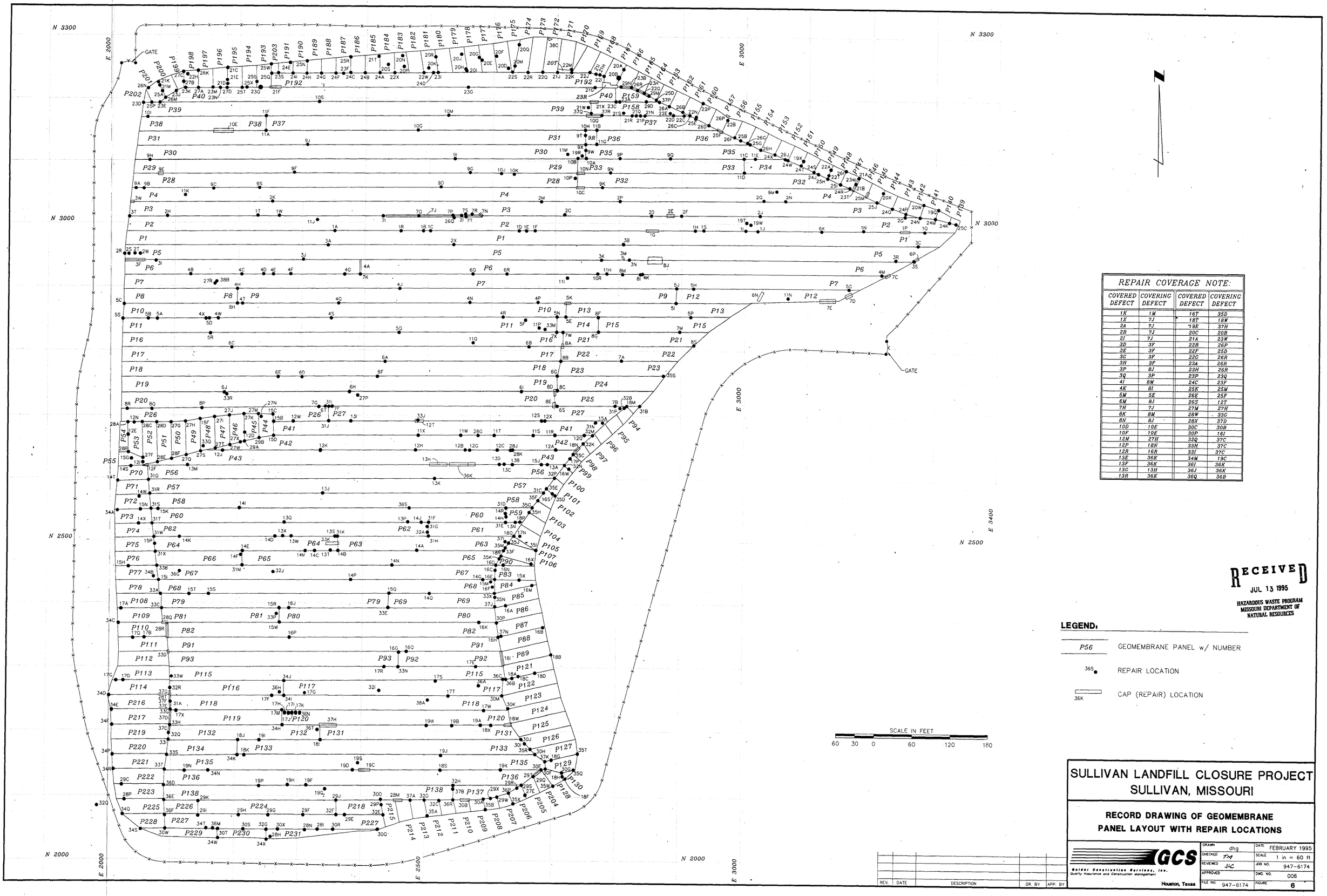
REV.	DATE	DESCRIPTION	DR. BY	APP. BY

SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

RECORD DRAWING OF GEOMEMBRANE PANEL LAYOUT WITH DESTRUCTIVE TEST SAMPLE LOCATIONS

GCS
Golder Construction Services, Inc.
Quality Assurance and Construction Management
Houston, Texas

DRAWN	dhg	DATE	FEBRUARY 1995
CHECKED	TM	SCALE	1 in = 60 ft
REVIEWED	JLC	JOB NO.	947-6174
APPROVED		DWG. NO.	005
FILE NO.	947-6174	FIGURE	5



REPAIR COVERAGE NOTE:			
COVERED DEFECT	COVERING DEFECT	COVERED DEFECT	COVERING DEFECT
1K	1M	16T	35D
1X	7J	18T	18W
2A	7J	19E	37H
2B	7J	20C	20B
2I	7J	21A	23W
3D	3F	22B	26P
3E	3F	22F	25D
3G	3F	22C	26R
3H	3P	23A	26R
3P	8J	23H	26R
3Q	3P	23P	23Q
4I	8M	24C	23F
4K	8I	25K	25M
5M	5E	26E	25F
6M	8J	26S	12T
7H	7J	27M	27H
8K	8M	28W	33C
8N	8J	28X	37D
10D	10E	30C	30B
10F	10E	30P	16I
12M	27H	32Q	37C
12P	18N	33H	37C
12R	16R	33I	37C
13E	36K	34M	19C
13F	36K	36I	36K
13C	13H	36J	36K
13R	36K	36Q	36B

RECEIVED
JUL 13 1995
HAZARDOUS WASTE PROGRAM
MISSOURI DEPARTMENT OF
NATURAL RESOURCES

LEGEND:

P56	GEOMEMBRANE PANEL w/ NUMBER
36S	REPAIR LOCATION
36K	CAP (REPAIR) LOCATION

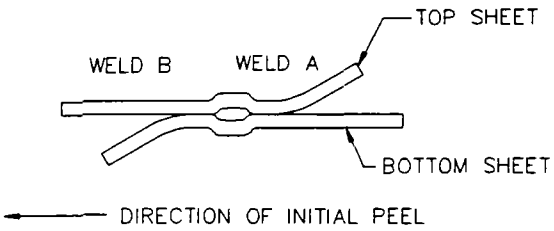
REV.	DATE	DESCRIPTION	DR. BY	APP. BY

SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

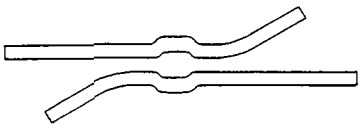
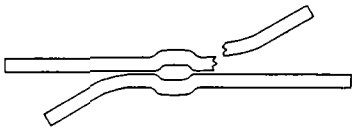
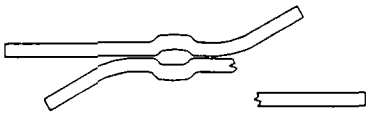
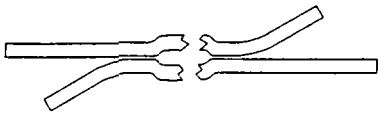
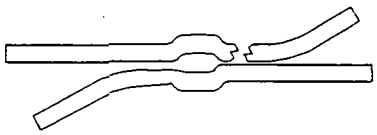
RECORD DRAWING OF GEOMEMBRANE PANEL LAYOUT WITH REPAIR LOCATIONS

GCS
Golder Construction Services, Inc.
Quality Assurance and Construction Management
Houston, Texas

DRAWN	dhg	DATE	FEBRUARY 1995
CHECKED	TM	SCALE	1 in = 60 ft
REVIEWED	JLC	JOB NO.	947-6174
APPROVED		DWG. NO.	006
FILE NO.	947-6174	FIGURE	6



SCHEMATIC OF UNTESTED SPECIMEN

Types of Failure	Locus-of-Break Code	Break	Classification[a]
	AD	Adhesion failure.	Non-FTB
	BRK	Break in sheeting. Break can be in either top or bottom sheet.	FTB
	SE1	Break at outer edge of seam. Break can be in either top or bottom sheet.	FTB
	SE2	Break at inner edge of seam through both sheets.	FTB
	AD-BRK	Break in first seam after less than 10% adhesion failure. Break can be in either the top or bottom sheet.	FTB

[a] FTB = Film-Tear Bond

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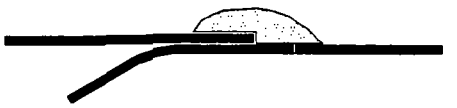
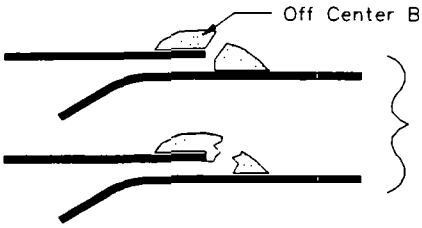
DESTRUCTIVE SAMPLE TEST CODES
DUAL HOT WEDGE FUSION WELD

SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DATE	SCALE	JOB NO.
FEBRUARY 1995	NONE	947-6174
FILE NO. 947-6174	DWG NO. 007	FIGURE NO. 7



UNTESTED SPECIMEN
EXTRUSION WELD WITH LEISTER HEAT SEAM

Types of Failure	Locus-of-Break Code	Break Description	Classification [a]
	AD1	Failure in adhesion. Specimans may also delaminate under the beed and break through the thin extruded material in the outer area.	Non-FTB
	AD2	Failure in Adhesion.	Non-FTB
	AD-WLD	Breaks through the fillet. Breaks through the fillet range from breaks starting at the edge of the the top sheet to breaks through the fillet after some adhesion failure between the fillet and the bottom sheet.	Non-FTB
	SE1	Break at seam edge in the bottom sheet. Specimens may break anywhere from the bead/outer area edge to the outer area/ buffed area. (Applicable to sheer only).	FTB
	SE2	Break at seam edge in the top sheet. Specimens may break anywhere from the bead/ outer area edge to the outer area/buffed area.	FTB
	SE3	Break at seam edge in the bottom sheet. (Applicable to peel only).	FTB
	BRK1	Break in the bottom sheering. A "B" in paraentheses following the code means the specimen broke in the buffed area. (Applicable to sheer only).	FTB
	BRK2	Break in the top sheering. A "B" in parentheses following the code means the speciman broke in the buffed area.	FTB
	AD-BRK	Break in the bottom sheering after less than 10% adhesion failure between the fillet and the bottom sheet. (Applicable to peel only).	FTB
	HT	Break at the edge of the hot tack for specimens which could not be delaminated in the hot tack.	No Test

[a] FTB = Film-Tear Bond

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Golder Construction Services, Inc.

SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DESTRUCTIVE SAMPLE TEST CODES FOR EXTRUSION WELD WITH LEISTER HEAT SEAM

DATE FEBRUARY 1995	SCALE NONE	JOB NO. 947-6174
FILE NO. 947-6174	DWG NO. 008	FIGURE NO. 8

APPENDIX A

CONSTRUCTION QUALITY ASSURANCE AND INSTALLATION PERSONNEL AND SPECIFICATION CLARIFICATIONS

Appendix A.1

Construction Quality Assurance And Installation Personnel

CONSTRUCTION QUALITY ASSURANCE AND INSTALLATION PERSONNEL
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

GOLDER CONSTRUCTION SERVICES, INC. CQA PERSONNEL	
NAME	INITIALS
Jerald L. Curless, P.E. Professional of Record	JLC
Tibebe Menkir Resident CQA Manager	TM
Brian D. Hopp – CQA Technician	BDH
David R. Boles – CQA Technician	DRB

SLT INSTALLATION PERSONNEL	
NAME	INITIALS
Dan Connelly – Supervisor	DC
Tracy McCuiston – Quality Control	TM
Veth Puth	VP
Nay Yorng	NY
Savann Som	SS
Leuthviengthong Syc	AIR
Gary Broadway	GB
Inpone Keomalithong	IK

A:\CONPEO.WK1

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GCS
Golder Construction Services, Inc.

Jerald L. Curless

Education

B.S. Mining Engineering, University of Missouri - Rolla, 1984.
OSHA 40 hours Hazardous Waste Health and Safety Training Course

Affiliations

Registered Professional Engineer - Missouri, Texas
Member - American Society of Civil Engineers, Association of State Dam Safety Officials, International Erosion Control Association

Experience

1994 to Date — **Golder Construction Services, Inc.** — **Houston, Texas**
Project Engineer
Certifying Engineer and Project Manager/Engineer for geotechnical, geological, and hydrogeological evaluations for civil, solid, and hazardous waste projects. Major responsibilities include certification and supervision of Construction Quality Assurance for clay and geosynthetic liners.

1988 to 1994 — **Soil Consultants, Inc.** — **St. Peters, Missouri**
Civil Department Director/Project Engineer
Managed drafting and plan preparation services. Served as Project Engineer on $2.5 million earthen levee construction project. Responsible for supervision of technical staff; preparation of contract documents, construction plans and specifications. Performed geotechnical and hydraulic analyses, wetland determinations, roadway design and economic benefit analyses.

Performed hydrologic, hydraulic and structural investigations on earthen dam rehabilitation projects for the Missouri Department of Natural Resources Dam and Reservoir Safety Program.

Performed flood plain studies including floodway determinations, hydraulic analysis of flood-prone structures and mapping of flood inundation zones.

Designed wastewater disposal systems ranging from a public sanitary sewer system in a 200 lot residential subdivision to design of a lift station/force main/ waste stabilization lagoon/land application system for a commercial truck stop facility to design of individual wastewater disposal systems for single-family residences.

1987 to 1988 — **SDR Consulting Engineers** — **St. Louis, Missouri**
Project Engineer
Designed storm and sanitary sewer systems, storm water detention facilities, grading plans, earthwork plans, and streets and roadways on residential, commercial and municipal site development projects.

1985 to 1987 — **Terra Associates Ltd.** — **St. Charles, Missouri**
Project Engineer
Performed site development project design and management.

1982 to 1985 — **Anderson & Associates Consulting Engineers** — **Rolla, Missouri**
Civil Engineering Technician
Performed full range of geotechnical materials testing including soils, concrete and asphalt. Also served on boundary and engineering survey crews, and drafted civil engineering plans.

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GCS
Golder Construction Services, Inc.

Tibebe Menkir

Education

M.S. Civil Engineering, Construction and Management, University of Illinois, Urbana Champaign, Illinois, 1971, B.S. Civil Engineering, Haile Selassie I University, Addis Ababa, Ethiopia, 1966

Affiliations

Registered Professional Engineer, Ministry of Construction,(Ethiopia) Member Engineers, and Architects Association (Ethiopia)
Radiation Safety and Nuclear Gauge Operation Certification (8 Hrs)
Hazardous Waste Site Investigation Health and Safety Training, 40 Hrs., Golder Associates, Atlanta, 1991.
Basic Military Engineering, Young Officers Course, College of Military Engineering, Poona, India, 1962.
Officer Cadets Course (Sword of Honor, Emperor's Cup, Gold Medal of Merit), Haile Selassie I Military Academy, Harar, Ethiopia, 1961.

Experience

1991 - present **Golder Construction Services, Inc** **Houston, Texas**

Staff Engineer

On-site Quality Assurance monitoring of the construction of soil embankments, clay liner and geosynthetic lining systems for the following hazardous and solid waste landfills:

A. Quality Control on geosynthetics
- Angelina County Landfill, Phase I, Angelina Co., Texas
- BFI Timberlands Landfill, Cell 2A, Escambia Co., Texas
- Sanifill Crow Landfill, Fortworth, Texas
- Waste Management, Bluebonnet Landfill Cell 26, Harris County, Texas
- Waste Management, Westside Sanitary Landfill Cell 5A, Tarrant County, Texas
- BFI Rio Grande Valley Regional Landfill, Fill Sector 1, Hidalgo, Texas
- BFI Kerrville Solid Waste Landfill, Kerrville, Texas
- BFI Sinton Solid Waste Landfill, Sinton, Texas
- BFI Jefferson County Solid Waste Landfill, Jefferson County, Texas
- Texas Ecologists Robstown Hazardous Waste Landfill Cell 41, Robtown, Texas
- BFI FM 521 Solid Waste Landfill, Frenso, Texas
- City Management Corporation Brent Run Solid Waste Landfill, Brent Run, Michigan
- USPCI Industrial Containment Facility, St. Paul MN.
- USPCI Hazardous Waste Landfills, Cell 3 and 5, Grassy Mountain, Clive, Utah
- Waste Management Solid Waste Landfill, Pecan Grove, Gulf Post, MI

B. Quality Control on Embankment/clay liner
- USPCI Hazardous Landfill Cell 5 and Cell 7 Grassy Mountain, Clive, Utah
- USPCI Industrial Containment Facility - St. Paul, MN
- BFI Jefferson County Landfill, Jefferson County, TX
- BFI FM521 Solid Waste Landfill, Frenso, TX

1990 - 1991 **National Seal Company** **Baton Rouge, LA**

Construction Quality Controller

Responsible for Construction Quality Control for liner installation at Chambers Oakridge Landfill (300,000 SF+) in Dorchester County, South Carolina and Broward County Landfill, Florida.

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Tibebe Menkir

1987 - 1990 **Lica Consultancy Agency** **Ethiopia**

Acting Manager

An agency working in association with engineering/management consulting firms from UK and manufacturing and supply firms from EEC countries and the U. S. which supply building materials, construction plants and equipment and the like. Was responsible for preparation of proposals/bids, negotiations, delivery and hand-over of supplies.

Evaluation of proposals/tenders by local and international engineering/management consulting firms/contractors, preparation of construction contracts and specifications for Getachew Bekele Consulting Architects P.L.C. Evaluation of proposals for international tender for the supervision of construction of the multi-disciplinary Angelele-Bolhamo Irrigation Project of Ethio-Libyan Agricultural Company. Review and appraisal of interim and final reports by a management consulting firm for the reorganization and appraisal of Ethiopian Household and Office Furniture Enterprise Technical Department.

1984 - 1988 **Eastern Africa Construction Engineers P.L.C.** **Ethiopia**

Project Engineer,

Responsible for construction planning, projects coordination and all office engineering works of the company.

1983 - 1984 **Industrial Projects Services** **Ethiopia**

Consultant

Review of C.E. design of the 5th Cement project, 600,000 t.py capacity plant planned to be constructed at Dire Dawa and review and appraisal of the preliminary project development concept of the 4th cement project Phase II consisting of the extension of the existing plant by an additional line.

-Market and demand study for the Rehabilitation and Renovation project of the Addis Ababa Asbestos Plant.
-Review of the preliminary design of the Gedamba Brick factory for Ethiopian Building Materials Corporation.
-Construction planning and costing at head office and supervision of construction works of the warehouses of the Relief and Rehabilitation Commission for Eastern Africa Construction Engineers P.L.C.

1982 - 1983 **Ethiopian Building Materials Corporation** **Ethiopia**

Chief Engineer

Responsible for the department engaged in the review of the design of the 5th Cement project.

1974 - 1982 **Marxist Military Government of Ethiopia** **Ethiopia**

Political prisoner

Political prisoner of the Marxist Military Government of Ethiopia.

1971 - 1974 **Construction Battalion** **Ethiopia**

Deputy Commanding Officer, Commanding Officer, Army Engineers (Ethiopian Army)

Responsible for the Battalion engaged in the design, construction and maintenance of Military Installation.

Tibebe Menkir

1966 - 1968 **Architecture Department, Army Engineers** **Ethiopia**

Engineer Officer

Responsible for the department under the construction battalion, which designed and supervised the construction and maintenance of military installation. Worked as team member with Engineers Strategic Studies Group from the United States in master planning military installations. Lectured as basic military engineering courses in the School of Army Engineers at Addis Ababa.

Brian Hopp

GCS
Golder Construction Services, Inc.

Education B.S., Geology and Geophysics, University of Missouri - Rolla, 1993

Affiliations
Member, American Associates of Petroleum Geologists
Member, Geologists Society of America
OSHA Hazardous Waste Health and Safety Training Course (40 Hrs.)
Radiation Safety and Use of Nuclear Gauge Course (8 Hrs)

Experience

1993- Present **Golder Construction Services, Inc.** **Houston, Texas**

Staff Geologist

Construction quality assurance monitor during construction of solid and hazardous waste landfills. Major responsibilities include documentation and testing of clay liners, geosynthetics/geomembrane, geonet, and geotextile, granular leachate collection and protective cover systems across the country.

Performed clay liner and geosynthetics construction quality assurance monitoring for a hazardous waste landfill in Kettleman Hills, California.

Performed construction quality assurance monitoring of geosynthetics, leachate collection system, and protective cover during installation at a 6 acres solid waste landfill site near St. Louis, Missouri.

Performed geosynthetics and protective cover monitoring during 10 acres of installation at a solid waste landfill near Fort Worth, Texas.

Performed temporary berm and rainflap construction quality assurance monitoring at a solid waste landfill near Corpus Christi, Texas.

bh/res

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David R. Boles

GCS
Golder Construction Services, Inc.

Education

Honor Student, Raymore - Peculiar High School
Senior Student, University of Missouri - Rolla
OSHA 40Hrs. Hazardous Materials Training, 29CFR 1910.120 (e)(3)(i), 1994

Affiliations

Member, Association of Engineering Geologists
Member, Lambda Chi Alpha Fraternity

Experience

1994 to Date **Golder Construction Services, Inc.** **Houston, Texas**

Field Technician

Responsibilities included monitoring and documentation of geosynthetic installation for sanitary landfills.

Project Sites:

- County solid waste landfill, Cell I & II — Atascocita, TX
- County solid waste landfill, Cell V — Security, TX
- Hazardous waste landfill, Cap — Sullivan, MO

Other responsibilities included subgrade inspection, as-built drawings and daily documentation review.

1994 to Date **Golder Construction Services, Inc.** **Houston, Texas**

Office and Lab Technician

Obtained, prepared, and organized field and lab documents for final report submittal. Prepared soils for lab tests. Monitored and documented smooth and textured geomembrane production at Gundle's Houston plant.

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Resume - Site Manager

Mr. Dan Connelly

As a SLT Site Manager, Dan Connelly is responsible for on-site installation management of SLT sheet lining projects. This includes customer relations, office-to-office contacts, manager of SLT installation crews, labor crews, quality control, and daily operations of large construction (liner) systems.

Mr. Connelly joined SLT North America, Inc. at the beginning of 1993. Mr Connelly has been in the liner business for over five (5) years. He has been involved in the installation of over five (5) million square feet of liner and other related geosynthetic products.

Some of Mr. Connelly's most recent installations include:

Lopez Canyon - Landfill - CA - 2,618,100 sf
Miles Chemical - Pond - Tx - 280,921 sf
US Fish and Wildlife - Pond - Tx - 131,280 sf
Star Enterprises - Landfill - Tx - 12,064 sf
BP Chemical - Hazardous Waste - 42,000 sf
IAH Fuel Complex - Tank - Tx - 657,012 sf
BFI Rio Grande - Landfill - Tx - 96,400 sf
USPCI Grayback - Landfill - UT - 3,229,020 sf
Bullfrog - Mine - NV - 846,000 sf

Resume - Quality Assurance Technician

Mr. Tracy McCuiston

As a Quality Assurance Technician, Tracy McCuiston is responsible for all aspects of a lining system project that relate to quality, including delivery of material, proper welding procedures, documentation of testing, acceptance procedures and assembly of final project records. Another important aspect of Mr. Edwards' duties include working with independent third party inspectors, State and/or EPA representatives and frequently, the general contractor's quality assurance representative.

An important organizational feature of SLT's quality assurance team is its independence. Although the Quality Assurance Technician works with the on-site construction crew, he/she has a direct reporting relationship to SLT's Manager of Construction Services, who has overall responsibility for all quality assurance operations. By maintaining this independence, SLT has developed a significant methodology to monitor and control construction quality operations.

Mr. McCuiston has been in the liner business since 1985 and has been involved in the installation of over seven (7) million square feet of liner and other related geosynthetic products.

Resume - Welding Technician II

Mr. Veth Puth

As an SLT Welding Technician II, Veth Puth is responsible for the set up, adjustment and operation of SLT welding equipment. The welding equipment includes, but is not limited to, hand welders, fusion welders, tensiometers, air and vacuum test equipment.

Mr. Puth has been in the liner industry for five (5) years. He has been involved in the installation of over ten (10) million square feet of liner and other related geosynthetic products. His most recent installations include:

USPCI Greyback - Landfill, UT - 3,229,020 sf
Lopez Canyon - Landfill - CA - 2,618,100 sf.

Resume - Welding Technician II

Mr. Nay Yorng

As an SLT Welding Technician II, Nay Yorng is responsible for the set up, adjustment and operation of SLT welding equipment. The welding equipment includes, but is not limited to, hand welders, fusion welders, tensiometers and air and vacuum test equipment.

Mr. Yorng has been in the liner business for four (4) years. He has been involved in the installation of over six (6) million square feet of liner and other related geosynthetic products.

Some of his most recent installations include:

Miles Chemical - Pond - TX - 280,921 sf
US Fish & Wildlife - Pond - TX - 131,280 sf
IAH Fuel Complex - Pond - TX - 432,000 sf
BP Chemical - Hazardous Waste - TX - 42,000 sf
BFI - Landfill - TX 996,400 sf
USPCI Grayback - Landfill - UT - 3,229,020 sf

SLT®

For environmental lining solutions... the world comes to SLT.®

Resume - Welding Technician II

Mr. Savann Som

As an SLT Welding Technician II, Savann Som is responsible for the set up, adjustment and operation of SLT welding equipment. The welding equipment includes, but is not limited to, hand welders, fusion welders, tensiometers, air and vacuum test equipment.

Mr. Som has been in the liner industry for five (5) years. He has been involved in the installation of over twenty (20) million square feet of liner and other related geosynthetic products. His most recent installations include:

J.B. Landfill, GA - 1,800,00 sf
USPCI Greyback - Landfill, UT - 3,229,020 sf
Lopez Canyon - Landfill - CA - 2,618,100 sf
Lake Charles Plant, LA - 1,500,000 sf

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Resume - Welding Technician I

Gary Broadway

As an SLT Welding Technician I, Mr. Broadway is responsible for the set up, adjustment and operation of SLT welding equipment. The welding equipment includes, but is not limited to, hand welders, fusion welders, grinders, leisters and tensile testers.

Mr. Broadway has been in the liner business for 1 year and has been involved in the installation of over one million square feet of liner and other related geosynthetic products.

Resume - Welding Technician I

Inpone Keomalithong

As an SLT Welding Technician I, Mr. Keomalithong is responsible for the set up, adjustment and operation of SLT welding equipment. The welding equipment includes, but is not limited to, hand welders, fusion welders, grinders, leisters and tensile testers.

Inpone has been in the liner business for 1½ years and has been involved in the installation of over two million square feet of liner and other related geosynthetic products.

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Appendix A.2

Specification Clarifications

ABB
ASEA BROWN BOVERI

ABB Environmental Services, Inc

110 Free Street/P.O. Box 7050 Portland, Maine 04112
(207) 775-5401

MEMORANDUM

TO: Jerry Curless - Golder Construction Services

DATE: October 5, 1994

FROM: Mark Stelmack MS

SUBJECT: Clarification to Geomembrane Specification
Sullivan, MO Landfill Closure Construction

Please note the following clarification to Specification 02777, VLDPE Geomembrane.

Part 3.05.C.3, Field Quality Assurance, Laboratory Testing, states that "... the shear strength (tensile strength) of 4 of the 5 specimens obtained from each sample shall be equal to or exceed 80% of the mean tensile stress break of the parent material." This requirement conflicts with the requirements in Table 02777-1 for field seam strength (shear).

Clarification: The values for seam strength in Table 02777-1 (48 lbs/in and 30 lbs/in, minimum, smooth and textured geomembrane, respectively) for 4 of the 5 specimens obtained from each sample are to be used to determine contractor conformance to specifications. Ignore the 80% criteria in Part 3.05.C.3.

Call me at 207-828-3592 if you have any questions.

cc: B. Farrin
Project File

Post-It™ brand fax transmittal memo 7671	# of pages ▸ 1
To JERRY CURLESS	From MARK STELMACK
Co. GCS	Co. ABB-ES
Dept.	Phone # 207 828 3592
Fax # 713 931 3246	Fax #

G:\PSGUP\FORMS\MEMOWP51.WP

ABB
ASEA BROWN BOVERI

ABB Environmental Services, Inc

110 Free Street/P.O. Box 7050 Portland, Maine 04112
(207) 775-5401

MEMORANDUM

TO: Jerry Curless - Golder Construction Services

DATE: October 21, 1994

FROM: Mark Stelmack

SUBJECT: Use of VLDPE Rolls 2344 & 9054
Sullivan, MO Landfill Closure Construction

We have reviewed the conformance test results you forwarded on October 20. The results show Elongation at Break values for the two subject textured rolls less than the required value (800%). The two rolls can be used in the landfill cover; this decision is based primarily on two observations:

1) Manufacturer's data sheets you forwarded on September 30 show that SLT should be achieving 1,000% for this test. However, results of only 300, 400, and 450% for textured VLDPE can be expected for industry rivals PolyFlex, Gundle, and National Seal, respectively. Conclusion: 800% elongation should not be expected to be obtained on textured VLDPE made by these four manufacturers on a routine basis.

2) Textured VLDPE will be used on the portion of the Sullivan landfill cap near the edge and/or outside of the waste disposal area where little if any landfill settlement and accompanying geomembrane tensile stress will occur after construction.

Call me at 207-828-3592 if you have any questions.

cc: B. Farrin
Project File

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 1

To BRAD FARRIN	From M. STELMACK
Co.	Co.
Dept.	Phone #
Fax #	Fax #

G:\PSSUP\FORMS\MEMOWP51.WP

APPENDIX B

GEOMEMBRANE MATERIAL INVENTORY

GEOMEMBRANE MATERIAL INVENTORY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SLT NORTH AMERICA 40 MIL VLDPE GEOMEMBRANE

ROLL COUNT	ROLL NUMBER	ARRIVAL DATE	RAILCAR OR RESIN LOT NUMBER	DATE OF ROLL QC DOC.	CONFORMANCE SAMPLED	REMARKS
1	AC- 2344	10/13/94	Q- 45755	10/13/94	YES	TEXTURED
2	AC- 9054	10/18/94	S- 61181	10/18/94	YES	TEXTURED
3	AC- 9078	09/12/94	S- 61183	09/12/94	YES	SMOOTH
4	AD- 1482	09/28/94	S- 61174	09/28/94	YES	SMOOTH
5	AD- 2558	09/12/94	S- 62160	09/12/94	YES	SMOOTH
6	AD- 2570	09/12/94	S- 62160	09/12/94	YES	SMOOTH
7	AD- 2614	09/28/94	S- 62159	09/28/94	YES	SMOOTH
8	AD- 2622	09/12/94	S- 62157	09/12/94	YES	SMOOTH
9	AD- 2688	09/12/94	S- 61175	09/12/94	YES	SMOOTH
10	AD- 4419	09/12/94	S- 62166	09/12/94	YES	SMOOTH
11	AD- 4420	09/12/94	S- 62166	09/12/94		SMOOTH
12	AD- 4421	09/12/94	S- 62166	09/12/94		SMOOTH
13	AD- 4422	09/12/94	S- 62166	09/12/94		SMOOTH
14	AD- 4423	09/12/94	S- 62166	09/12/94	YES	SMOOTH
15	AD- 4428	09/12/94	S- 62161	09/12/94		SMOOTH
16	AD- 4450	09/12/94	S- 62161	09/12/94	YES	SMOOTH
17	AD- 4460	09/12/94	S- 62161	09/12/94		SMOOTH
18	AD- 4462	09/12/94	S- 62161	09/12/94	YES	SMOOTH
19	AD- 4463	09/12/94	S- 62161	09/12/94		SMOOTH
20	AD- 4546	09/12/94	S- 62164	09/12/94		SMOOTH
21	AD- 4547	09/12/94	S- 62164	09/12/94	YES	SMOOTH
22	AD- 6855	09/12/94	S- 60893	09/12/94	YES	SMOOTH
23	AD- 7224	09/28/94	S- 60898	09/28/94	YES	SMOOTH
24	AD- 9222	09/28/94	S- 61411	09/28/94	YES	SMOOTH
25	AD- 9227	09/28/94	S- 61411	09/28/94		SMOOTH
26	AD- 9293	09/28/94	S- 61416	09/28/94		SMOOTH
27	AD- 9301	09/28/94	S- 61416	09/28/94		SMOOTH
28	AD- 9302	09/28/94	S- 61416	09/28/94	YES	SMOOTH
29	AD- 9307	09/28/94	S- 61416	09/28/94		SMOOTH
30	AD- 9328	09/28/94	S- 61416	09/28/94		SMOOTH
31	AE- 0128	10/10/94	T- 61417	10/10/94	YES	SMOOTH
32	AE- 0132	10/10/94	T- 61417	10/10/94		SMOOTH
33	AE- 0135	10/10/94	T- 61417	10/10/94		SMOOTH
34	AE- 0137	10/10/94	T- 61417	10/10/94		SMOOTH
35	AE- 0153	10/10/94	T- 61417	10/10/94		SMOOTH

FILENAME:INVGM40.WK1

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GEOMEMBRANE MATERIAL INVENTORY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SLT NORTH AMERICA 40 MIL VLDPE GEOMEMBRANE

ROLL COUNT	ROLL NUMBER	ARRIVAL DATE	RAILCAR OR RESIN LOT NUMBER	DATE OF ROLL QC DOC.	CONFORMANCE SAMPLED	REMARKS
36	AE- 0155	10/10/94	T- 61417	10/10/94		SMOOTH
37	AE- 0156	10/10/94	S- 61417	10/10/94		SMOOTH
38	AE- 0157	10/10/94	T- 61417	10/10/94		SMOOTH
39	AE- 0165	10/10/94	T- 61417	10/10/94		SMOOTH
40	AE- 0170	10/10/94	T- 61415	10/10/94		SMOOTH
41	AE- 0171	10/10/94	T- 61415	10/10/94		SMOOTH
42	AE- 0174	10/10/94	T- 61415	10/10/94		SMOOTH
43	AE- 0178	10/10/94	T- 61415	10/10/94	YES	SMOOTH
44	AE- 0370	10/13/94	T- 61415	10/13/94	YES	SMOOTH
45	AE- 0371	10/13/94	T- 61415	10/13/94		SMOOTH
46	AE- 0372	10/13/94	T- 61415	10/13/94		SMOOTH
47	AE- 0377	10/13/94	T- 61415	10/13/94		SMOOTH
48	AE- 0381	10/13/94	T- 61415	10/13/94		SMOOTH
49	AE- 0382	10/13/94	T- 61415	10/13/94		SMOOTH
50	AE- 0383	10/13/94	T- 61415	10/13/94		SMOOTH
51	AE- 0384	10/13/94	T- 61415	10/13/94		SMOOTH
52	AE- 0385	10/13/94	T- 61415	10/13/94		SMOOTH
53	AE- 0386	10/13/94	T- 61415	10/13/94		SMOOTH
54	AE- 0387	10/13/94	T- 61415	10/13/94		SMOOTH
55	AE- 0388	10/13/94	T- 61415	10/13/94	YES	SMOOTH
56	AE- 0394	10/17/94	T- 61415	10/17/94		TEXTURED
57	AE- 0395	10/17/94	T- 61415	10/17/94	YES	TEXTURED
58	AE- 0396	10/17/94	T- 61415	10/17/94		TEXTURED
59	AE- 0397	10/17/94	T- 61415	10/17/94		TEXTURED
60	AE- 0398	10/17/94	T- 61415	10/17/94		TEXTURED
61	AE- 0399	10/17/94	T- 61415	10/17/94	YES	TEXTURED
62	AE- 0400	10/17/94	T- 61415	10/17/94		TEXTURED
63	AE- 0401	10/17/94	T- 61415	10/17/94		TEXTURED
64	AE- 0402	10/17/94	T- 61405	10/17/94		TEXTURED
65	AE- 0403	10/17/94	T- 61405	10/17/94		TEXTURED
66	AE- 0404	10/17/94	T- 61405	10/17/94		TEXTURED
67	AE- 0405	10/17/94	T- 61405	10/17/94	YES	TEXTURED

FILENAME:INVGM40.WK1

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APPENDIX C

GEOMEMBRANE RESIN AND ROLL QUALITY CONTROL DOCUMENTS

SLT

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Roll Test Data Report

ULTRAFLEX™

ROLL NO. AC-2344FF

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AC-2344FF	
PROD DATE:	05/24/93	
SHEET AREA:	8515	sq.ft.
	791	sq. meters
LENGTH:	359	feet
	109	meters
WIDTH:	23.72	feet
	7.2	meters
WEIGHT:	1800	pounds
	816	kilograms

RESIN LOT INFORMATION

LOT NUMBER	Q-45755
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	<0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.759

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		162 lb/in	29 kg/cm	223 lb/in	40 kg/cm
MD -		160	29	219	39
BREAK ELONGATION	D638				
CD -		780 %		877 %	
MD -		780		859	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1808 ft-lb/in2	3800mj/mm2
MD -		381	801	1856	3900
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	29 lb	13 kg
MD -		24	11	28	13
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	85 lb	38 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 %	
MD -		+/-2.00		0.8	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.00 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.928 g/cc
ESCR	D1693-B	2000 hours		Start 5/28/93	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	39	0.99
AVG. THICKNESS				40	1.02

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH= 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 5/28/93 #2 QA

CUSTOMER: SLT STOCK
B NO.
COMMENTS:

DATE SHIPPED

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Roll Test Data Report

*ULTRAFLEX*R

ROLL NO. AC-9054FF

ROLL DIMENSIONS - ± 1%

ROLL NUMBER:	AC-9054FF	
PROD DATE:	11/19/93	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3750	pounds
	1706	kilograms

RESIN LOT INFORMATION

LOT NUMBER	S-61181
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.919
MOISTURE	%	D570	<0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.896

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	214 lb/in	38 kg/cm
MD -		140	25	209	37
BREAK ELONGATION	D638				
CD -		800 %		917 %	
MD -		800		884	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1475 ft-lb/in2	3100 mj/mm2
MD -		381	801	1570	3300
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1300%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	27 lb	12 kg
MD -		24	11	26	12
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	83 lb	38 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 %	
MD -		+/-2.00		0.5	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.49 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.929 g/cc
ESCR	D1693-B	1500 hours		Start 11/26/93	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	39	1.00
AVG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH= 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED Jeremy #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS: _____

DATE SHIPPED _____

20042051

SLT

Roll Test Data Report

ULTRAFLEX™

ROLL NO. AC-9078

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AC-9078	
PROD DATE:	11/20/93	
SHEET AREA:	33820	sq.ft.
	3143	sq. meters
LENGTH:	1430	feet
	436	meters
WIDTH:	23.65	feet
	7.2	meters
WEIGHT:	6848	pounds
	3106	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-61183
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.893

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	191 lb/in	34 kg/cm
MD -		160	29	211	38
BREAK ELONGATION	D638				
CD -		800 %		899 %	
MD -		800		911	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1760 ft-lb.in2	3700mj-mm2
MD -		381	801	1808	3800
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	27	12
PUNCTURE STRENGTH	FTMS 101/2065 ✓	40 lb	18 kg	78 lb	35 kg
SHRINKAGE	D1204 ✓				
CD -	(1 HR @ 100C)	+/-2.00 %		0.3 %	
MD -		+/-2.00		0.4	
CARBON BLACK DISPERSION	D3015 ✓	A2		A2	
CARBON BLACK CONTENT	D1603 ✓	2.00 %		2.54 %	
GEOMEMBRANE DENSITY	D792 ✓		0.920 g/cc		0.928 g/cc
ESCR	D1693-B ✓	1500 hours		Start 11/26/93	
THICKNESS	D1593/D751 ✓				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 11-20-93 #9 QA

CUSTOMER:
JOB NO.
COMMENTS

DATE SHIPPED

SLT

Roll Test Data Report

*ULTRAFLEX*R

ROLL NO. AD-1482

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-1482	
PROD DATE:	01/21/94	
SHEET AREA:	33805	sq.ft.
	3142	sq. meters
LENGTH:	1430	feet
	436	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	6886	pounds
	3123	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-61174
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.920
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.911

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638 ✓				
CD -		140 lb/in	25 kg/cm	219 lb/in ✓	39 kg/cm
MD -		140	25	236	42
BREAK ELONGATION	D638 ✓				
CD -		800 %		836 % ✓	
MD -		800		874	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1903 ft-lb/in2	4000 mj/mm2
MD -		381	801	1998	4200
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb 16 lb	11 kg	29 lb ✓	13 kg
MD -		24	11	30	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb 52 lb	18 kg	88 lb ✓	40 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 %	
MD -		+/-2.00		1.3	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 % 2.5%		2.08 % ✓	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.928 g/cc ✓
ESCR	D1693-B	1500 hours		Start 1/28/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil ✓	1.02 mm
MINIMUM		36	0.91	39 ✓	0.99
AVG. THICKNESS				41 ✓	1.04

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 9/17 #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS

DATE SHIPPED

DRB

SLT

Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-2558

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-2558	
PROD DATE:	02/17/94	
SHEET AREA:	33920	sq.ft.
	3152	sq. meters
LENGTH:	1430	feet
	436	meters
WIDTH:	23.72	feet
	7.2	meters
WEIGHT:	6886	pounds
	3123	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-62160
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.937

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	196 lb/in	35 kg/cm
MD -		160	29	193	34
BREAK ELONGATION	D638				
CD -		800 %		888 %	
MD -		800		883	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1951 ft-lb/in2	4100 mj/mm2
MD -		381	801	2189	4600
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	27 lb	12 kg
MD -		24	11	27	12
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	74 lb	34 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.3 %	
MD -		+/-2.00		0.2	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.16 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 2/23/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	39	0.99
AVG. THICKNESS				40	1.03

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 2/23/94 #6 QA

CUSTOMER:
JOB NO.
COMMENTS

DATE SHIPPED

SLT

Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-2570

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-2570	
PROD DATE:	02/17/94	
SHEET AREA:	33920	sq.ft.
	3152	sq. meters
LENGTH:	1430	feet
	436	meters
WIDTH:	23.72	feet
	7.2	meters
WEIGHT:	6916	pounds
	3137	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-62160
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.937

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	196 lb/in	35 kg/cm
MD -		160	29	226	40
BREAK ELONGATION	D638				
CD -		800 %		928 %	
MD -		800		931	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1856 ft-lb/in2	3900 mj/mm2
MD -		381	801	2046	4300
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	25 lb	12 kg
MD -		24	11	27	12
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	85 lb	38 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.3 %	
MD -		+/-2.00		0.5	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.30 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 2/25/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	38	0.97
AVG. THICKNESS				41	1.03

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 2.17.94 #6 QA

CUSTOMER
JOB NO.
COMMENTS

DATE SHIPPED

SLT

Roll Test Data Report

ULTRAFLEX®

ROLL NO. AD-2614

ROLL DIMENSIONS ≈ ± 1%		
ROLL NUMBER:	AD-2614	
PROD DATE:	02/19/94	
SHEET AREA:	33805	sq.ft.
	3142	sq. meters
LENGTH:	1430	feet
	436	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	6878	pounds
	3120	kilograms

RESIN LOT INFORMATION	
LOT NUMBER	S-62159
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.927

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	216 lb/in ✓	39 kg/cm
MD -		140	25	222	40
BREAK ELONGATION	D638				
CD -		800 %		900 % ✓	
MD -		800		924	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1951 ft-lb/in2	4100 mj/mm2
MD -		381	801	1903	4000
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400 %	
MD -		100		>1300	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	26 lb ✓	12 kg
MD -		24	11	27	12
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	85 lb ✓	39 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.4 %	
MD -		+/-2.00		0.5	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.40 % ✓	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.928 g/cc ✓
ESCR	D1693-B	1500 hours		Start 2/25/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil ✓	1.02 mm
MINIMUM		36	0.91	39 ✓	0.98
AVG. THICKNESS				40 ✓	1.01

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 9/19/94 #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS

DATE SHIPPED

DRB

SLT

Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-2622

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-2622	
PROD DATE:	02/19/94	
SHEET AREA:	33920	sq.ft.
	3152	sq. meters
LENGTH:	1430	feet
	436	meters
WIDTH:	23.72	feet
	7.2	meters
WEIGHT:	6852	pounds
	3108	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-62159
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.927

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	217 lb/in	39 kg/cm
MD -		160	29	215	38
BREAK ELONGATION	D638				
CD -		800 %		922 %	
MD -		800		882	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1903 ft-lb/in2	4000 mj/mm2
MD -		381	801	1713	3600
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1200	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	28 lb	13 kg
MD -		24	11	30	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	90 lb	41 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.4 %	
MD -		+/-2.00		0.4	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.31 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 2/25/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	38	0.98
AVG. THICKNESS				40	1.01

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 2/20/94 #7 KT QA

CUSTOMER:
JOB NO.
COMMENTS

DATE SHIPPED

3004:250

SLT

Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-2688

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-2688	
PROD DATE:	02/21/94	
SHEET AREA:	33491	sq.ft.
	3113	sq. meters
LENGTH:	1430	feet
	436	meters
WIDTH:	23.42	feet
	7.1	meters
WEIGHT:	6864	pounds
	3113	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-61175
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.920

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		126 lb/in	23 kg/cm	208 lb/in	37 kg/cm
MD -		126	23	221	40
BREAK ELONGATION	D638				
CD -		800 %		864 %	
MD -		800		874	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1951 ft-lb/in2	4100 mj/mm2
MD -		381	801	1903	4000
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		20 lb	9 kg	28 lb	13 kg
MD -		20	9	28	13
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	87 lb	39 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-3.00 %		0.3 %	
MD -		+/-2.00		0.6	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.24 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 2/25/93	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	39	0.99
AVG. THICKNESS				40	1.03

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
·FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED #8 QA

CUSTOMER:
JOB NO.
COMMENTS

DATE SHIPPED

SLT

Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-4419

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-4419	
PROD DATE:	04/07/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.54	feet
	7.2	meters
WEIGHT:	3508	pounds
	1591	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-62166
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.919
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.930

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	213 lb/in	38 kg/cm
MD -		160	29	217	39
BREAK ELONGATION	D638				
CD -		800 %		924 %	
MD -		800		897	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1760 ft-lb/in2	3700 mj/mm2
MD -		381	801	1665	3500
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	76 lb	34 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/- 2.00 %		0.2 %	
MD -		+/- 2.00		0.6	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.35 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.928 g/cc
ESCR	D1693-B	1500 hours		Start 4/15/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 4/15/94 #8 QA

CUSTOMER:
JOB NO.
COMMENTS

DATE SHIPPED

SLT

Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-4420

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-4420	
PROD DATE:	04/07/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3504	pounds
	1589	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-62166
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.919
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.930

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		128 lb/in	23 kg/cm	220 lb/in	39 kg/cm
MD -		128	23	224	40
BREAK ELONGATION	D638				
CD -		625 %		937 %	
MD -		625		923	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1760 ft-lb/in2	3700 mj/mm2
MD -		381	801	1665	3500
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400 %	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		16 lb	7 kg	31 lb	14 kg
MD -		16	7	31	14
PUNCTURE STRENGTH	FTMS 101/2065	52 lb	24 kg	77 lb	35 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-3.00 %		0.2 %	
MD -		+/-3.00		0.7	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.35 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.928 g/cc
ESCR	D1693-B	1500 hours		Start 4/15/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.02
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 4/8/94 #2 BZ QA

CUSTOMER: _____
JOB NO.
COMMENTS _____

DATE SHIPPED _____

SLT

Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-4421

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-4421	
PROD DATE:	04/07/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3508	pounds
	1591	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-62166
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.919
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.930

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		125 lb/in	23 kg/cm	220 lb/in	39 kg/cm
MD -		125	23	223	40
BREAK ELONGATION	D638				
CD -		900 %		939 %	
MD -		900		925	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1713 ft-lb/in2	3600 mj/mm2
MD -		381	801	1713	3600
SILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1300	
INITIAL TEARING STRENGTH	D1004				
CD -		18 lb	8 kg	31 lb	14 kg
MD -		18	8	31	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	76 lb	34 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/- 2.00 %		0.2 %	
MD -		-/- 2.00		0.6	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.33 %	
GEOMEMBRANE DENSITY	D792		0.900 g/cc		0.928 g/cc
ESCR	D1693-B	1500 hours		Start 4/15/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.02
AVG. THICKNESS				42	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 4/8/94 #2 QA

CUSTOMER _____
JOB NO. _____
COMMENTS _____

DATE SHIPPED _____

SLT

Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-4422

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-4422	
PROD DATE:	04/07/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3518	pounds
	1596	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-62166
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.919
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.930

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		126 lb/in	23 kg/cm	227 lb/in	41 kg/cm
MD -		126	23	225	40
BREAK ELONGATION	D638				
CD -		900 %		932 %	
MD -		900		917	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1713 ft-lb/in2	3600 mj/mm2
MD -		381	801	1665	3500
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1300	
INITIAL TEARING STRENGTH	D1004				
CD -		18 lb	8 kg	32 lb	14 kg
MD -		18	8	32	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	76 lb	34 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 %	
MD -		+/-2.00		0.6	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.34 %	
GEOMEMBRANE DENSITY	D792		0.900 g/cc		0.928 g/cc
ESCR	D1693-B	1500 hours		Start 4/15/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 4/8/94 #2 QA

CUSTOMER: _____
JOB NO. _____
COMMENTS _____

DATE SHIPPED _____

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SLT

Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-4423

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-4423	
PROD DATE:	04/07/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3522	pounds
	1598	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-62166
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.919
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.930

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		126 lb/in	23 kg/cm	229 lb/in	41 kg/cm
MD -		126	23	224	40
BREAK ELONGATION	D638				
CD -		900 %		935 %	
MD -		900		924	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1713 ft-lb/in2	3600 mj/mm2
MD -		381	801	1665	3500
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1300	
INITIAL TEARING STRENGTH	D1004				
CD -		18 lb	8 kg	31 lb	14 kg
MD -		18	8	32	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	77 lb	35 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 %	
MD -		+/-2.00		-0.5	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.34 %	
GEOMEMBRANE DENSITY	D792		0.900 g/cc		0.928 g/cc
ESCR	D1693-B	1500 hours		Start 4/15/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED #2 QA

CUSTOMER: _____
JOB NO. _____
COMMENTS _____

DATE SHIPPED _____

SLT

Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-4428

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-4428	
PROD DATE:	04/07/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3502	pounds
	1588	kilograms

RESIN LOT INFORMATION

LOT NUMBER	S-62161
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.940

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		128 lb/in	23 kg/cm	235 lb/in	42 kg/cm
MD -		128	23	220	39
BREAK ELONGATION	D638				
CD -		625 %		905 %	
MD -		625		885	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1713 ft-lb/in2	3600 mj/mm2
MD -		381	801	1618	3400
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1300	
INITIAL TEARING STRENGTH	D1004				
CD -		16 lb	7 kg	32 lb	14 kg
MD -		16	7	32	15
PUNCTURE STRENGTH	FTMS 101/2065	52 lb	24 kg	74 lb	34 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-3.00 %		0.3 %	
MD -		+/-3.00		0.4	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.36 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 4/15/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.02
AVG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 4/8/94 #2 QA

CUSTOMER: _____

JOB NO.

COMMENTS _____

DATE SHIPPED _____

SLT

Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-4450

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-4450	
PROD DATE:	04/07/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3510	pounds
	1592	kilograms

RESIN LOT INFORMATION

LOT NUMBER	S-62161
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.940

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	232 lb/in	41 kg/cm
MD -		160	29	228	41
BREAK ELONGATION	D638				
CD -		800 %		929 %	
MD -		800		886	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1951 ft-lb/in2	4100 mj/mm2
MD -		381	801	1903	4000
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1300%	
MD -		100		>1200	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	30	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	91 lb	41 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 %	
MD -		+/-2.00		0.4	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.32 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 4/15/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.02
AVG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED #2 QA

CUSTOMER:
JOB NO.
COMMENTS

DATE SHIPPED

SLT

Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-4460

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-4460	
PROD DATE:	04/08/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3498	pounds
	1587	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-62161
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.940

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	225 lb/in	40 kg/cm
MD -		160	29	226	40
BREAK ELONGATION	D638				
CD -		800 %		923 %	
MD -		800		917	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1808 ft-lb/in2	3800 mj/mm2
MD -		381	801	1760	3700
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	29 lb	13 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	75 lb	34 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.3 %	
MD -		+/-2.00		0.5	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.21 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 4/15/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 4/19/94 #2 QA

CUSTOMER:
JOB NO.
COMMENTS

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Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-4462

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-4462	
PROD DATE:	04/08/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3510	pounds
	1592	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-62161
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.940

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	226 lb/in	40 kg/cm
MD -		160	29	224	40
BREAK ELONGATION	D638				
CD -		800 %		915 %	
MD -		800		907	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1760 ft-lb/in2	3700mj/mm2
MD -		381	801	1760	3700
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1300%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	30 lb	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	76 lb	34 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.3 %	
MD -		+/-2.00		0.4	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.25 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 4/15/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				42	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED #2 QA

CUSTOMER:
JOB NO.
COMMENTS

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Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-4463

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-4463	
PROD DATE:	04/08/94	
SHEET AREA:	16926	sq.ft.
	1573	sq. meters
LENGTH:	716	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3510	pounds
	1592	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-62161
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.940

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	227 lb/in	40 kg/cm
MD -		160	29	223	40
BREAK ELONGATION	D638				
CD -		800 %		917 %	
MD -		800		909	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1760 ft-lb/in2	3700 mj/mm2
MD -		381	801	1713	3600
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1300 %	
MD -		100		>1300	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	30 lb	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	81 lb	37 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.3 %	
MD -		+/-2.00		0.5	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.27 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 4/15/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 4/18/94 #2 QA

CUSTOMER:
JOB NO.
COMMENTS

DATE SHIPPED

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Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-4546

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-4546	
PROD DATE:	04/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3508	pounds
	1591	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-62164
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.950

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	218 lb/in	39 kg/cm
MD -		160	29	225	40
BREAK ELONGATION	D638				
CD -		800 %		896 %	
MD -		800		868	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1713 ft-lb/in2	3600 mj/mm2
MD -		381	801	1760	3700
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	30	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	82 lb	37 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.5 %	
MD -		+/-2.00		0.4	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.37 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 4/15/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.02
AVG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 4/11/94 K.T.

CUSTOMER:
JOB NO.
COMMENTS

DATE SHIPPED

SLT

Roll Test Data Report

ULTRAFLEX™

ROLL NO. AD-4547

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-4547	
PROD DATE:	04/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3510	pounds
	1592	kilograms

RESIN LOT INFORMATION

LOT NUMBER S-62164
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.950

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	217 lb/in	39 kg/cm
MD -		160	29	224	40
BREAK ELONGATION	D638				
CD -		800 %		898 %	
MD -		800		874	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1665 ft-lb/in2	3500mj/mm2
MD -		381	801	1713	3600
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	30	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	84 lb	38 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.5 %	
MD -		+/-2.00		0.4	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.37 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 4/15/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.03
AVG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 4/11/94 KT QA

CUSTOMER:
JOB NO.
COMMENTS

DATE SHIPPED

SLT

Roll Test Data Report

ULTRAFLEX®

ROLL NO. AD-6855

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-6855	
PROD DATE:	07/02/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3478	pounds
	1578	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-60893
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		126 lb/in	23 kg/cm	233 lb/in	42 kg/cm
MD -		126	23	231	41
BREAK ELONGATION	D638				
CD -		800 %		923 %	
MD -		800		860	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2284 ft-lb/in2	4800mj/mm2
MD -		381	801	2284	4800
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		18 lb	8 kg	30 lb	14 kg
MD -		18	8	30	14
PUNCTURE STRENGTH	FTMS 101/2065	64 lb	29 kg	96 lb	43 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.3 %	
MD -		+/-2.00		0.8	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.59 %	
GEOMEMBRANE DENSITY	D792		0.900 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 7/08/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.02
AVG. THICKNESS				41	1.04

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED #8 QA

CUSTOMER
JOB NO.
COMMENTS

DATE SHIPPED

TOTAL P.21

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AD-7224

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-7224	
PROD DATE:	07/13/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3544	pounds
	1608	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-60898
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.918
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.980

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	190 lb/in ✓	34 kg/cm
MD -		140	25	188	34
BREAK ELONGATION	D638				
CD -		800 %		842 % ✓	
MD -		800		814	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2045 ft-lb/in2	4300mj/mm2
MD -		381	801	2141	4500
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb ✓	14 kg
MD -		24	11	30	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	89 lb ✓	40 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 % ✓	
MD -		+/-2.00		0.5	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.22 % ✓	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc ✓
ESCR	D1693-B	1500 hours		Start 7/15/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil ✓	1.02 mm
MINIMUM		36	0.91	41 ✓	1.03
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS

DATE SHIPPED

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Roll Test Data Report

*ULTRAFLEX*R

ROLL NO. AD-9222

ROLL DIMENSIONS = ± 1%

ROLL NUMBER:	AD-9222	
PROD DATE:	09/10/94	
SHEET AREA:	16926	sq.ft.
	1573	sq. meters
LENGTH:	716	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3542	pounds
	1607	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61411
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.900

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	228 lb/in ✓	41 kg/cm
MD -		140	25	222	40
BREAK ELONGATION	D638				
CD -		800 %		877 % ✓	
MD -		800		856	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1998 ft-lb/in2	4200 mj/mm2
MD -		381	801	1998	4200
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	32 lb ✓	14 kg
MD -		24	11	30	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	93 lb ✓	42 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/- 2.00 %		0.2 % ✓	
MD -		+/- 2.00		1.2	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.40 % ✓	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc ✓
ESCR	D1693-B	1500 hours		Start 9/16/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40 ✓	1.03
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 9/19/94 #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS

DATE SHIPPED

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Roll Test Data Report

*ULTRAFLEX*R

ROLL NO. AD-9227

ROLL DIMENSIONS = ± 1%

ROLL NUMBER:	AD-9227	
PROD DATE:	09/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3526	pounds
	1599	kilograms

RESIN LOT INFORMATION

LOT NUMBER	T-61411
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.900

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	236 lb/in ✓	42 kg/cm
MD -		140	25	232	41
BREAK ELONGATION	D638				
CD -		800 %		871 % ✓	
MD -		800		860	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1998 ft-lb/in2	4200 mj/mm2
MD -		381	801	1998	4200
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb ✓	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	97 lb ✓	44 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.1 % ✓	
MD -		+/-2.00		0.5	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.37 % ✓	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc ✓
ESCR	D1693-B	1500 hours		Start 9/16/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40 ✓	1.00
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 9/19/94 #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS _____

DATE SHIPPED _____

DRB

SLT

Roll Test Data Report

ULTRAFLEX®

ROLL NO. AD-9293

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-9293	
PROD DATE:	09/11/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3522	pounds
	1598	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61416
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.910

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	227 lb/in ✓	40 kg/cm
MD -		140	25	234	42
BREAK ELONGATION	D638				
CD -		800 %		853 % ✓	
MD -		800		825	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2141 ft-lb/in2	4500 mj/mm2
MD -		381	801	2046	4300
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	33 lb ✓	15 kg
MD -		24	11	33	15
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	101 lb ✓	46 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.3 % ✓	
MD -		+/-2.00		1.0	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.23 % ✓	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc ✓
ESCR	D1693-B	1500 hours		Start 9/16/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40 ✓	1.02
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 9/11 #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS

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Roll Test Data Report

*ULTRAFLEX*R

ROLL NO. AD-9301

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-9301	
PROD DATE:	09/12/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3568	pounds
	1618	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61416
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.910

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	227 lb/in ✓	41 kg/cm
MD -		140	25	233	42
BREAK ELONGATION	D638				
CD -		800 %		835 % ✓	
MD -		800		828	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2189 ft-lb/in2	4600 mj/mm2
MD -		381	801	2046	4300
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	32 lb ✓	15 kg
MD -		24	11	32	15
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	97 lb ✓	44 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.3 % ✓	
MD -		+/-2.00		1.0	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.44 % ✓	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc ✓
ESCR	D1693-B	1500 hours		Start 9/16/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40 ✓	1.01
AVG. THICKNESS				42	1.07

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS

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Roll Test Data Report

*ULTRAFLEX*R

ROLL NO. AD-9302

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-9302	
PROD DATE:	09/12/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3532	pounds
	1602	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61416
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.910

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	225 lb/in ✓	40 kg/cm
MD -		140	25	230	41
BREAK ELONGATION	D638				
CD -		800 %		837 % ✓	
MD -		800		825	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2189 ft-lb/in2	4600 mj/mm2
MD -		381	801	2045	4300
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	32 lb ✓	15 kg
MD -		24	11	32	15
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	99 lb ✓	45 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 % ✓	
MD -		+/-2.00		1.0	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.49 % ✓	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc ✓
ESCR	D1693-B	1500 hours		Start 9/16/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40 ✓	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 9/19/94 #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS

DATE SHIPPED

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AD-9307

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-9307	
PROD DATE:	09/12/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3518	pounds
	1596	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61416
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.910

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	227 lb/in ✓	40 kg/cm
MD -		140	25	236	42
BREAK ELONGATION	D638				
CD -		800 %		844 % ✓	
MD -		800		841	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2141 ft-lb/in2	4500 mj/mm2
MD -		381	801	2189	4600
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	32 lb ✓	15 kg
MD -		24	11	32	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	101 lb ✓	46 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.3 % ✓	
MD -		+/-2.00		0.8	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.53 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc ✓
ESCR	D1693-B	1500 hours		Start 9/16/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40 ✓	1.02
AVG. THICKNESS				42	1.07

TEST NOTES: MD = MACHINE DIRECTION CD = CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH = 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS

DATE SHIPPED

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Roll Test Data Report

*ULTRAFLEX*R

ROLL NO. AD-9328

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AD-9328	
PROD DATE:	09/12/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3524	pounds
	1598	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61416
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.910

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	222 lb/in	40 kg/cm
MD -		140	25	237 ✓	42
BREAK ELONGATION	D638				
CD -		800 %		851 % ✓	
MD -		800		839	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2093 ft-lb/in2	4400 mj/mm2
MD -		381	801	2141	4500
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb ✓	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	95 lb ✓	43 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 % ✓	
MD -		+/-2.00		0.1	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.29 % ✓	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc ✓
ESCR	D1693-B	1500 hours		Start 9/16/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.02
AVG. THICKNESS				42 ✓	1.07

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 9/19/94 #8 mc QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS

DATE SHIPPED

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0128

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0128	
PROD DATE:	10/04/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3576	pounds
	1622	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61417
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.890

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
ENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	235 lb/in	42 kg/cm
MD -		160	29	238	43
REAK ELONGATION	D638				
CD -		800 %		862 %	
MD -		800		876	
NSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2141 ft-lb/in2	4500 mj/mm2
MD -		381	801	2141	4500
LE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	33 lb	15 kg
MD -		24	11	33	15
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	99 lb	45 kg
INKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 %	
MD -		+/-2.00		0.5	
BON BLACK DISPERSION	D3015	A2		A2	
BON BLACK CONTENT	D1603	2.00 %		2.32 %	
EOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
SCR	D1693-B	1500 hours		Start 10/07/94	
KNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.02
VG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

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DATE SHIPPED

APPROVED WT #7 10-4-94 QA

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Roll Test Data Report

ULTRAFLEX R

ROLL NO. AE-0132

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0132	
PROD DATE:	10/04/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3576	pounds
	1622	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61417
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.890

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	229 lb/in	41 kg/cm
MD -		160	29	238	42
BREAK ELONGATION	D638				
CD -		800 %		851 %	
MD -		800		886	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2141 ft-lb/in2	4500 mj/mm2
MD -		381	801	2093	4400
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	32 lb	15 kg
MD -		24	11	33	15
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	95 lb	43 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 %	
MD -		+/-2.00		0.6	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.32 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/07/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10-4-94 #6 QA

CUSTOMER:
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DATE SHIPPED _____

200-C014

SLT

Roll Test Data Report

ULTRAFLEX R

ROLL NO. AE-0135

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0135	
PROD DATE:	10/04/94	
SHEET AREA:	16926	sq.ft.
	1573	sq. meters
LENGTH:	716	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3576	pounds
	1622	kilograms

RESIN LOT INFORMATION

LOT NUMBER	T-61417
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.890

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH		SLT MINIMUMS METRIC		ACTUAL TEST VALUES ENGLISH		ACTUAL TEST VALUES METRIC	
ENSILE BREAK STRENGTH	D638								
CD -		160	lb/in	29	kg/cm	233	lb/in	42	kg/cm
MD -		160		29		242		43	
REAK ELONGATION	D638								
CD -		800	%			864	%		
MD -		800				887			
ENSILE IMPACT STRENGTH	D1822								
CD -		381	ft-lb/in2	801	mj/mm2	1998	ft-lb/in2	4200	mj/mm2
MD -		381		801		2141		4500	
TILE IMPACT ELONGATION	D1822								
CD -		100	%			>1500	%		
MD -		100				>1400			
NITIAL TEARING STRENGTH	D1004								
CD -		24	lb	11	kg	31	lb	14	kg
MD -		24		11		32		15	
PUNCTURE STRENGTH	FTMS 101/2065	55	lb	25	kg	93	lb	42	kg
HRINKAGE	D1204								
CD -	(1 HR @ 100C)	+/-2.00	%			0.3	%		
MD -		+/-2.00				0.4			
ARBON BLACK DISPERSION	D3015	A2				A2			
ARBON BLACK CONTENT	D1603	2.00	%			2.31	%		
GEOMEMBRANE DENSITY	D792			0.920	g/cc			0.926	g/cc
ESCR	D1693-B	1500	hours			Start 10/07/94			
HICKNESS	D1593/D751								
NOMINAL		40	mil	1.02	mm	40	mil	1.02	mm
MINIMUM		36		0.91		40		1.02	
AVG. THICKNESS						41		1.05	

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10.4.94 #6 QA

USTOMER:

JOB NO.

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DATE SHIPPED

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Roll Test Data Report

ULTRAFLEX R

ROLL NO. AE-0137

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0137	
PROD DATE:	10/04/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3570	pounds
	1619	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61417
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.890

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
ENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	236 lb/in	42 kg/cm
MD -		160	29	239	43
REAK ELONGATION	D638				
CD -		800 %		865 %	
MD -		800		879	
ENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2046 ft-lb/in2	4300 mj/mm2
MD -		381	801	2141	4500
TILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1400	
TTIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	30 lb	14 kg
MD -		24	11	32	14
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	96 lb	43 kg
IRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.4 %	
MD -		+/-2.00		0.5	
ARBON BLACK DISPERSION	D3015	A2		A2	
ARBON BLACK CONTENT	D1603	2.00 %		2.31 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
SCR	D1693-B	1500 hours		Start 10/07/94	
HICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				42	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10.4.94 #6 QA

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20042014

SLT

Roll Test Data Report

ULTRAFLEX R

ROLL NO. AE-0153

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0153	
PROD DATE:	09/24/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3590	pounds
	1628	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61417
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.890

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC.
ENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	233 lb/in	42 kg/cm
MD -		160	29	241	43
REAK ELONGATION	D638				
CD -		800 %		853 %	
MD -		800		880	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2141 ft-lb/in2	4500 mj/mm2
MD -		381	801	2331	4900
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	30 lb	13 kg
MD -		24	11	32	14
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	104 lb	47 kg
HRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.1 %	
MD -		+/-2.00		0.4	
CARBON BLACK DISPERSION	D3015	A2		A2	
ARBON BLACK CONTENT	D1603	2.00 %		2.30 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/07/94	
HICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	39	1.00
AVG. THICKNESS				41	1.04

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED LT #7 10-5-94 QA

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0155

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0155	
PROD DATE:	10/04/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3580	pounds
	1624	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61417
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.890

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	233 lb/in	42 kg/cm
MD -		160	29	240	43
BREAK ELONGATION	D638				
CD -		800 %		855 %	
MD -		800		880	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2093 ft-lb/in2	4400 mj/mm2
MD -		381	801	2141	4500
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	30 lb	14 kg
MD -		24	11	32	15
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	100 lb	46 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.1 %	
MD -		+/-2.00		0.7	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.33 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/07/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.02
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED WT #7 10-5-94 QA

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0156

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0156	
PROD DATE:	10/04/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3610	pounds
	1637	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61417
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.890

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
ENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	235 lb/in	42 kg/cm
MD -		160	29	236	42
REAK ELONGATION	D638				
CD -		800 %		856 %	
MD -		800		859	
ENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2093 ft-lb/in2	4400mj/mm2
MD -		381	801	2093	4400
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	33	15
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	101 lb	46 kg
HRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 %	
MD -		+/-2.00		0.7	
CARBON BLACK DISPERSION	D3015	A2		A2	
ARBON BLACK CONTENT	D1603	2.00 %		2.34 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/07/94	
HICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	41	1.03
AVG. THICKNESS				42	1.07

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED #7 10-5-94 QA

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Roll Test Data Report

ULTRAFLEX R

ROLL NO. AE-0157

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0157	
PROD DATE:	10/04/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3580	pounds
	1624	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61417
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.890

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
ENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	236 lb/in	42 kg/cm
MD -		160	29	237	42
REAK ELONGATION	D638				
CD -		800 %		858 %	
MD -		800		864	
ENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2093 ft-lb/in2	4400mj/mm2
MD -		381	801	2093	4400
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	32 lb	14 kg
MD -		24	11	33	15
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	101 lb	46 kg
HRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 %	
MD -		+/-2.00		0.7	
CARBON BLACK DISPERSION	D3015	A2		A2	
ARBON BLACK CONTENT	D1603	2.00 %		2.45 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 10/07/94	
HICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0165

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0165	
PROD DATE:	10/05/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3590	pounds
	1628	kilograms

RESIN LOT INFORMATION

LOT NUMBER	T-61417
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.890

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	245 lb/in	44 kg/cm
MD -		160	29	241	43
BREAK ELONGATION	D638				
CD -		800 %		878 %	
MD -		800		879	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2046 ft-lb/in2	4300 mj/mm2
MD -		381	801	2093	4400
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400 %	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	32 lb	15 kg
MD -		24	11	34	15
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	103 lb	47 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 %	
MD -		+/-2.00		0.6	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.36 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/07/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.02
AVG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10/5/94 #4 K.T. QA

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0170

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0170	
PROD DATE:	10/05/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3580	pounds
	1624	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
ENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	237 lb/in	42 kg/cm
MD -		160	29	232	41
REAK ELONGATION	D638				
CD -		800 %		862 %	
MD -		800		845	
ENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2093 ft-lb/in2	4400 mj/mm2
MD -		381	801	2093	4400
LE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
NITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	32 lb	15 kg
MD -		24	11	33	15
UNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	100 lb	45 kg
HRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 %	
MD -		+/-2.00		0.6	
ARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.18 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
SCR	D1693-B	1500 hours		Start 10/07/94	
HICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10/5/94 #4 K.T. QA

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Roll Test Data Report

*ULTRAFLEX*R

ROLL NO. AE-0171

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0171	
PROD DATE:	10/05/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3590	pounds
	1628	kilograms

RESIN LOT INFORMATION

LOT NUMBER	T-61415
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
ENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	238 lb/in	42 kg/cm
MD -		160	29	232	42
REAK ELONGATION	D638				
CD -		800 %		863 %	
MD -		800		855	
ENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2046 ft-lb/in2	4300 mj/mm2
MD -		381	801	2141	4500
ILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
NITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	32 lb	15 kg
MD -		24	11	33	15
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	99 lb	45 kg
HRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 %	
MD -		+/-2.00		0.6	
ARBON BLACK DISPERSION	D3015	A2		A2	
ARBON BLACK CONTENT	D1603	2.00 %		2.21 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
SCR	D1693-B	1500 hours		Start 10/07/94	
HICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10/17/94 #4 K.T. QA

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Roll Test Data Report

ULTRAFLEX R

ROLL NO. AE-0174

ROLL DIMENSIONS ≈ ± 1%

..OLL NUMBER:	AE-0174	
PROD DATE:	10/05/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3588	pounds
	1628	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
ENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	235 lb/in	42 kg/cm
MD -		160	29	231	41
REAK ELONGATION	D638				
CD -		800 %		868 %	
MD -		800		899	
ENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2046 ft-lb/in2	4300 mj/mm2
MD -		381	801	2189	4600
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	33	15
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	98 lb	44 kg
IRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.3 %	
MD -		+/-2.00		0.5	
ARBON BLACK DISPERSION	D3015	A2		A2	
ARBON BLACK CONTENT	D1603	2.00 %		2.31 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/07/94	
HICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				41	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10/5/94 #4 K.T.

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Roll Test Data Report

ULTRAFLEX R

ROLL NO. AE-0178

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0178	
PROD DATE:	10/05/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3556	pounds
	1613	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	235 lb/in	42 kg/cm
MD -		160	29	234	42
BREAK ELONGATION	D638				
CD -		800 %		870 %	
MD -		800		902	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2093 ft-lb/in2	4400 mj/mm2
MD -		381	801	2189	4600
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1500	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	30 lb	14 kg
MD -		24	11	32	14
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	102 lb	46 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.4 %	
MD -		+/-2.00		0.5	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.34 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/07/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	41	1.03
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10/5/94 #4 K.T. QA

CUSTOMER:
JOB NO.
COMMENTS _____

DATE SHIPPED _____

20042013

Date: 10-10-94 Date: 10/10/94
Roll #: AE 370 Roll #: AE 370
By: DG By: DG

ll Test Data Report

ULTRAFLEXR

ROLL NO. AE-0370

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0370	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3550	pounds
	1610	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
ENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	235 lb/in	42 kg/cm
MD -		160	29	235	42
REAK ELONGATION	D638				
CD -		800 %		854 %	
MD -		800		857	
ENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1903 ft-lb/in2	4000 mj/mm2
MD -		381	801	1760	3700
SILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1300	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	100 lb	45 kg
HRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.4 %	
MD -		+/-2.00		1.2	
ARBON BLACK DISPERSION	D3015	A2		A2	
ARBON BLACK CONTENT	D1603	2.00 %		2.19 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
HICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

USTOMER:
OB NO.
MENTS
20042019

DATE SHIPPED

APPROVED 10-10-94 #4

SP

By: LG

ROLL NO. AE-0371

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0371	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3540	pounds
	1606	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		120 lb/in	22 kg/cm	234 lb/in	42 kg/cm
MD -		120	22	232	41
BREAK ELONGATION	D638				
CD -		800 %		859 %	
MD -		800		854	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1951 ft-lb/in2	4100 mj/mm2
MD -		381	801	1713	3600
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1300	
TRAPEZOIDAL TEARING STRENGTH	D1004				
CD -		14 lb	6 kg	31 lb	14 kg
MD -		14	6	31	14
PUNCTURE STRENGTH	FTMS 101/2065	49 lb	22 kg	102 lb	46 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.4 %	
MD -		+/-2.00		1.3	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.14 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.01 mm	40 mil	1.01 mm
MINIMUM		40	1.01	40	1.01
AVG. THICKNESS				42	1.05

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

RECEIVED 10.10.94 QA

CUSTOMER: COMBE FILL SOUTH
JOB NO. 6144
COMMENTS

DATE SHIPPED

200-02019

SLT Roll #: AE372 By: DB Date: 10/10/94 Roll #: AE372 By: DB

Data Report

ULTRAFLEXR

ROLL NO. AE-0372

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0372	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3540	pounds
	1606	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
ENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	238 lb/in	42 kg/cm
MD -		160	29	236	42
REAK ELONGATION	D638				
CD -		800 %		863 %	
MD -		800		860	
ENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1998 ft-lb/in2	4200 mj/mm2
MD -		381	801	1713	3600
ILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400 %	
MD -		100		>1300	
ITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	32	14
UNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	102 lb	46 kg
HRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.4 %	
MD -		+/-2.00		1.3	
ARBON BLACK DISPERSION	D3015	A2		A2	
ARBON BLACK CONTENT	D1603	2.00 %		2.18 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
SCR	D1693-B	1500 hours		Start 10/14/94	
HICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	39	0.99
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10-10-94 QA

USTOMER:
NO.
MENTS
20042019

DATE SHIPPED

SLT

Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0377

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0377	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3520	pounds
	1597	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		120 lb/in	22 kg/cm	227 lb/in	40 kg/cm
MD -		120	22	223	40
BREAK ELONGATION	D638				
CD -		800 %		861 %	
MD -		800		855	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1856 ft-lb/in2	3900 mj/mm2
MD -		381	801	1903	4000
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		14 lb	6 kg	31 lb	14 kg
MD -		14	6	32	14
PUNCTURE STRENGTH	FTMS 101/2065	49 lb	22 kg	101 lb	46 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.2 %	
MD -		+/-2.00		1.3	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.29 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.01 mm	40 mil	1.01 mm
MINIMUM		40	1.01	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10-10-94 #6 QA

CUSTOMER: COMBE FILL SOUTH
JOB NO. 6144
COMMENTS

DATE SHIPPED

TOTAL P.01

SLT

Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0381

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0381	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3570	pounds
	1619	kilograms

RESIN LOT INFORMATION

LOT NUMBER	T-61415
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	233 lb/in	42 kg/cm
MD -		160	29	231	41
BREAK ELONGATION	D638				
CD -		800 %		884 %	
MD -		800		893	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1713 ft-lb/in2	3600 mj/mm2
MD -		381	801	2046	4300
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1300%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	32	14
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	90 lb	41 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.9 %	
MD -		+/-2.00		1.2	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.34 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	39	1.00
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10.10.94 #6 QA

CUSTOMER:
JOB NO.
COMMENTS

DATE SHIPPED

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0382

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0332	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3570	pounds
	1619	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		120 lb/in	22 kg/cm	235 lb/in	42 kg/cm
MD -		120	22	235	42
BREAK ELONGATION	D638				
CD -		800 %		894 %	
MD -		800		904	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1713 ft-lb/in2	3600 mj/mm2
MD -		381	801	1951	4100
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1300%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		14 lb	6 kg	31 lb	14 kg
MD -		14	6	31	14
PUNCTURE STRENGTH	FTMS 101/2065	49 lb	22 kg	93 lb	42 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.8 %	
MD -		+/-2.00		1.2	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.34 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.01 mm	40 mil	1.01 mm
MINIMUM		40	1.01	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10-10-94 #6 QA

CUSTOMER: COMBE FILL SOUTH
JOB NO. 6144
COMMENTS

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Roll Test Data Report

ULTRAFLEX R

ROLL NO. AE-0383

ROLL DIMENSIONS ≈ ± 1%		
ROLL NUMBER:	AE-0383	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3570	pounds
	1619	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		120 lb/in	22 kg/cm	234 lb/in	42 kg/cm
MD -		120	22	239	43
BREAK ELONGATION	D638				
CD -		800 %		897 %	
MD -		800		916	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1760 ft-lb/in2	3700 mj/mm2
MD -		381	801	1856	3900
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1300%	
MD -		100		>1400	
TIAL TEARING STRENGTH	D1004				
CD -		14 lb	6 kg	31 lb	14 kg
MD -		14	6	32	14
PUNCTURE STRENGTH	FTMS 101/2065	49 lb	22 kg	96 lb	44 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.8 %	
MD -		+/-2.00		1.2	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.35 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.01 mm	40 mil	1.01 mm
MINIMUM		40	1.01	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10-10-94 #6 QA

CUSTOMER: COMBE FILL SOUTH
JOB NO. 6144
COMMENTS

DATE SHIPPED

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Roll Test Data Report

*ULTRAFLEX*R

ROLL NO. AE-0384

ROLL DIMENSIONS ≈ ± 1%		
ROLL NUMBER:	AE-0384	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3580	pounds
	1624	kilograms

RESIN LOT INFORMATION	
LOT NUMBER	T-61415
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		120 lb/in	22 kg/cm	230 lb/in	41 kg/cm
MD -		120	22	234	42
BREAK ELONGATION	D638				
CD -		800 %		895 %	
MD -		800		915	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1903 ft-lb/in2	4000mj/mm2
MD -		381	801	1903	4000
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
TIAL TEARING STRENGTH	D1004				
CD -		14 lb	6 kg	31 lb	14 kg
MD -		14	6	32	14
PUNCTURE STRENGTH	FTMS 101/2065	49 lb	22 kg	97 lb	44 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.7 %	
MD -		+/-2.00		1.1	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.36 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.01 mm	40 mil	1.01 mm
MINIMUM		40	1.01	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10-10-94 #6 QA

CUSTOMER: COMBE FILL SOUTH
JOB NO. 6144
COMMENTS

DATE SHIPPED

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0385

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0385	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3570	pounds
	1619	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	233 lb/in	42 kg/cm
MD -		160	29	242	43
BREAK ELONGATION	D638				
CD -		800 %		893 %	
MD -		800		924	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1951 ft-lb/in2	4100 mj/mm2
MD -		381	801	1903	4000
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400 %	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	99 lb	45 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.5 %	
MD -		+/-2.00		1.0	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.37 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	39	1.00
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10-18-94 #6 QA

CUSTOMER:
JOB NO.
COMMENTS

DATE SHIPPED

SP

SLT

Roll Test Data Report

ULTRAFLEX R

ROLL NO. AE-0386

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0386	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3580	pounds
	1624	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		120 lb/in	22 kg/cm	233 lb/in	42 kg/cm
MD -		120	22	239	43
BREAK ELONGATION	D638				
CD -		800 %		890 %	
MD -		800		916	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1998 ft-lb/in2	4200 mj/mm2
MD -		381	801	1856	3900
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		14 lb	6 kg	31 lb	14 kg
MD -		14	6	31	14
PUNCTURE STRENGTH	FTMS 101/2065	49 lb	22 kg	96 lb	43 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/- 2.00 %		0.4 %	
MD -		+/- 2.00		0.8	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.35 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.01 mm	40 mil	1.01 mm
MINIMUM		40	1.01	40	1.02
AVG. THICKNESS				42	1.07

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10-10-94 #6 QA

CUSTOMER: COMBE FILL SOUTH
JOB NO. 6144
COMMENTS

DATE SHIPPED

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0387

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0387	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3566	pounds
	1618	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		120 lb/in	22 kg/cm	229 lb/in	41 kg/cm
MD -		120	22	234	42
BREAK ELONGATION	D638				
CD -		800 %		882 %	
MD -		800		912	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	2046 ft-lb/in2	4300 mj/mm2
MD -		381	801	1951	4100
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
TIAL TEARING STRENGTH	D1004				
CD -		14 lb	6 kg	31 lb	14 kg
MD -		14	6	31	14
PUNCTURE STRENGTH	FTMS 101/2065	49 lb	22 kg	95 lb	43 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.6 %	
MD -		+/-2.00		0.7	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.32 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.01 mm	40 mil	1.01 mm
MINIMUM		40	1.01	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10-10-94 #6 QA

CUSTOMER: COMBE FILL SOUTH
JOB NO. 6144
COMMENTS

DATE SHIPPED

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Roll Test Data Report

*ULTRAFLEX*R

ROLL NO. AE-0388

ROLL DIMENSIONS ≈ ± 1%

ROLL NUMBER:	AE-0388	
PROD DATE:	10/10/94	
SHEET AREA:	16926	sq.ft.
	1573	sq. meters
LENGTH:	716	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3550	pounds
	1610	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	< 0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	SLT MINIMUMS ENGLISH	SLT MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		160 lb/in	29 kg/cm	227 lb/in	41 kg/cm
MD -		160	29	232	41
BREAK ELONGATION	D638				
CD -		800 %		875 %	
MD -		800		895	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1951 ft-lb/in2	4100 mj/mm2
MD -		381	801	1998	4200
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	30 lb	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	55 lb	25 kg	99 lb	45 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.6 %	
MD -		+/-2.00		0.5	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.30 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	39	0.99
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH=2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10-10-94 #6 WE QA

CUSTOMER:
JOB NO.
COMMENTS

DATE SHIPPED

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Roll Test Data Report

ULTRAFLEX®

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ROLL NO. AE-0394FF

ROLL DIMENSIONS - ± 1%

ROLL NUMBER:	AE-0394FF	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3900	pounds
	1769	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	<0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	234 lb/in	42 kg/cm
MD -		140	25	223	40
BREAK ELONGATION	D638				
CD -		800 %		891 %	
MD -		800		899	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1951 ft-lb/in2	4100 mj/mm2
MD -		381	801	1951	4100
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1300	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	30	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	96 lb	43 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.6 %	
MD -		+/-2.00		0.3	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.14 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH= 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10/11/94 #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS:

DATE SHIPPED

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0395FF

ROLL DIMENSIONS - ± 1%

ROLL NUMBER:	AE-0395FF	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3840	pounds
	1742	kilograms

RESIN LOT INFORMATION

LOT NUMBER	T-61415
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	<0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	234 lb/in	42 kg/cm
MD -		140	25	224	40
BREAK ELONGATION	D638				
CD -		800 %		892 %	
MD -		800		906	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1903 ft-lb/in2	4000 mj/mm2
MD -		381	801	1903	4000
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1300	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	30	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	94 lb	43 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.7 %	
MD -		+/-2.00		0.3	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.11 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.925 g/cc
ESCR	D1693-B	1500 hrs	Start 10/14/94		
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH= 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10/11/94 #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS: _____

DATE SHIPPED _____

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0396FF

ROLL DIMENSIONS ~ ± 1%

ROLL NUMBER:	AE-0396FF	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3840	pounds
	1742	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	<0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	234 lb/in	42 kg/cm
MD -		140	25	221	39
BREAK ELONGATION	D638				
CD -		800 %		896 %	
MD -		800		899	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1951 ft-lb/in2	4100 mj/mm2
MD -		381	801	1856	3900
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1300	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	30	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	93 lb	42 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.6 %	
MD -		+/-2.00		0.4	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.18 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH= 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10/19/94 #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS:

DATE SHIPPED

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Roll Test Data Report

ULTRAFLEX

ROLL NO. AE-0397FF

ROLL DIMENSIONS - ± 1%		
ROLL NUMBER:	AE-0397FF	
PROD DATE:	10/10/94	
SHEET AREA:	17068	sq.ft.
	1586	sq. meters
LENGTH:	722	feet
	220	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3760	pounds
	1706	kilograms

RESIN LOT INFORMATION	
LOT NUMBER	T-61415
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	<0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	231 lb/in	41 kg/cm
MD -		140	25	223	40
BREAK ELONGATION	D638				
CD -		800 %		895 %	
MD -		800		891	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1951 ft-lb/in2	4100 mj/mm2
MD -		381	801	1808	3800
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1300	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	30	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	92 lb	42 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.5 %	
MD -		+/-2.00		0.4	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.24 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH= 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED Mix #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS: _____

DATE SHIPPED _____

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0398FF

ROLL DIMENSIONS - ± 1%

ROLL NUMBER:	AE-0398FF	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3840	pounds
	1742	kilograms

RESIN LOT INFORMATION

LOT NUMBER	T-61415
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	<0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	227 lb/in	41 kg/cm
MD -		140	25	227	40
BREAK ELONGATION	D638				
CD -		800 %		891 %	
MD -		800		888	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1903 ft-lb/in2	4000 mj/mm2
MD -		381	801	1808	3800
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	30 lb	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	91 lb	41 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.5 %	
MD -		+/-2.00		0.5	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.31 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.00
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH= 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED #8 QA

CUSTOMER: SULLIVAN LE CLOSURE
JOB NO. 7667
COMMENTS: _____

DATE SHIPPED _____

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Roll Test Data Report

ULTRAFLEX

ROLL NO. AE-0399FF

ROLL DIMENSIONS ~ ± 1%

ROLL NUMBER:	AE-0399FF	
PROD DATE:	10/10/94	
SHEET AREA:	17139	sq.ft.
	1593	sq. meters
LENGTH:	725	feet
	221	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3840	pounds
	1742	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	<0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	227 lb/in	41 kg/cm
MD -		140	25	225	40
BREAK ELONGATION	D638				
CD -		800 %		891 %	
MD -		800		880	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1951 ft-lb/in2	4100 mj/mm2
MD -		381	801	1808	3800
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	91 lb	41 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.4 %	
MD -		+/-2.00		0.6	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.37 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.926 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.00
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH= 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS: _____

DATE SHIPPED _____

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0400FF

ROLL DIMENSIONS ~ ± 1%

ROLL NUMBER:	AE-0400FF	
PROD DATE:	10/10/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3840	pounds
	1742	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	<0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	229 lb/in	41 kg/cm
MD -		140	25	225	40
BREAK ELONGATION	D638				
CD -		800 %		888 %	
MD -		800		872	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1998 ft-lb/in2	4200 mj/mm2
MD -		381	801	1808	3800
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1300	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	91 lb	41 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.3 %	
MD -		+/-2.00		0.8	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.44 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.00
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH = 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10/19/94 #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS: _____

DATE SHIPPED _____

SLT

Roll Test Data Report

ULTRAFLEX

ROLL NO. AE-0401FF

ROLL DIMENSIONS ~ ± 1%

ROLL NUMBER:	AE-0401FF	
PROD DATE:	10/10/94	
SHEET AREA:	17399	sq.ft.
	1617	sq. meters
LENGTH:	736	feet
	224	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3950	pounds
	1792	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61415
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	<0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.880

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	231 lb/in	41 kg/cm
MD -		140	25	229	41
BREAK ELONGATION	D638				
CD -		800 %		881 %	
MD -		800		878	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1951 ft-lb/in2	4100 mj/mm2
MD -		381	801	1760	3700
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1300	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	93 lb	42 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.4 %	
MD -		+/-2.00		0.9	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.43 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.00
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH= 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10/14 #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS: _____

DATE SHIPPED _____

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0402FF

ROLL DIMENSIONS - ± 1%

ROLL NUMBER:	AE-0402FF	
PROD DATE:	10/11/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3780	pounds
	1715	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61405
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	<0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.920

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	230 lb/in	41 kg/cm
MD -		140	25	233	42
BREAK ELONGATION	D638				
CD -		800 %		875 %	
MD -		800		887	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1903 ft-lb/in2	4000 mj/mm2
MD -		381	801	1760	3700
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1300	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	95 lb	43 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/- 2.00 %		0.4 %	
MD -		+/- 2.00		0.9	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.42 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH= 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED LINE #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS:

DATE SHIPPED

SLT

Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0403FF

ROLL DIMENSIONS ≈ ± 1%		
ROLL NUMBER:	AE-0403FF	
PROD DATE:	10/11/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3840	pounds
	1742	kilograms

RESIN LOT INFORMATION	
LOT NUMBER	T-61405
RESIN TYPE	100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	<0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.920

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	230 lb/in	41 kg/cm
MD -		140	25	234	42
BREAK ELONGATION	D638				
CD -		800 %		871 %	
MD -		800		890	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1903 ft-lb/in2	4000 mj/mm2
MD -		381	801	1760	3700
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	97 lb	44 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.3 %	
MD -		+/-2.00		0.9	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.41 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH= 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10/14/94 #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS: _____

DATE SHIPPED _____

SLT

Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0404FF

ROLL DIMENSIONS ~ ± 1%

ROLL NUMBER:	AE-0404FF	
PROD DATE:	10/11/94	
SHEET AREA:	16903	sq.ft.
	1571	sq. meters
LENGTH:	715	feet
	218	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	3740	pounds
	1696	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61405
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	<0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.920

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	229 lb/in	41 kg/cm
MD -		140	25	236	42
BREAK ELONGATION	D638				
CD -		800 %		864 %	
MD -		800		894	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1903 ft-lb/in2	4000mj/mm2
MD -		381	801	1760	3700
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1500%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2055	40 lb	18 kg	98 lb	45 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.4 %	
MD -		+/-2.00		0.9	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.39 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hours		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH= 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED 10/14/94 #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS:

DATE SHIPPED

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Roll Test Data Report

ULTRAFLEX®

ROLL NO. AE-0405FF

ROLL DIMENSIONS - ± 1%

ROLL NUMBER:	AE-0405FF	
PROD DATE:	10/11/94	
SHEET AREA:	17659	sq.ft.
	1641	sq. meters
LENGTH:	747	feet
	228	meters
WIDTH:	23.64	feet
	7.2	meters
WEIGHT:	4140	pounds
	1878	kilograms

RESIN LOT INFORMATION

LOT NUMBER T-61405
RESIN TYPE 100 SERIES

PROPERTY	UNITS	METHOD	RESULT
DENSITY	g/cc	D792	0.917
MOISTURE	%	D570	<0.09
BRITTLENESS	°C	D746	<-70
MELT INDEX	g/10 min.	D1238	0.920

PROPERTY	ASTM METHOD	ORDER MINIMUMS ENGLISH	ORDER MINIMUMS METRIC	ACTUAL TEST VALUES ENGLISH	ACTUAL TEST VALUES METRIC
TENSILE BREAK STRENGTH	D638				
CD -		140 lb/in	25 kg/cm	227 lb/in	41 kg/cm
MD -		140	25	237	42
BREAK ELONGATION	D638				
CD -		800 %		869 %	
MD -		800		900	
TENSILE IMPACT STRENGTH	D1822				
CD -		381 ft-lb/in2	801 mj/mm2	1903 ft-lb/in2	4000 mj/mm2
MD -		381	801	1808	3800
TENSILE IMPACT ELONGATION	D1822				
CD -		100 %		>1400%	
MD -		100		>1400	
INITIAL TEARING STRENGTH	D1004				
CD -		24 lb	11 kg	31 lb	14 kg
MD -		24	11	31	14
PUNCTURE STRENGTH	FTMS 101/2065	40 lb	18 kg	99 lb	45 kg
SHRINKAGE	D1204				
CD -	(1 HR @ 100C)	+/-2.00 %		0.4 %	
MD -		+/-2.00		0.9	
CARBON BLACK DISPERSION	D3015	A2		A2	
CARBON BLACK CONTENT	D1603	2.00 %		2.38 %	
GEOMEMBRANE DENSITY	D792		0.920 g/cc		0.927 g/cc
ESCR	D1693-B	1500 hrs		Start 10/14/94	
THICKNESS	D1593/D751				
NOMINAL		40 mil	1.02 mm	40 mil	1.02 mm
MINIMUM		36	0.91	40	1.01
AVG. THICKNESS				42	1.06

TEST NOTES: MD=MACHINE DIRECTION CD=CROSS DIRECTION ESCR START DATE IS GIVEN
-FOR TENSILE ELONGATION TEST GAUGE LENGTH= 2.5 ON BREAK
ALL STRENGTH VALUES BASED ON NOMINAL THICKNESS

APPROVED #8 QA

CUSTOMER: SULLIVAN LF CLOSURE
JOB NO. 7667
COMMENTS: _____

DATE SHIPPED _____

TOTAL P.03

APPENDIX D

SUMMARY OF GEOMEMBRANE CONFORMANCE TESTING

AUGUST 1994

947-6174

SUMMARY OF GEOMEMBRANE CONFORMANCE TEST RESULTS
ABB ENVIRONMENTAL SERVICES SULLIVAN LANDFILL MISSOURI

ROLL DESIGNATION	Reference value	2558	2570	2622	2688	4419	4421	4423	4450	4462	4465 (3)
THICKNESS (mils) ASTM D 751	40	43.1	43.4	42.9	42.9	44.6	44.3	44.4	42.7	44.3	44.0
DENSITY (g/cc) ASTM D 792	0.920–0.935	0.930	0.930	0.929	0.930	0.929	0.929	0.928	0.930	0.931	0.930
STRENGTH AT BREAK (ppi)	≥140	202.2	193.2	182.7	209.6	203.6	204.6	210.1	190.4	189.2	189.6
MD/TD (1) ASTM D 638	≥140	201.9	188.0	186.0	206.3	202.7	208.5	206.4	203.4	189.2	187.9
ELONGATION AT BREAK (%)	≥800	800	880	878	800	880	862	867	861	880	835
MD/TD (1) ASTM D 638	≥800	800	874	880	800	871	880	868	863	864	842
CARBON BLACK CONTENT (%) ASTM D 1603	2–3	2.24	2.34	2.36	2.60	2.36	2.32	2.29	2.37	2.22	1.50
CARBON BLACK DISPERSION(2) ASTM D 3015	A1,A2 or B1	A1	A1	A1	A1	A1	A1	-	-	-	-

(1) MD/TD corresponds to Machine Direction / Transverse Direction.

(2) Carbon black dispersion was tested according to ASTM D3015 and reported according to the ASTM D2663 dispersion classification chart.

(3) Roll 4465 failed carbon black content. Roll was not used on project and is bounded by rolls 4463 and 4546.

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SUMMARY OF GEOMEMBRANE CONFORMANCE TEST RESULTS
ABB ENVIRONMENTAL SERVICES SULLIVAN LANDFILL MISSOURI

947-6174

ROLL DESIGNATION	Reference value	4463	4546	4547	6855	9078	1482	2614	7224	9222	9302
THICKNESS (mils) ASTM D 751	40	-	-	44.0	42.8	44.0	42.9	42.5	43.3	42.7	42.4
DENSITY (g/cc) ASTM D 792	0.920–0.935	-	-	0.930	0.929	0.930	0.930	0.931	0.930	0.930	0.930
STRENGTH AT BREAK (ppi)	≥140	-	-	190.7	196.5	190.7	192.0	184.5	196.0	197.2	200.6
MD/TD (1) ASTM D 638	≥140	-	-	189.5	198.4	189.5	188.2	181.4	193.5	194.0	196.4
ELONGATION AT BREAK (%)	≥800	-	-	>800	>837	>800	>846	>782	>875	>800	>800
MD/TD (1) ASTM D 638	≥800	-	-	>800	>880	>800	>827	>759	>880	>792	>800
CARBON BLACK CONTENT (%) ASTM D 1603	2–3	2.24	2.41	2.44	2.55	2.44	2.22	2.46	2.03	2.48	2.64
CARBON BLACK DISPERSION(2) ASTM D 3015	A1,A2 or B1	-	-	-	-	-	-	-	-	-	-

(1) MD/TD corresponds to Machine Direction / Transverse Direction.

(2)* Carbon black dispersion was tested according to ASTM D3015 and reported according to the ASTM D2663 dispersion classification chart.

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SUMMARY OF GEOMEMBRANE CONFORMANCE TEST RESULTS
ABB ENVIRONMENTAL SERVICES SULLIVAN LANDFILL MISSOURI

947-6174

ROLL DESIGNATION	Reference value	2614 Retest	9222 Retest	-	-	-	-	-	-	-	-
THICKNESS (mils) ASTM D 751	40	-	-	-	-	-	-	-	-	-	-
DENSITY (g/cc) ASTM D 792	0.920–0.935	-	-	-	-	-	-	-	-	-	-
STRENGTH AT BREAK (ppi)	≥140	211.0	-	-	-	-	-	-	-	-	-
MD/TD (1) ASTM D 638	≥140	216.6	218.3	-	-	-	-	-	-	-	-
ELONGATION AT BREAK (%)	≥800	>1014	-	-	-	-	-	-	-	-	-
MD/TD (1) ASTM D 638	≥800	>1057	932	-	-	-	-	-	-	-	-
CARBON BLACK CONTENT (%) ASTM D 1603	2-3	-	-	-	-	-	-	-	-	-	-
CARBON BLACK DISPERSION(2) ASTM D 3015	A1,A2 or B1	-	-	-	-	-	-	-	-	-	-

(1) MD/TD corresponds to Machine Direction / Transverse Direction.

(2) Carbon black dispersion was tested according to ASTM D3015 and reported according to the ASTM D2663 dispersion classification chart.

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OCTOBER 1994

947-6174

SUMMARY OF GEOMEMBRANE CONFORMANCE TEST RESULTS
ABB ENVIRONMENTAL SERVICES SULLIVAN LANDFILL MISSOURI

ROLL DESIGNATION	Reference value	0128	0178	0370	0388	-	-	-	-	-	-
THICKNESS (mils) ASTM D 751	40	43.6	43.3	43.9	43.8	-	-	-	-	-	-
DENSITY (g/cc) ASTM D 792	0.920–0.935	0.929	0.929	0.928	0.928	-	-	-	-	-	-
STRENGTH AT BREAK (ppi)	≥140	231.2	221.9	213.9	210.6	-	-	-	-	-	-
MD/TD (1)	≥140	240.7	248.0	213.3	222.3	-	-	-	-	-	-
ASTM D 638											
ELONGATION AT BREAK (%)	≥800	968	963	890	887	-	-	-	-	-	-
MD/TD (1)	≥800	1023	1047	950	969	-	-	-	-	-	-
ASTM D 638											
CARBON BLACK CONTENT (%) ASTM D 1603	2–3	2.37	2.24	2.31	2.31	-	-	-	-	-	-
CARBON BLACK DISPERSION(2) ASTM D 3015	A1,A2 or B1	-	-	-	-	-	-	-	-	-	-

(1) MD/TD corresponds to Machine Direction / Transverse Direction.

(2) Carbon black dispersion was tested according to ASTM D3015 and reported according to the ASTM D2663 dispersion classification chart.

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OCTOBER 1994

947-6174

SUMMARY OF TEXTURED GEOMEMBRANE CONFORMANCE TEST RESULTS

ABB ENVIRONMENTAL SERVICES
SULLIVAN LANDFILL
MISSOURI

ROLL DESIGNATION	Reference value	0399	0405	2344	0395	9054	0395 Retest	0405 Retest	-	-	-
THICKNESS (mils) ASTM D 751	40	41.7	41.7	42.3	41.2	41.0	-	-	-	-	-
DENSITY (g/cc) ASTM D 792	0.920–0.935	0.928	0.929	0.930	0.930	0.931	-	-	-	-	-
STRENGTH AT BREAK (ppi)	≥45	211.4	202.8	195.1	201.2	188.5	217.2	207.4	-	-	-
MD/TD (1)	≥45	200.1	202.0	187.4	195.6	183.1	212.7	204.5	-	-	-
ASTM D 638											
ELONGATION AT BREAK (%)	≥800	838	>773	799	>777	792	901	816	-	-	-
MD/TD (1)	≥800	818	>769	771	>740	745	849	854	-	-	-
ASTM D 638											
CARBON BLACK CONTENT (%) ASTM D 1603	2–3	2.43	2.40	2.52	2.39	2.55	-	-	-	-	-
CARBON BLACK DISPERSION(2) ASTM D 3015	A1,A2 or B1	-	-	-	-	-	-	-	-	-	-

(1) MD/TD corresponds to Machine Direction / Transverse Direction.
(2) Carbon black dispersion was tested according to ASTM D3015 and reported according to the ASTM D2663 dispersion classification chart.

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August 1994 947-6174

GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-2558

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	41.0	1.	0.930	1.	2.24	1.	A1
2.	41.6	2.	0.930	2.	2.23	2.	A1
3.	43.7	3.	0.930			3.	A1
4.	44.1					4.	A1
5.	43.4					5.	A1
6.	43.8					6.	A1
7.	43.7						
8.	43.8						
9.	42.8						
10.	43.5						
AVG	43.1		0.930		2.24		A1

	BREAK STRENGTH (lb/in. width)		ELONGATION AT BREAK (%)	
	MD	TD	MD	TD
1.	195.1	196.0	800	800
2.	205.5	205.4	800	800
3.	204.9	206.5	800	800
4.	202.6	201.4	800	800
5.	203.1	200.2	800	800
AVG	202.2	201.9	800	800

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-2570

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	42.1	1.	0.930	1.	2.35	1.	A1
2.	42.7	2.	0.930	2.	2.32	2.	A1
3.	43.7	3.	0.930			3.	A1
4.	43.7					4.	A1
5.	44.0					5.	A1
6.	44.1					6.	A1
7.	46.4						
8.	43.5						
9.	41.7						
10.	42.0						
AVG	43.4		0.930		2.34		A1

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	188.6	185.2	880	880
2.	195.6	190.4	880	880
3.	192.8	193.4	880	849
4.	203.0	190.4	880	880
5.	186.0	180.6	880	880
AVG	193.2	188.0	880	874

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-2688

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	40.3	1.	0.930	1.	2.59	1.	A1
2.	41.3	2.	0.930	2.	2.60	2.	A1
3.	43.4	3.	0.930			3.	A1
4.	42.7					4.	A1
5.	43.7					5.	A1
6.	43.7					6.	A1
7.	43.4						
8.	43.4						
9.	43.6						
10.	43.2						
AVG	42.9		0.930		2.60		A1

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	204.5	199.4	800	800
2.	211.5	208.4	800	800
3.	213.7	209.8	800	801
4.	209.9	208.2	800	800
5.	208.4	205.5	800	800
AVG	209.6	206.3	800	800

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-4419

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	42.4	1.	0.929	1.	2.35	1.	A1
2.	43.7	2.	0.929	2.	2.36	2.	A1
3.	44.2	3.	0.929			3.	A1
4.	44.6					4.	A1
5.	47.3					5.	A1
6.	44.6					6.	A1
7.	45.9						
8.	47.1						
9.	43.1						
10.	42.8						
AVG	44.6		0.929		2.36		A1

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	196.8	193.6	880	833
2.	215.2	207.8	880	880
3.	207.4	211.2	880	880
4.	204.4	203.2	880	880
5.	194.0	197.6	880	880
AVG	203.6	202.7	880	871

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-4421

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	42.2	1.	0.929	1.	2.32	1.	-
2.	45.4	2.	0.929	2.	2.31	2.	-
3.	44.3	3.	0.929			3.	-
4.	45.0					4.	-
5.	45.0					5.	-
6.	45.2					6.	-
7.	43.9						
8.	43.4						
9.	44.7						
10.	43.9						
AVG	44.3		0.929		2.32		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	202.2	208.6	880	880
2.	203.6	202.2	880	880
3.	202.8	209.8	880	880
4.	202.4	213.2	790	880
5.	212.0	208.8	880	880
AVG	204.6	208.5	862	880

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-4423

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	43.9	1.	0.928	1.	2.29	1.	-
2.	44.0	2.	0.928	2.	2.29	2.	-
3.	44.8	3.	0.928			3.	-
4.	44.2					4.	-
5.	44.9					5.	-
6.	45.0					6.	-
7.	44.2						
8.	45.5						
9.	43.2						
10.	44.3						
AVG	44.4		0.928		2.29		-

	BREAK STRENGTH (lb/in. width) MD	BREAK STRENGTH (lb/in. width) TD	ELONGATION AT BREAK (%) MD	ELONGATION AT BREAK (%) TD
1.	211.0	200.8	880	849
2.	208.4	208.2	880	880
3.	213.0	211.6	880	880
4.	211.6	207.0	880	850
5.	206.4	204.6	814	880
AVG	210.1	206.4	867	868

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-4450

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	43.2	1.	0.930	1.	2.39	1.	-
2.	42.9	2.	0.930	2.	2.34	2.	-
3.	44.6	3.	0.930			3.	-
4.	44.1					4.	-
5.	43.9					5.	-
6.	44.4					6.	-
7.	42.8						
8.	40.9						
9.	41.1						
10.	38.8						
AVG	42.7		0.930		2.37		-

	BREAK STRENGTH (lb/in. width)		ELONGATION AT BREAK (%)	
	MD	TD	MD	TD
1.	188.0	195.8	784	846
2.	189.0	204.2	880	880
3.	193.0	208.6	880	880
4.	194.0	206.2	880	827
5.	188.2	202.0	880	880
AVG	190.4	203.4	861	863

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-4462

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	43.3	1.	0.931	1.	2.21	1.	-
2.	43.6	2.	0.931	2.	2.22	2.	-
3.	44.1	3.	0.931			3.	-
4.	44.7					4.	-
5.	45.6					5.	-
6.	45.2					6.	-
7.	45.1						
8.	44.2						
9.	43.2						
10.	43.9						
AVG	44.3		0.931		2.22		-

	BREAK STRENGTH (lb/in. width) MD	BREAK STRENGTH (lb/in. width) TD	ELONGATION AT BREAK (%) MD	ELONGATION AT BREAK (%) TD
1.	185.6	185.0	880	880
2.	188.6	188.8	880	834
3.	194.0	193.2	880	880
4.	191.8	193.0	880	880
5.	186.0	185.8	880	847
AVG	189.2	189.2	880	864

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-4465

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	42.8	1.	0.930	1.	1.50	1.	-
2.	42.3	2.	0.930	2.	1.48	2.	-
3.	45.1	3.	0.931	3.	1.51	3.	-
4.	44.5					4.	-
5.	44.7					5.	-
6.	45.1					6.	-
7.	44.2						
8.	44.6						
9.	43.2						
10.	43.8						
AVG	44.0		0.930		1.50		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	189.6	187.0	880	880
2.	191.2	192.4	880	880
3.	192.6	193.6	804	880
4.	197.2	180.0	880	690
5.	177.6	186.6	731	880
AVG	189.6	187.9	835	842

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-4463

THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)	
1.	-	1.	-	1.	2.23	1.	-
2.	-	2.	-	2.	2.24	2.	-
3.	-	3.	-			3.	-
4.	-					4.	-
5.	-					5.	-
6.	-					6.	-
7.	-						
8.	-						
9.	-						
10.	-						
AVG	0.0		0.000		2.24		-

	BREAK STRENGTH (lb/in. width) MD	BREAK STRENGTH (lb/in. width) TD	ELONGATION AT BREAK (%) MD	ELONGATION AT BREAK (%) TD
1.	-	-	-	-
2.	-	-	-	-
3.	-	-	-	-
4.	-	-	-	-
5.	-	-	-	-
AVG	0.0	0.0	0	0

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-4546

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	-	1.	-	1.	2.41	1.	-
2.	-	2.	-	2.	2.41	2.	-
3.	-	3.	-			3.	-
4.	-					4.	-
5.	-					5.	-
6.	-					6.	-
7.	-						
8.	-						
9.	-						
10.	-						
AVG	0.0		0.000		2.41		-

	BREAK STRENGTH (lb/in. width) MD	BREAK STRENGTH (lb/in. width) TD	ELONGATION AT BREAK (%) MD	ELONGATION AT BREAK (%) TD
1.	-	-	-	-
2.	-	-	-	-
3.	-	-	-	-
4.	-	-	-	-
5.	-	-	-	-
AVG	0.0	0.0	0	0

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-4547

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	41.7	1.	0.930	1.	2.43	1.	-
2.	41.4	2.	0.930	2.	2.44	2.	-
3.	43.6	3.	0.930			3.	-
4.	43.9					4.	-
5.	45.1					5.	-
6.	44.9					6.	-
7.	44.5						
8.	44.3						
9.	45.2						
10.	45.1						
AVG	44.0		0.930		2.44		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	180.0	179.4	800	800
2.	190.0	189.1	800	800
3.	194.0	193.0	800	800
4.	197.0	194.4	800	800
5.	192.5	191.4	800	800
AVG	190.7	189.5	800	800

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-6855

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	42.7	1.	0.929	1.	2.54	1.	-
2.	41.8	2.	0.929	2.	2.55	2.	-
3.	43.5	3.	0.930			3.	-
4.	43.4					4.	-
5.	43.7					5.	-
6.	43.9					6.	-
7.	43.0						
8.	43.3						
9.	41.3						
10.	41.2						
AVG	42.8		0.929		2.55		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	192.4	191.4	880	880
2.	202.6	200.6	880	880
3.	204.6	203.2	880	880
4.	203.2	202.6	880	880
5.	179.8	194.2	666	880
AVG	196.5	198.4	837	880

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-9078

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	41.3	1.	0.930	1.	2.570	1.	-
2.	41.5	2.	0.930	2.	2.580	2.	-
3.	40.6	3.	0.930			3.	-
4.	44.5					4.	-
5.	44.2					5.	-
6.	45.4					6.	-
7.	44.3						
8.	44.5						
9.	43.5						
10.	42.7						
AVG	43.3		0.930		2.58		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	177.8	177.6	880	780
2.	191.6	186.4	880	880
3.	194.8	195.2	880	880
4.	129.8	191.4	499	880
5.	187.8	185.8	880	880
AVG	176.4	187.3	804	860

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-1482

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	41.1	1.	0.930	1.	2.23	1.	-
2.	41.8	2.	0.930	2.	2.21	2.	-
3.	43.8	3.	0.930			3.	-
4.	42.9					4.	-
5.	43.8					5.	-
6.	43.7					6.	-
7.	42.5						
8.	43.8						
9.	42.7						
10.	42.4						
AVG	42.9		0.930		2.22		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	190.0	185.8	880	880
2.	193.0	183.4	822	728
3.	194.6	197.2	880	880
4.	195.4	184.4	880	766
5.	187.2	190.2	768	880
AVG	192.0	188.2	846	827

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-2614

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	41.1	1.	0.931	1.	2.46	1.	-
2.	41.7	2.	0.931	2.	2.45	2.	-
3.	43.0	3.	0.931			3.	-
4.	43.8					4.	-
5.	43.5					5.	-
6.	43.1					6.	-
7.	43.1						
8.	42.9						
9.	41.3						
10.	41.2						
AVG	42.5		0.931		2.46		-

	BREAK STRENGTH (lb/in. width) MD	BREAK STRENGTH (lb/in. width) TD	ELONGATION AT BREAK (%) MD	ELONGATION AT BREAK (%) TD
1.	173.7	167.9	709	703
2.	184.1	172.2	800	694
3.	191.8	193.4	800	800
4.	189.9	190.1	800	800
5.	183.1	183.3	800	800
AVG	184.5	181.4	782	759

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-7224

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	42.1	1.	0.930	1.	2.03	1.	-
2.	42.0	2.	0.930	2.	2.02	2.	-
3.	43.5	3.	0.930			3.	-
4.	42.5					4.	-
5.	45.0					5.	-
6.	45.3					6.	-
7.	43.9						
8.	43.2						
9.	42.8						
10.	42.5						
AVG	43.3		0.930		2.03		-

	BREAK STRENGTH (lb/in. width)		ELONGATION AT BREAK (%)	
	MD	TD	MD	TD
1.	189.0	190.2	856	880
2.	196.4	191.8	878	880
3.	204.8	201.6	880	880
4.	197.8	194.8	880	880
5.	192.0	189.2	880	880
AVG	196.0	193.5	875	880

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-9222

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	40.5	1.	0.930	1.	2.48	1.	-
2.	40.2	2.	0.930	2.	2.47	2.	-
3.	43.7	3.	0.930			3.	-
4.	45.9					4.	-
5.	43.5					5.	-
6.	43.9					6.	-
7.	41.1						
8.	43.2						
9.	43.2						
10.	42.2						
AVG	42.7		0.930		2.48		-

	BREAK STRENGTH (lb/in. width)		ELONGATION AT BREAK (%)	
	MD	TD	MD	TD
1.	183.2	182.2	800	800
2.	209.4	202.4	800	760
3.	199.4	197.4	800	800
4.	202.6	198.3	800	800
5.	191.5	189.9	800	800
AVG	197.2	194.0	800	792

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-9302

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	41.1	1.	0.930	1.	2.65	1.	-
2.	40.8	2.	0.930	2.	2.63	2.	-
3.	44.2	3.	0.930			3.	-
4.	44.0					4.	-
5.	42.4					5.	-
6.	41.9					6.	-
7.	42.5						
8.	43.7						
9.	41.1						
10.	42.0						
AVG	42.4		0.930		2.64		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	200.7	192.4	800	800
2.	201.1	196.1	800	800
3.	202.4	200.3	800	800
4.	202.8	199.7	800	800
5.	196.1	193.7	800	800
AVG	200.6	196.4	800	800

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-2614 (Retest)

THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)	
1.	-	1.	-	1.	-	1.	-
2.	-	2.	-	2.	-	2.	-
3.	-	3.	-			3.	-
4.	-					4.	-
5.	-					5.	-
6.	-					6.	-
7.	-						
8.	-						
9.	-						
10.	-						
AVG	0.0		0.000		0.00		-

	BREAK STRENGTH (lb/in. width)		ELONGATION AT BREAK (%)	
	MD	TD	MD	TD
1.	180.8	216.5	873	1045
2.	224.4	220.4	1060	1060
3.	212.0	222.4	1016	1060
4.	225.4	212.0	1060	1060
5.	212.6	211.8	1060	1060
AVG	211.0	216.6	1014	1057

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October 1994 947-6174

GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AD-9222 (Retest)

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	-	1.	-	1.	-	1.	-
2.	-	2.	-	2.	-	2.	-
3.	-	3.	-			3.	-
4.	-					4.	-
5.	-					5.	-
6.	-					6.	-
7.	-						
8.	-						
9.	-						
10.	-						
AVG	0.0		0.000		0.00		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	-	213.2	-	993
2.	-	235.6	-	1006
3.	-	248.2	-	1039
4.	-	225.4	-	967
5.	-	169.2	-	653
AVG	0.0	218.3	0	932

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October 1994 947-6174

GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AE-0128

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	42.2	1.	0.929	1.	2.37	1.	-
2.	41.6	2.	0.929	2.	2.37	2.	-
3.	44.4	3.	0.929			3.	-
4.	44.7					4.	-
5.	44.9					5.	-
6.	45.0					6.	-
7.	44.9						
8.	44.3						
9.	41.3						
10.	43.0						
AVG	43.6		0.929		2.37		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	219.1	224.0	977	1008
2.	249.3	241.4	1029	1003
3.	258.4	252.3	1048	1031
4.	188.1	255.8	726	1046
5.	241.0	230.0	1060	1026
AVG	231.2	240.7	968	1023

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October 1994 947-6174

GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AE-0178

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	41.6	1.	0.929	1.	2.25	1.	-
2.	42.3	2.	0.929	2.	2.23	2.	-
3.	44.1	3.	0.929			3.	-
4.	44.2					4.	-
5.	44.7					5.	-
6.	44.6					6.	-
7.	45.0						
8.	44.4						
9.	41.2						
10.	40.9						
AVG	43.3		0.929		2.24		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	189.8	235.5	880	1021
2.	202.2	255.2	880	1050
3.	233.2	257.5	976	1053
4.	255.8	255.7	1060	1060
5.	228.7	236.3	1018	1050
AVG	221.9	248.0	963	1047

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October 1994 947-6174

GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AE-0370

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	44.0	1.	0.928	1.	2.31	1.	-
2.	43.7	2.	0.928	2.	2.31	2.	-
3.	46.0	3.	0.928			3.	-
4.	44.6					4.	-
5.	44.9					5.	-
6.	44.5					6.	-
7.	44.2						
8.	43.8						
9.	41.0						
10.	41.8						
AVG	43.9		0.928		2.31		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	220.1	237.4	928.6	1019.0
2.	239.5	211.2	1006.0	931.0
3.	232.7	213.4	944.6	939.9
4.	209.0	220.4	911.3	973.5
5.	168.1	184.0	657.1	885.1
AVG	213.9	213.3	890	950

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October 1994 947-6174

GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AE-0388

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	42.5	1.	0.928	1.	2.32	1.	-
2.	42.2	2.	0.928	2.	2.30	2.	-
3.	44.2	3.	0.928			3.	-
4.	44.5					4.	-
5.	45.1					5.	-
6.	44.2					6.	-
7.	44.2						
8.	44.5						
9.	43.2						
10.	43.6						
AVG	43.8		0.928		2.31		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	180.4	207.8	819.5	955.1
2.	176.8	226.6	662.2	971.1
3.	236.0	221.0	992.3	952.1
4.	230.4	231.6	971.0	983.7
5.	229.6	224.6	991.3	984.3
AVG	210.6	222.3	887	969

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October 1994 947-6174

GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AE-0399

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	41.8	1.	0.928	1.	2.43	1.	-
2.	41.9	2.	0.928	2.	2.43	2.	-
3.	43.5	3.	0.928			3.	-
4.	40.6					4.	-
5.	42.5					5.	-
6.	41.4					6.	-
7.	43.4						
8.	41.3						
9.	40.1						
10.	40.9						
AVG	41.7		0.928		2.43		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	220.6	188.2	903	793
2.	206.2	212.6	757	750
3.	246.4	205.6	980	768
4.	189.0	198.4	696	866
5.	194.8	195.6	853	916
AVG	211.4	200.1	838	818

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October 1994 947-6174

GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AE-0405

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	41.7	1.	0.929	1.	2.41	1.	-
2.	42.3	2.	0.929	2.	2.38	2.	-
3.	41.5	3.	0.929			3.	-
4.	41.1					4.	-
5.	42.0					5.	-
6.	43.9					6.	-
7.	42.4						
8.	39.2						
9.	41.8						
10.	41.4						
AVG	41.7		0.929		2.40		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	202.2	199.1	800	738
2.	208.2	203.8	791	751
3.	210.0	209.5	800	764
4.	199.8	203.4	757	794
5.	193.7	194.4	717	800
AVG	202.8	202.0	773	769

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AC-2344

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	46.1	1.	0.930	1.	2.52	1.	-
2.	43.7	2.	0.930	2.	2.52	2.	-
3.	43.8	3.	0.929			3.	-
4.	41.8					4.	-
5.	42.2					5.	-
6.	41.8					6.	-
7.	42.4						
8.	40.3						
9.	40.0						
10.	40.9						
AVG	42.3		0.930		2.52		-

	BREAK STRENGTH (lb/in. width)		ELONGATION AT BREAK (%)	
	MD	TD	MD	TD
1.	195.6	179.0	794	725
2.	181.8	180.8	705	711
3.	200.6	193.4	824	824
4.	201.3	191.0	849	770
5.	196.0	192.6	826	825
AVG	195.1	187.4	799	771

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GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AE-0395

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	39.8	1.	0.930	1.	2.41	1.	-
2.	41.9	2.	0.930	2.	2.37	2.	-
3.	40.8	3.	0.930			3.	-
4.	43.7					4.	-
5.	40.0					5.	-
6.	44.9					6.	-
7.	41.7						
8.	40.3						
9.	40.5						
10.	38.2						
AVG	41.2		0.930		2.39		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	195.9	182.0	800	681
2.	208.6	207.0	800	800
3.	212.1	208.6	800	800
4.	206.9	202.5	800	766
5.	182.5	177.8	686	654
AVG	201.2	195.6	777	740

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October 1994 947-6174

GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AC-9054

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	41.6	1.	0.931	1.	2.57	1.	-
2.	41.5	2.	0.931	2.	2.53	2.	-
3.	40.4	3.	0.931			3.	-
4.	40.6					4.	-
5.	41.5					5.	-
6.	38.5					6.	-
7.	42.1						
8.	42.3						
9.	39.9						
10.	41.7						
AVG	41.0		0.931		2.55		-

	BREAK STRENGTH (lb/in. width) MD	BREAK STRENGTH (lb/in. width) TD	ELONGATION AT BREAK (%) MD	ELONGATION AT BREAK (%) TD
1.	181.4	179.2	813	742
2.	193.8	188.5	812	767
3.	193.3	182.3	767	730
4.	194.6	182.6	840	728
5.	179.3	182.8	726	759
AVG	188.5	183.1	792	745

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October 1994 947-6174

GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AE-0395 (Retest)

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	-	1.	-	1.	-	1.	-
2.	-	2.	-	2.	-	2.	-
3.	-	3.	-			3.	-
4.	-					4.	-
5.	-					5.	-
6.	-					6.	-
7.	-						
8.	-						
9.	-						
10.	-						
AVG	0.0		0.000		0.00		-

	BREAK STRENGTH (lb/in. width)		ELONGATION AT BREAK (%)	
	MD	TD	MD	TD
1.	223.2	192.8	973	816
2.	234.4	191.7	971	682
3.	194.6	252.9	685	1028
4.	207.2	241.7	906	1010
5.	226.4	184.4	971	711
AVG	217.2	212.7	901	849

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October 1994 947-6174

GEOMEMBRANE TEST RESULTS

PROJECT NUMBER: 947-6174
PROJECT NAME: ABB-ES/SULLIVAN/MO
ROLL DESIGNATION: AE-0405 (Retest)

	THICKNESS (mils)		DENSITY (g/cc)		CARBON BLACK CONTENT (%)		CARBON BLACK DISPERSION (rating)
1.	-	1.	-	1.	-	1.	-
2.	-	2.	-	2.	-	2.	-
3.	-	3.	-			3.	-
4.	-					4.	-
5.	-					5.	-
6.	-					6.	-
7.	-						
8.	-						
9.	-						
10.	-						
AVG	0.0		0.000		0.00		-

	BREAK STRENGTH (lb/in. width) MD	TD	ELONGATION AT BREAK (%) MD	TD
1.	203.0	200.2	873	869
2.	247.8	219.0	1000	941
3.	199.0	230.6	706	964
4.	195.2	199.6	770	844
5.	191.8	173.2	732	650
AVG	207.4	204.5	816	854

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APPENDIX E

SUBGRADE ACCEPTANCE CERTIFICATES

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA	LOCATION	Sullivan, MO
ADDRESS	2005. TRADE CENTER PKWY. CONROE, TX 77385	PROJECT	947-6174
		OWNER	ABB Environmental Services, Inc

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA

do hereby accept the area of soil surface bounded by P-1, P2, P3, P4

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
DAN CONNELLY	Dan Connelly	SITE MANAGER	9/29/94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBEBE MEHKIR	[illegible]	STAFF ENGINEER	9-29-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER

NAME	SIGNATURE	TITLE	DATE
BRADLEE T. FARRIN	[illegible]	RESIDENT ENGINEER	9-29-94

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA	LOCATION	Sullivan, MO
ADDRESS	200 S. TRADE CENTER PKWY	PROJECT	947-6174
	CONROE, TX 77385	OWNER	ABB Environmental Services, Inc

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA

do hereby accept the area of soil surface bounded by P-5, P-6

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
DAN CONNELLY	Dan Connelly	SITE MANAGER	9-30-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBEBE MENKIR	[signature]	STAFF ENGINEER	9-30-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER

NAME	SIGNATURE	TITLE	DATE
BRADLEE T. FARRIN	[signature]	RESIDENT ENGINEER	9-30-94

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA	LOCATION	Sullivan, MO
ADDRESS	200 S. TRADE CENTER PKWY	PROJECT	947-6174
	CONROE, TX 77385	OWNER	ABB Environmental Services, Inc

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA

do hereby accept the area of soil surface bounded by P-7, P-8, P-9, P-10 P-11, P-12, P-13, P-14, P-15, P-16

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
DAN CONNELLY	Dan Connelly	SITE MANAGER	10-03-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBERE MENKIR	T. Menkir	STAFF ENGINEER	10-3-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER

NAME	SIGNATURE	TITLE	DATE
BRADLEE T. FARRIN	Bradlee Farrin	RESIDENT ENGINEER	10-3-9

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT North America	LOCATION	Sullivan, MO
ADDRESS	2005 Trade Center Pkwy. Conroe, TX 77385	PROJECT	947-6174
		OWNER	ABB Environmental Services, Inc

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA

do hereby accept the area of soil surface bounded by P17, P18, P19, P20

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
DAN CONNELLY	Dan Connelly	SITE MANAGER	10-4-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBEBE MENKIR	T Menkir	STAFF ENGINEER	10-4-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER

NAME	SIGNATURE	TITLE	DATE
BRADLEE T. FARRIS	[illegible]	PRESIDENT ENGINEER	10-4-94

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA	LOCATION	Sullivan, MO
ADDRESS	2005. TRADE CENTER PKWY	PROJECT	947-6174
	CONROE, TX 77385	OWNER	ABB Environmental Services, Inc

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA

do hereby accept the area of soil surface bounded by P21, P22, P23, P24 P25, P26, P27

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
DAN CONNELLY	Dan Connelly	SITE MANAGER	10-5-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBEBE MENKIR	[signature]	STAFF ENGINEER	10-5-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER

NAME	SIGNATURE	TITLE	DATE
BRADLEE FARRIN	[signature]	RESIDENT ENGINEER	10/11/94

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA INC.	LOCATION	Sullivan, MO
ADDRESS	200 S. TRADE CENTER PKWY CONROE, TX 77385	PROJECT	947-6174
		OWNER	ABB Environmental Services, Inc

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA INC

do hereby accept the area of soil surface bounded by P28, P29, P30, P31

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
DAN CONNELLY	Dan Connelly	SITE MGR	10-11-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBEBE MENKIR	[signature]	STAFF ENGINEER	10-11-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER

NAME	SIGNATURE	TITLE	DATE
BRADLEE T. FARRIN	[signature]	RESIDENT ENGINEER	10-11-94

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA INC.	LOCATION	Sullivan, MO
ADDRESS	200 S. TRADE CENTER PKWY CONROE, TX 77385	PROJECT	947-6174
		OWNER	ABB Environmental Services, Inc.

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA INC.

do hereby accept the area of soil surface bounded by P32, P33, P34, P35, P36, 9-R, P37, P38, P39 and P40

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
DAN CONNELLY	Dan Connelly	SITE MGR	10-12-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBEBE MENKIR	[illegible]	STAFF ENGINEER	10-12-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER

NAME	SIGNATURE	TITLE	DATE
BRADLEY T. FARRELL	[illegible]	RESIDENT ENGINEER	10-12-94

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA INC.	LOCATION	Sullivan, MO
ADDRESS	200 S. TRADE CENTER PKWY	PROJECT	947-6174
	CONROE, TX 77385	OWNER	ABB Environmental Services, Inc

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA INC.

do hereby accept the area of soil surface bounded by P41, P42, P43, P44, P45, P46, P47, P48, P49, P50, P51, P52, P53, P54, P55, P56

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
TRACY McCUISTON	Tracy McCuiston	QC Rep	10-21-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBEBE MENKIR	T. Menkir	STAFF ENGINEER	10-21-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REP.

NAME	SIGNATURE	TITLE	DATE
BRADLEE T. FARRIN	[illegible]	RESIDENT ENGINEER	10-21-94

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA INC.	LOCATION	Sullivan, MO
ADDRESS	200 S. TRADE CENTER PKWY CONROE, TX 77385	PROJECT	947-6174
		OWNER	ABB Environmental Services, Inc

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA INC

do hereby accept the area of soil surface bounded by P57, P58, P59, P60, P61, P62, P63, P64, P65, P66, P67, P68, P69, P70, P71, P72, P73, P74, P75, P76, P77, P78

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
TRACY McCUISTON		QC	10-22-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBEBE MENKIR		STAFF ENGINEER	10-22-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REP.

NAME	SIGNATURE	TITLE	DATE
BRADLEE T. FARRIN		RESIDENT ENGINEER	10/22/94

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA INC.	LOCATION	Sullivan, MO
ADDRESS	200 S. TRADE CENTER PKWY	PROJECT	947-6174
	CONROE, TX 77385	OWNER	ABB Environmental Services, Inc

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA INC.

do hereby accept the area of soil surface bounded by P79, P-80, P81, P82, P83 P84, P85, P86, P87, P88, P89, P90, P91, P92, P93.

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
TRACY McCLISTON			10 23 94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIMEBE MENKIR		STAFF ENGINEER	10-23-93

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REP.

NAME	SIGNATURE	TITLE	DATE
BRADLEE T. FARRIN		RESIDENT ENGINEER	10-24-94

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA INC.	LOCATION	Sullivan, MO
ADDRESS	200 S. TRADE CENTER PKWY CONROE, TX 77385	PROJECT	947-6174
		OWNER	ABB Environmental Services, Inc.

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA INC.

do hereby accept the area of soil surface bounded by P94, P95, P96, P97, P98, P99, P100, P101, P102, P103, P104, P105, P106, P107, P108, P109, P110, P111, P112, P113, P114, P115, P116, P117, P118, P119, P120

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
DAN CONNELLY	Dan Connelly	Site mgr	

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBEBE MENKIR	T. Menkir	STAFF ENGINEER	10-24-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REP.

NAME	SIGNATURE	TITLE	DATE
BRANDLEE T. FARRIN	[illegible]	RESIDENT ENGINEER	10-26-94

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA INC.	LOCATION	Sullivan, MO
ADDRESS	200 S. TRADE CENTER PKWY CONROE, TX 77385	PROJECT	947-6174
		OWNER	ABB Environmental Services, Inc

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA INC.

do hereby accept the area of soil surface bounded by P121, P122, P123, P124, P125 P126, P127, P128, P129, P130 P131, P132, P133 P134, P135 P136, P137, P138, P139, P140, P141, P142, P143, P144, P145, P146, P147.

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
DAN CONNELLY	Dan Connelly	Site mgr	10-25-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBEBE MENKIR	[signature]	STAFF ENGINEER	10-25-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REP

NAME	SIGNATURE	TITLE	DATE
BRADLEY T. FARRELL	[signature]	RESIDENT ENGINEER	10/26/94

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA INC.	LOCATION	Sullivan, MO
ADDRESS	200 S. TRADE CENTER PKWY CONROE, TX 77385	PROJECT	947-6174
		OWNER	ABB Environmental Services, Inc

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA INC.

do hereby accept the area of soil surface bounded by P148, P149, P150, P151 P152, P153, P154, P155, P156, P157, P158, P159, P160, P161, P162, P163 P164, P165, P166, P167, P168, P169, P170, P171, P172, P173, P174, P175, P176, P177, P178, P179, P180, P181, P182, P183, P184, P185, P186 P187, P188, P189, P190, P191, P192 AND EXTENSIONS 20T, 23R

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
DAN CONNELLY	Dan Connelly	Site Mgr	10-26-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBEBE MENKIR	[signature]	STAFF ENGINEER	10-26-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER'S REP

NAME	SIGNATURE	TITLE	DATE
BRAD FABRIN	[signature]	RES. ENGINEER	11/3/94

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA INC.	LOCATION	Sullivan, MO
ADDRESS	200 S. TRADE CENTER PKWY	PROJECT	947-6174
	CONROE, TX 77385	OWNER	ABB Environmental Services, Inc

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA INC.

do hereby accept the area of soil surface bounded by P193, P194, P195, P196, P197, P198, P199, P200, P201, P202, P203

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
DAN CONNELLY	Dan Connelly	SITE MGR	10-27-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBEBE MENKIR	[signature]	STAFF ENGINEER	10-27-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER

NAME	SIGNATURE	TITLE	DATE
BRAD FABRIO	[signature]	RES ENGINEER	11/3/94

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA INC.	LOCATION	Sullivan, MO
ADDRESS	200 S. TRADE CENTER PKWY	PROJECT	947-6174
	CONROE, TX 77385	OWNER	ABB Environmental Services, Inc

I, the Undersigned, the duly authorized representative of _____

do hereby accept the area of soil surface bounded by P204, P205, P206, P207, P208, P209, P210, P211, P212, P213, P214, P215, P216, P217, P218, P219, P220, P221, P222, P223

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
DAN CONNELLY	Dan Connelly	SITE MGR	10-28-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBEBE MENKIR	[illegible]	STAFF ENGINEER	10-28-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER

NAME	SIGNATURE	TITLE	DATE
BRAD FARRIS	[illegible]	REG. ENG.	11/3/94

GCS FORM: G4

(JUNE 1992)

CERTIFICATE OF ACCEPTANCE OF SOIL SURFACE

GEOSYNTHETIC INSTALLER		PROJECT	
COMPANY	SLT NORTH AMERICA INC.	LOCATION	Sullivan, MO
ADDRESS	200 S. TRADE CENTER PKWY CONROE, TX 77385	PROJECT	947-6174
		OWNER	ABB Environmental Services, Inc.

I, the Undersigned, the duly authorized representative of SLT NORTH AMERICA INC.

do hereby accept the area of soil surface bounded by P224, P225, P226, P227, P228, P229, P230, P231

and shall be responsible for maintaining its integrity and suitability in accordance with the project specifications from this date to the completion of the installation.

NAME	SIGNATURE	TITLE	DATE
DAN CONNELLY	Dan Connelly	SITE MGR	10-29-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY QA / QC MANAGER

NAME	SIGNATURE	TITLE	DATE
TIBEBE MENKIR	[illegible]	STAFF ENGINEER	10-29-94

CERTIFICATE OF ACCEPTANCE RECEIVED BY OWNER

NAME	SIGNATURE	TITLE	DATE
BRAD FARRID	[illegible]	RES. ENG.	11/3/94

GCS FORM: G4

(JUNE 1992)

APPENDIX F

GEOMEMBRANE PANEL DEPLOYMENT SUMMARY

GEOMEMBRANE PANEL DEPLOYMENT SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

PANEL NUMBER	ROLL NUMBER	DATE DEPLOYED	VISUAL PANEL CONDITION	MINIMUM OVERLAP (inches)	AVERAGE PANEL EDGE THICKNESS (mils) LEAD	TRAIL	REMARKS
P 1	AD2622	09/28/94	O.K.	4	42	43	
P 2	AD2688	09/28/94	O.K.	4	42	42	
P 3	AC9078	09/28/94	O.K.	4	43	43	
P 4	AD2558	09/28/94	O.K.	4	42	42	
P 5	AD2614	09/30/94	O.K.	4	42	42	
P 6	AD1482	09/30/94	O.K.	4	42	42	
P 7	AD2570	10/03/94	O.K.	4	42	42	
P 8	AD2570	10/03/94	O.K.	4	42	42	
P 9	AD6855	10/03/94	O.K.	4	42	41	
P 10	AD9293	10/03/94	O.K.	4	42	42	
P 11	AD9302	10/03/94	O.K.	4	42	43	
P 12	AD4547	10/03/94	O.K.	4	43	42	
P 13	AD4547	10/03/94	O.K.	4	42	42	
P 14	AD4547	10/03/94	O.K.	4	42	42	
P 15	AD2558	10/03/94	O.K.	4	41	41	
P 16	AD9301	10/03/94	O.K.	4	42	42	
P 17	AD9307	10/04/94	O.K.	4	42	42	
P 18	AD9227	10/04/94	O.K.	4	42	42	
P 19	AD9328	10/04/94	O.K.	4	42	41	
P 20	AD7224	10/04/94	O.K.	4	42	42	
P 21	AD4546	10/05/94	O.K.	4	42	42	
P 22	AD4546	10/05/94	O.K.	4	42	42	
P 23	AD4546	10/05/94	O.K.	4	42	42	
P 24	AD4421	10/05/94	O.K.	4	43	42	
P 25	AD4421	10/05/94	O.K.	4	42	42	
P 26	AD4421	10/05/94	O.K.	4	42	43	
P 27	AD4463	10/05/94	O.K.	4	42	42	
P 28	AE0178	10/11/94	O.K.	4	43	42	
P 29	AE0128	10/11/94	O.K.	4	42	43	
P 30	AE0135	10/11/94	O.K.	4	42	42	
P 31	AE0132	10/11/94	O.K.	4	43	42	
P 32	AE0174	10/12/94	O.K.	4	43	42	
P 33	AE0174	10/12/94	O.K.	4	42	41	
P 34	AE0153	10/12/94	O.K.	4	42	42	
P 35	AE0153	10/12/94	O.K.	4	42	42	
P 36	AE0153	10/12/94	O.K.	4	42	42	
P 37	AE0170	10/12/94	O.K.	4	42	42	

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GEOMEMBRANE PANEL DEPLOYMENT SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

PANEL NUMBER	ROLL NUMBER	DATE DEPLOYED	VISUAL PANEL CONDITION	MINIMUM OVERLAP (inches)	AVERAGE PANEL EDGE THICKNESS (mils) LEAD	TRAIL	REMARKS
P 38	AD4463	10/12/94	O.K.	4	42	42	
P 39	AE0137	10/12/94	O.K.	4	42	41	
P 40	AE0157	10/12/94	O.K.	4	42	42	
P 41	AE0171	10/21/94	O.K.	4	42	42	
P 42	AD4428	10/21/94	O.K.	4	42	42	
P 43	AD4419	10/21/94	O.K.	4	42	42	
P 44	AE0401	10/21/94	O.K.	4	44	44	
P 45	AE0401	10/21/94	O.K.	4	44	44	
P 46	AE0401	10/21/94	O.K.	4	44	44	
P 47	AE0401	10/21/94	O.K.	4	44	44	
P 48	AE0401	10/21/94	O.K.	4	44	44	
P 49	AE0401	10/21/94	O.K.	4	44	44	
P 50	AE0401	10/21/94	O.K.	4	44	44	
P 51	AE0401	10/21/94	O.K.	4	44	44	
P 52	AE0401	10/21/94	O.K.	4	44	44	
P 53	AE0401	10/21/94	O.K.	4	44	44	
P 54	AE0401	10/21/94	O.K.	4	44	44	
P 55	AE0401	10/21/94	O.K.	4	44	44	
P 56	AD4462	10/21/94	O.K.	4	42	42	
P 57	AD4422	10/22/94	O.K.	4	42	42	
P 58	AD4423	10/22/94	O.K.	4	42	42	
P 59	AD4423	10/22/94	O.K.	4	42	42	
P 60	AE0165	10/22/94	O.K.	4	42	42	
P 61	AE0165	10/22/94	O.K.	4	42	42	
P 62	AE0156	10/22/94	O.K.	4	42	43	
P 63	AE0156	10/22/94	O.K.	4	43	42	
P 64	AE0155	10/22/94	O.K.	4	42	42	
P 65	AE0155	10/22/94	O.K.	4	42	43	
P 66	AE0381	10/22/94	O.K.	4	42	42	
P 67	AE0381	10/22/94	O.K.	4	42	42	
P 68	AE0388	10/22/94	O.K.	4	43	42	
P 69	AE0388	10/22/94	O.K.	4	42	42	
P 70	AE0400	10/22/94	O.K.	4	44	44	
P 71	AE0400	10/22/94	O.K.	4	44	44	
P 72	AE0400	10/22/94	O.K.	4	44	44	
P 73	AE0400	10/22/94	O.K.	4	44	44	
P 74	AE0400	10/22/94	O.K.	4	44	44	

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GEOMEMBRANE PANEL DEPLOYMENT SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

PANEL NUMBER	ROLL NUMBER	DATE DEPLOYED	VISUAL PANEL CONDITION	MINIMUM OVERLAP (inches)	AVERAGE PANEL EDGE THICKNESS (mils) LEAD	TRAIL	REMARKS
P 75	AE0400	10/22/94	O.K.	4	44	43	
P 76	AE0400	10/22/94	O.K.	4	43	44	
P 77	AE0400	10/22/94	O.K.	4	44	44	
P 78	AE0400	10/22/94	O.K.	4	44	44	
P 79	AE0387	10/23/94	O.K.	4	42	42	
P 80	AE0387	10/23/94	O.K.	4	42	42	
P 81	AE0383	10/23/94	O.K.	4	42	42	
P 82	AE0383	10/23/94	O.K.	4	42	42	
P 83	AE0396	10/23/94	O.K.	4	43	43	
P 84	AE0396	10/23/94	O.K.	4	43	44	
P 85	AE0396	10/23/94	O.K.	4	44	44	
P 86	AE0396	10/23/94	O.K.	4	44	44	
P 87	AE0396	10/23/94	O.K.	4	44	44	
P 88	AE0396	10/23/94	O.K.	4	44	43	
P 89	AE0396	10/23/94	O.K.	4	43	43	
P 90	AE0396	10/23/94	O.K.	4	44	44	TRIANGULAR PANEL
P 91	AE0377	10/23/94	O.K.	4	42	42	
P 92	AE0377	10/23/94	O.K.	4	42	42	
P 93	AE0371	10/23/94	O.K.	4	43	42	
P 94	AE0402	10/24/94	O.K.	4	42	43	
P 95	AE0402	10/24/94	O.K.	4	43	42	
P 96	AE0402	10/24/94	O.K.	4	42	43	
P 97	AE0402	10/24/94	O.K.	4	43	42	
P 98	AE0402	10/24/94	O.K.	4	42	42	
P 99	AE0402	10/24/94	O.K.	4	42	42	
P 100	AE0402	10/24/94	O.K.	4	42	42	
P 101	AE0402	10/24/94	O.K.	4	42	43	
P 102	AE0402	10/24/94	O.K.	4	43	43	
P 103	AE0402	10/24/94	O.K.	4	43	43	
P 104	AE0402	10/24/94	O.K.	4	43	43	
P 105	AE0402	10/24/94	O.K.	4	43	42	
P 106	AE0402	10/24/94	O.K.	4	42	42	
P 107	AE0402	10/24/94	O.K.	4	42	43	TRIANGULAR PANEL
P 108	AE0402	10/24/94	O.K.	4	43	42	
P 109	AE0395	10/24/94	O.K.	4	43	42	
P 110	AE0395	10/24/94	O.K.	4	42	42	
P 111	AE0395	10/24/94	O.K.	4	42	43	

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GEOMEMBRANE PANEL DEPLOYMENT SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

PANEL NUMBER	ROLL NUMBER	DATE DEPLOYED	VISUAL PANEL CONDITION	MINIMUM OVERLAP (inches)	AVERAGE PANEL EDGE THICKNESS (mils) LEAD	TRAIL	REMARKS
P 186	AE0404	10/26/94	O.K.	4	43	42	
P 187	AE0404	10/26/94	O.K.	4	42	42	
P 188	AE0404	10/26/94	O.K.	4	42	43	
P 189	AE0404	10/26/94	O.K.	4	43	43	
P 190	AE0404	10/26/94	O.K.	4	43	42	
P 191	AE0404	10/26/94	O.K.	4	42	44	
P 192	AD4450	10/26/94	O.K.	4	42	42	
P 193	AC2344	10/27/94	O.K.	4	42	42	
P 194	AC2344	10/27/94	O.K.	4	42	42	
P 195	AC2344	10/27/94	O.K.	4	42	42	
P 196	AC2344	10/27/94	O.K.	4	42	42	
P 197	AC2344	10/27/94	O.K.	4	42	42	
P 198	AC2344	10/27/94	O.K.	4	42	42	
P 199	AC2344	10/27/94	O.K.	4	42	42	
P 200	AC2344	10/27/94	O.K.	4	42	42	
P 201	AE0395	10/27/94	O.K.	4	42	42	
P 202	AE0395	10/27/94	O.K.	4	42	43	
P 203	AE0405	10/27/94	O.K.	4	42	43	
P 204	AE0397	10/28/94	O.K.	4	43	46	
P 205	AE0397	10/28/94	O.K.	4	46	44	
P 206	AE0397	10/28/94	O.K.	4	44	45	
P 207	AE0397	10/28/94	O.K.	4	45	45	
P 208	AE0397	10/28/94	O.K.	4	45	44	
P 209	AE0397	10/28/94	O.K.	4	44	44	
P 210	AE0397	10/28/94	O.K.	4	44	42	
P 211	AE0397	10/28/94	O.K.	4	42	44	
P 212	AE0397	10/28/94	O.K.	4	44	44	
P 213	AE0397	10/28/94	O.K.	4	44	44	
P 214	AE0397	10/28/94	O.K.	4	44	45	
P 215	AE0397	10/28/94	O.K.	4	45	44	
P 216	AE0397	10/28/94	O.K.	4	44	41	
P 217	AE0397	10/28/94	O.K.	4	41	44	
P 218	AE0397	10/28/94	O.K.	4	44	44	
P 219	AE0394	10/28/94	O.K.	4	44	44	
P 220	AE0394	10/28/94	O.K.	4	44	43	
P 221	AE0394	10/28/94	O.K.	4	43	43	
P 222	AE0394	10/28/94	O.K.	4	43	43	

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GEOMEMBRANE PANEL DEPLOYMENT SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

PANEL NUMBER	ROLL NUMBER	DATE DEPLOYED	VISUAL PANEL CONDITION	MINIMUM OVERLAP (inches)	AVERAGE PANEL EDGE THICKNESS (mils) LEAD	TRAIL	REMARKS
P 223	AE0394	10/28/94	O.K.	4	43	44	
P 224	AE0394	10/29/94	O.K.	4	44	45	
P 225	AE0398	10/29/94	O.K.	4	43	44	
P 226	AE0398	10/29/94	O.K.	4	44	43	
P 227	AE0398	10/29/94	O.K.	4	43	43	
P 228	AE0398	10/29/94	O.K.	4	43	43	
P 229	AE0398	10/29/94	O.K.	4	43	43	
P 230	0400	10/29/94	O.K.	4	43	44	
P 231	9054	10/29/94	O.K.	4	42	42	

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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS									TESTING PROCESS				
									NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)		P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 34 / P 35	10/12/94	1020	58	TM	AIR	318	72		P	10/12/94	DRB		
P 35 / P 152	10/27/94	1646	72	TM	AIR	321	20		P	10/28/94	DRB		
P 35 / P 153	10/27/94	1644	72	TM	AIR	321	23		P	10/28/94	DRB		
P 35 / P 154	10/27/94	1640	72	TM	AIR	321	20		P	10/28/94	DRB		
P 35 / P 36	10/12/94	1103	65	TM	AIR	318	246		P	10/12/94	DRB		
P 35 / 9 R	10/12/94	1100	65	TM	AIR	318	17		P	10/12/94	DRB		
P 36 / P 154	10/27/94	1634	72	TM	AIR	321	4		V	10/31/94	BDH		
P 36 / P 155	10/27/94	1631	72	TM	AIR	321	23		P	10/28/94	DRB	DS-100	
P 36 / P 156	10/27/94	1626	73	TM	AIR	321	23		P	10/28/94	DRB		
P 36 / P 157	10/27/94	1626	73	TM	AIR	321	5		--	--	--		COVERED BY REPAIR 25-F
P 36 / P 37	10/12/94	1533	71	TM	AIR	321	195		P	10/12/94	DRB		
P 36 / 9 R	10/12/94	1051	65	TM	AIR	318	23		P	10/12/94	DRB		
P 37 / P 157	10/27/94	1611	73	TM	AIR	321	19		P	10/28/94	DRB		
P 37 / P 158	10/26/94	1742	52	TM	AIR	321	153		P/V	11/08/94	DRB		
P 37 / P 160	10/27/94	1609	73	TM	AIR	321	23		P	10/28/94	DRB		
P 37 / P 161	10/27/94	1603	73	TM	AIR	321	10		P	10/28/94	DRB		
P 37 / P 38	10/12/94	1410	69	TM	AIR	321	23		P	10/14/94	TM		
P 37 / P 39	10/12/94	1630	68	TM	AIR	321	505		P	10/14/94	TM	DS-47	
P 37 / 9 R	10/12/94	1531	70	TM	AIR	321	19		P	10/12/94	DRB		
P 38 / P 39	10/12/94	1615	68	TM	AIR	321	200		P	10/14/94	TM	DS-46	

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
(2) "P" DENOTES PRESSURE TESTING; "V" DENOTES VACUUM TESTING.

GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
								NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 39 / P 158	10/26/94	1715	53	TM	NY	324	23	V	11/08/94	DRB		
P 39 / P 201	10/27/94	1127	60	TM	AIR	321	14	P	10/28/94	TM		
P 39 / P 202	10/27/94	1125	60	TM	AIR	321	13	P	10/28/94	TM		
P 39 / P 40	10/12/94	1718	66	TM	AIR	321	679	P	10/14/94	TM	DS-48	
P 40 / P 158	10/26/94	1740	52	TM	NY	324	37	P	10/27/94	DRB		
P 40 / P 159	10/26/94	1726	53	TM	AIR	321	23	P	10/27/94	TM		
P 40 / P 192	10/26/94	1605	61	TM	NY	324	527	P	10/27/94	DRB	DS-97	
P 40 / P 193	10/27/94	1431	71	TM	AIR	321	23	P	10/28/94	TM		
P 40 / P 194	10/27/94	1428	71	TM	AIR	321	23	P	11/02/94	BDH		
P 40 / P 195	10/27/94	1426	71	TM	AIR	321	23	P	10/28/94	TM		
P 40 / P 196	10/27/94	1423	71	TM	AIR	321	23	P/V	11/02/94	TM		
P 40 / P 197	10/27/94	1354	70	TM	AIR	321	23	P	10/28/94	TM		
P 40 / P 198	10/27/94	1342	70	TM	AIR	321	23	P	10/28/94	TM		
P 40 / P 199	10/27/94	1341	70	TM	AIR	321	10	V	10/31/94	BDH		
P 40 / P 200	10/27/94	1339	70	TM	AIR	321	24	P	10/28/94	TM		
P 40 / P 201	10/27/94	1336	70	TM	AIR	321	9	P	10/28/94	TM		
P 41 / P 42	10/21/94	0930	68	TM	SS	324	97	P	10/29/94	BDH	DS-49	
P 41 / P 42	10/21/94	1055	68	TM	SS	324	53	P/V	11/01/94	BDH		
P 41 / P 42	10/21/94	1125	75	TM	SS	324	298	P	10/29/94	BDH		
P 41 / P 42	10/21/94	1735	68	TM	AIR	321	74	P	11/02/94	DRB		

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
								NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 41 / P 44	10/21/94	1642	70	TM	AIR	321	23	P	10/28/94	TM		
P 41 / P 95	10/24/94	1057	74	TM	AIR	321	7	V	11/10/94	DRB		
P 41 / P 96	10/24/94	1058	74	TM	AIR	321	23	P	11/02/94	DRB		
P 41 / P 97	10/24/94	1100	74	TM	AIR	321	4	V	11/10/94	DRB		
P 42 / P 43	10/21/94	1335	75	TM	SS	324	140	P/V	11/01/94	BDH	DS-50	
P 42 / P 43	10/21/94	1735	68	TM	AIR	321	35	P	11/02/94	DRB		
P 42 / P 43	10/21/94	1408	72	TM	AIR	321	401	P	10/28/94	TM	DS-53	
P 42 / P 44	10/21/94	1556	72	TM	AIR	321	21	P	10/28/94	TM		
P 42 / P 45	10/21/94	1554	72	TM	AIR	321	24	P	10/28/94	TM		
P 42 / P 46	10/21/94	1553	72	TM	AIR	321	24	P/V	11/03/94	TM		
P 42 / P 47	10/21/94	1552	72	TM	AIR	321	23	P	10/28/94	TM		
P 42 / P 97	10/24/94	1100	74	TM	AIR	321	20	P	11/02/94	DRB		
P 42 / P 98	10/24/94	1103	74	TM	AIR	321	15	P	11/02/94	DRB		
P 43 / P 48	10/21/94	1518	72	TM	AIR	321	11	P	10/28/94	TM		
P 43 / P 49	10/21/94	1516	72	TM	AIR	321	24	P	10/28/94	TM		
P 43 / P 50	10/21/94	1515	72	TM	AIR	321	23	P	10/28/94	TM		
P 43 / P 51	10/21/94	1514	72	TM	AIR	321	24	P	10/28/94	TM		
P 43 / P 52	10/21/94	1512	72	TM	AIR	321	12	P	10/28/94	TM		
P 43 / P 56	10/21/94	1830	64	TM	SS	318	220	P/V	11/10/94	DRB	DS-59	
P 43 / P 56	10/22/94	1045	73	TM	SS	324	447	P	10/29/94	BDH	DS-58	

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
			AMBIENT					NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 43 / P 98	10/24/94	1104	74	TM	AIR	321	9	--	--	--		COVERED BY REPAIR 18-N
P 43 / P 99	10/24/94	1104	74	TM	AIR	321	20	P	11/02/94	DRB	DS-77	
P 44 / P 45	10/21/94	1343	75	TM	AIR	321	41	P	10/28/94	TM		
P 45 / P 46	10/21/94	1350	75	TM	AIR	321	46	P	10/28/94	TM	DS-51	
P 46 / P 47	10/21/94	1356	75	TM	AIR	321	50	P	10/28/94	TM		
P 47 / P 48	10/21/94	1400	75	TM	AIR	321	52	P	10/28/94	TM		
P 48 / P 49	10/21/94	1410	75	TM	AIR	321	56	P	10/28/94	TM		
P 49 / P 50	10/21/94	1417	75	TM	AIR	321	57	P	10/28/94	TM		
P 50 / P 51	10/21/94	1426	73	TM	AIR	321	63	P	10/28/94	TM		
P 51 / P 52	10/21/94	1436	73	TM	AIR	321	67	P	10/28/94	TM		
P 52 / P 53	10/21/94	1501	72	TM	AIR	321	60	P	10/28/94	BDH		
P 52 / P 55	10/21/94	1500	72	TM	AIR	321	13	P	10/28/94	BDH	DS-52	
P 53 / P 54	10/21/94	1447	73	TM	AIR	321	52	P	10/28/94	BDH		
P 53 / P 55	10/21/94	1457	72	TM	AIR	321	25	P	10/28/94	BDH		
P 54 / P 55	10/21/94	1455	73	TM	AIR	321	23	P	10/28/94	BDH		
P 55 / P 70	10/22/94	1700	79	TM	AIR	321	46	P	10/28/94	BDH		
P 56 / P 100	10/24/94	1106	74	TM	AIR	321	23	P	11/02/94	DRB		
P 56 / P 101	10/24/94	1108	74	TM	AIR	321	3	--	--	--		COVERED BY REPAIR 32-P
P 56 / P 57	10/22/94	1016	68	TM	AIR	321	655	P	10/29/94	BDH	DS-57	
P 56 / P 70	10/22/94	1820	69	TM	AIR	321	23	P	10/29/94	BDH		

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS									TESTING PROCESS				
				AMBIENT			WELDING	WELDED	NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	MACHINE (Note 1)	LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 56 / P 99	10/24/94	1106	74	TM	AIR	321	3	--	--	--		COVERED BY REPAIR 32-N
P 57 / P 101	10/24/94	1108	74	TM	AIR	321	20	P	11/02/94	DRB		
P 57 / P 102	10/24/94	1110	74	TM	AIR	321	9	P	11/02/94	DRB		
P 57 / P 58	10/22/94	0920	67	TM	AIR	321	638	P	11/01/94	DRB	DS-56	
P 57 / P 71	10/22/94	1819	70	TM	AIR	321	23	P	11/03/94	TM		
P 58 / P 102	10/24/94	1111	74	TM	AIR	321	15	P	11/02/94	DRB		
P 58 / P 103	10/24/94	1112	74	TM	AIR	321	15	P	11/02/94	DRB		
P 58 / P 59	10/22/94	1129	83	TM	AIR	321	48	P	11/01/94	DRB		
P 58 / P 60	10/22/94	113	83	TM	AIR	321	564	P	11/01/94	DRB	DS-61	
P 58 / P 72	10/22/94	1818	70	TM	AIR	321	23	P	11/03/94	TM		
P 59 / P 103	10/24/94	1114	74	TM	AIR	321	8	P	11/02/94	DRB		
P 59 / P 104	10/24/94	1115	74	TM	AIR	321	19	P	11/02/94	DRB		
P 59 / P 60	10/22/94	1121	83	TM	AIR	321	23	P	11/01/94	DRB	DS-60	
P 59 / P 61	10/22/94	1130	83	TM	SS	324	24	P/V	11/09/94	DRB		
P 60 / P 61	10/22/94	1132	83	TM	SS	324	122	P	11/01/94	DRB		
P 60 / P 62	10/22/94	1137	83	TM	SS	324	441	P	11/01/94	DRB	DS-62	
P 60 / P 73	10/22/94	1817	70	TM	AIR	321	23	P	11/01/94	DRB		
P 61 / P 104	10/24/94	1116	74	TM	AIR	321	5	V	11/09/94	DRB		
P 61 / P 105	10/24/94	1116	74	TM	AIR	321	23	V	11/09/94	DRB		
P 61 / P 62	10/22/94	1125	83	TM	SS	324	23	P	11/01/94	DRB		

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
								NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 61 / P 63	10/22/94	1340	86	TM	SS	324	137	P	11/01/94	DRB		
P 62 / P 63	10/22/94	1350	86	TM	SS	324	143	P	11/01/94	DRB		
P 62 / P 64	10/22/94	1405	87	TM	SS	324	298	P	11/01/94	DRB	DS-63	
P 62 / P 74	10/22/94	1816	70	TM	AIR	321	23	P	11/01/94	DRB		
P 63 / P 106	10/24/94	1120	74	TM	AIR	321	14	P	11/03/94	DRB		
P 63 / P 107	10/24/94	1119	74	TM	AIR	321	14	P	11/02/94	DRB		
P 63 / P 64	10/22/94	1354	86	TM	AIR	321	23	V	11/03/94	TM		
P 63 / P 65	10/22/94	1408	86	TM	AIR	321	266	P	11/01/94	DRB		
P 64 / P 65	10/22/94	1425	86	TM	AIR	321	153	P	11/01/94	DRB	DS-64	
P 64 / P 66	10/22/94	1440	87	TM	AIR	321	142	P	11/01/94	DRB		
P 64 / P 75	10/22/94	1815	70	TM	AIR	321	23	P	11/01/94	DRB	DS-69	
P 65 / P 106	10/24/94	1121	74	TM	AIR	321	10	V	11/09/94	DRB		
P 65 / P 66	10/22/94	1430	87	TM	SS	324	23	P	11/01/94	DRB		
P 65 / P 67	10/22/94	1440	87	TM	SS	324	405	P	11/01/94	DRB	DS-65	
P 65 / P 90	10/23/94	1510	74	TM	AIR	321	18	P	11/03/94	DRB		
P 66 / P 67	10/22/94	1510	87	TM	SS	324	142	P	11/01/94	DRB		
P 66 / P 76	10/22/94	1813	70	TM	AIR	321	23	P	11/01/94	DRB		
P 67 / P 68	10/22/94	1530	80	TM	AIR	321	540	P	11/01/94	DRB	DS-66	
P 67 / P 77	10/22/94	1812	71	TM	AIR	321	23	P	11/01/94	DRB		
P 67 / P 83	10/23/94	1512	75	TM	AIR	321	23	VT	11/09/94	DRB		

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS									TESTING PROCESS				
									NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)		P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 68 / P 69	10/22/94	1540	80	TM	SS	324	169		P	11/01/94	DRB	DS-67	
P 68 / P 78	10/22/94	1810	71	TM	AIR	321	23		V	11/03/94	DRB		
P 68 / P 79	10/23/94	1115	70	TM	SS	324	363		P	11/01/94	DRB		
P 68 / P 84	10/23/94	1521	75	TM	AIR	321	23		P	11/03/94	DRB		
P 69 / P 79	10/23/94	1050	64	TM	SS	324	23		P	11/01/94	DRB		
P 69 / P 80	10/23/94	1105	68	TM	AIR	321	167		P	11/01/94	DRB		
P 69 / P 85	10/23/94	1523	75	TM	AIR	321	23		P	11/03/94	DRB		
P 70 / P 71	10/22/94	1710	79	TM	AIR	321	53		P	11/01/94	DRB		
P 71 / P 72	10/22/94	1713	78	TM	AIR	321	58		P	11/01/94	DRB		
P 72 / P 73	10/22/94	1717	78	TM	AIR	321	65		P/V	11/03/94	TM	DS-68	
P 73 / P 74	10/22/94	1730	77	TM	AIR	321	66		P	11/01/94	DRB		
P 74 / P 75	10/22/94	1740	76	TM	AIR	321	68		P	11/01/94	DRB		
P 75 / P 76	10/22/94	1745	76	TM	AIR	321	70		P	11/01/94	DRB		
P 76 / P 77	10/22/94	1755	73	TM	AIR	321	72		P	11/01/94	DRB		
P 77 / P 78	10/22/94	1800	72	TM	AIR	321	76		P	11/01/94	DRB		
P 78 / P 108	10/24/94	1324	64	TM	AIR	321	74		P	11/01/94	DRB		
P 79 / P 108	10/24/94	1822	59	TM	AIR	321	23		P	11/01/94	DRB		
P 79 / P 80	10/23/94	1114	70	TM	AIR	321	188		P	11/01/94	DRB	DS-70	
P 79 / P 81	10/23/94	1135	70	TM	AIR	321	190		P	11/01/94	DRB		
P 80 / P 81	10/23/94	1055	65	TM	AIR	321	23		P	11/01/94	DRB		

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS									TESTING PROCESS				
									NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)		P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 80 / P 82	10/23/94	1145	70	TM	SS	324	345		P	11/01/94	DRB	DS-71	
P 80 / P 86	10/23/94	1525	75	TM	AIR	321	23		P	11/03/94	DRB		
P 81 / P 109	10/24/94	1820	60	TM	AIR	321	23		P	11/01/94	DRB		
P 81 / P 82	10/23/94	1150	70	TM	AIR	321	177		P	11/01/94	DRB		
P 82 / P 110	10/24/94	1818	60	TM	AIR	321	23		--	--	--		COVERED BY REPAIR 28-R
P 82 / P 87	10/23/94	1527	74	TM	AIR	321	23		P	11/03/94	DRB		
P 82 / P 91	10/23/94	1540	74	TM	AIR	321	526		P	11/01/94	DRB	DS-74	
P 83 / P 84	10/23/94	1355	70	TM	AIR	321	73		P	11/03/94	DRB		
P 83 / P 90	10/23/94	1505	74	TM	AIR	321	73		P	11/03/94	DRB	DS-73	
P 84 / P 85	10/23/94	1405	73	TM	AIR	321	78		P/V	11/09/94	DRB	DS-72	
P 85 / P 86	10/23/94	1417	73	TM	AIR	321	87		P	11/03/94	DRB		
P 86 / P 87	10/23/94	1429	73	TM	AIR	321	90		P	11/03/94	DRB		
P 87 / P 88	10/23/94	1440	73	TM	AIR	321	92		P	11/03/94	DRB		
P 88 / P 89	10/23/94	1452	74	TM	AIR	321	91		P	11/03/94	DRB		
P 88 / P 91	10/23/94	1635	73	TM	AIR	321	23		P	11/09/94	DRB		
P 89 / P 121	10/25/94	0800	42	TM	AIR	321	81		P	11/03/94	DRB		
P 89 / P 92	10/23/94	1627	73	TM	AIR	321	23		--	--	--		COVERED BY REPAIR 16-I
P 90 / P 106	10/24/94	1035	75	TM	AIR	321	49		P	11/03/94	DRB		
P 91 / P 111	10/24/94	1815	60	TM	AIR	321	22		P	11/01/94	DRB		
P 91 / P 112	10/24/94	1815	60	TM	AIR	321	1		--	--	--		COVERED BY REPAIR 33-D

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
			AMBIENT			WELDING	WELDED	NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	MACHINE (Note 1)	LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 91 / P 92	10/23/94	1610	73	TM	SS	324	163	P	11/01/94	DRB	DS-75	
P 91 / P 93	10/23/94	1630	73	TM	SS	324	366	P	11/01/94	DRB		
P 92 / P 115	10/24/94	1515	66	TM	AIR	321	167	P	11/01/94	DRB		
P 92 / P 93	10/23/94	1625	73	TM	SS	324	23	P	11/01/94	DRB		
P 93 / P 112	10/24/94	1812	60	TM	AIR	321	22	P	11/01/94	DRB		
P 93 / P 115	10/24/94	1525	66	TM	AIR	321	363	P	11/01/94	DRB	DS-79	
P 94 / P 95	10/24/94	1000	59	TM	AIR	321	28	P	11/02/94	DRB		
P 95 / P 96	10/24/94	0910	63	TM	AIR	321	34	P	11/02/94	DRB		
P 96 / P 97	10/24/94	0915	64	TM	AIR	321	30	P	11/02/94	DRB		
P 97 / P 98	10/24/94	0920	64	TM	AIR	321	26	P	11/02/94	DRB		
P 98 / P 99	10/24/94	0935	67	TM	AIR	321	26	P	11/02/94	DRB		
P 99 / P 100	10/24/94	0950	67	TM	AIR	321	26	P	11/02/94	DRB	DS-76	
P 100 / P 101	10/24/94	0955	67	TM	AIR	321	24	P	11/02/94	DRB		
P 101 / P 102	10/24/94	0957	65	TM	AIR	321	28	P/V	11/10/94	DRB		
P 102 / P 103	10/24/94	1000	65	TM	AIR	321	38	P	11/02/94	DRB		
P 103 / P 104	10/24/94	1007	65	TM	AIR	321	42	P	11/02/94	DRB		
P 104 / P 105	10/24/94	1013	65	TM	AIR	321	47	P	11/02/94	DRB		
P 105 / P 106	10/24/94	1025	73	TM	AIR	321	4	--	--	--		CUT OFF IN EAST A.T.
P 105 / P 107	10/24/94	1020	69	TM	AIR	321	50	P/V	11/09/94	DRB		
P 106 / P 107	10/24/94	1025	73	TM	AIR	321	52	P/V	11/09/94	DRB		

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
(2) "P" DENOTES PRESSURE TESTING; "V" DENOTES VACUUM TESTING.

GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
								NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 108 / P 109	10/24/94	1332	65	TM	AIR	321	75	P	11/01/94	DRB		
P 109 / P 110	10/24/94	1340	64	TM	AIR	321	83	P	11/01/94	DRB		
P 110 / P 111	10/24/94	1350	65	TM	AIR	321	84	P	11/01/94	DRB	DS-78	
P 111 / P 112	10/24/94	1400	65	TM	AIR	321	88	P	11/01/94	DRB		
P 112 / P 113	10/24/94	1410	65	TM	AIR	321	91	P	11/01/94	DRB		
P 113 / P 114	10/24/94	1420	65	TM	AIR	321	98	P/V	11/03/94	TM		
P 114 / P 116	10/24/94	1810	60	TM	AIR	321	22	P	11/01/94	DRB		
P 114 / P 216	10/28/94	1645	66	TM	AIR	321	98	P/V	11/03/94	TM		
P 115 / P 116	10/24/94	1630	66	TM	AIR	321	178	P	11/01/94	DRB		
P 115 / P 117	10/24/94	1605	66	TM	AIR	321	341	P	11/01/94	DRB	DS-80	
P 115 / P 121	10/25/94	1120	56	TM	AIR	321	21	P	11/03/94	DRB		
P 116 / P 117	10/24/94	1555	66	TM	AIR	321	23	V	11/10/94	DRB		
P 116 / P 118	10/24/94	1500	63	TM	NY	324	180	P	11/01/94	DRB		
P 117 / P 118	10/24/94	1625	66	TM	NY	324	329	P	11/01/94	DRB	DS-81	
P 117 / P 122	10/25/94	1125	56	TM	AIR	321	23	P	11/03/94	DRB		
P 118 / P 119	10/24/94	1746	61	TM	AIR	321	173	P	11/01/94	DRB	DS-83	
P 118 / P 120	10/24/94	1710	63	TM	AIR	321	354	P	11/01/94	DRB	DS-82	
P 118 / P 123	10/25/94	1130	56	TM	AIR	321	20	P	11/03/94	DRB		
P 118 / P 124	10/25/94	1133	56	TM	AIR	321	2	--	--	--		COVERED BY REPAIR 30-K
P 118 / P 216	10/29/94	1724	83	TM	AIR	321	21	V	11/03/94	DRB	DS-108	

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
								NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 118 / P 217	10/29/94	1724	83	TM	AIR	321	3	--	--	--		COVERED BY REPAIR 33-G
P 119 / P 120	10/24/94	1700	63	TM	AIR	321	23	P	11/01/94	DRB		
P 119 / P 132	10/25/94	1423	62	TM	AIR	321	178	P	11/01/94	DRB		
P 119 / P 217	10/29/94	1720	83	TM	AIR	321	21	V	11/03/94	DRB		
P 119 / P 219	10/29/94	1720	83	TM	AIR	321	3	--	--	--		COVERED BY REPAIR 33-H
P 120 / P 124	10/25/94	1133	56	TM	AIR	321	20	P	11/03/94	DRB		
P 120 / P 131	10/25/94	1337	62	TM	AIR	321	303	P	11/01/94	DRB	DS-89	
P 120 / P 132	10/25/94	1420	62	TM	AIR	321	62	P	11/01/94	DRB		
P 121 / P 122	10/25/94	0800	42	TM	NY	324	90	P/V	11/09/94	DRB	DS-84	
P 122 / P 123	10/25/94	0815	42	TM	NY	324	100	P	11/03/94	DRB		
P 123 / P 124	10/25/94	0827	42	TM	AIR	321	95	P	11/03/94	DRB		
P 124 / P 125	10/25/94	0825	46	TM	NY	324	101	P	11/03/94	DRB		
P 125 / P 126	10/25/94	0840	46	TM	AIR	321	98	P	11/03/94	DRB		
P 125 / P 131	10/25/94	1135	56	TM	AIR	321	23	P	11/03/94	DRB		
P 126 / P 127	10/25/94	0840	46	TM	NY	324	81	P	11/03/94	DRB		
P 126 / P 131	10/25/94	1138	56	TM	AIR	321	6	V	11/09/94	DRB		
P 126 / P 133	10/25/94	1140	56	TM	AIR	321	23	P/V	11/09/94	DRB		
P 127 / P 129	10/25/94	0855	50	TM	AIR	321	64	P	11/03/94	DRB		
P 127 / P 133	10/25/94	1148	58	TM	AIR	321	11	P	11/03/94	DRB		
P 127 / P 135	10/25/94	1150	58	TM	AIR	321	30	V	11/09/94	DRB		

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
								NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 128 / P 129	10/25/94	0915	50	TM	AIR	321	26	V	11/09/94	DRB		
P 128 / P 130	10/25/94	0911	50	TM	AIR	321	20	V	11/09/94	DRB	DS-85	
P 128 / P 204	10/28/94	1420	72	TM	AIR	321	33	P/V	11/09/94	DRB		
P 129 / P 130	10/25/94	0900	50	TM	NY	324	27	P	11/03/94	DRB		
P 129 / P 135	10/25/94	1153	58	TM	AIR	321	10	V	11/09/94	DRB		
P 131 / P 132	10/25/94	1030	61	TM	AIR	321	23	P	11/01/94	DRB		
P 131 / P 133	10/25/94	0959	60	TM	AIR	321	320	P	11/01/94	DRB		
P 132 / P 133	10/25/94	1035	61	TM	AIR	321	130	P	11/01/94	DRB	DS-86	
P 132 / P 134	10/25/94	1050	61	TM	AIR	321	110	P	11/02/94	DRB		
P 132 / P 219	10/29/94	1718	84	TM	AIR	321	21	P	11/02/94	DRB		
P 132 / P 220	10/29/94	1718	84	TM	AIR	321	3	--	--	--		COVERED BY REPAIR 33-I
P 133 / P 134	10/25/94	1045	61	TM	AIR	321	23	P	11/02/94	DRB		
P 133 / P 135	10/25/94	1015	61	TM	NY	324	466	P/V	11/03/94	TM	DS-87	
P 134 / P 135	10/25/94	1100	62	TM	NY	324	112	P	11/02/94	DRB		
P 134 / P 220	10/29/94	1715	85	TM	AIR	321	21	P	11/02/94	DRB		
P 134 / P 221	10/29/94	1715	85	TM	AIR	321	3	--	--	--		COVERED BY REPAIR 33-S
P 135 / P 136	10/25/94	1130	56	TM	NY	324	155	P	11/01/94	DRB	DS-88	
P 135 / P 136	10/25/94	1335	62	TM	NY	324	442	P/V	11/07/94	DRB	DS-90	
P 135 / P 204	10/29/94	1451	84	TM	AIR	321	5	P	11/09/94	DRB		
P 135 / P 221	10/29/94	1713	85	TM	AIR	321	21	P	11/02/94	DRB		

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
								NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 135 / P 222	10/29/94	1713	85	TM	AIR	321	3	--	--	--		COVERED BY REPAIR 33-T
P 136 / P 137	10/25/94	1430	62	TM	NY	324	104	P	11/02/94	DRB		
P 136 / P 138	10/25/94	1440	62	TM	NY	324	233	P	11/02/94	DRB		
P 136 / P 138	10/25/94	1447	62	TM	AIR	321	226	P	11/02/94	DRB	DS-91	
P 136 / P 205	10/29/94	1458	84	TM	AIR	321	23	P	11/03/94	DRB		
P 136 / P 222	10/29/94	1711	85	TM	AIR	321	21	P	11/02/94	DRB		
P 136 / P 223	10/29/94	1711	85	TM	AIR	321	3	--	--	--		COVERED BY REPAIR 36-D
P 136 / P 29-Q	10/29/94	1447	84	TM	AIR	321	16	P	11/03/94	DRB		
P 137 / P 138	10/25/94	1415	62	TM	NY	324	23	P	11/02/94	DRB		
P 137 / P 206	10/29/94	1534	80	TM	AIR	321	23	P	11/03/94	DRB		
P 137 / P 207	10/29/94	1541	80	TM	AIR	321	23	V	11/09/94	DRB		
P 137 / P 208	10/29/94	1544	80	TM	AIR	321	23	V	11/09/94	DRB		
P 137 / P 209	10/29/94	1548	80	TM	AIR	321	23	P	11/02/94	DRB		
P 137 / P 210	10/29/94	1605	86	TM	AIR	321	23	P	11/02/94	DRB		
P 137 / P 210	10/29/94	1551	80	TM	AIR	321	8	--	--	--		COVERED BY REPAIR 30-B
P 137 / P 211	10/29/94	1606	87	TM	AIR	321	1	--	--	--		COVERED BY REPAIR 36-R
P 138 / P 211	10/29/94	1606	87	TM	AIR	321	22	P	11/02/94	DRB		
P 138 / P 212	10/29/94	1607	88	TM	AIR	321	23	P	11/02/94	DRB		
P 138 / P 213	10/29/94	1608	88	TM	AIR	321	23	P	11/02/94	DRB		
P 138 / P 215	10/29/94	1615	88	TM	AIR	321	23	P	11/02/94	DRB		

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
								NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 138 / P 218	10/29/94	1030	67	TM	AIR	321	70	P	11/02/94	DRB		
P 138 / P 223	10/29/94	1709	86	TM	AIR	321	21	P	11/02/94	DRB		
P 138 / P 224	10/29/94	1040	67	TM	AIR	321	221	P	11/02/94	DRB		
P 138 / P 225	10/29/94	1709	86	TM	AIR	321	3	--	--	--		COVERED BY REPAIR 36-E
P 138 / P 226	10/29/94	1054	67	TM	AIR	321	56	P	11/02/94	DRB		
P 139 / P 140	10/25/94	1645	55	TM	AIR	321	19	P	10/27/94	TM		
P 140 / P 141	10/25/94	1655	55	TM	AIR	321	21	V	10/31/94	BDH		
P 141 / P 142	10/25/94	1658	55	TM	AIR	321	31	P/V	10/31/94	BDH		
P 142 / P 143	10/25/94	1703	55	TM	AIR	321	32	P	10/27/94	TM		
P 143 / P 144	10/25/94	1706	55	TM	AIR	321	36	P	10/27/94	TM		
P 144 / P 145	10/25/94	1711	55	TM	AIR	321	35	P	10/27/94	TM		
P 145 / P 146	10/25/94	1715	55	TM	AIR	321	34	P	11/27/94	TM	DS-101	
P 146 / P 147	10/25/94	1722	55	TM	AIR	321	33	--	--	--		COVERED BY 21-B, 23-T, 23-W
P 147 / P 148	10/27/94	1709	72	TM	AIR	321	31	P	10/28/94	DRB		
P 148 / P 149	10/26/94	0930	50	TM	NY	321	32	P	10/27/94	DRB		
P 149 / P 150	10/26/94	0935	50	TM	NY	321	35	P	10/27/94	DRB		
P 150 / P 151	10/26/94	0945	50	TM	NY	321	32	P	10/27/94	DRB	DS-92	
P 151 / P 152	10/26/94	0950	50	TM	NY	321	34	P	10/27/94	DRB		
P 152 / P 153	10/26/94	0955	50	TM	NY	321	33	P	10/27/94	DRB		
P 153 / P 154	10/26/94	1000	50	TM	NY	321	37	P	10/27/94	DRB		

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
			AMBIENT			WELDING	WELDED	NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	MACHINE (Note 1)	LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 154 / P 155	10/26/94	1005	53	TM	NY	321	36	P	10/27/94	DRB		
P 155 / P 156	10/26/94	1010	54	TM	NY	321	38	P	10/27/94	DRB		
P 156 / P 157	10/26/94	1016	54	TM	NY	321	29	P	10/27/94	DRB		
P 157 / P 160	10/26/94	1021	54	TM	NY	321	35	P	10/27/94	DRB		
P 158 / P 159	10/26/94	1745	52	TM	NY	324	72	P	10/27/94	DRB	DS-104	
P 158 / P 161	10/27/94	1602	73	TM	AIR	321	14	P	10/28/94	DRB		
P 158 / P 162	10/27/94	1600	73	TM	AIR	321	23	P	10/28/94	DRB		
P 158 / P 163	10/27/94	1557	73	TM	AIR	321	18	P	10/28/94	DRB		
P 159 / P 163	10/26/94	1740	52	TM	AIR	321	4	--	--	--		COVERED BY REPAIR 25-D
P 159 / P 164	10/26/94	1737	53	TM	AIR	321	23	P	10/27/94	TM		
P 159 / P 165	10/26/94	1735	53	TM	AIR	321	23	P	10/27/94	TM	DS-98	
P 159 / P 166	10/26/94	1732	53	TM	AIR	321	24	P	10/27/94	TM		
P 160 / P 161	10/26/94	1028	54	TM	NY	321	34	V	10/31/94	BDH		
P 161 / P 162	10/26/94	1030	54	TM	NY	321	34	P	10/27/94	DRB		
P 162 / P 163	10/26/94	1035	54	TM	NY	321	36	P	10/27/94	DRB		
P 163 / P 164	10/26/94	1040	54	TM	NY	321	36	P	10/27/94	DRB		
P 164 / P 165	10/26/94	1055	54	TM	NY	321	36	P	10/27/94	TM		
P 165 / P 166	10/26/94	1100	54	TM	NY	321	36	P	10/27/94	TM		
P 166 / P 167	10/26/94	1105	54	TM	NY	321	46	P	10/27/94	TM	DS-93	
P 167 / P 168	10/26/94	1120	54	TM	NY	321	48	P	10/27/94	DRB		

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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
								NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 200 / P 201	10/27/94	1000	53	TM	AIR	321	36	P/V	11/02/94	BDH	DS-99	
P 201 / P 202	10/27/94	1101	60	TM	AIR	321	24	P	10/28/94	TM		
P 204 / P 205	10/28/94	1430	72	TM	AIR	321	35	P	11/03/94	DRB		
P 204 / P 29-Q	10/29/94	1451	84	TM	AIR	321	18	V	11/09/94	DRB		
P 205 / P 206	10/28/94	1438	74	TM	AIR	321	30	V	11/09/94	DRB	DS-102	
P 206 / P 207	10/28/94	1500	76	TM	AIR	321	31	P	11/03/94	DRB		
P 207 / P 208	10/28/94	1507	76	TM	AIR	321	25	P	11/03/94	DRB		
P 208 / P 209	10/28/94	1514	76	TM	AIR	321	25	P	11/03/94	DRB		
P 209 / P 210	10/28/94	1520	76	TM	AIR	321	26	P	11/02/94	DRB		
P 210 / P 211	10/28/94	1536	76	TM	AIR	321	31	P	11/02/94	DRB		
P 211 / P 212	10/28/94	1533	76	TM	AIR	321	33	P	11/02/94	DRB		
P 212 / P 213	10/28/94	1543	76	TM	AIR	321	40	P/V	11/09/94	DRB		
P 213 / P 214	10/28/94	1550	76	TM	AIR	321	42	P	11/02/94	DRB		
P 214 / P 215	10/28/94	1600	76	TM	AIR	321	43	P	11/02/94	DRB		
P 215 / P 218	10/29/94	1417	84	TM	AIR	321	23	P	11/02/94	DRB	DS-106	
P 215 / P 227	10/29/94	1420	84	TM	AIR	321	23	P	11/02/94	DRB		
P 216 / P 217	10/28/94	1705	66	TM	AIR	321	97	P/V	11/03/94	TM		
P 217 / P 219	10/28/94	1716	66	TM	AIR	321	98	P/V	11/03/94	TM		
P 218 / P 224	10/29/94	0832	57	TM	AIR	321	23	V	11/07/94	DRB		
P 218 / P 227	10/29/94	0854	57	TM	AIR	321	72	P	11/02/94	DRB		

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
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GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
			AMBIENT			WELDING	WELDED	NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	MACHINE (Note 1)	LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 219 / P 220	10/28/94	1730	66	TM	AIR	321	97	P	11/02/94	DRB		
P 220 / P 221	10/28/94	1742	65	TM	AIR	321	93	P/V	11/03/94	TM		
P 221 / P 222	10/28/94	1754	65	TM	AIR	321	89	P/V	11/03/94	TM		
P 222 / P 223	10/28/94	1805	65	TM	AIR	321	89	P	11/02/94	DRB	DS-103	
P 223 / P 225	10/29/94	0952	62	TM	AIR	321	87	P	11/02/94	DRB	DS-105	
P 224 / P 226	10/29/94	0938	62	TM	AIR	321	23	P	11/02/94	DRB		
P 224 / P 227	10/29/94	0930	62	TM	AIR	321	221	P	11/02/94	DRB		
P 225 / P 226	10/29/94	1706	86	TM	AIR	321	17	P	11/02/94	DRB		
P 225 / P 228	10/29/94	1005	64	TM	AIR	321	76	P/V	11/03/94	TM		
P 226 / P 227	10/29/94	0941	62	TM	AIR	321	56	P	11/02/94	DRB		
P 226 / P 228	10/29/94	1706	86	TM	AIR	321	3	--	--	--		COVERED BY REPAIR 36-F
P 227 / P 228	10/29/94	1705	86	TM	AIR	321	21	P	11/02/94	DRB		
P 227 / P 229	10/29/94	1643	86	TM	AIR	321	82	P/V	11/02/94	TM		
P 227 / P 230	10/29/94	1634	88	TM	AIR	321	77	P	11/02/94	DRB		
P 227 / P 231	10/29/94	1619	88	TM	AIR	321	182	P	11/02/94	DRB	DS-107	
P 228 / P 229	10/29/94	1651	86	TM	AIR	321	41	P	11/02/94	DRB		
P 229 / P 230	10/29/94	1115	68	TM	AIR	321	20	P	11/02/94	DRB		
P 230 / P 231	10/29/94	1119	68	TM	AIR	321	17	P	11/02/94	DRB		

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
(2) "P" DENOTES PRESSURE TESTING; "V" DENOTES VACUUM TESTING.

PRESSURE TEST SUMMARY

PRESSURE TEST SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
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SEAM NUMBER	DATE	LOCATION	TECH	TIME START	TIME FINISH	PRESSURE START	PRESSURE FINISH	PASS/ FAIL	MON	REMARKS
P 5 / P 6	10/03/94	3-M TO 3-K	VL	1648	1653	30	30	PASS	DRB	
P 5 / P 6	10/03/94	3-K TO 3-I	VL	1655	1700	29	28	PASS	DRB	
P 6 / P 7	10/04/94	4-I TO 4-M	TM	0952	0957	25	24	PASS	DRB	
P 7 / P 12	10/04/94	WEOS TO EAT	TM	1133	1137	28	26	PASS	DRB	
P 7 / P 9	10/04/94	EEOS TO WEOS	TM	1140	1145	25	23	PASS	DRB	
P 9 / P 13	10/04/94	EEOS TO WEOS	TM	1150	1155	29	28	PASS	DRB	
P 9 / P 12	10/04/94	SEOS TO NEOS	TM	1152	1157	33	31	PASS	DRB	
P 12 / P 13	10/04/94	WEOS TO EEOS	VL	1305	1310	28	27	PASS	DRB	
P 10 / P 13	10/04/94	NEOS TO 5-E	VL	1340	1345	28	25	PASS	DRB	
P 9 / P 10	10/04/94	EEOS TO 4-N	VL	1344	1349	30	30	PASS	DRB	
P 10 / P 14	10/04/94	EEOS TO WEOS	VL	1350	1355	28	25	PASS	DRB	
P 13 / P 14	10/04/94	WEOS TO EEOS	VL	1351	1356	28	26	PASS	DRB	TESTED THRU P13/P14, P13/P15
P 13 / P 15	10/04/94	WEOS TO EEOS	VL	1351	1356	28	26	PASS	DRB	
P 10 / P 11	10/04/94	EEOS TO 4-S	VL	1407	1412	29	27	PASS	DRB	
P 9 / P 10	10/04/94	4-N TO WEOS	VL	1430	1435	29	26	PASS	DRB	
P 6 / P 7	10/04/94	4-A TO 6-Q	VL	1503	1508	25	23	PASS	DRB	
P 6 / P 7	10/04/94	4-A TO 4-G	VL	1506	1511	26	25	PASS	DRB	
P 6 / P 7	10/04/94	4-G TO 4-F	VL	1513	1518	25	23	PASS	DRB	
P 6 / P 7	10/04/94	4-F TO 4-E	VL	1530	1535	25	23	PASS	DRB	
P 6 / P 7	10/04/94	4-E TO 4-D	VL	1540	1545	25	25	PASS	DRB	
P 6 / P 7	10/04/94	4-D TO 4-C	VL	1602	1607	26	25	PASS	DRB	
P 6 / P 7	10/04/94	4-C TO WAT	VL	1608	1613	25	25	PASS	DRB	
P 7 / P 8	10/04/94	EEOS TO WAT	VL	1615	1620	27	27	PASS	DRB	
P 8 / P 10	10/04/94	EEOS TO WAT	VL	1625	1630	30	28	PASS	DRB	
P 8 / P 9	10/04/94	SEOS TO NEOS	VL	1634	1639	27	27	PASS	DRB	
P 10 / P 11	10/05/94	4-W TO 4-S	VL	1114	1119	30	29	PASS	TM	

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SEAM NUMBER	DATE	LOCATION	TECH	TIME START	TIME FINISH	PRESSURE START	PRESSURE FINISH	PASS/ FAIL	MON	REMARKS
P 10 / P 11	10/05/94	4-W TO 4-X	VL	1120	1125	30	30	PASS	TM	
P 10 / P 11	10/05/94	4-X TO 5-A	VL	1131	1136	28	27	PASS	TM	
P 10 / P 11	10/05/94	5-A TO 5-B	VL	1137	1142	28	20	FAIL	TM	SEAM VACUUM TESTED
P 10 / P 11	10/05/94	5-B TO 5-S	VL	1144	1149	30	29	PASS	TM	
P 11 / P 16	10/05/94	5-R TO WEOS	VL	1308	1313	30	30	PASS	TM	
P 11 / P 16	10/05/94	5-R TO EEOS	VL	1320	1325	30	30	PASS	TM	
P 16 / P 17	10/05/94	EEOS TO WAT	VL	1345	1350	30	29	PASS	DRB	
P 17 / P 18	10/05/94	EEOS TO WAT	VL	1400	1405	30	29	PASS	DRB	
P 18 / P 19	10/05/94	EEOS TO 6-D	VL	1430	1435	29	28	PASS	DRB	
P 2 / 7-J	10/05/94	7-P TO 7-Q	VL	1519	1524	30	29	PASS	DRB	
P 2 / 7-J	10/05/94	7-Q TO WEOS	VL	1530	1535	28	27	PASS	DRB	
P 3 / 7-J	10/05/94	7-S TO WEOS	VL	1503	1508	28	27	PASS	DRB	
P 2 / 7-J	10/05/94	7-T TO EEOS	VL	1536	1541	30	28	PASS	DRB	VACUUM TESTED 7-P TO 7-T
P 3 / 7-J	10/05/94	7-R TO 7-S	VL	1545	1550	28	28	PASS	DRB	
P 3 / 7-J	10/05/94	7-R TO EEOS	VL	1550	1555	30	29	PASS	DRB	
P 11 / P 14	10/06/94	SEOS TO NEOS	VL	0715	0720	30	29	PASS	DRB	
P 16 / P 21	10/06/94	NEOS TO SEOS	VL	0723	0728	25	23	PASS	DRB	
P 14 / P 21	10/06/94	WEOS TO EEOS	VL	0732	0737	29	26	PASS	DRB	
P 14 / P 15	10/06/94	SEOS TO NEOS	VL	0738	0743	30	30	PASS	DRB	
P 15 / P 21	10/06/94	WEOS TO EEOS	VL	0744	0749	30	28	PASS	DRB	
P 21 / P 22	10/06/94	WEOS TO EEOS	VL	0752	0757	29	28	PASS	DRB	
P 17 / P 22	10/06/94	NEOS TO SEOS	VL	0803	0808	30	28	PASS	DRB	
P 22 / P 23	10/06/94	WEOS TO EEOS	VL	0809	0814	30	27	PASS	DRB	
P 18 / P 23	10/06/94	NEOS TO SEOS	VL	0815	0820	29	28	PASS	DRB	
P 23 / P 24	10/06/94	WEOS TO EEOS	VL	0817	0822	30	28	PASS	DRB	
P 24 / P 25	10/06/94	WEOS TO EEOS	VL	0831	0836	30	28	PASS	DRB	

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P 19 / P 24	10/06/94	SEOS TO NEOS	VL	0834	0839	30	28	PASS	DRB	
P 20 / P 25	10/06/94	NEOS TO SEOS	VL	0845	0850	30	28	PASS	DRB	
P 25 / P 27	10/06/94	6-S TO EEOS	VL	0855	0900	30	28	PASS	DRB	
P 19 / P 20	10/06/94	EEOS TO 6-H	VL	0901	0906	30	29	PASS	DRB	
P 20 / P 27	10/06/94	EEOS TO 7-F	VL	0908	0913	30	28	PASS	DRB	
P 20 / P 26	10/06/94	6-I TO 8-P	VL	0950	0955	30	27	PASS	DRB	
P 19 / P 20	10/06/94	6-H TO WEOS	VL	0920	0925	30	27	PASS	DRB	
P 18 / P 19	10/06/94	6-D TO 6-E	VL	1005	1010	29	28	PASS	DRB	
P 18 / P 19	10/06/94	6-E TO WEOS	VL	1006	1011	28	26	PASS	DRB	
P 20 / P 26	10/06/94	8-P TO 8-Q	VL	1054	1059	30	28	PASS	DRB	
P 20 / P 26	10/06/94	8-Q TO 8-R	VL	1105	1110	28	26	PASS	DRB	
P 20 / P 26	10/06/94	8-R TO WAT	VL	1110	1115	30	30	PASS	DRB	
P 1 / P 5	09/30/94	2-X TO EEOS	VL	1313	1318	27	25	PASS	DRB	
P 4 / P 28	10/12/94	9-A TO 9-C	VL	1037	1042	28	26	PASS	DRB	
P 28 / P 29	10/12/94	9-E TO WEOS	VL	1042	1047	30	28	PASS	DRB	
P 28 / P 29	10/12/94	9-E TO 9-G	VL	1100	1105	27	27	PASS	DRB	
P 4 / P 28	10/12/94	9-C TO 9-S	VL	1110	1115	29	28	PASS	DRB	
P 4 / P 28	10/12/94	9-S TO EEOS	VL	1114	1119	29	27	PASS	DRB	
P 29 / P 30	10/12/94	WEOS TO EEOS	VL	1129	1134	26	24	PASS	DRB	
P 30 / P 31	10/12/94	EEOS TO WEOS	VL	1322	1327	28	27	PASS	DRB	
P 28 / P 32	10/12/94	SEOS TO NEOS	VL	1407	1412	26	26	PASS	DRB	
P 29 / P 33	10/12/94	SEOS TO NEOS	VL	1415	1420	28	26	PASS	DRB	
P 32 / P 33	10/12/94	WEOS TO EEOS	VL	1423	1428	27	27	PASS	DRB	TESTED THRU P32/P34
P 32 / P 34	10/12/94	WEOS TO EEOS	VL	1423	1428	27	27	PASS	DRB	
P 33 / P 35	10/12/94	WEOS TO 9-P	VL	1452	1457	29	26	PASS	DRB	
P 33 / P 35	10/12/94	9-P TO EEOS	VL	1459	1504	30	29	PASS	DRB	

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SEAM NUMBER	DATE	LOCATION	TECH	TIME START	TIME FINISH	PRESSURE START	PRESSURE FINISH	PASS/ FAIL	MON	REMARKS
P 35 / 9-R	10/12/94	WEOS TO EEOS	VL	1534	1539	30	29	PASS	DRB	
P 35 / P 36	10/12/94	WEOS TO EEOS	VL	1536	1541	30	30	PASS	DRB	
P 31 / 9-R	10/12/94	SEOS TO NEOS	VL	1552	1557	29	28	PASS	DRB	
P 28 / P 29	10/12/94	EEOS TO 10-K	VL	1610	1615	28	27	PASS	DRB	
P 28 / P 29	10/12/94	10-K TO 10-J	VL	1618	1623	29	26	PASS	DRB	
P 28 / P 29	10/12/94	10-J TO 9-G	VL	1623	1628	30	27	PASS	DRB	
P 4 / P 32	10/12/94	WEOS TO EEOS	VL	1640	1645	28	27	PASS	DRB	
P 33 / P 34	10/12/94	NEOS TO SEOS	VL	1655	1700	29	29	PASS	DRB	
P 34 / P 35	10/12/94	WEOS TO 11-E	VL	1501	1506	30	28	PASS	DRB	
P 34 / P 35	10/12/94	11-E TO EEOS	VL	1459	1504	30	28	PASS	DRB	
9-R / P 37	10/12/94	WEOS TO EEOS	VL	1513	1518	30	28	PASS	DRB	
P 36 / P 37	10/12/94	WEOS TO EEOS	VL	1514	1519	30	30	PASS	DRB	
9-R / P 36	10/12/94	NEOS TO SEOS	VL	1515	1520	30	30	PASS	DRB	
P 31 / P 37	10/14/94	EEOS TO WEOS	VL	0813	0818	29	28	PASS	TM	
P 37 / P 39	10/14/94	10-Q TO WEOS	VL	0845	0850	28	26	PASS	TM	
P 39 / P 40	10/14/94	EEOS TO WEOS	VL	0903	0908	28	28	PASS	TM	
P 37 / P 38	10/14/94	NEOS TO SEOS	VL	0920	0925	28	28	PASS	TM	
P 31 / P 38	10/14/94	EEOS TO 10-E	VL	0935	0940	29	28	PASS	TM	
P 38 / P 39	10/14/94	EEOS TO 10-I	VL	0937	0942	30	30	PASS	TM	
P 31 / P 38	10/14/94	10-E TO WEOS	VL	1004	1009	27	27	PASS	TM	
P 139 / P 140	10/27/94	SEOS TO NEOS	VL	0736	0741	30	30	PASS	TM	
P 141 / P 142	10/27/94	SEOS TO 20-W	VL	0743	0748	29	28	PASS	TM	
P 142 / P 143	10/27/94	SEOS TO NEOS	VL	0746	0751	30	30	PASS	TM	
P 143 / P 144	10/27/94	SEOS TO NEOS	VL	0751	0756	30	28	PASS	TM	
P 144 / P 145	10/27/94	SEOS TO 20-X	VL	0810	0815	32	30	PASS	TM	
P 144 / P 145	10/27/94	20-X TO NEOS	VL	0813	0818	30	28	PASS	TM	

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P 145 / P 146	10/27/94	SEOS TO NEOS	VL	0808	0813	28	27	PASS	TM	
P 146 / P 147	10/27/94	SEOS TO 21-B	VL	0826	0831	29	28	PASS	TM	
P 146 / P 147	10/27/94	21-B TO 21-A	VL	0837	0842	29	28	PASS	TM	
P 148 / P 149	10/27/94	22-A TO NEOS	VL	0846	0851	30	28	PASS	DRB	
P 148 / P 149	10/27/94	SEOS TO 22-A	VL	0845	0850	30	30	PASS	DRB	
P 149 / P 150	10/27/94	SEOS TO NEOS	VL	0850	0855	29	26	PASS	DRB	
P 150 / P 151	10/27/94	SEOS TO NEOS	VL	0856	0901	28	24	FAIL	DRB	
P 151 / P 152	10/27/94	SEOS TO NEOS	VL	0904	0909	30	29	PASS	DRB	
P 150 / P 151	10/27/94	SEOS TO NEOS	VL	0909	0914	29	28	PASS	DRB	RETEST
P 152 / P 153	10/27/94	SEOS TO NEOS	VL	0914	0919	29	25	FAIL	DRB	
P 153 / P 154	10/27/94	SEOS TO NEOS	VL	0915	0920	30	28	PASS	DRB	
P 154 / P 155	10/27/94	SEOS TO NEOS	VL	0916	0921	32	32	PASS	DRB	
P 152 / P 153	10/27/94	SEOS TO NEOS	VL	0933	0938	30	29	PASS	DRB	RETEST
P 155 / P 156	10/27/94	SEOS TO NEOS	VL	0944	0945	30	29	PASS	DRB	
P 157 / P 160	10/27/94	SEOS TO NEOS	VL	1000	1005	29	28	PASS	DRB	
P 156 / P 157	10/27/94	SEOS TO 22-B	VL	1001	1006	30	30	PASS	DRB	
P 161 / P 162	10/27/94	SEOS TO NEOS	VL	1010	1015	28	27	PASS	DRB	
P 37 / P 158	10/27/94	22-C TO 22-D	VL	1020	1025	28	28	PASS	DRB	
P 37 / P 158	10/27/94	22-D TO 21-N	VL	1023	1028	29	27	PASS	DRB	
P 162 / P 163	10/27/94	SEOS TO NEOS	VL	1028	1033	30	28	PASS	DRB	
P 158 / P 159	10/27/94	EEOS TO WEOS	VL	1031	1036	30	28	PASS	DRB	
P 163 / P 164	10/27/94	SEOS TO NEOS	VL	1034	1039	29	28	PASS	DRB	
P 159 / P 165	10/27/94	EEOS TO WEOS	VL	1046	1051	30	30	PASS	TM	
P 164 / P 165	10/27/94	SEOS TO NEOS	VL	1045	1050	30	28	PASS	TM	
P 159 / P 164	10/27/94	WEOS TO EEOS	VL	1055	1100	30	29	PASS	TM	
P 159 / P 166	10/27/94	EEOS TO WEOS	VL	1057	1102	29	28	PASS	TM	

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P 165 / P 166	10/27/94	SEOS TO NEOS	VL	1003	1008	30	29	PASS	TM	
P 166 / P 167	10/27/94	SEOS TO NEOS	VL	1106	1111	30	28	PASS	TM	
P 40 / P 159	10/27/94	NEOS TO SEOS	VL	1118	1123	30	30	PASS	TM	
P 40 / P 192	10/27/94	EEOS TO 21-G	VL	1124	1129	30	28	PASS	DRB	
P 40 / P 192	10/27/94	21-G TO WEOS	VL	1126	1131	29	26	PASS	DRB	
P 40 / P 158	10/27/94	WEOS TO EEOS	VL	1128	1133	30	30	PASS	DRB	
P 167 / P 168	10/27/94	SEOS TO NEOS	VL	1134	1139	29	28	PASS	DRB	
P 168 / P 192	10/27/94	21-I TO WEOS	VL	1136	1141	28	26	PASS	DRB	
P 168 / P 192	10/27/94	21-H TO 21-I	VL	1135	1140	29	26	PASS	DRB	
P 168 / P 169	10/27/94	SEOS TO NEOS	VL	1140	1145	28	27	PASS	DRB	
P 169 / P 192	10/27/94	EEOS TO WEOS	VL	1143	1148	29	27	PASS	DRB	
P 169 / P 170	10/27/94	SEOS TO NEOS	VL	1302	1307	30	28	PASS	DRB	
P 192 / 20-T	10/27/94	EEOS TO WEOS	VL	1307	1312	30	29	PASS	DRB	
P 170 / P 171	10/27/94	SEOS TO NEOS	VL	1308	1313	30	28	PASS	DRB	
P 171 / P 172	10/27/94	SEOS TO NEOS	VL	1316	1321	30	27	PASS	DRB	
P 172 / P 192	10/27/94	EEOS TO WEOS	VL	1317	1322	30	27	PASS	DRB	
P 172 / P 173	10/27/94	SEOS TO NEOS	VL	1337	1342	28	26	PASS	DRB	
P 173 / P 192	10/27/94	EEOS TO WEOS	VL	1346	1351	29	28	PASS	DRB	
P 173 / P 174	10/27/94	SEOS TO NEOS	VL	1349	1354	29	26	PASS	DRB	
P 174 / P 192	10/27/94	EEOS TO WEOS	VL	1347	1352	30	28	PASS	DRB	
P 174 / P 175	10/27/94	SEOS TO 20-M	VL	1350	1355	30	28	PASS	DRB	
P 174 / P 175	10/27/94	20-M TO 20-Q	VL	1358	1403	29	28	PASS	DRB	
P 176 / P 192	10/27/94	EEOS TO WEOS	VL	1411	1416	30	28	PASS	DRB	
P 175 / P 176	10/27/94	SEOS TO NEOS	VL	1419	1424	30	28	PASS	DRB	
P 176 / P 177	10/27/94	SEOS TO NEOS	VL	1420	1425	29	27	PASS	DRB	
P 177 / P 192	10/27/94	EEOS TO WEOS	VL	1423	1428	29	26	PASS	DRB	

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P 177 / P 178	10/27/94	SEOS TO NEOS	VL	1428	1433	30	30	PASS	DRB	
P 179 / P 192	10/27/94	EEOS TO WEOS	VL	1431	1436	29	27	PASS	DRB	
P 178 / P 179	10/27/94	SEOS TO NEOS	VL	1433	1438	29	26	PASS	DRB	
P 178 / P 192	10/27/94	EEOS TO WEOS	VL	1436	1441	29	25	FAIL	DRB	SEAM VACUUM TESTED
P 179 / P 180	10/27/94	SEOS TO NEOS	VL	1406	1511	29	27	PASS	DRB	
P 180 / P 192	10/27/94	EEOS TO WEOS	VL	1507	1512	30	27	PASS	DRB	
P 180 / P 181	10/27/94	SEOS TO 20-R	VL	1518	1523	30	28	PASS	DRB	
P 181 / P 192	10/27/94	EEOS TO WEOS	VL	1530	1535	29	28	PASS	DRB	
P 180 / P 181	10/27/94	20-R TO NEOS	VL	1531	1536	30	30	PASS	DRB	
P 181 / P 182	10/27/94	SEOS TO NEOS	VL	1535	1540	30	27	PASS	DRB	
P 182 / P 192	10/27/94	EEOS TO WEOS	VL	1537	1542	30	30	PASS	DRB	
P 182 / P 183	10/27/94	SEOS TO NEOS	VL	1558	1603	29	27	PASS	DRB	
P 183 / P 192	10/27/94	EEOS TO WEOS	VL	1559	1604	29	29	PASS	DRB	
P 183 / P 184	10/27/94	SEOS TO NEOS	VL	1600	1605	30	30	PASS	DRB	
P 184 / P 192	10/27/94	EEOS TO WEOS	VL	1601	1606	30	29	PASS	DRB	
P 184 / P 185	10/27/94	SEOS TO NEOS	VL	1615	1620	30	30	PASS	DRB	
P 185 / P 192	10/27/94	EEOS TO WEOS	VL	1616	1621	30	30	PASS	DRB	
P 185 / P 186	10/27/94	SEOS TO NEOS	VL	1623	1628	26	25	PASS	DRB	
P 186 / P 192	10/27/94	EEOS TO WEOS	VL	1619	1624	30	27	PASS	DRB	
P 186 / P 187	10/27/94	SEOS TO NEOS	VL	1629	1634	30	28	PASS	DRB	
P 187 / P 192	10/27/94	EEOS TO WEOS	VL	1715	1720	30	28	PASS	DRB	
P 187 / P 188	10/27/94	SEOS TO NEOS	VL	1718	1723	30	30	PASS	DRB	
P 188 / P 192	10/27/94	EEOS TO WEOS	VL	1717	1722	30	28	PASS	DRB	
P 188 / P 189	10/27/94	SEOS TO NEOS	VL	1736	1741	30	30	PASS	DRB	
P 189 / P 192	10/27/94	EEOS TO WEOS	VL	1735	1740	30	30	PASS	DRB	
P 190 / P 192	10/28/94	EEOS TO WEOS	VL	0830	0835	30	28	PASS	TM	

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P 189 / P 190	10/28/94	SEOS TO 25-N	VL	0835	0840	30	30	PASS	TM	25-N EXTENDS TO NAT
P 190 / P 191	10/28/94	SEOS TO NEOS	VL	0836	0841	30	30	PASS	TM	
P 191 / P 192	10/28/94	EEOS TO WEOS	VL	0841	0846	30	23	FAIL	TM	SEAM VACUUM TESTED
P 192 / P 203	10/28/94	EEOS TO WEOS	VL	0900	0905	30	--	FAIL	TM	SEAM VACUUM TESTED
P 191 / P 203	10/28/94	SEOS TO NEOS	VL	0902	0907	29	28	PASS	TM	
P 192 / P 193	10/28/94	SEOS TO NEOS	VL	0913	0918	29	27	PASS	TM	
P 193 / P 203	10/28/94	SEOS TO NEOS	VL	0914	0919	26	25	PASS	TM	
P 40 / P 193	10/28/94	EEOS TO 23-Q	VL	0950	0955	29	29	PASS	TM	23-Q EXTENDS TO WEOS
P 193 / P 194	10/28/94	SEOS TO NEOS	VL	0953	0958	29	29	PASS	TM	
P 40 / P 194	10/28/94	EEOS TO 25-X	VL	0955	--	30	--	FAIL	TM	SEAM VACUUM TESTED
P 40 / P 194	10/28/94	WEOS TO 25-X	VL	1010	1015	29	29	PASS	TM	
P 40 / P 195	10/28/94	EEOS TO WEOS	VL	1030	1035	28	28	PASS	TM	
P 194 / P 195	10/28/94	SEOS TO NEOS	VL	1034	1039	29	28	PASS	TM	
P 40 / P 196	10/28/94	EEOS TO 23-N	VL	1040	--	--	--	FAIL	TM	
P 195 / P 196	10/28/94	SEOS TO 21-C	VL	1041	1046	30	28	PASS	TM	21-C EXTENDS TO NEOS
P 40 / P 196	10/28/94	23-N TO WEOS	VL	1042	1047	29	29	PASS	TM	
P 196 / P 197	10/28/94	SEOS TO NEOS	VL	1044	1049	30	30	PASS	TM	
P 40 / P 197	10/28/94	EEOS TO WEOS	VL	1053	1058	30	29	PASS	TM	
P 40 / P 198	10/28/94	EEOS TO 23-K	VL	1055	1100	30	29	PASS	TM	23-K EXTENDS TO WEOS
P 197 / P 198	10/28/94	SEOS TO NEOS	VL	1106	1111	30	30	PASS	TM	
P 198 / P 199	10/28/94	27-B TO 27-C	VL	1118	1123	28	28	PASS	TM	27-C EXTENDS TO NAT
P 40 / P 199	10/28/94	EEOS TO WEOS	VL	1115	--	--	--	FAIL	TM	SEAM VACUUM TESTED
P 198 / P 199	10/28/94	SEOS TO 27-B	VL	1124	1129	29	28	PASS	TM	
P 199 / P 200	10/28/94	SEOS TO NEOS	VL	1125	1130	29	29	PASS	TM	
P 40 / P 200	10/28/94	EEOS TO WEOS	VL	1129	1134	30	30	PASS	TM	
P 40 / P 201	10/28/94	EEOS TO WEOS	VL	1134	1139	29	29	PASS	TM	

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P 200 / P 201	10/28/94	SEOS TO 21-M	VL	1136	1141	30	29	PASS	TM	
P 200 / P 201	10/28/94	21-M TO 21-K	VL	1137	--	--	--	FAIL	TM	SEAM VACUUM TESTED
P 39 / P 201	10/28/94	WEOS TO EEOS	VL	1145	1150	28	28	PASS	TM	
P 201 / P 202	10/28/94	SEOS TO NEOS	VL	1150	1155	30	29	PASS	TM	
P 39 / P 202	10/28/94	EEOS TO 23-D	VL	1305	1310	30	29	PASS	TM	23-D EXTENDS TO WAT
P 43 / P 52	10/28/94	12-F TO EEOS	VL	1453	1458	30	28	PASS	TM	
P 51 / P 52	10/28/94	SEOS TO NEOS	VL	1455	1500	30	29	PASS	TM	
P 50 / P 51	10/28/94	SEOS TO NEOS	VL	1528	1533	30	30	PASS	TM	
P 43 / P 50	10/28/94	EEOS TO WEOS	VL	1537	1542	30	29	PASS	TM	
P 49 / P 50	10/28/94	SEOS TO NEOS	VL	1538	1543	30	29	PASS	TM	
P 43 / P 51	10/28/94	EEOS TO WEOS	VL	1540	1545	30	29	PASS	TM	
P 43 / P 49	10/28/94	EEOS TO WEOS	VL	1618	1623	30	29	PASS	TM	
P 43 / P 48	10/28/94	WEOS TO EEOS	VL	1619	1624	30	29	PASS	TM	
P 48 / P 49	10/28/94	SEOS TO NEOS	VL	1620	1625	30	30	PASS	TM	
P 47 / P 48	10/28/94	SEOS TO NEOS	VL	1636	1641	30	29	PASS	TM	
P 42 / P 47	10/28/94	WEOS TO EEOS	VL	1637	1642	30	29	PASS	TM	
P 46 / P 47	10/28/94	SEOS TO NEOS	VL	1640	1645	30	28	PASS	TM	
P 42 / P 46	10/28/94	WEOS TO 27-X	VL	1644	1649	30	29	PASS	TM	
P 45 / P 46	10/28/94	SEOS TO NEOS	VL	1652	1657	30	29	PASS	TM	
P 42 / P 45	10/28/94	WEOS TO EEOS	VL	1653	1658	30	29	PASS	TM	
P 44 / P 45	10/28/94	SEOS TO NEOS	VL	1656	1701	29	28	PASS	TM	
P 42 / P 44	10/28/94	WEOS TO EEOS	VL	1657	1702	28	28	PASS	TM	
P 41 / P 44	10/28/94	NEOS TO SEOS	VL	1733	1738	30	29	PASS	TM	
P 26 / P 44	10/28/94	EEOS TO WEOS	VL	1734	1739	28	28	PASS	TM	TESTED THRU P26/P45
P 26 / P 45	10/28/94	EEOS TO WEOS	VL	1734	1739	28	28	PASS	TM	TESTED THRU P26/P45
P 26 / P 46	10/28/94	EEOS TO WEOS	VL	1737	1742	30	30	PASS	TM	TESTED THRU P26/P47

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P 26 / P 47	10/28/94	EEOS TO WEOS	VL	1737	1742	30	30	PASS	TM	TESTED THRU P26/P47
P 2 / P 139	10/28/94	WEOS TO 25-C	AIR	0748	0753	30	30	PASS	DRB	
P 2 / P 140	10/28/94	WEOS TO EEOS	AIR	0751	0756	30	28	PASS	DRB	
P 2 / P 141	10/28/94	EEOS TO WEOS	AIR	0759	0804	30	27	PASS	DRB	
P 3 / P 142	10/28/94	EEOS TO WEOS	AIR	0800	0805	30	28	PASS	DRB	
P 3 / P 143	10/28/94	EEOS TO WEOS	AIR	0805	0810	30	27	PASS	DRB	
P 3 / P 144	10/28/94	EEOS TO WEOS	AIR	0814	0819	30	28	PASS	DRB	
P 4 / P 145	10/28/94	EEOS TO WEOS	AIR	0816	0821	30	28	PASS	DRB	
P 4 / P 146	10/28/94	EEOS TO WEOS	AIR	0828	0833	30	29	PASS	DRB	
P 32 / P 147	10/28/94	EEOS TO WEOS	AIR	0830	0835	30	27	PASS	DRB	
P 32 / P 148	10/28/94	EEOS TO 25-H	AIR	0832	0838	30	27	PASS	DRB	
P 147 / P 148	10/28/94	SEOS TO NEOS	AIR	0832	0838	30	27	PASS	DRB	
P 32 / P 149	10/28/94	WEOS TO EEOS	AIR	0912	0917	30	29	PASS	DRB	
P 34 / P 150	10/28/94	EEOS TO WEOS	AIR	0913	0918	30	27	PASS	DRB	
P 34 / P 151	10/28/94	EEOS TO WEOS	AIR	0915	0920	30	27	PASS	DRB	
P 35 / P 152	10/28/94	EEOS TO WEOS	AIR	0915	0920	30	28	PASS	DRB	
P 35 / P 153	10/28/94	EEOS TO WEOS	AIR	0918	0923	30	27	PASS	DRB	
P 35 / P 154	10/28/94	EEOS TO WEOS	AIR	0919	0924	30	28	PASS	DRB	
P 36 / P 155	10/28/94	EEOS TO WEOS	AIR	0940	0945	30	28	PASS	DRB	
P 36 / P 156	10/28/94	WEOS TO EEOS	AIR	0941	0946	30	28	PASS	DRB	
P 37 / P 157	10/28/94	EEOS TO WEOS	AIR	0953	0958	30	28	PASS	DRB	
P 37 / P 160	10/28/94	WEOS TO EEOS	AIR	0955	1000	30	27	PASS	DRB	
P 37 / P 161	10/28/94	EEOS TO WEOS	AIR	0955	1000	30	27	PASS	DRB	
P 158 / P 161	10/28/94	EEOS TO WEOS	AIR	0956	1001	30	27	PASS	DRB	
P 158 / P 162	10/28/94	WEOS TO EEOS	AIR	1001	1006	30	28	PASS	DRB	
P 158 / P 163	10/28/94	EEOS TO WEOS	AIR	1001	1006	30	27	PASS	DRB	

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P 53 / P 54	10/28/94	SEOS TO 12-E	VL	1403	1408	29	28	PASS	BDH	
P 53 / P 54	10/28/94	12-E TO NEOS	VL	1407	1412	30	29	PASS	BDH	
P 53 / P 55	10/28/94	EEOS TO WEOS	VL	1417	1422	29	28	PASS	BDH	
P 54 / P 55	10/28/94	EEOS TO WEOS	VL	1420	1425	30	29	PASS	BDH	
P 52 / P 55	10/28/94	SEOS TO NEOS	VL	1430	1435	30	29	PASS	BDH	TESTED THRU P52/P53
P 52 / P 53	10/28/94	SEOS TO NEOS	VL	1430	1435	30	29	PASS	BDH	TESTED THRU P52/P53
P 55 / P 70	10/28/94	EEOS TO WEOS	VL	1434	1439	29	28	PASS	BDH	
P 26 / P 48	10/28/94	EEOS TO WEOS	VL	1744	1749	29	27	PASS	BDH	
P 26 / P 49	10/28/94	EEOS TO WEOS	VL	1755	1800	30	28	PASS	BDH	
P 26 / P 50	10/28/94	EEOS TO WEOS	VL	1755	1800	30	28	PASS	BDH	
P 26 / P 51	10/28/94	EEOS TO WEOS	VL	1807	1812	30	29	PASS	BDH	
P 26 / P 52	10/28/94	EEOS TO WEOS	VL	1807	1812	30	29	PASS	BDH	
P 26 / P 53	10/29/94	EEOS TO WEOS	VL	1010	1015	30	22	FAIL	BDH	SEAM VACUUM TESTED
P 26 / P 54	10/29/94	EEOS TO WEOS	VL	1011	1016	30	29	PASS	BDH	
P 26 / P 41	10/29/94	WEOS TO 12-W	VL	1105	1110	28	28	PASS	BDH	
P 26 / P 41	10/29/94	12-W TO EEOS	VL	1113	1118	29	28	PASS	BDH	
P 26 / P 27	10/29/94	SEOS TO NEOS	VL	1130	1135	30	28	PASS	BDH	
P 27 / P 41	10/29/94	WEOS TO 12-T	VL	1114	1119	29	28	PASS	BDH	
P 41 / P 42	10/29/94	WEOS TO 11-X	VL	1133	1138	29	28	PASS	BDH	
P 42 / P 43	10/29/94	12-J TO WEOS	VL	1303	1308	28	27	PASS	BDH	
P 42 / P 43	10/29/94	12-J TO 12-H	VL	1313	1318	28	26	PASS	BDH	
P 42 / P 43	10/29/94	12-H TO 12-B	VL	1316	1321	30	30	PASS	BDH	
P 41 / P 42	10/29/94	11-X TO 11-W	VL	1323	1328	28	27	PASS	BDH	
P 27 / P 41	10/29/94	12-T TO 12-R	VL	1326	1331	28	26	PASS	BDH	
P 41 / P 42	10/29/94	11-W TO 28-G	VL	1407	1412	29	26	PASS	BDH	
P 41 / P 42	10/29/94	11-T TO 11-R	VL	1423	1428	30	29	PASS	BDH	

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P 42 / P 43	10/29/94	12-G TO 28-J	VL	1430	1435	30	28	PASS	BDH	
P 43 / P 56	10/29/94	13-E TO 13-D	VL	1443	1448	28	28	PASS	BDH	
P 43 / P 56	10/29/94	13-F TO 13-H	VL	1454	1459	29	26	PASS	BDH	
P 43 / P 56	10/29/94	13-D TO 15-J	VL	1456	1501	30	29	PASS	BDH	
P 43 / P 56	10/29/94	13-H TO WEOS	VL	1504	1509	28	26	PASS	BDH	
P 70 / P 56	10/29/94	SEOS TO NEOS	VL	1523	1528	29	28	PASS	BDH	
P 56 / P 57	10/29/94	WEOS TO EEOS	VL	1543	1548	29	26	PASS	BDH	
P 58 / P 60	10/31/94	15-K TO WEOS	VL	1027	1032	29	29	PASS	DRB	
P 58 / P 60	10/31/94	15-K TO 14-I	VL	1025	1030	30	30	PASS	DRB	
P 57 / P 58	10/31/94	WEOS TO 13-J	VL	1023	1028	28	27	PASS	DRB	
P 70 / P 71	11/01/94	EEOS TO WEOS	VL	0733	0738	29	27	PASS	DRB	
P 71 / P 72	11/01/94	EEOS TO WEOS	VL	0740	0745	29	29	PASS	DRB	
P 57 / P 58	11/01/94	13-J TO EEOS	VL	0804	0809	29	26	PASS	DRB	
P 58 / P 60	11/01/94	14-I TO EEOS	VL	0811	0816	30	27	PASS	DRB	
P 72 / P 73	11/01/94	EEOS TO 34-A	VL	0826	0831	28	25	PASS	DRB	
P 60 / P 73	11/01/94	NEOS TO SEOS	VL	0832	0837	29	26	PASS	DRB	
P 73 / P 74	11/01/94	EEOS TO WEOS	VL	0835	0840	30	28	PASS	DRB	
P 60 / P 62	11/01/94	WEOS TO 13-P	VL	0844	0849	26	25	PASS	DRB	
P 62 / P 74	11/01/94	NEOS TO SEOS	VL	0853	0858	29	26	PASS	DRB	
P 62 / P 64	11/01/94	WEOS TO 14-K	VL	0855	0900	30	30	PASS	DRB	
P 74 / P 75	11/01/94	EEOS TO WEOS	VL	0858	0903	29	28	PASS	DRB	
P 64 / P 75	11/01/94	NEOS TO SEOS	VL	0907	0912	30	29	PASS	DRB	
P 75 / P 76	11/01/94	EEOS TO WEOS	VL	0909	0914	28	26	PASS	DRB	
P 66 / P 76	11/01/94	NEOS TO SEOS	VL	0910	0915	29	28	PASS	DRB	
P 64 / P 66	11/01/94	WEOS TO EEOS	VL	0911	0916	30	28	PASS	DRB	
P 62 / P 64	11/01/94	14-K TO 13-W	VL	0918	0923	30	28	PASS	DRB	

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				START	FINISH	START	FINISH			
P 64 / P 65	11/01/94	WEOS TO 14-M	VL	0920	0925	29	27	PASS	DRB	
P 65 / P 66	11/01/94	NEOS TO SEOS	VL	0925	0930	28	26	PASS	DRB	
P 62 / P 64	11/01/94	13-W TO EEOS	VL	0930	0935	30	30	PASS	DRB	
P 64 / P 65	11/01/94	14-M TO 14-C	VL	0934	0939	29	26	PASS	DRB	
P 64 / P 65	11/01/94	14-C TO EEOS	VL	0931	0936	29	26	PASS	DRB	
P 63 / P 65	11/01/94	WEOS TO EEOS	VL	0936	0941	28	25	PASS	DRB	
P 62 / P 63	11/01/94	WEOS TO EEOS	VL	0942	0947	30	29	PASS	DRB	
P 60 / P 62	11/01/94	13-P TO EEOS	VL	1003	1008	30	30	PASS	DRB	
P 61 / P 62	11/01/94	NEOS TO SEOS	VL	1004	1009	29	27	PASS	DRB	
P 61 / P 63	11/01/94	WEOS TO EEOS	VL	1007	1012	29	27	PASS	DRB	
P 60 / P 61	11/01/94	WEOS TO EEOS	VL	1008	1013	30	30	PASS	DRB	
P 59 / P 60	11/01/94	SEOS TO NEOS	VL	1013	1018	30	30	PASS	DRB	
P 59 / P 61	11/01/94	WEOS TO 13-N	VL	1014	1019	28	27	PASS	DRB	
P 58 / P 59	11/01/94	WEOS TO EEOS	VL	1022	1027	30	30	PASS	DRB	
P 65 / P 67	11/01/94	WEOS TO EEOS	VL	1030	1035	29	26	PASS	DRB	
P 66 / P 67	11/01/94	EEOS TO WEOS	VL	1035	1040	30	29	PASS	DRB	
P 67 / P 77	11/01/94	NEOS TO SEOS	VL	1042	1047	30	28	PASS	DRB	
P 76 / P 77	11/01/94	EEOS TO WEOS	VL	1043	1048	29	26	PASS	DRB	
P 67 / P 68	11/01/94	WEOS TO EEOS	VL	1044	1049	29	28	PASS	DRB	
P 77 / P 78	11/01/94	EEOS TO WEOS	VL	1100	1105	29	28	PASS	DRB	
P 78 / P 108	11/01/94	EEOS TO WEOS	VL	1107	1112	30	29	PASS	DRB	
P 68 / P 79	11/01/94	WEOS TO 15-T	VL	1125	1130	28	25	PASS	DRB	
P 79 / P 108	11/01/94	NEOS TO SEOS	VL	1127	1132	30	27	PASS	DRB	
P 108 / P 109	11/01/94	EEOS TO 17-A	VL	1131	1136	29	26	PASS	DRB	
P 81 / P 109	11/01/94	NEOS TO SEOS	VL	1132	1137	30	28	PASS	DRB	
P 79 / P 81	11/01/94	WEOS TO EEOS	VL	1134	1139	30	29	PASS	DRB	

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				START	FINISH	START	FINISH			
P 108 / P 109	11/01/94	17-A TO WEOS	VL	1137	1142	30	30	PASS	DRB	
P 68 / P 79	11/01/94	15-T TO 15-S	VL	1141	1146	30	29	PASS	DRB	
P 68 / P 79	11/01/94	15-S TO EEOS	VL	1311	1316	29	27	PASS	DRB	
P 80 / P 81	11/01/94	NEOS TO SEOS	VL	1313	1318	30	28	PASS	DRB	
P 79 / P 80	11/01/94	WEOS TO EEOS	VL	1319	1324	28	25	PASS	DRB	
P 80 / P 82	11/01/94	WEOS TO EEOS	VL	1320	1325	29	27	PASS	DRB	
P 81 / P 82	11/01/94	EEOS TO WEOS	VL	1328	1333	29	27	PASS	DRB	
P 69 / P 80	11/01/94	WEOS TO EEOS	VL	1334	1339	29	27	PASS	DRB	
P 69 / P 79	11/01/94	SEOS TO NEOS	VL	1344	1349	29	28	PASS	DRB	
P 68 / P 69	11/01/94	WEOS TO EEOS	VL	1340	1345	30	29	PASS	DRB	
P 109 / P 110	11/01/94	EEOS TO 34-C	VL	1400	1405	28	26	PASS	DRB	
P 91 / P 111	11/01/94	NEOS TO SEOS	VL	1406	1411	30	27	PASS	DRB	
P 110 / P 111	11/01/94	EEOS TO 17-B	VL	1403	1408	30	29	PASS	DRB	
P 82 / P 91	11/01/94	WEOS TO EEOS	VL	1407	1412	28	25	PASS	DRB	
P 110 / P 111	11/01/94	17-B TO WEOS	VL	1408	1413	30	29	PASS	DRB	
P 111 / P 112	11/01/94	EEOS TO WEOS	VL	1413	1418	29	26	PASS	DRB	
P 93 / P 112	11/01/94	NEOS TO SEOS	VL	1419	1424	29	26	PASS	DRB	
P 91 / P 93	11/01/94	WEOS TO EEOS	VL	1420	1425	28	25	PASS	DRB	
P 112 / P 113	11/01/94	EEOS TO WEOS	VL	1417	1422	29	27	PASS	DRB	
P 93 / P 115	11/01/94	WEOS TO EEOS	VL	1418	1423	28	26	PASS	DRB	
P 92 / P 93	11/01/94	SEOS TO NEOS	VL	1427	1432	30	28	PASS	DRB	
P 91 / P 92	11/01/94	WEOS TO EEOS	VL	1441	1446	30	29	PASS	DRB	
P 92 / P 115	11/01/94	WEOS TO EEOS	VL	1443	1448	30	27	PASS	DRB	
P 115 / P 117	11/01/94	WEOS TO EEOS	VL	1450	1455	29	26	PASS	DRB	
P 117 / P 118	11/01/94	WEOS TO EEOS	VL	1452	1457	30	28	PASS	DRB	
P 116 / P 118	11/01/94	EEOS TO 17-F	VL	1458	1503	30	28	PASS	DRB	

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P 116 / P 118	11/01/94	17-F TO WEOS	VL	1502	1507	30	27	PASS	DRB	
P 115 / P 116	11/01/94	EEOS TO WEOS	VL	1504	1509	29	27	PASS	DRB	
P 113 / P 114	11/01/94	EEOS TO 17-D	VL	1510	1515	30	30	PASS	DRB	
P 114 / P 116	11/01/94	NEOS TO SEOS	VL	1523	1528	30	28	PASS	DRB	
P 114 / P 216	11/01/94	EEOS TO 34-D	VL	1526	1531	30	27	PASS	DRB	
P 216 / P 217	11/01/94	EEOS TO 34-E	VL	1558	1603	30	28	PASS	DRB	
P 118 / P 119	11/01/94	WEOS TO EEOS	VL	1608	1613	30	27	PASS	DRB	
P 217 / P 219	11/01/94	EEOS TO WEOS	VL	1610	1615	30	28	PASS	DRB	
P 119 / P 132	11/01/94	WEOS TO EEOS	VL	1613	1618	30	28	PASS	DRB	
P 118 / P 120	11/01/94	WEOS TO EEOS	VL	1628	1633	30	30	PASS	DRB	
P 119 / P 120	11/01/94	NEOS TO SEOS	VL	1630	1635	28	26	PASS	DRB	
P 120 / P 131	11/01/94	WEOS TO 34-G	VL	1634	1639	30	28	PASS	DRB	
P 131 / P 133	11/01/94	WEOS TO EEOS	VL	1650	1655	30	30	PASS	DRB	
P 131 / P 132	11/01/94	SEOS TO NEOS	VL	1650	1655	29	28	PASS	DRB	
P 132 / P 133	11/01/94	EEOS TO WEOS	VL	1653	1658	30	30	PASS	DRB	
P 120 / P 132	11/01/94	EEOS TO WEOS	VL	1654	1659	30	27	PASS	DRB	
P 120 / P 131	11/01/94	34-G TO 19-A	VL	1700	1705	30	29	PASS	DRB	
P 120 / P 131	11/01/94	19-A TO 18-X	VL	1703	1708	30	28	PASS	DRB	
P 120 / P 131	11/01/94	18-X TO 18-W	VL	1704	1709	30	29	PASS	DRB	18-W EXTENDS TO EEOS
P 135 / P 136	11/01/94	18-S TO EEOS	VL	1708	1713	30	28	PASS	DRB	
P 135 / P 136	11/01/94	18-S TO 19-C	VL	1709	1714	30	28	PASS	DRB	
P 135 / P 136	11/02/94	19-D TO 34-N	VL	0733	0738	28	28	PASS	DRB	
P 133 / P 134	11/02/94	SEOS TO NEOS	VL	0741	0746	27	26	PASS	DRB	
P 134 / P 135	11/02/94	EEOS TO WEOS	VL	0748	0753	26	25	PASS	DRB	
P 133 / P 135	11/02/94	18-K TO EEOS	VL	0755	0800	28	26	PASS	DRB	
P 132 / P 219	11/02/94	NEOS TO SEOS	VL	0801	0806	30	29	PASS	DRB	

PRESSURE TEST SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAM NUMBER	DATE	LOCATION	TECH	TIME		PRESSURE		PASS/ FAIL	MON	REMARKS
				START	FINISH	START	FINISH			
P 132 / P 134	11/02/94	WEOS TO EEOS	VL	0802	0807	28	26	PASS	DRB	
P 219 / P 220	11/02/94	EEOS TO WEOS	VL	0803	0808	29	26	PASS	DRB	
P 134 / P 220	11/02/94	NEOS TO SEOS	VL	0807	0812	30	29	PASS	DRB	
P 220 / P 221	11/02/94	EEOS TO 34-P	VL	0811	0816	30	28	PASS	DRB	
P 135 / P 221	11/02/94	NEOS TO SEOS	VL	0823	0828	30	28	PASS	DRB	
P 135 / P 136	11/02/94	WEOS TO 34-N	VL	0828	0833	30	28	PASS	DRB	
P 136 / P 222	11/02/94	NEOS TO SEOS	VL	0830	0835	30	27	PASS	DRB	
P 221 / P 222	11/02/94	EEOS TO 34-R	VL	0833	0838	30	28	PASS	DRB	
P 136 / P 138	11/02/94	WEOS TO 19-F	VL	0850	0855	30	28	PASS	DRB	
P 138 / P 223	11/02/94	NEOS TO SEOS	VL	0851	0856	30	29	PASS	DRB	
P 222 / P 223	11/02/94	EEOS TO WEOS	VL	0852	0857	30	30	PASS	DRB	
P 223 / P 225	11/02/94	EEOS TO WEOS	VL	0853	0858	30	27	PASS	DRB	
P 138 / P 226	11/02/94	WEOS TO EEOS	VL	0858	0903	30	28	PASS	DRB	
P 225 / P 226	11/02/94	NEOS TO SEOS	VL	0900	0905	30	28	PASS	DRB	
P 226 / P 227	11/02/94	WEOS TO EEOS	VL	0903	0908	30	28	PASS	DRB	
P 225 / P 228	11/02/94	EEOS TO 34-Q	VL	0901	0906	30	27	PASS	DRB	
P 227 / P 228	11/02/94	NEOS TO SEOS	VL	0904	0909	30	29	PASS	DRB	
P 228 / P 229	11/02/94	EEOS TO WEOS	VL	0905	0910	30	30	PASS	DRB	
P 138 / P 224	11/02/94	WEOS TO EEOS	VL	0919	0924	29	26	PASS	DRB	
P 224 / P 226	11/02/94	NEOS TO SEOS	VL	0918	0923	30	28	PASS	DRB	
P 227 / P 229	11/02/94	WEOS TO 34-T	VL	0926	0931	28	28	PASS	DRB	
P 224 / P 227	11/02/94	WEOS TO 29-H	VL	0930	0935	30	30	PASS	DRB	
P 229 / P 230	11/02/94	NEOS TO 34-W	VL	0937	0942	30	28	PASS	DRB	
P 227 / P 230	11/02/94	WEOS TO 30-S	VL	0938	0943	28	27	PASS	DRB	
P 224 / P 227	11/02/94	29-H TO 29-F	VL	0942	0947	30	28	PASS	DRB	
P 227 / P 230	11/02/94	30-S TO EEOS	VL	0944	0949	30	28	PASS	DRB	

PRESSURE TEST SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAM NUMBER	DATE	LOCATION	TECH	TIME START	TIME FINISH	PRESSURE START	PRESSURE FINISH	PASS/ FAIL	MON	REMARKS
P 136 / P 138	11/02/94	19-F TO EEOS	VL	1004	1009	28	26	PASS	DRB	
P 224 / P 227	11/02/94	29-F TO EEOS	VL	1005	1010	29	26	PASS	DRB	
P 227 / P 231	11/02/94	WEOS TO EEOS	VL	1006	1011	29	27	PASS	DRB	
P 230 / P 231	11/02/94	NEOS TO SEOS	VL	1015	1020	30	29	PASS	DRB	
P 218 / P 227	11/02/94	WEOS TO 29-E	VL	1028	1033	30	30	PASS	DRB	
P 138 / P 218	11/02/94	WEOS TO EEOS	VL	1020	1025	30	29	PASS	DRB	
P 218 / P 227	11/02/94	29-E TO EEOS	VL	1021	1026	30	28	PASS	DRB	
P 215 / P 227	11/02/94	NEOS TO SEOS	VL	1027	1032	28	27	PASS	DRB	
P 215 / P 218	11/02/94	SEOS TO NEOS	VL	1026	1031	28	28	PASS	DRB	
P 138 / P 215	11/02/94	WEOS TO EEOS	VL	1028	1033	28	26	PASS	DRB	
P 214 / P 215	11/02/94	NEOS TO SEOS	VL	1029	1034	30	29	PASS	DRB	
P 213 / P 214	11/02/94	NEOS TO SEOS	VL	1031	1036	30	29	PASS	DRB	
P 138 / P 213	11/02/94	WEOS TO EEOS	VL	1032	1037	30	28	PASS	DRB	
P 138 / P 212	11/02/94	WEOS TO EEOS	VL	1034	1039	30	30	PASS	DRB	
P 212 / P 213	11/02/94	NEOS TO 35-A	VL	1046	1051	30	28	PASS	DRB	
P 138 / P 211	11/02/94	WEOS TO EEOS	VL	1055	1100	29	26	PASS	DRB	
P 211 / P 212	11/02/94	NEOS TO SEOS	VL	1056	1101	29	27	PASS	DRB	
P 137 / P 138	11/02/94	NEOS TO SEOS	VL	1058	1103	30	28	PASS	DRB	
P 210 / P 211	11/02/94	NEOS TO SEOS	VL	1059	1104	30	29	PASS	DRB	
P 137 / P 210	11/02/94	WEOS TO 30-C	VL	1105	1110	28	25	PASS	DRB	
P 136 / P 137	11/02/94	WEOS TO EEOS	VL	1110	1115	29	28	PASS	DRB	
P 137 / P 209	11/02/94	WEOS TO EEOS	VL	1130	1135	30	27	PASS	DRB	
P 209 / P 210	11/02/94	NEOS TO SEOS	VL	1125	1130	30	27	PASS	DRB	
P 27 / P 94	11/02/94	NEOS TO SEOS	VL	1313	1318	29	27	PASS	DRB	
P 27 / P 94	11/02/94	WEOS TO EEOS	VL	1314	1319	30	27	PASS	DRB	
P 94 / P 95	11/02/94	WEOS TO EEOS	VL	1315	1320	28	25	PASS	DRB	

PRESSURE TEST SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAM NUMBER	DATE	LOCATION	TECH	TIME START	TIME FINISH	PRESSURE START	PRESSURE FINISH	PASS/ FAIL	MON	REMARKS
P 27 / P 95	11/02/94	NEOS TO SEOS	VL	1316	1321	28	25	PASS	DRB	
P 95 / P 96	11/02/94	WEOS TO EEOS	VL	1333	1338	30	28	PASS	DRB	
P 41 / P 96	11/02/94	NEOS TO SEOS	VL	1334	1339	30	30	PASS	DRB	
P 96 / P 97	11/02/94	WEOS TO EEOS	VL	1342	1347	30	30	PASS	DRB	
P 41 / P 42	11/02/94	EEOS TO 12-Q	VL	1345	1350	30	30	PASS	DRB	
P 41 / P 42	11/02/94	12-Q TO 11-R	VL	1346	1351	30	30	PASS	DRB	
P 42 / P 97	11/02/94	SEOS TO NEOS	VL	1358	1403	29	29	PASS	DRB	
P 97 / P 98	11/02/94	WEOS TO EEOS	VL	1408	1413	30	30	PASS	DRB	
P 42 / P 43	11/02/94	EEOS TO 12-A	VL	1409	1414	30	28	PASS	DRB	
P 42 / P 98	11/02/94	NEOS TO SEOS	VL	1413	1418	30	28	PASS	DRB	
P 98 / P 99	11/02/94	WEOS TO EEOS	VL	1410	1415	30	30	PASS	DRB	
P 43 / P 99	11/02/94	NEOS TO SEOS	VL	1426	1431	30	29	PASS	DRB	
P 99 / P 100	11/02/94	WEOS TO 16-W	VL	1428	1433	30	30	PASS	DRB	
P 99 / P 100	11/02/94	16-W TO EEOS	VL	1429	1434	30	30	PASS	DRB	
P 56 / P 100	11/02/94	SEOS TO NEOS	VL	1442	1447	30	27	PASS	DRB	
P 100 / P 101	11/02/94	WEOS TO EEOS	VL	1445	1450	29	26	PASS	DRB	
P 57 / P 101	11/02/94	NEOS TO SEOS	VL	1452	1457	30	28	PASS	DRB	
P 101 / P 102	11/02/94	WEOS TO 16-S	VL	1453	1458	30	28	PASS	DRB	
P 57 / P 102	11/02/94	NEOS TO SEOS	VL	1454	1459	30	29	PASS	DRB	
P 58 / P 102	11/02/94	NEOS TO SEOS	VL	1514	1519	30	28	PASS	DRB	
P 102 / P 103	11/02/94	WEOS TO EEOS	VL	1515	1520	30	28	PASS	DRB	
P 58 / P 103	11/02/94	NEOS TO SEOS	VL	1516	1521	30	28	PASS	DRB	
P 59 / P 104	11/02/94	NEOS TO SEOS	VL	1523	1528	30	29	PASS	DRB	
P 103 / P 104	11/02/94	WEOS TO EEOS	VL	1527	1532	30	28	PASS	DRB	
P 59 / P 103	11/02/94	SEOS TO NEOS	VL	1524	1529	30	30	PASS	DRB	
P 104 / P 105	11/02/94	WEOS TO EEOS	VL	1610	1615	30	27	PASS	DRB	

PRESSURE TEST SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAM NUMBER	DATE	LOCATION	TECH	TIME START	TIME FINISH	PRESSURE START	PRESSURE FINISH	PASS/ FAIL	MON	REMARKS
P 61 / P 105	11/02/94	NEOS TO SEOS	VL	1620	1625	30	24	FAIL	DRB	SEAM VACUUM TESTED
P 105 / P 107	11/02/94	WEOS TO EEOS	VL	1624	1629	30	30	PASS	DRB	
P 63 / P 107	11/02/94	NEOS TO SEOS	VL	1630	1635	30	30	PASS	DRB	
P 37 / P 158	11/02/94	WEOS TO 21-R	AIR	1425	1430	29	29	PASS	BDH	
P 63 / P 106	11/03/94	NEOS TO SEOS	VL	0721	0726	30	28	PASS	DRB	
P 90 / P 106	11/03/94	WEOS TO 16-X	VL	0728	0733	30	28	PASS	DRB	16-X TO EAT VACUUM TESTED
P 106 / P 107	11/03/94	WEOS TO EEOS	VL	0733	0738	30	29	PASS	DRB	
P 65 / P 90	11/03/94	NEOS TO SEOS	VL	0737	0742	30	29	PASS	DRB	
P 83 / P 90	11/03/94	WEOS TO 16-N	VL	0750	0755	29	28	PASS	DRB	
P 83 / P 90	11/03/94	16-N TO EEOS	VL	0751	0756	28	28	PASS	DRB	
P 83 / P 84	11/03/94	WEOS TO 15-X	VL	0756	0801	30	29	PASS	DRB	
P 83 / P 84	11/03/94	15-X TO EEOS	VL	0759	0804	29	26	PASS	DRB	
P 68 / P 84	11/03/94	NEOS TO SEOS	VL	0804	0809	30	27	PASS	DRB	
P 84 / P 85	11/03/94	WEOS TO 16-M	VL	0806	0811	30	28	PASS	DRB	
P 69 / P 85	11/03/94	NEOS TO SEOS	VL	0815	0820	30	28	PASS	DRB	
P 85 / P 86	11/03/94	WEOS TO 16-A	VL	0823	0828	30	30	PASS	DRB	
P 85 / P 86	11/03/94	16-A TO 35-P	VL	0827	0832	30	27	PASS	DRB	35-P AT EAT
P 80 / P 86	11/03/94	NEOS TO SEOS	VL	0829	0834	30	30	PASS	DRB	
P 86 / P 87	11/03/94	WEOS TO EEOS	VL	0831	0836	30	29	PASS	DRB	
P 82 / P 87	11/03/94	NEOS TO SEOS	VL	0832	0837	30	28	PASS	DRB	
P 87 / P 88	11/03/94	WEOS TO 16-B	VL	0914	0919	29	27	PASS	DRB	16-B AT EAT
P 88 / P 89	11/03/94	WEOS TO EEOS	VL	0916	0921	30	29	PASS	DRB	
P 89 / P 121	11/03/94	WEOS TO EEOS	VL	0924	0929	30	28	PASS	DRB	
P 115 / P 121	11/03/94	NEOS TO SEOS	VL	0953	0958	30	29	PASS	DRB	
P 121 / P 122	11/03/94	18-A TO 18-D	VL	0955	1000	30	29	PASS	DRB	
P 121 / P 122	11/03/94	18-D TO EEOS	VL	0957	1002	30	30	PASS	DRB	

PRESSURE TEST SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAM NUMBER	DATE	LOCATION	TECH	TIME START	TIME FINISH	PRESSURE START	PRESSURE FINISH	PASS/ FAIL	MON	REMARKS
P 117 / P 122	11/03/94	NEOS TO SEOS	VL	1014	1019	30	29	PASS	DRB	
P 122 / P 123	11/03/94	WEOS TO EEOS	VL	1016	1021	30	29	PASS	DRB	
P 118 / P 123	11/03/94	NEOS TO SEOS	VL	1023	1028	30	29	PASS	DRB	
P 123 / P 124	11/03/94	WEOS TO EEOS	VL	1056	1101	29	26	PASS	DRB	
P 120 / P 124	11/03/94	NEOS TO SEOS	VL	1057	1102	30	27	PASS	DRB	
P 125 / P 131	11/03/94	NEOS TO SEOS	VL	1104	1109	30	29	PASS	DRB	
P 124 / P 125	11/03/94	WEOS TO EEOS	VL	1105	1110	30	29	PASS	DRB	
P 125 / P 126	11/03/94	WEOS TO EEOS	VL	1113	1128	30	27	PASS	DRB	
P 127 / P 133	11/03/94	NEOS TO SEOS	VL	1127	1132	30	29	PASS	DRB	
P 126 / P 133	11/03/94	SEOS TO 30-I	VL	1133	1138	30	29	PASS	DRB	
P 126 / P 127	11/03/94	WEOS TO EEOS	VL	1137	1142	30	30	PASS	DRB	
P 127 / P 129	11/03/94	WEOS TO EEOS	VL	1541	1546	30	29	PASS	DRB	
P 128 / P 204	11/03/94	NEOS TO 35-W	VL	1543	1548	30	27	PASS	DRB	
P 129 / P 130	11/03/94	WEOS TO 35-Q	VL	1547	1552	30	28	PASS	DRB	35-Q @ SAT
P 136 / 29-Q	11/03/94	EEOS TO WEOS	VL	1558	1603	29	26	PASS	DRB	
P 204 / P 205	11/03/94	NEOS TO SEOS	VL	1607	1612	30	27	PASS	DRB	
P 136 / P 205	11/03/94	EEOS TO WEOS	VL	1614	1619	30	28	PASS	DRB	
P 205 / P 206	11/03/94	NEOS TO 27-E	VL	1623	1628	29	24	FAIL	DRB	NEOS TO SAT VACUUM TESTED
P 137 / P 206	11/03/94	WEOS TO EEOS	VL	1631	1636	30	27	PASS	DRB	
P 206 / P 207	11/03/94	NEOS TO SEOS	VL	1630	1635	30	29	PASS	DRB	
P 207 / P 208	11/03/94	NEOS TO SEOS	VL	1636	1641	30	27	PASS	DRB	
P 208 / P 209	11/03/94	NEOS TO 35-B	VL	1638	1643	30	28	PASS	DRB	35-B AT SAT

GEOSYNTHETIC CQA MONITORING
DEFECT AND REPAIR TYPES AND MAPPING NOTES
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT AND REPAIR TYPES		MAPPING NOTES	
BO	FUSION WELDER BURNOUT	W	WEST
BS	BOOT/SKIRT FOR FML PENETRATION	E	EAST
CO	CHANGE OF OVERLAP	S	SOUTH
CR	CREASE	N	NORTH
D	GENERAL FIELD DAMAGE	AT	ANCHOR TRENCH
DS-000	DESTRUCTIVE TEST NUMBER	@	AT
	PRIMARY-FUSION	EOS	END OF SEAM
DSE-000	DESTRUCTIVE TEST NUMBER	INT	INTERSECTION
	PRIMARY EXTRUSION	W/	WITH
EE	EARTHWORK EQUIPMENT DAMAGE	SOS	START OF SEAM
EXT	EXTENSION	O	OF
FM	FISHMOUTH	P	PANEL
FS	FAILED SEAM LENGTH	SEOS	SOUTH END OF SEAM
FTS	FAILED TEST STRIP	NEOS	NORTH END OF SEAM
HT	HEAT TRACK BURN	EEOS	EAST END OF SEAM
INT	FOUR PANEL INTERSECTION	WEOS	WEST END OF SEAM
IO	INSUFFICIENT OVERLAP (UNDER SPEC.)	SEOP	SOUTH END OF PANEL
MD	MANUFACTURER/DELIVERY DAMAGE	NEOP	NORTH END OF PANEL
NW	NOT WELDED	EEOP	EAST END OF PANEL
NT	NOT TESTED	WEOP	WEST END OF PANEL
OL	EQUIPMENT OIL LEAK	E1	EXISTING LINER (TIE-IN)
PT	PRESSURE TEST CUT	CUT	DELIBERATE CUT ON LINER
SI	SUBGRADE IRREGULARITY		
SL	SLAG ON TEXTURED SHEET		
T	THREE PANEL INTERSECTION		
VL	VACUUM TEST LEAK		
WR	WRINKLE		
WS	WELDER START		
C	CAP		
P	PATCH		
GW	GRIND AND WELD		
RS	RECONSTRUCTED SEAM		
P\RS	PATCH AND RECONSTRUCTED SEAM		
			B:\REPCODES.WK1

B:\REPCODES.WK1

APPENDIX G

GEOMEMBRANE TRIAL SEAM SUMMARIES

APPENDIX G.1

FUSION TRIAL SEAM SUMMARY

GEOMEMBRANE FUSION TRIAL SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SAMPLE NUMBER	WELDING MACHINE	WELD DATE	WELD TIME	WELD TECHNICIAN	AMBIENT AIR TEMPERATURE (F)	MACHINE SPEED	WEDGE TEMPERATURE (F)	TEST RESULTS (1) INSIDE PEEL MODE STRENGTH	TEST RESULTS (1) OUTSIDE PEEL MODE STRENGTH	TEST RESULTS (1) SHEAR MODE STRENGTH	PASS/ FAIL	QA MON.
TF- 01	324	09/29/94	0800	SS	56	2.5	750	P2/-/- 80/-/-	F1/-/- 65/-/-	-/-/- -/-/-	FAIL	TM
TF- 02	318	09/29/94	0930	AIR	74	6	750	P2/P2/P2 68/67/66	P2/P2/P2 67/69/66	P1/P1/P1 71/74/71	PASS	TM
TF- 03	318	09/29/94	1345	AIR	84	6	750	P2/P2/P2 59/61/61	P2/P2/P2 57/60/59	P1/P1/P1 60/59/59	PASS	TM
TF- 04	321	09/29/94	1345	NY	84	6	750	P2/P2/- 60/60/-	P2/F1/- 52/58/-	-/-/- -/-/-	FAIL	TM
TF- 01	318	09/30/94	0818	AIR	70	5	750	F1/-/- 56/-/-	-/-/- -/-/-	-/-/- -/-/-	FAIL	TM
TF- 01-R1	318	09/30/94	0915	AIR	74	5	750	P2/P2/P2 57/61/57	P2/P2/P2 61/59/62	P1/P1/P1 58/62/62	PASS	TM
TF- 02	318	09/30/94	1240	AIR	89	5	750	P2/P2/- 54/52/-	P2/F1/- 51/53/-	-/-/- -/-/-	FAIL	TM
TF- 02-R1	318	09/30/94	1310	AIR	89	5	750	P2/P2/P2 53/53/54	P2/P2/P2 54/53/55	P1/P1/P1 55/55/55	PASS	TM
TF- 01	324	10/03/94	0715	SS	62	3.5	750	P2/P2/P2 71/70/73	P2/P2/P2 71/73/71	P1/P1/P1 70/72/69	PASS	TM
TF- 02	318	10/03/94	0815	AIR	62	5	750	P2/P2/P2 72/71/72	P2/P2/P2 74/72/71	P1/P1/P1 68/68/71	PASS	TM
TF- 03	324	10/03/94	1302	SS	77	3.5	750	P2/P2/P2 58/60/59	P2/P2/P2 59/58/58	P1/P1/P1 56/58/61	PASS	TM

Note: (1) Modes are illustrated on Figure 7. Strengths are in pounds per inch.

FILENAME-TSFUSION.WK1

GEOMEMBRANE FUSION TRIAL SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SAMPLE NUMBER	WELDING MACHINE	WELD DATE	WELD TIME	WELD TECHNICIAN	AMBIENT AIR TEMPERATURE (F)	MACHINE SPEED	WEDGE TEMPERATURE (F)	TEST RESULTS (1) INSIDE PEEL MODE STRENGTH	TEST RESULTS (1) OUTSIDE PEEL MODE STRENGTH	TEST RESULTS (1) SHEAR MODE STRENGTH	PASS/ FAIL	QA MON.
TF- 01	318	10/04/94	0720	AIR	63	5	750	P2/P2/P2 69/63/70	P2/P2/P2 60/71/64	P1/P1/P1 69/71/64	PASS	TM
TF- 02	324	10/04/94	0945	SS	65	4.5	750	P2/P2/P2 73/69/68	P2/P2/P2 73/72/73	P1/P1/P1 69/69/69	PASS	TM
TF- 03	318	10/04/94	1315	AIR	73	5	750	P2/P2/P2 66/72/65	P2/P2/P2 65/70/64	P1/P1/P1 68/67/68	PASS	TM
TF- 01	318	10/05/94	0800	AIR	59	5	750	P2/P2/P2 72/77/73	P2/P2/P2 71/69/73	P1/P1/P1 75/74/72	PASS	TM
TF- 02	321	10/05/94	0930	SS	66	4.5	750	P2/P2/P2 61/64/66	P2/P2/P2 67/65/65	P1/P1/P1 64/65/64	PASS	TM
TF- 03	318	10/05/94	1300	AIR	72	5	750	P2/P2/P2 58/59/57	P2/P2/P2 60/57/63	P1/P1/P1 64/64/63	PASS	TM
TF- 01	318	10/11/94	1320	AIR	70	4	750	P2/P2/P2 69/67/74	P2/P2/P2 67/69/69	P1/P1/P1 69/73/68	PASS	TM
TF- 01	318	10/12/94	0815	AIR	54	4	750	P2/P2/P2 75/73/72	P2/P2/P2 72/72/70	P1/P1/P1 74/73/74	PASS	TM
TF- 02	321	10/12/94	1332	AIR	68	4	750	P2/P2/P2 63/64/65	P2/P2/P2 65/64/66	P1/P1/P1 65/66/63	PASS	TM

Note: (1) Modes are illustrated on Figure 7. Strengths are in pounds per inch.

FILENAME=TSFUSION.WK1

GEOMEMBRANE FUSION TRIAL SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SAMPLE NUMBER	WELDING MACHINE	WELD DATE	WELD TIME	WELD TECHNICIAN	AMBIENT AIR TEMPERATURE (F)	MACHINE SPEED	WEDGE TEMPERATURE (F)	TEST RESULTS (1) INSIDE PEEL MODE STRENGTH	OUTSIDE PEEL MODE STRENGTH	SHEAR MODE STRENGTH	PASS/ FAIL	QA MON.
TF- 01	324	10/21/94	0840	SS	63	4	750	P2/P2/P2 74/70/60	P2/P2/P2 68/68/64	P1/P1/P1 69/69/75	PASS	TM
TF- 02	324	10/21/94	1100	SS	75	4	750	P2/P2/P2 73/70/66	P2/P2/P2 70/68/70	P1/P1/P1 69/70/72	PASS	TM
TF- 03	324	10/21/94	1300	SS	74	4	750	P2/P2/P2 66/67/62	P2/P2/P2 66/68/64	P1/P1/P1 68/67/63	PASS	TM
TF- 04	321	10/21/94	1315	AIR	74	3	730	P2/P2/P2 62/62/66	P2/P2/P2 62/65/63	P1/P1/P1 71/64/72	PASS	TM
TF- 05	321	10/21/94	1510	AIR	72	3	730	P2/P2/P2 64/63/62	P2/P2/P2 63/65/62	P1/P1/P1 63/71/64	PASS	TM
TF- 06	318	10/21/94	1810	SS	68	4	750	P2/P2/P2 69/71/70	P2/P2/P2 60/65/67	P1/P1/P1 68/69/72	PASS	TM
TF- 07	321	10/21/94	1815	AIR	68	3	730	P2/P2/P2 70/66/63	P2/P2/P2 70/71/63	P1/P1/P1 69/68/69	PASS	TM
TF- 01	321	10/22/94	0835	AIR	64	3	730	P2/P2/P2 72/71/69	P2/P2/P2 66/72/72	P1/P1/P1 75/73/76	PASS	TM
TF- 02	324	10/22/94	1005	SS	71	3.5	750	P2/P2/P2 71/72/72	P2/P2/P2 69/73/69	P1/P1/P1 74/74/71	PASS	TM
TF- 03	324	10/22/94	1320	SS	84	3.5	750	P2/P2/P2 55/57/55	P2/P2/P2 59/60/54	P1/P1/P1 57/58/56	PASS	TM
TF- 04	321	10/22/94	1340	AIR	86	3.5	730	P2/P2/P2 64/68/65	P2/P2/P2 64/65/63	P1/P1/P1 62/64/66	PASS	TM

Note: (1) Modes are illustrated on Figure 7. Strengths are in pounds per inch.

FILENAME=TSFUSION.WK1

GEOMEMBRANE FUSION TRIAL SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SAMPLE NUMBER	WELDING MACHINE	WELD DATE	WELD TIME	WELD TECHNICIAN	AMBIENT AIR TEMPERATURE (F)	MACHINE SPEED	WEDGE TEMPERATURE (F)	TEST RESULTS (1) INSIDE PEEL MODE STRENGTH	OUTSIDE PEEL MODE STRENGTH	SHEAR MODE STRENGTH	PASS/ FAIL	QA MON.
TF- 05	321	10/22/94	1635	AIR	81	3.5	730	P2/P2/P2 69/66/69	P2/P2/P2 70/70/71	P1/P1/P1 72/72/75	PASS	TM
TF- 01	321	10/23/94	1015	AIR	62	3	730	P2/P2/P2 73/75/73	P2/P2/P2 72/74/74	P1/P1/P1 79/80/81	PASS	TM
TF- 02	324	10/23/94	1015	SS	62	3.5	750	P2/P2/P2 71/72/71	P2/P2/P2 72/72/72	P1/P1/P1 75/76/73	PASS	TM
TF- 03	321	10/23/94	1315	AIR	70	3	730	P2/P2/P2 70/74/71	P2/P2/P2 72/77/73	P1/P1/P1 72/76/75	PASS	TM
TF- 04	321	10/23/94	1315	AIR	70	7	730	P2/P2/P2 74/73/73	P2/P2/P2 75/75/71	P1/P1/P1 76/78/77	PASS	TM
TF- 05	324	10/23/94	1540	SS	74	3.5	750	P2/P2/P2 69/69/68	P2/P2/P2 66/67/68	P1/P1/P1 67/67/69	PASS	TM
TF- 01	321	10/24/94	0730	AIR	57	3	730	P2/P2/P2 77/79/79	P2/P2/P2 77/78/77	P1/P1/P1 81/81/80	PASS	TM
TF- 02	321	10/24/94	0730	AIR	57	3	730	P2/P2/P2 73/74/74	P2/P2/P2 74/77/77	P1/P1/P1 76/74/74	PASS	TM
TF- 03	321	10/24/94	1300	AIR	64	3	730	P2/P2/P2 67/69/71	P2/P2/P2 75/70/68	P1/P1/P1 69/72/74	PASS	TM
TF- 04	321	10/24/94	1305	AIR	64	3	730	P2/P2/P2 70/66/67	P2/P2/P2 70/66/68	P1/P1/P1 69/71/70	PASS	TM
TF- 05	324	10/24/94	1600	NY	63	6	750	P2/P2/P2 58/61/66	P2/P2/P2 59/68/73	P1/P1/P1 66/70/68	PASS	TM

Note: (1) Modes are illustrated on Figure 7. Strengths are in pounds per inch.

FILENAME=TSFUSION.WK1

GEOMEMBRANE FUSION TRIAL SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SAMPLE NUMBER	WELDING MACHINE	WELD DATE	WELD TIME	WELD TECHNICIAN	AMBIENT AIR TEMPERATURE (F)	MACHINE SPEED	WEDGE TEMPERATURE (F)	TEST RESULTS (1) INSIDE PEEL MODE STRENGTH	TEST RESULTS (1) OUTSIDE PEEL MODE STRENGTH	TEST RESULTS (1) SHEAR MODE STRENGTH	PASS/ FAIL	QA MON.
TF- 06	321	10/24/94	1800	AIR	60	2	730	P2/P2/P2 70/71/68	P2/P2/P2 68/74/70	P1/P1/P1 70/70/72	PASS	
TF- 01	321	10/25/94	0730	AIR	40	3	730	P2/P2/P2 86/80/81	P2/P2/P2 81/82/85	P1/P1/P1 84/87/87	PASS	TM
TF- 02	321	10/25/94	0740	AIR	40	3	730	P2/P2/P2 85/90/90	P2/P2/P2 85/86/85	P1/P1/P1 85/89/88	PASS	TM
TF- 03	324	10/25/94	0730	NY	40	2.5	750	P2/P2/P2 82/85/82	P2/P2/P2 82/79/83	P1/P1/P1 86/84/83	PASS	TM
TF- 04	321	10/25/94	1305	AIR	62	3	730	P2/P2/P2 74/73/74	P2/P2/P2 73/74/74	P1/P1/P1 80/74/75	PASS	TM
TF- 05	324	10/25/94	1305	NY	62	2.5	750	P2/P2/P2 78/80/79	P2/P2/P2 78/80/77	P1/P1/P1 77/80/80	PASS	TM
TF- 06	321	10/25/94	1620	AIR	55	3	730	P2/F1/- 71/33/-	-/-/- -/-/-	P1/P1/P1 71/76/72	FAIL	TM
TF- 07	321	10/25/94	1625	AIR	55	3	730	P2/P2/P2 74/64/72	P2/P2/P2 77/68/76	P1/P1/P1 71/80/76	PASS	TM
TF- 06-R1	321	10/25/94	1630	AIR	55	3	730	P2/P2/P2 74/77/74	P2/P2/P2 74/77/77	P1/P1/P1 80/76/76	PASS	TM
TF- 01	321	10/26/94	0905	NY	50	2.5	750	P2/P2/P2 83/83/89	P2/P2/P2 81/85/79	P1/P1/P1 79/82/82	PASS	TM
TF- 02	321	10/26/94	1300	NY	58	2.5	750	P2/P2/P2 67/66/73	P2/P2/P2 67/67/73	P1/P1/P1 64/70/69	PASS	TM

Note: (1) Modes are illustrated on Figure 7. Strengths are in pounds per inch.

FILENAME=TSFUSION.WK1

GEOMEMBRANE FUSION TRIAL SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SAMPLE NUMBER	WELDING MACHINE	WELD DATE	WELD TIME	WELD TECHNICIAN	AMBIENT AIR TEMPERATURE (F)	MACHINE SPEED	WEDGE TEMPERATURE (F)	TEST RESULTS (1) INSIDE PEEL MODE STRENGTH	TEST RESULTS (1) OUTSIDE PEEL MODE STRENGTH	TEST RESULTS (1) SHEAR MODE STRENGTH	PASS/ FAIL	QA MON.
TF- 03	321	10/26/94	1305	NY	58	2.5	750	P2/P2/P2	P2/P2/P2	P1/P1/P1	PASS	TM
								72/74/72	71/73/68	77/76/71		
TF- 04	321	10/26/94	1420	AIR	61	2	730	P2/P2/P2	P2/P2/P2	P1/P1/P1	PASS	TM
								69/69/71	67/69/71	68/72/73		
TF- 05	321	10/26/94	1422	AIR	61	3	730	P2/P2/P2	P2/P2/P2	P1/P1/P1	PASS	TM
								66/65/67	68/67/64	66/66/65		
TF- 06	324	10/26/94	1435	NY	65	2.5	750	P2/P2/P2	P2/P2/P2	P1/P1/P1	PASS	TM
								68/65/66	71/71/70	77/75/73		
TF- 01	321	10/27/94	0735	AIR	45	2.5	730	P2/P2/P2	P2/P2/P2	P1/P1/P1	PASS	TM
								76/83/76	82/89/83	84/84/82		
TF- 02	321	10/27/94	0741	AIR	45	2.5	730	P2/P2/P2	P2/P2/P2	P1/P1/P1	PASS	TM
								81/74/84	81/82/82	85/83/86		
TF- 03	321	10/27/94	1300	AIR	70	2.5	730	P2/P2/P2	P2/P2/P2	P1/P1/P1	PASS	TM
								64/63/65	68/65/65	66/67/69		
TF- 04	321	10/27/94	1301	AIR	70	2.5	730	P2/P2/P2	P2/P2/P2	P1/P1/P1	PASS	TM
								65/65/67	62/68/68	69/70/67		
TF- 01	321	10/28/94	1317	AIR	68	2.5	730	P2/P2/P2	P2/P2/P2	P1/P1/P1	PASS	TM
								64/62/64	65/68/69	71/69/70		
TF- 02	321	10/28/94	1328	AIR	68	2.5	730	P2/P2/P2	P2/P2/P2	P1/P1/P1	PASS	TM
								65/62/66	64/64/61	63/62/64		

Note: (1) Modes are illustrated on Figure 7. Strengths are in pounds per inch.

FILENAME=TSFUSION.WK1

GEOMEMBRANE FUSION TRIAL SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SAMPLE NUMBER	WELDING MACHINE	WELD DATE	WELD TIME	WELD TECHNICIAN	AMBIENT AIR TEMPERATURE (F)	MACHINE SPEED	WEDGE TEMPERATURE (F)	TEST RESULTS (1) INSIDE PEEL MODE STRENGTH	OUTSIDE PEEL MODE STRENGTH	SHEAR MODE STRENGTH	PASS/ FAIL	QA MON.
TF- 01	321	10/29/94	0750	AIR	55	2.5	730	P2/P2/P2 77/75/77	P2/P2/P2 61/76/77	P1/P1/P1 81/72/80	PASS	DRB
TF- 02	321	10/29/94	0751	AIR	55	2.5	730	P2/P2/P2 78/75/78	P2/P2/P2 75/79/76	P1/P1/P1 79/79/79	PASS	DRB
TF- 03	321	10/29/94	1345	AIR	70	2.5	730	P2/P2/P2 60/60/61	P2/P2/P2 57/59/59	P1/P1/P1 59/63/60	PASS	DRB
TF- 04	321	10/29/94	1347	AIR	70	2.5	730	P2/P2/P2 58/57/61	P2/P2/P2 58/58/58	P1/P1/P1 58/58/59	PASS	DRB

Note: (1) Modes are illustrated on Figure 7. Strengths are in pounds per inch.

FILENAME=TSFUSION.WK1

APPENDIX G.2

EXTRUSION TRIAL SEAM SUMMARY

GEOMEMBRANE EXTRUSION TRIAL SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SAMPLE NUMBER	WELDING MACHINE	WELD DATE	WELD TIME	WELD TECHNICIAN	AMBIENT AIR TEMPERATURE (F)	PREHEAT OR MACHINE SPEED	EXTRUDER TEMPERATURE (F)	TEST RESULTS (1) INSIDE PEEL MODE STRENGTH	OUTSIDE PEEL MODE STRENGTH	SHEAR MODE STRENGTH	PASS/ FAIL	QA MON.
TX- 01	1	09/30/94	1445	NY	92	3	405	P2/P2/P2 61/58/58	-/-/- -/-/-	P6/P6/P6 60/62/62	PASS	TM
TX- 02	24	09/30/94	1545	AIR	90	3	400	P2/P2/P2 55/54/57	-/-/- -/-/-	P6/P6/P6 62/59/61	PASS	TM
TX- 01	24	10/03/94	1320	AIR	77	3	400	P2/P2/P2 61/60/61	-/-/- -/-/-	P6/P6/P6 60/61/61	PASS	TM
TX- 01	24	10/04/94	1320	SS	74	6	430	P2/P2/P2 63/61/65	-/-/- -/-/-	P3/P6/P6 67/64/63	PASS	TM
TX- 02	1	10/04/94	1400	VP	74	6	410	P2/P2/P2 59/59/60	-/-/- -/-/-	P3/P3/P6 64/60/64	PASS	TM
TX- 03	1	10/04/94	1430	NY	76	6	410	P2/P2/P2 64/66/64	-/-/- -/-/-	P6/P6/P6 63/66/68	PASS	TM
TX- 01	24	10/05/94	1030	SS	70	6	430	P2/P2/P2 64/61/59	-/-/- -/-/-	P3/P3/P3 63/62/64	PASS	TM
TX- 02	24	10/05/94	1300	SS	72	7	430	P2/P2/P2 56/55/53	-/-/- -/-/-	P3/P6/P3 58/59/58	PASS	TM
TX- 03	1	10/05/94	1345	VP	72	7	410	P2/P2/P2 56/56/58	-/-/- -/-/-	P6/P6/P6 58/57/58	PASS	TM
TX- 04	1	10/05/94	1340	NY	72	7	410	P2/P2/P2 54/54/53	-/-/- -/-/-	P3/P3/P3 57/58/58	PASS	TM

Note. (1) Modes are illustrated on Figure 8. Strengths are in pounds per inch.

GEOMEMBRANE EXTRUSION TRIAL SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SAMPLE NUMBER	WELDING MACHINE	WELD DATE	WELD TIME	WELD TECHNICIAN	AMBIENT AIR TEMPERATURE (F)	PREHEAT OR MACHINE SPEED	EXTRUDER TEMPERATURE (F)	TEST RESULTS (1) INSIDE PEEL MODE STRENGTH	OUTSIDE PEEL MODE STRENGTH	SHEAR MODE STRENGTH	PASS/ FAIL	QA MON.
TX- 01	24	10/06/94	0715	SS	66	6	430	P2/F1/-	-/-/-	-/-/-	FAIL	TM
								68/60/-	-/-/-	-/-/-		
TX- 02	1	10/06/94	0730	VP	66	10	430	P2/P2/P2	-/-/-	P6/P6/P3	PASS	TM
								62/63/65	-/-/-	71/75/73		
TX- 03	1	10/06/94	0735	NY	66	10	430	P2/F1/-	-/-/-	-/-/-	FAIL	TM
								65/60/-	-/-/-	-/-/-		
TX- 01-R1	24	10/06/94	0735	SS	66	6	430	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								65/68/68	-/-/-	72/71/68		
TX- 04	8	10/06/94	0825	AIR	66	10	420	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								66/69/65	-/-/-	71/71/69		
TX- 05	24	10/06/94	1315	SS	79	6	430	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								59/57/59	-/-/-	62/60/63		
TX- 01	24	10/14/94	0730	SS	56	10	435	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								73/77/76	-/-/-	76/77/80		
TX- 02	1	10/14/94	0735	NY	56	10	435	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								69/68/70	-/-/-	77/78/81		
TX- 03	1	10/14/94	1310	NY	63	10	435	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								62/67/65	-/-/-	71/74/73		
TX- 04	24	10/14/94	1315	SS	63	10	450	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								69/72/70	-/-/-	73/73/74		

Note. (1) Modes are illustrated on Figure 8. Strengths are in pounds per inch.

GEOMEMBRANE EXTRUSION TRIAL SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SAMPLE NUMBER	WELDING MACHINE	WELD DATE	WELD TIME	WELD TECHNICIAN	AMBIENT AIR TEMPERATURE (F)	PREHEAT OR MACHINE SPEED	EXTRUDER TEMPERATURE (F)	TEST RESULTS (1) INSIDE PEEL MODE STRENGTH	OUTSIDE PEEL MODE STRENGTH	SHEAR MODE STRENGTH	PASS/ FAIL	QA MON.
TX- 01	1	10/21/94	0805	AIR	57	7	435	P2/P2/P2	-/-/-	P6/P6/P3	PASS	TM
								83/81/80	-/-/-	85/81/83		
TX- 01	24	10/27/94	0955	SS	55	10	450	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								76/77/75	-/-/-	83/81/78		
TX- 02	24	10/27/94	1310	SS	70	10	450	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								68/61/65	-/-/-	71/73/68		
TX- 03	1	10/27/94	1321	VP	70	10	450	P2/P2/F1	-/-/-	-/-/-	FAIL	TM
								65/61/60	-/-/-	-/-/-		
TX- 04	1	10/27/94	1320	NY	70	10	450	P2/P2/P2	-/-/-	P3/P3/P3	PASS	TM
								58/68/71	-/-/-	70/71/69		
TX- 01	24	10/28/94	0745	IK	50	10	450	P2/P2/P2	-/-/-	P6/P6/P3	PASS	TM
								83/79/81	-/-/-	86/89/87		
TX- 02	24	10/28/94	0747	SS	50	10	450	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								91/74/84	-/-/-	84/79/80		
TX- 03	1	10/28/94	0730	NY	50	10	450	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								69/78/76	-/-/-	84/84/81		
TX- 04	1	10/28/94	0735	VP	50	10	450	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								74/72/74	-/-/-	82/79/84		
TX- 05	1	10/28/94	1305	VP	68	10	450	P2/P2/P2	-/-/-	P6/P3/P3	PASS	TM
								63/58/59	-/-/-	68/70/68		

Note. (1) Modes are illustrated on Figure 8. Strengths are in pounds per inch.

GEOMEMBRANE EXTRUSION TRIAL SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SAMPLE NUMBER	WELDING MACHINE	WELD DATE	WELD TIME	WELD TECHNICIAN	AMBIENT AIR TEMPERATURE (F)	PREHEAT OR MACHINE SPEED	EXTRUDER TEMPERATURE (F)	TEST RESULTS (1) INSIDE PEEL MODE STRENGTH	OUTSIDE PEEL MODE STRENGTH	SHEAR MODE STRENGTH	PASS/ FAIL	QA MON.
TX- 06	1	10/28/94	1310	NY	68	10	450	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								69/64/66	-/-/-	66/68/69		
TX- 07	24	10/28/94	1315	SS	68	10	450	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								77/73/70	-/-/-	72/72/69		
TX- 01	24	10/29/94	0730	SS	55	10	450	P2/P2/P2	-/-/-	P6/P6/P6	PASS	DRB
								79/74/77	-/-/-	76/77/81		
TX- 02	1	10/29/94	0740	NY	55	10	450	P2/P2/P2	-/-/-	P6/P3/P3	PASS	DRB
								76/67/68	-/-/-	71/75/73		
TX- 03	24	10/29/94	1045	SS	65	10	450	P2/P2/P2	-/-/-	P6/P6/P6	PASS	DRB
								65/62/64	-/-/-	67/67/70		
TX- 04	1	10/29/94	1305	NY	70	10	450	P2/P2/P2	-/-/-	P3/P3/P3	PASS	DRB
								64/61/60	-/-/-	63/65/65		
TX- 05	1	10/29/94	1310	VP	70	10	450	P2/P2/P2	-/-/-	P3/P3/P3	PASS	DRB
								61/63/60	-/-/-	65/66/64		
TX- 06	24	10/29/94	1315	SS	70	10	450	P2/P2/P2	-/-/-	P6/P6/P6	PASS	DRB
								64/60/62	-/-/-	63/63/59		
TX- 01	24	10/31/94	1005	SS	50	10	450	P2/P2/P2	-/-/-	P3/P3/P3	PASS	TM
								73/77/69	-/-/-	80/81/81		
TX- 01	24	11/01/94	0730	SS	42	10	450	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								71/64/73	-/-/-	82/81/83		

Note. (1) Modes are illustrated on Figure 8. Strengths are in pounds per inch.

GEOMEMBRANE EXTRUSION TRIAL SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SAMPLE NUMBER	WELDING MACHINE	WELD DATE	WELD TIME	WELD TECHNICIAN	AMBIENT AIR TEMPERATURE (F)	PREHEAT OR MACHINE SPEED	EXTRUDER TEMPERATURE (F)	TEST RESULTS (1) INSIDE PEEL MODE STRENGTH	OUTSIDE PEEL MODE STRENGTH	SHEAR MODE STRENGTH	PASS/ FAIL	QA MON.
TX- 02	1	11/01/94	0800	VP	42	9	450	P2/P2/P2	-/-/-	P3/P3/P3	PASS	TM
								78/75/74	-/-/-	76/82/81		
TX- 03	1	11/01/94	0805	NY	42	9	450	P2/P2/P2	-/-/-	P3/P3/P3	PASS	TM
								82/87/79	-/-/-	87/84/84		
TX- 04	24	11/01/94	1310	SS	70	10	450	P2/P2/P2	-/-/-	P6/P6/P6	PASS	TM
								65/64/63	-/-/-	68/69/67		
TX- 05	1	11/01/94	1323	VP	70	9	450	P2/P2/P2	-/-/-	P3/P3/P3	PASS	TM
								56/59/63	-/-/-	64/65/70		
TX- 06	1	11/01/94	1328	NY	70	9	450	P2/P2/F1	-/-/-	-/-/-	FAIL	TM
								71/66/57	-/-/-	-/-/-		
TX- 06-R1	1	11/01/94	1332	NY	70	9	450	P2/P2/P2	-/-/-	P3/P3/P3	PASS	TM
								56/56/79	-/-/-	76/72/74		
TX- 01	24	11/02/94	0725	SS	48	10	450	P3/P3/P3	-/-/-	P2/P2/P2	PASS	BDH
								74/74/75	-/-/-	77/76/79		
TX- 02	1	11/02/94	0735	UP	48	10	450	P3/P3/P3	-/-/-	P2/P2/P2	PASS	BDH
								62/50/53	-/-/-	72/75/77		
TX- 03	1	11/02/94	0730	NY	48	10	450	P3/P3/P3	-/-/-	P2/P2/P2	PASS	BDH
								62/72/71	-/-/-	79/80/78		
TX- 04	1	11/02/94	1340	UP	65	10	450	P3/P3/P3	-/-/-	P2/P2/P2	PASS	BDH
								58/59/60	-/-/-	67/65/65		
TX- 05	1	11/02/94	1345	NY	65	10	450	P3/P3/P3	-/-/-	P2/P2/P2	PASS	BDH
								63/61/62	-/-/-	64/66/65		

Note. (1) Modes are illustrated on Figure 8. Strengths are in pounds per inch.

GEOMEMBRANE EXTRUSION TRIAL SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SAMPLE NUMBER	WELDING MACHINE	WELD DATE	WELD TIME	WELD TECHNICIAN	AMBIENT AIR TEMPERATURE (F)	PREHEAT OR MACHINE SPEED	EXTRUDER TEMPERATURE (F)	TEST RESULTS (1) INSIDE PEEL MODE STRENGTH	OUTSIDE PEEL MODE STRENGTH	SHEAR MODE STRENGTH	PASS/ FAIL	QA MON.
TX- 06	24	11/02/94	1415	SS	65	10	450	P3/P3/P3 62/65/69	-/-/- -/-/-	P2/P2/P2 67/65/65	PASS	BDH
TX- 01	1	11/03/94	0730	VP	65	10	450	P2/P2/P2 69/67/68	-/-/- -/-/-	P6/P6/P6 70/72/67	PASS	TM
TX- 02	24	11/03/94	0720	SS	65	10	450	P2/P2/P2 68/69/65	-/-/- -/-/-	P6/P6/P6 72/69/69	PASS	TM
TX- 03	24	11/03/94	1320	SS	70	10	450	P2/P2/P2 62/67/67	-/-/- -/-/-	P3/P6/P6 68/66/70	PASS	TM
TX- 04	1	11/03/94	1315	VP	70	10	450	P2/P2/P2 65/62/63	-/-/- -/-/-	P6/P6/P6 69/68/68	PASS	TM
TX- 01	24	11/04/94	0730	SS	60	5	450	P2/P2/P2 75/83/76	-/-/- -/-/-	P3/P3/P3 76/72/68	PASS	DRB
TX- 02	1	11/04/94	0745	VP	60	10	450	P2/P2/P2 73/71/69	-/-/- -/-/-	P3/P3/P3 70/69/77	PASS	DRB
TX- 01	1	11/07/94	0755	NY	55	10	450	P2/P2/P2 59/59/70	-/-/- -/-/-	P6/P6/P6 69/78/72	PASS	DRB
TX- 01	1	11/08/94	1045	NY	62	10	450	P2/P2/P2 68/73/64	-/-/- -/-/-	P6/P6/P6 67/68/69	PASS	DRB

Note. (1) Modes are illustrated on Figure 8. Strengths are in pounds per inch.

GEOMEMBRANE EXTRUSION TRIAL SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SAMPLE NUMBER	WELDING MACHINE	WELD DATE	WELD TIME	WELD TECHNICIAN	AMBIENT AIR TEMPERATURE (F)	PREHEAT OR MACHINE SPEED	EXTRUDER TEMPERATURE (F)	TEST RESULTS (1) INSIDE PEEL MODE STRENGTH	OUTSIDE PEEL MODE STRENGTH	SHEAR MODE STRENGTH	PASS/ FAIL	QA MON.
TX- 02	1	11/08/94	1545	NY	68	10	450	P2/P2/P2 73/75/67	-/-/- -/-/-	P3/P6/P3 73/74/80	PASS	DRB
TX- 01	1	11/10/94	0730	NY	45	10	450	P2/P2/P2 80/84/83	-/-/- -/-/-	P3/P3/P3 84/86/85	PASS	DRB
TX- 02	1	11/10/94	1330	VP	50	10	450	P2/P2/P2 79/73/75	-/-/- -/-/-	P3/P6/P3 78/85/76	PASS	DRB
TX- 01	1	11/11/94	0810	VP	65	10	450	P2/P2/P2 68/64/71	-/-/- -/-/-	P6/P6/P6 72/76/71	PASS	TM

Note. (1) Modes are illustrated on Figure 8. Strengths are in pounds per inch.

APPENDIX H

GEOMEMBRANE SEAM AND PRESSURE TEST SUMMARY

APPENDIX H.1

FUSION SEAM SUMMARY

GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS									TESTING PROCESS				
									NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)		P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 01 / P 02	09/29/94	1000	75	TM	AIR	318	335		P	09/30/94	DRB		
P 01 / P 02	09/29/94	1050	75	TM	AIR	318	566		P/V	10/03/94	DRB	DS-01	
P 01 / P 02	09/29/94	1140	78	TM	AIR	318	424		P	10/03/94	DRB	DS-02	
P 01 / P 05	09/30/94	0938	75	TM	AIR	318	1297		P	10/03/94	DRB	DS-09,10,11	
P 02 / P 139	10/27/94	1740	67	TM	AIR	321	13		P/V	10/31/94	BDH		
P 02 / P 140	10/27/94	1736	67	TM	AIR	321	23		P	10/28/94	DRB		
P 02 / P 141	10/27/94	1734	67	TM	AIR	321	24		P	10/28/94	DRB		
P 02 / P 3	09/29/94	1348	84	TM	AIR	318	1254		P/V	10/03/94	DRB	DS-03,04,05	
P 02 / 7 J	10/05/94	1500	78	TM	AIR	318	150		P/V	10/05/94	DRB		
P 03 / P 142	10/27/94	1729	68	TM	AIR	321	13		P	10/28/94	DRB		
P 03 / P 143	10/27/94	1724	68	TM	AIR	321	23		P	10/28/94	DRB		
P 03 / P 144	10/27/94	1721	68	TM	AIR	321	23		P	10/28/94	DRB		
P 03 / P 4	09/29/94	1520	88	TM	AIR	318	1178		P	10/03/94	DRB	DS-06,07,08	
P 03 / 7 J	10/05/94	1435	78	TM	AIR	318	150		P	10/05/94	DRB		
P 04 / P 145	10/27/94	1719	70	TM	AIR	321	20		P	10/28/94	DRB		
P 04 / P 146	10/27/94	1717	71	TM	AIR	321	23		P	10/28/94	DRB		
P 04 / P 147	10/27/94	1716	71	TM	AIR	321	6		P	10/28/94	DRB		
P 04 / P 28	10/11/94	1355	68	TM	AIR	318	701		P	10/12/94	DRB	DS-35,36	
P 04 / P 32	10/12/94	0834	54	TM	AIR	318	443		P	10/12/94	DRB	DS-41	
P 05 / P 6	09/30/94	1335	91	TM	AIR	318	1254		P/V	10/06/94	DRB	DS-12,13,14	

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
(2) "P" DENOTES PRESSURE TESTING; "V" DENOTES VACUUM TESTING.

GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS									TESTING PROCESS				
				AMBIENT			WELDING	WELDED	NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	MACHINE (Note 1)	LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 06 / P 7	10/03/94	0825	62	TM	SS	324	385	P	10/04/94	DRB	DS-15	
P 06 / P 7	10/03/94	0915	65	TM	SS	324	400	P/V	10/14/94	DRB		
P 06 / P 7	10/03/94	1015	71	TM	SS	324	430	P/V	10/12/94	DRB	DS-17	
P 07 / P 12	10/03/94	1435	77	TM	SS	324	307	P	10/04/94	DRB	DS-22	
P 07 / P 8	10/03/94	0841	62	TM	AIR	318	184	P	10/04/94	DRB		
P 07 / P 9	10/03/94	0921	65	TM	AIR	318	697	P	10/04/94	DRB	DS-16	
P 08 / P 10	10/03/94	1145	84	TM	AIR	318	184	P	10/04/94	DRB		
P 08 / P 9	10/03/94	0920	65	TM	AIR	318	23	P	10/04/94	DRB		
P 09 / P 10	10/03/94	1115	76	TM	AIR	318	528	P	10/04/94	DRB	DS-18,20	
P 09 / P 12	10/03/94	1410	78	TM	SS	324	23	P	10/04/94	DRB		
P 09 / P 13	10/03/94	1510	77	TM	SS	324	175	P	10/04/94	DRB		
P 10 / P 11	10/03/94	1130	79	TM	SS	324	358	P	10/04/94	DRB	DS-19	
P 10 / P 11	10/03/94	1310	78	TM	SS	324	337	P/V	10/06/94	TM	DS-21	
P 10 / P 13	10/03/94	1400	78	TM	SS	324	23	P	10/04/94	DRB		
P 10 / P 14	10/03/94	1620	78	TM	SS	324	14	P	10/04/94	DRB		
P 11 / P 14	10/03/94	1540	78	TM	SS	324	23	P	10/06/94	DRB		
P 11 / P 16	10/03/94	1652	77	TM	SS	324	694	P	10/05/94	TM	DS-24	
P 12 / P 13	10/03/94	1448	77	TM	SS	324	138	P	10/04/94	DRB		
P 13 / P 14	10/03/94	1615	78	TM	SS	324	52	P	10/04/94	DRB		
P 13 / P 15	10/03/94	1555	78	TM	SS	324	228	P	10/04/94	DRB	DS-23	

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
(2) "P" DENOTES PRESSURE TESTING; "V" DENOTES VACUUM TESTING.

GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
								NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 14 / P 15	10/03/94	1550	78	TM	SS	324	23	P	10/06/94	DRB		
P 14 / P 16	10/03/94	1650	77	TM	SS	324	10	V	10/07/94	DRB		
P 14 / P 21	10/05/94	1412	77	TM	AIR	318	55	P	10/06/94	DRB		
P 15 / P 21	10/05/94	1400	77	TM	AIR	318	175	P	10/06/94	DRB	DS-34	
P 16 / P 17	10/04/94	0932	65	TM	AIR	318	705	P	10/05/94	DRB	DS-26,27	
P 16 / P 21	10/05/94	1344	77	TM	AIR	318	23	P	10/06/94	DRB		
P 17 / P 18	10/04/94	0830	65	TM	AIR	318	703	P	10/05/94	DRB	DS-25	
P 17 / P 22	10/05/94	1340	77	TM	AIR	318	23	P	10/06/94	DRB		
P 18 / P 19	10/04/94	1055	65	TM	AIR	318	708	P	10/06/94	DRB	DS-28	
P 18 / P 23	10/05/94	1336	77	TM	AIR	318	23	P	10/06/94	DRB		
P 19 / P 20	10/04/94	1335	74	TM	AIR	318	324	P	10/06/94	DRB	DS-29	
P 19 / P 20	10/04/94	1410	76	TM	AIR	318	370	P	10/06/94	DRB	DS-30	
P 19 / P 24	10/05/94	1330	77	TM	AIR	318	23	P	10/06/94	DRB		
P 20 / P 25	10/05/94	1325	77	TM	AIR	318	23	P	10/06/94	DRB		
P 20 / P 26	10/05/94	1113	70	TM	AIR	318	336	P	10/06/94	DRB	DS-33	
P 20 / P 27	10/05/94	1030	70	TM	AIR	318	357	P	10/06/94	DRB		
P 21 / P 22	10/05/94	0833	63	TM	AIR	318	210	P	10/06/94	DRB		
P 22 / P 23	10/05/94	0850	63	TM	AIR	318	197	P	10/06/94	DRB	DS-31	
P 23 / P 24	10/05/94	0907	63	TM	AIR	318	180	P	10/06/94	DRB		
P 24 / P 25	10/05/94	0925	67	TM	AIR	318	158	P	10/06/94	DRB		

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
(2) "P" DENOTES PRESSURE TESTING; "V" DENOTES VACUUM TESTING.

GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
								NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 25 / P 27	10/05/94	1003	68	TM	AIR	318	138	P	10/06/94	DRB	DS-32	
P 26 / P 27	10/05/94	1055	70	TM	AIR	318	23	P	10/29/94	BDH		
P 26 / P 41	10/21/94	1910	64	TM	AIR	321	89	P	10/29/94	BDH		
P 26 / P 44	10/21/94	1650	70	TM	AIR	321	23	P	10/28/94	TM		
P 26 / P 45	10/21/94	1651	69	TM	AIR	321	23	P	10/28/94	TM		
P 26 / P 46	10/21/94	1653	69	TM	AIR	321	23	P	10/28/94	TM		
P 26 / P 47	10/21/94	1654	69	TM	AIR	321	23	P	10/28/94	TM		
P 26 / P 48	10/21/94	1656	69	TM	AIR	321	23	P	10/28/94	BDH		
P 26 / P 49	10/21/94	1657	69	TM	AIR	321	23	P	10/28/94	BDH		
P 26 / P 50	10/21/94	1659	68	TM	AIR	321	23	P	10/28/94	BDH		
P 26 / P 51	10/21/94	1700	68	TM	AIR	321	23	P	10/28/94	BDH		
P 26 / P 52	10/21/94	1702	68	TM	AIR	321	23	P	10/28/94	BDH		
P 26 / P 53	10/21/94	1703	68	TM	AIR	321	23	P	10/28/94	BDH	DS-54	
P 26 / P 54	10/21/94	1705	68	TM	AIR	321	19	P	10/28/94	BDH		
P 27 / P 41	10/21/94	1835	64	TM	AIR	321	380	P	10/29/94	BDH	DS-55	
P 27 / P 41	10/24/94	0821	55	TM	AIR	321	57	--	--	--		COVERED BY REPAIR 16-R
P 27 / P 94	10/24/94	1052	75	TM	AIR	321	21	P	11/02/94	DRB		
P 27 / P 94	10/24/94	0955	59	TM	AIR	321	26	P	11/02/94	DRB		
P 27 / P 95	10/24/94	1055	75	TM	AIR	321	16	P	11/02/94	DRB		
P 28 / P 29	10/11/94	1455	72	TM	AIR	318	709	P	10/12/94	DRB	DS-37	

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
(2) "P" DENOTES PRESSURE TESTING; "V" DENOTES VACUUM TESTING.

GEOMEMBRANE FUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS								TESTING PROCESS				
								NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)	P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 28 / P 32	10/12/94	1145	69	TM	AIR	318	23	P	10/12/94	DRB		
P 29 / P 30	10/11/94	1600	72	TM	AIR	318	705	P	10/12/94	DRB	DS-38,39	
P 29 / P 33	10/12/94	1140	69	TM	AIR	318	23	P	10/12/94	DRB		
P 30 / P 31	10/11/94	1710	70	TM	AIR	318	713	P	10/12/94	DRB	DS-40	
P 30 / P 33	10/12/94	1139	69	TM	AIR	318	12	V	10/14/94	DRB		
P 30 / P 35	10/12/94	1134	69	TM	AIR	318	7	V	10/14/94	DRB		
P 31 / P 37	10/12/94	1455	71	TM	AIR	321	504	P	10/14/94	TM	DS-45	
P 31 / P 38	10/12/94	1435	71	TM	AIR	321	204	P	10/14/94	TM		
P 31 / 9 R	10/12/94	1131	69	TM	AIR	318	23	P	10/12/94	DRB	DS-44	
P 32 / P 147	10/27/94	1715	71	TM	AIR	321	17	P	10/28/94	DRB		
P 32 / P 148	10/27/94	1658	72	TM	AIR	321	23	P	10/28/94	DRB		
P 32 / P 149	10/27/94	1653	72	TM	AIR	321	16	P	10/28/94	DRB		
P 32 / P 33	10/12/94	0925	55	TM	AIR	318	263	P	10/12/94	DRB	DS-42	
P 32 / P 34	10/12/94	0945	56	TM	AIR	318	124	P	10/12/94	DRB		
P 33 / P 34	10/12/94	0916	54	TM	AIR	318	23	P	10/12/94	DRB		
P 33 / P 35	10/12/94	1000	56	TM	AIR	318	248	P	10/12/94	DRB	DS-43	
P 34 / P 149	10/27/94	1652	72	TM	AIR	321	7	V	10/31/94	BDH		
P 34 / P 150	10/27/94	1650	72	TM	AIR	321	23	P	10/28/94	DRB		
P 34 / P 151	10/27/94	1648	72	TM	AIR	321	23	P	10/28/94	DRB		
P 34 / P 152	10/27/94	1648	72	TM	AIR	321	3	V	10/31/94	BDH		

NOTES: (1) WELDING MACHINES #318, 321 AND 324 ARE DAUL TRACK FUSION WELDERS.
(2) "P" DENOTES PRESSURE TESTING; "V" DENOTES VACUUM TESTING.

APPENDIX H.2

EXTRUSION SEAM SUMMARY

GEOMEMBRANE EXTRUSION SEAM SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

SEAMING PROCESS									TESTING PROCESS				
									NON-DESTRUCTIVE			DESTRUCT.	
SEAM NUMBER	DATE	START TIME	AMBIENT TEMPERATURE (F)	QA MONITOR	WELDING TECHNICIAN	WELDING MACHINE (Note 1)	WELDED LENGTH (FT)		P/V (Note 2)	DATE COMPLETE	QA MONITOR	TEST NUMBER	REMARKS
P 4 / P 28	10/14/94	0840	57	TM	NY	1	8		V	10/14/94	DRB		
P 19 / P 25	10/06/94	0935	66	TM	SS	24	4		V	10/07/94	DRB		
P 20 / P 26	10/06/94	1108	66	TM	AIR	8	2		V	10/06/94	TM		
P 20 / P 27	10/06/94	1108	66	TM	AIR	8	4		V	10/06/94	TM		
P 25 / P 27	10/06/94	1030	66	TM	SS	24	5		V	10/07/94	TM		
P 26 / P 44	10/29/94	1632	88	TM	NY	1	10		V	11/03/94	TM		
P 30 / P 35	10/14/94	0900	57	TM	SS	24	10		V	10/14/94	DRB		
P 59 / P 61	11/02/94	0932	50	TM	SS	24	5		V	11/09/94	DRB		
P 90 / P 106	11/02/94	1425	68	TM	SS	24	12		V	11/09/94	DRB		
P 115 / P 122	11/08/94	1500	68	DRB	NY	1	5		V	11/09/94	DRB		
P 138 / P 214	11/07/94	1130	65	TM	NY	1	7		V	11/09/94	DRB		
P 170 / 20-T	10/27/94	1547	71	TM	NY	1	3		V	11/01/94	BDH		
P 171 / 20-T	10/27/94	1548	71	TM	NY	1	23		V	11/01/94	BDH		
P 172 / 20-T	10/27/94	1600	71	TM	NY	1	5		V	11/01/94	BDH		

NOTES: (1) WELDING MACHINES #1, 8 AND 24 ARE EXTRUSION WELDERS.
(2) "V" DENOTES VACUUM TESTING.

APPENDIX I

GEOMEMBRANE SEAM STRENGTH DESTRUCTIVE TEST SUMMARIES

GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-01	DS-1	10/4/94	10/4/94	73.7	BRK	71.2	SE-1	70.0	SE-1	PASS	
				73.0	BRK	68.4	SE-1	66.5	SE-1		
				70.2	BRK	70.6	SE-1	69.5	SE-1		
				70.6	BRK	71.6	SE-1	72.2	SE-1		
				71.6	BRK	72.1	SE-1	71.1	SE-1		
ASLP-02	DS-2	10/4/94	10/4/94	72.4	BRK	70.5	SE-1	68.2	SE-1	PASS	
				72.7	BRK	69.0	SE-1	67.5	SE-1		
				70.7	BRK	69.4	SE-1	69.2	SE-1		
				71.6	BRK	70.4	SE-1	66.8	SE-1		
				73.1	BRK	69.8	SE-1	69.4	SE-1		
ASLP-03	DS-3	10/4/94	10/4/94	73.6	BRK	73.9	SE-1	73.2	SE-1	PASS	
				74.6	BRK	71.1	SE-1	67.0	SE-1		
				74.3	BRK	69.9	SE-1	68.8	SE-1		
				73.2	BRK	68.4	SE-1	70.9	SE-1		
				71.9	BRK	70.6	SE-1	71.1	SE-1		
ASLP-04	DS-4	10/4/94	10/4/94	73.0	BRK	27.3	AD	70.4	SE-1	FAIL	Peel A-1,2,3,4,5 Low Strength and/or Adhesion Failure SEE DS-4 N1, P1
				73.4	BRK	28.9	AD	71.1	SE-1		
				74.2	BRK	27.8	AD	70.9	SE-1		
				70.6	BRK	26.8	AD	72.0	SE-1		
				72.5	BRK	13.2	AD	65.4	SE-1		
ASLP-05	DS-5	10/4/94	10/4/94	71.5	BRK	71.5	SE-1	65.9	SE-1	PASS	
				73.1	BRK	70.4	SE-1	70.3	SE-1		
				71.0	BRK	65.3	SE-1	66.9	SE-1		
				74.6	BRK	71.0	SE-1	70.8	SE-1		
				73.6	BRK	67.0	SE-1	66.7	SE-1		

DATE: 12-5-94
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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-06	DS-6	10/4/94	10/4/94	76.4	BRK	71.0	SE-1	71.9	SE-1	PASS	
				74.6	BRK	69.2	SE-1	70.9	SE-1		
				75.3	BRK	70.0	SE-1	70.0	SE-1		
				71.2	BRK	68.2	SE-1	71.0	SE-1		
				72.0	BRK	66.7	SE-1	67.2	SE-1		
ASLP-07	DS-7	10/4/94	10/4/94	7.5	BRK	70.6	SE-1	73.7	SE-1	PASS	
				71.9	BRK	68.6	SE-1	72.2	SE-1		
				74.1	BRK	67.8	SE-1	73.7	SE-1		
				74.6	BRK	66.1	SE-1	71.0	SE-1		
				75.1	BRK	66.3	SE-1	72.3	SE-1		
ASLP-08	DS-8	10/4/94	10/4/94	69.8	BRK	68.5	SE-1	69.8	SE-1	PASS	
				71.0	BRK	66.7	SE-1	69.4	SE-1		
				72.9	BRK	66.5	SE-1	70.1	SE-1		
				71.8	BRK	67.3	SE-1	67.3	SE-1		
				71.4	BRK	63.3	SE-1	67.1	SE-1		
ASLP-09	DS-9	10/5/94	10/5/94	69.0	BRK	68.3	SE-1	68.8	SE-1	PASS	
				70.6	BRK	65.0	SE-1	64.7	SE-1		
				68.4	BRK	65.8	SE-1	69.3	SE-1		
				65.2	BRK	66.9	SE-1	65.6	SE-1		
				68.8	BRK	64.4	SE-1	65.5	SE-1		
ASLP-10	DS-10	10/5/94	10/5/94	68.2	BRK	67.5	SE-1	67.9	SE-1	PASS	
				68.8	BRK	67.7	SE-1	68.5	SE-1		
				66.0	BRK	66.2	SE-1	66.8	SE-1		
				66.9	BRK	66.0	SE-1	68.3	SE-1		
				67.3	BRK	65.2	SE-1	65.7	SE-1		

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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-11	DS-11	10/5/94	10/5/94	68.3	BRK	67.5	SE-1	68.4	SE-1	PASS	
				67.3	BRK	65.4	SE-1	63.1	SE-1		
				69.0	BRK	65.7	SE-1	65.0	SE-1		
				70.1	BRK	66.1	SE-1	65.9	SE-1		
				70.7	BRK	66.5	SE-1	66.8	SE-1		
ASLP-12	DS-12	10/5/94	10/5/94	72.9	BRK	71.1	SE-1	68.6	SE-1	PASS	
				73.7	BRK	73.0	SE-1	69.9	SE-1		
				74.2	BRK	67.0	SE-1	64.2	SE-1		
				74.0	BRK	68.0	SE-1	68.4	SE-1		
				70.4	BRK	66.9	SE-1	66.6	SE-1		
ASLP-13	DS-13	10/5/94	10/5/94	67.8	BRK	68.5	SE-1	68.9	SE-1	PASS	
				70.4	BRK	67.1	SE-1	67.0	SE-1		
				70.2	BRK	67.6	SE-1	66.6	SE-1		
				68.5	BRK	63.1	SE-1	63.7	SE-1		
				68.8	BRK	64.4	SE-1	63.6	SE-1		
ASLP-14	DS-14	10/5/94	10/5/94	70.1	BRK	67.3	SE-1	65.6	SE-1	PASS	
				68.7	BRK	66.7	SE-1	64.3	SE-1		
				70.2	BRK	66.2	SE-1	62.7	SE-1		
				70.7	BRK	68.9	SE-1	64.8	SE-1		
				71.0	BRK	68.4	SE-1	67.5	SE-1		
ASLP-15	DS-15	10/5/94	10/5/94	69.8	BRK	69.7	SE-1	68.4	SE-1	PASS	
				70.7	BRK	68.4	SE-1	65.9	SE-1		
				68.4	BRK	69.7	SE-1	67.3	SE-1		
				71.3	BRK	68.3	SE-1	66.9	SE-1		
				70.9	BRK	67.6	SE-1	66.8	SE-1		

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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
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947-6174

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				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-16	DS-16	10/5/94	10/5/94	68.9	BRK	68.0	SE-1	68.1	SE-1	PASS	
				68.6	BRK	68.3	SE-1	67.9	SE-1		
				68.0	BRK	67.1	SE-1	68.2	SE-1		
				68.0	BRK	66.1	SE-1	66.1	SE-1		
				66.7	BRK	63.6	SE-1	60.7	SE-1		
ASLP-17	DS-17	10/5/94	10/5/94	71.5	BRK	70.2	SE-1	68.3	SE-1	PASS	
				73.4	BRK	69.9	SE-1	68.2	SE-1		
				72.0	BRK	65.0	SE-1	68.7	SE-1		
				67.9	BRK	69.4	SE-1	69.3	SE-1		
				69.9	BRK	67.9	SE-1	64.7	SE-1		
ASLP-18	DS-18	10/5/94	10/5/94	67.7	BRK	66.9	SE-1	67.6	SE-1	PASS	
				69.2	BRK	66.5	SE-1	66.8	SE-1		
				69.6	BRK	65.2	SE-1	66.8	SE-1		
				69.6	BRK	65.3	SE-1	62.6	SE-1		
				68.2	BRK	63.1	SE-1	64.2	SE-1		
ASLP-19	DS-19	10/5/94	10/5/94	68.9	BRK	67.2	SE-1	67.1	SE-1	PASS	
				67.8	BRK	64.2	SE-1	64.4	SE-1		
				67.3	BRK	64.0	SE-1	63.9	SE-1		
				65.6	BRK	61.9	SE-1	64.9	SE-1		
				65.0	BRK	63.2	SE-1	61.0	SE-1		
ASLP-20	DS-22	10/5/94	10/5/94	73.0	BRK	70.1	SE-1	71.5	SE-1	PASS	
				75.4	BRK	70.7	SE-1	73.8	SE-1		
				73.8	BRK	68.4	SE-1	70.1	SE-1		
				72.9	BRK	70.0	SE-1	69.8	SE-1		
				73.2	BRK	66.9	SE-1	67.8	SE-1		

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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

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				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-21	DSE-1	10/5/94	10/5/94	71.7	BRK1	56.8	AD-1			FAIL	Extrusion Weld Peel 1,2,3,4,5 Adhesion Failure SEE DSE-1 N1, P1
				70.0	BRK1	49.2	AD-1				
				71.5	BRK1	45.0	AD-1				
				69.8	BRK1	51.2	AD-1				
				68.8	BRK1	53.4	AD-1				
ASLP-22	DSE-2	10/5/94	10/5/94	69.3	BRK1	60.1	SE-3			PASS	Extrusion Weld
				67.5	BRK1	55.9	SE-3				
				69.8	BRK1	58.5	SE-3				
				68.8	BRK1	61.9	SE-3				
				64.8	BRK1	60.1	SE-3				
ASLP-23	DS-20	10/6/94	10/6/94	68.7	BRK	67.3	SE-1	67.9	SE-1	PASS	
				66.0	BRK	65.8	SE-1	63.8	SE-1		
				69.9	BRK	66.7	SE-1	64.0	SE-1		
				69.1	BRK	66.7	SE-1	64.5	SE-1		
				69.0	BRK	61.4	SE-1	62.2	SE-1		
ASLP-24	DS-21	10/6/94	10/6/94	65.7	BRK	65.5	SE-1	67.1	SE-1	PASS	
				69.3	BRK	67.4	SE-1	66.3	SE-1		
				67.4	BRK	67.2	SE-1	64.5	SE-1		
				68.5	BRK	63.5	SE-1	62.9	SE-1		
				67.5	BRK	65.2	SE-1	62.9	SE-1		
ASLP-25	DS-23	10/6/94	10/6/94	72.3	BRK	71.8	SE-1	69.9	SE-1	PASS	
				71.3	BRK	69.8	SE-1	68.9	SE-1		
				72.5	BRK	69.5	SE-1	69.2	SE-1		
				73.9	BRK	69.7	SE-1	70.3	SE-1		
				70.0	BRK	64.1	SE-1	65.9	SE-1		

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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
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GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-21	DS-24	10/6/94	10/6/94	66.3	BRK	66.3	SE-1	67.2	SE-1	PASS	
				68.2	BRK	67.0	SE-1	67.5	SE-1		
				71.7	BRK	66.7	SE-1	66.6	SE-1		
				67.8	BRK	65.4	SE-1	64.2	SE-1		
				68.7	BRK	64.3	SE-1	63.8	SE-1		
ASLP-27	DS-25	10/6/94	10/6/94	69.4	BRK	67.2	SE-1	66.5	SE-1	PASS	
				68.3	BRK	66.9	SE-1	67.3	SE-1		
				69.0	BRK	65.3	SE-1	63.1	SE-1		
				68.1	BRK	65.7	SE-1	64.0	SE-1		
				66.5	BRK	63.4	SE-1	65.3	SE-1		
ASLP-28	DS-26	10/6/94	10/6/94	67.3	BRK	66.7	SE-1	67.2	SE-1	PASS	
				68.9	BRK	66.9	SE-1	67.1	SE-1		
				68.3	BRK	66.8	SE-1	65.3	SE-1		
				66.6	BRK	66.1	SE-1	66.7	SE-1		
				67.0	BRK	63.0	SE-1	61.9	SE-1		
ASLP-29	DS-27	10/6/94	10/6/94	67.4	BRK	65.5	SE-1	67.2	SE-1	PASS	
				68.7	BRK	64.7	SE-1	68.0	SE-1		
				68.3	BRK	64.6	SE-1	65.2	SE-1		
				68.1	BRK	67.3	SE-1	67.9	SE-1		
				68.1	BRK	64.4	SE-1	64.0	SE-1		
ASLP-30	DS-28	10/6/94	10/6/94	63.4	BRK	64.3	SE-1	63.0	SE-1	PASS	
				66.1	BRK	64.4	SE-1	58.9	SE-1		
				67.6	BRK	64.6	SE-1	66.7	SE-1		
				66.4	BRK	65.9	SE-1	65.9	SE-1		
				66.9	BRK	65.7	SE-1	63.7	SE-1		

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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
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GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-31	DS-4N1	10/6/94	10/6/94	68.9	BRK	72.9	SE-1	73.7	SE-1	PASS	
				74.0	BRK	70.0	SE-1	72.2	SE-1		
				73.4	BRK	70.3	SE-1	70.1	SE-1		
				72.2	BRK	71.4	SE-1	72.3	SE-1		
				75.3	BRK	68.2	SE-1	64.9	SE-1		
ASLP-32	DS-4P1	10/6/94	10/6/94	69.2	BRK	71.7	SE-1	72.9	SE-1	PASS	
				71.5	BRK	70.5	SE-1	68.3	SE-1		
				72.6	BRK	69.3	SE-1	68.8	SE-1		
				71.2	BRK	69.1	SE-1	71.6	SE-1		
				72.7	BRK	68.1	SE-1	70.5	SE-1		
ASLP-33	DSE-1N1	10/7/94	10/7/94	70.8	BRK2	58.4	SE-3			PASS	Extrusion Weld
				69.0	BRK1	66.0	SE-3				
				69.5	BRK2	63.4	SE-3				
				68.7	BRK1	57.9	SE-3				
				69.0	BRK1	63.3	SE-3				
ASLP-34	DSE-1P1	10/7/94	10/7/94	71.7	BRK1	58.3	SE-3			PASS	Extrusion Weld
				70.0	BRK1	62.6	SE-3				
				72.1	BRK1	59.5	SE-3				
				70.5	BRK1	53.0	SE-3				
				71.1	BRK1	59.6	SE-3				
ASLP-35	DS-29	10/7/94	10/7/94	70.5	BRK	69.9	SE-1	67.9	SE-1	PASS	
				71.6	BRK	68.3	SE-1	69.9	SE-1		
				70.8	BRK	68.8	SE-1	69.7	SE-1		
				70.6	BRK	68.4	SE-1	66.7	SE-1		
				70.0	BRK	68.2	SE-1	66.5	SE-1		

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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

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				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-36	DS-30	10/7/94	10/7/94	70.5	BRK	69.3	SE-1	66.9	SE-1	PASS	
				70.3	BRK	65.9	SE-1	63.7	SE-1		
				69.0	BRK	66.3	SE-1	64.6	SE-1		
				68.2	BRK	69.9	SE-1	68.1	SE-1		
				68.2	BRK	67.8	SE-1	64.4	SE-1		
ASLP-37	DS-31	10/7/94	10/7/94	71.0	BRK	70.3	SE-1	69.9	SE-1	PASS	
				69.9	BRK	69.1	SE-1	70.6	SE-1		
				72.8	BRK	68.6	SE-1	67.8	SE-1		
				71.6	BRK	66.7	SE-1	67.6	SE-1		
				70.3	BRK	66.2	SE-1	68.3	SE-1		
ASLP-38	DS-32	10/7/94	10/7/94	74.2	BRK	71.9	SE-1	69.9	SE-1	PASS	
				75.5	BRK	68.0	SE-1	68.6	SE-1		
				74.6	BRK	69.9	SE-1	70.8	SE-1		
				72.4	BRK	71.1	SE-1	71.6	SE-1		
				71.1	BRK	66.9	SE-1	68.8	SE-1		
ASLP-39	DS-33	10/7/94	10/7/94	74.6	BRK	70.0	SE-1	72.3	SE-1	PASS	
				74.7	BRK	73.0	SE-1	72.7	SE-1		
				74.9	BRK	70.0	SE-1	66.9	SE-1		
				74.2	BRK	72.1	SE-1	71.2	SE-1		
				71.1	BRK	72.5	SE-1	71.1	SE-1		
ASLP-40	DS-34	10/7/94	10/7/94	71.3	BRK	68.1	SE-1	70.2	SE-1	PASS	
				69.1	BRK	66.1	SE-1	68.5	SE-1		
				72.2	BRK	65.9	SE-1	67.0	SE-1		
				70.7	BRK	69.7	SE-1	69.9	SE-1		
				66.5	BRK	63.2	SE-1	66.1	SE-1		

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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
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				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-41	DS-35	10/17/94	10/17/94	68.7	BRK	66.8	SE-1	68.2	SE-1	PASS	
				69.9	BRK	67.7	SE-1	69.0	SE-1		
				69.8	BRK	68.7	SE-1	66.9	SE-1		
				67.9	BRK	66.9	SE-1	68.9	SE-1		
				67.3	BRK	66.5	SE-1	65.5	SE-1		
ASLP-42	DS-36	10/17/94	10/17/94	69.8	BRK	67.0	SE-1	67.8	SE-1	PASS	
				69.6	BRK	68.7	SE-1	69.3	SE-1		
				69.0	BRK	68.9	SE-1	68.8	SE-1		
				68.2	BRK	67.8	SE-1	68.7	SE-1		
				66.1	BRK	67.0	SE-1	68.6	SE-1		
ASLP-43	DS-37	10/17/94	10/17/94	70.5	BRK	68.5	SE-1	70.9	SE-1	PASS	
				70.5	BRK	69.5	SE-1	73.0	SE-1		
				69.6	BRK	68.7	SE-1	70.3	SE-1		
				70.0	BRK	68.6	SE-1	72.6	SE-1		
				69.7	BRK	66.9	SE-1	68.1	SE-1		
ASLP-44	DS-38	10/17/94	10/17/94	69.0	BRK	68.5	SE-1	67.9	SE-1	PASS	
				69.9	BRK	66.3	SE-1	66.9	SE-1		
				69.2	BRK	69.0	SE-1	67.8	SE-1		
				69.6	BRK	67.9	SE-1	68.9	SE-1		
				69.9	BRK	66.3	SE-1	63.9	SE-1		
ASLP-45	DS-39	10/17/94	10/17/94	71.8	BRK	65.3	SE-1	66.9	SE-1	PASS	
				69.1	BRK	65.9	SE-1	66.7	SE-1		
				70.8	BRK	66.9	SE-1	66.4	SE-1		
				67.6	BRK	64.3	SE-1	64.4	SE-1		
				68.1	BRK	63.9	SE-1	64.8	SE-1		

DATE:	12·5·94
CHECKED:	[illegible]
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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-46	DS-40	10/17/94	10/17/94	69.0	BRK	67.9	SE-1	69.2	SE-1	PASS	
				69.5	BRK	68.5	SE-1	69.9	SE-1		
				71.2	BRK	68.0	SE-1	68.6	SE-1		
				70.2	BRK	69.5	SE-1	70.0	SE-1		
				70.0	BRK	63.6	SE-1	68.7	SE-1		
ASLP-47	DS-41	10/17/94	10/17/94	71.0	BRK	70.7	SE-1	69.7	SE-1	PASS	
				70.9	BRK	70.2	SE-1	67.4	SE-1		
				70.6	BRK	69.7	SE-1	68.4	SE-1		
				70.0	BRK	69.9	SE-1	69.0	SE-1		
				68.3	BRK	65.5	SE-1	65.1	SE-1		
ASLP-48	DS-42	10/17/94	10/17/94	68.8	BRK	67.0	SE-1	68.0	SE-1	PASS	
				69.7	BRK	67.4	SE-1	67.5	SE-1		
				69.8	BRK	68.6	SE-1	68.3	SE-1		
				69.2	BRK	66.5	SE-1	66.8	SE-1		
				67.3	BRK	67.4	SE-1	67.4	SE-1		
ASLP-49	DS-43	10/17/94	10/17/94	72.3	BRK	68.2	SE-1	67.7	SE-1	PASS	
				73.0	BRK	67.7	SE-1	67.5	SE-1		
				71.3	BRK	68.5	SE-1	67.9	SE-1		
				72.3	BRK	69.2	SE-1	69.9	SE-1		
				70.0	BRK	67.4	SE-1	68.3	SE-1		
ASLP-50	DS-44	10/17/94	10/17/94	75.7	BRK	73.1	SE-1	69.3	SE-1	PASS	
				74.7	BRK	73.5	SE-1	69.9	SE-1		
				72.5	BRK	70.5	SE-1	73.0	SE-1		
				74.8	BRK	70.9	SE-1	73.3	SE-1		
				71.5	BRK	71.5	SE-1	73.2	SE-1		

DATE: 12·5·94
CHECKED: [illegible]
REVIEWED: [illegible]

GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-51	DS-45	10/17/94	10/17/94	69.5	BRK	68.3	SE-1	69.4	SE-1	PASS	
				67.7	BRK	68.5	SE-1	69.0	SE-1		
				66.4	BRK	69.7	SE-1	69.3	SE-1		
				67.0	BRK	67.1	SE-1	66.6	SE-1		
				67.6	BRK	65.6	SE-1	66.6	SE-1		
ASLP-52	DS-46	10/17/94	10/17/94	73.5	BRK	72.1	SE-1	70.8	SE-1	PASS	
				73.3	BRK	72.4	SE-1	70.9	SE-1		
				70.4	BRK	72.0	SE-1	69.9	SE-1		
				73.1	BRK	70.0	SE-1	70.1	SE-1		
				72.4	BRK	68.0	SE-1	67.9	SE-1		
ASLP-53	DS-47	10/17/94	10/17/94	71.6	BRK	68.2	SE-1	72.2	SE-1	PASS	
				68.7	BRK	69.5	SE-1	73.3	SE-1		
				69.9	BRK	67.0	SE-1	69.1	SE-1		
				70.6	BRK	67.9	SE-1	69.9	SE-1		
				69.5	BRK	66.0	SE-1	68.4	SE-1		
ASLP-54	DS-48	10/17/94	10/17/94	73.6	BRK	70.9	SE-1	69.7	SE-1	PASS	
				72.4	BRK	70.9	SE-1	70.2	SE-1		
				71.9	BRK	70.7	SE-1	67.4	SE-1		
				70.0	BRK	68.9	SE-1	69.8	SE-1		
				69.8	BRK	66.1	SE-1	67.5	SE-1		
ASLP-55	DS-92	10/28/94	10/28/94	72.6	BRK	72.1	SE-1	75.0	SE-1	PASS	
				72.8	BRK	70.0	SE-1	70.0	SE-1		
				71.7	BRK	70.7	SE-1	71.9	SE-1		
				69.0	BRK	69.1	SE-1	72.6	SE-1		
				68.2	BRK	67.4	SE-1	67.8	SE-1		

DATE:	12·5 '94
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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-56	DS-93	10/28/94	10/28/94	72.6	BRK	71.8	SE-1	73.5	SE-1	PASS	
				70.2	BRK	71.4	SE-1	72.5	SE-1		
				71.6	BRK	69.9	SE-1	70.4	SE-1		
				72.2	BRK	67.9	SE-1	71.4	SE-1		
				70.0	BRK	68.5	SE-1	69.3	SE-1		
ASLP-57	DS-94	10/28/94	10/28/94	78.8	BRK	76.8	SE-1	77.7	SE-1	PASS	
				81.7	BRK	75.8	SE-1	73.2	SE-1		
				78.1	BRK	73.0	SE-1	74.9	SE-1		
				77.2	BRK	72.9	SE-1	76.8	SE-1		
				77.6	BRK	76.4	SE-1	73.3	SE-1		
ASLP-58	DS-95	10/28/94	10/28/94	70.6	BRK	72.2	SE-1	71.6	SE-1	PASS	
				71.1	BRK	72.3	SE-1	71.5	SE-1		
				71.9	BRK	72.4	SE-1	71.1	SE-1		
				72.5	BRK	70.2	SE-1	70.2	SE-1		
				71.3	BRK	72.5	SE-1	72.5	SE-1		
ASLP-59	DS-96	10/28/94	10/28/94	74.3	BRK	68.3	SE-1	69.2	SE-1	PASS	
				73.0	BRK	62.9	SE-1	68.7	SE-1		
				74.3	BRK	64.4	SE-1	65.4	SE-1		
				71.2	BRK	56.6	SE-1	69.7	SE-1		
				71.7	BRK	69.0	SE-1	69.9	SE-1		
ASLP-60	DS-97	10/28/94	10/28/94	69.3	BRK	66.2	SE-1	66.4	SE-1	PASS	
				70.2	BRK	62.9	SE-1	61.9	SE-1		
				68.9	BRK	64.3	SE-1	67.9	SE-1		
				67.3	BRK	67.0	SE-1	68.8	SE-1		
				69.8	BRK	64.7	SE-1	66.4	SE-1		

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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-61	DS-98	10/28/94	10/28/94	79.4	BRK	66.9	SE-1	74.7	SE-1	FAIL	Peel A-4,5 Adhesion Failure SEE DS-98 N1, P1
				77.4	BRK	74.8	SE-1	73.2	SE-1		
				79.1	BRK	73.9	SE-1	73.8	SE-1		
				81.3	BRK	56.9	AD	73.9	SE-1		
				75.4	BRK	60.6	AD	71.1	SE-1		
ASLP-62	DS-51	11/1/94	11/1/94	71.2	BRK	68.5	SE-1	69.9	SE-1	PASS	
				70.4	BRK	68.6	SE-1	68.9	SE-1		
				70.6	BRK	68.2	SE-1	69.6	SE-1		
				70.0	BRK	67.4	SE-1	67.4	SE-1		
				69.6	BRK	68.5	SE-1	68.8	SE-1		
ASLP-63	DS-52	11/1/94	11/1/94	70.9	BRK	71.6	SE-1	71.2	SE-1	PASS	
				71.0	BRK	66.2	SE-1	66.5	SE-1		
				71.1	BRK	70.4	SE-1	70.8	SE-1		
				69.5	BRK	69.3	SE-1	69.3	SE-1		
				69.8	BRK	66.6	SE-1	69.2	SE-1		
ASLP-64	DS-53	11/1/94	11/1/94	71.2	BRK	70.7	SE-1	71.3	SE-1	PASS	
				71.7	BRK	68.9	SE-1	66.7	SE-1		
				70.5	BRK	67.7	SE-1	66.1	SE-1		
				72.1	BRK	67.8	SE-1	69.8	SE-1		
				69.2	BRK	66.6	SE-1	66.3	SE-1		
ASLP-65	DS-56	11/1/94	11/1/94	73.8	BRK	72.1	SE-1	70.0	SE-1	PASS	
				74.8	BRK	72.1	SE-1	67.4	SE-1		
				75.5	BRK	71.2	SE-1	69.5	SE-1		
				74.4	BRK	70.8	SE-1	68.5	SE-1		
				74.3	BRK	69.8	SE-1	67.6	SE-1		

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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-66	DS-57	11/1/94	11/1/94	70.9	BRK	71.0	SE-1	69.8	SE-1	PASS	
				71.0	BRK	70.8	SE-1	70.1	SE-1		
				72.7	BRK	70.5	SE-1	71.2	SE-1		
				71.9	BRK	71.7	SE-1	69.5	SE-1		
				72.3	BRK	69.3	SE-1	68.2	SE-1		
ASLP-67	DS-61	11/1/94	11/1/94	71.7	BRK	72.2	SE-1	71.1	SE-1	PASS	
				70.1	BRK	70.8	SE-1	71.8	SE-1		
				70.5	BRK	70.4	SE-1	70.3	SE-1		
				71.5	BRK	69.3	SE-1	65.8	SE-1		
				70.5	BRK	68.2	SE-1	65.1	SE-1		
ASLP-68	DS-63	11/1/94	11/1/94	71.3	BRK	70.3	SE-1	67.6	SE-1	PASS	
				71.0	BRK	68.4	SE-1	68.8	SE-1		
				73.3	BRK	66.9	SE-1	69.2	SE-1		
				69.6	BRK	69.6	SE-1	70.8	SE-1		
				70.6	BRK	68.3	SE-1	67.7	SE-1		
ASLP-69	DS-64	11/1/94	11/1/94	69.5	BRK	71.0	SE-1	69.6	SE-1	PASS	
				69.8	BRK	71.8	SE-1	70.0	SE-1		
				70.1	BRK	70.5	SE-1	68.1	SE-1		
				70.0	BRK	69.9	SE-1	67.0	SE-1		
				67.9	BRK	67.3	SE-1	65.8	SE-1		
ASLP-70	DS-99	11/1/94	11/1/94	74.4	BRK	73.2	SE-1	72.2	SE-1	PASS	
				71.8	BRK	73.2	SE-1	72.5	SE-1		
				71.1	BRK	70.7	SE-1	67.1	SE-1		
				73.4	BRK	69.9	SE-1	69.3	SE-1		
				72.9	BRK	68.4	SE-1	67.3	SE-1		

DATE: 12·5·94
CHECKED: [illegible]
REVIEWED: [illegible]

GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-71	DS-100	11/1/94	11/1/94	74.5	BRK	75.4	SE-1	74.6	SE-1	PASS	
				74.0	BRK	73.3	SE-1	70.4	SE-1		
				76.0	BRK	74.9	SE-1	73.7	SE-1		
				78.2	BRK	71.3	SE-1	73.5	SE-1		
				72.5	BRK	70.5	SE-1	72.4	SE-1		
ASLP-72	DS-101	11/1/94	11/1/94	69.6	BRK	68.4	SE-1	69.4	SE-1	PASS	
				68.2	BRK	66.4	SE-1	69.2	SE-1		
				70.4	BRK	67.0	SE-1	68.0	SE-1		
				68.8	BRK	65.6	SE-1	68.6	SE-1		
				65.6	BRK	64.9	SE-1	66.8	SE-1		
ASLP-73	DS-98P1	11/1/94	11/1/94	71.5	BRK	69.7	SE-1	71.1	SE-1	PASS	
				70.8	BRK	69.3	SE-1	71.5	SE-1		
				73.0	BRK	67.4	SE-1	69.1	SE-1		
				69.8	BRK	65.2	SE-1	67.4	SE-1		
				72.2	BRK	63.4	SE-1	67.9	SE-1		
ASLP-74	DS-98N1	11/1/94	11/1/94	70.1	BRK	71.5	SE-1	69.9	SE-1	PASS	
				74.1	BRK	68.9	SE-1	67.4	SE-1		
				70.0	BRK	69.9	SE-1	69.8	SE-1		
				72.6	BRK	71.8	SE-1	66.4	SE-1		
				71.1	BRK	69.1	SE-1	71.6	SE-1		
ASLP-75	DS-49	11/2/94	11/2/94	71.4	BRK	71.8	SE-1	72.9	SE-1	PASS	
				71.2	BRK	71.4	SE-1	73.7	SE-1		
				71.6	BRK	69.6	SE-1	71.3	SE-1		
				71.9	BRK	69.3	SE-1	72.3	SE-1		
				67.9	BRK	67.6	SE-1	68.5	SE-1		

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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-76	DS-50	11/2/94	11/2/94	74.3	BRK	70.5	SE-1	73.4	SE-1	PASS	
				70.7	BRK	70.5	SE-1	73.8	SE-1		
				73.0	BRK	69.9	SE-1	72.7	SE-1		
				70.0	BRK	69.7	SE-1	70.8	SE-1		
				72.0	BRK	52.8	AD-BRK	72.6	SE-1		
ASLP-77	DS-55	11/2/94	11/2/94	69.4	BRK	68.8	SE-1	69.2	SE-1	PASS	
				67.3	BRK	67.8	SE-1	65.0	SE-1		
				70.5	BRK	66.1	SE-1	66.5	SE-1		
				69.8	BRK	68.8	SE-1	69.5	SE-1		
				68.5	BRK	65.4	SE-1	62.6	SE-1		
ASLP-78	DS-58	11/2/94	11/2/94	74.9	BRK	70.5	SE-1	71.8	SE-1	PASS	
				73.3	BRK	70.6	SE-1	72.1	SE-1		
				74.4	BRK	70.1	SE-1	71.6	SE-1		
				71.4	BRK	66.6	SE-1	69.8	SE-1		
				70.5	BRK	69.9	SE-1	72.2	SE-1		
ASLP-79	DS-59	11/2/94	11/2/94	71.0	BRK	69.4	SE-1	69.5	SE-1	FAIL	Peel A-2,5 Adhesion Failure SEE DS-59 N1, P1
				68.7	BRK	68.1	AD	65.2	SE-1		
				69.9	BRK	68.6	AD-BRK	68.8	SE-1		
				68.2	BRK	67.2	SE-1	67.2	SE-1		
				69.6	BRK	62.3	AD	66.7	SE-1		
ASLP-80	DS-60	11/2/94	11/2/94	76.2	BRK	75.0	SE-1	74.6	SE-1	PASS	
				75.2	BRK	72.7	SE-1	73.6	SE-1		
				70.3	BRK	72.6	SE-1	72.4	SE-1		
				69.6	BRK	72.5	SE-1	72.3	SE-1		
				72.4	BRK	72.5	SE-1	72.0	SE-1		

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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-81	DS-65	11/2/94	11/2/94	69.2	BRK	70.0	SE-1	68.7	SE-1	PASS	
				69.2	BRK	67.3	SE-1	69.8	SE-1		
				68.9	BRK	68.5	SE-1	69.9	SE-1		
				69.9	BRK	68.3	SE-1	69.0	SE-1		
				67.7	BRK	64.5	SE-1	65.5	SE-1		
ASLP-82	DS-66	11/2/94	11/2/94	70.9	BRK	67.4	SE-1	68.5	SE-1	PASS	
				70.5	BRK	69.3	SE-1	68.5	SE-1		
				70.1	BRK	69.1	SE-1	69.2	SE-1		
				69.0	BRK	66.9	SE-1	67.5	SE-1		
				68.1	BRK	64.6	SE-1	66.1	SE-1		
ASLP-83	DS-67	11/2/94	11/2/94	69.8	BRK	68.5	SE-1	68.9	SE-1	PASS	
				69.3	BRK	68.9	SE-1	67.6	SE-1		
				67.2	BRK	69.2	SE-1	67.7	SE-1		
				71.4	BRK	66.9	SE-1	65.4	SE-1		
				71.2	BRK	66.0	SE-1	66.4	SE-1		
ASLP-84	DS-68	11/2/94	11/2/94	69.2	BRK	68.7	SE-1	68.8	SE-1	PASS	
				70.7	BRK	69.3	SE-1	68.6	SE-1		
				70.4	BRK	67.5	SE-1	68.4	SE-1		
				70.1	BRK	66.8	SE-1	67.2	SE-1		
				68.4	BRK	64.7	SE-1	64.5	SE-1		
ASLP-85	DS-69	11/2/94	11/2/94	76.6	BRK	75.4	SE-1	74.5	SE-1	PASS	
				77.5	BRK	73.8	SE-1	73.4	SE-1		
				74.0	BRK	75.6	SE-1	74.3	SE-1		
				75.3	BRK	75.0	SE-1	74.7	SE-1		
				72.8	BRK	72.2	SE-1	73.1	SE-1		

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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-86	DS-70	11/2/94	11/2/94	69.5	BRK	66.3	SE-1	66.6	SE-1	PASS	
				68.7	BRK	67.1	SE-1	66.6	SE-1		
				69.3	BRK	65.4	SE-1	64.1	SE-1		
				68.4	BRK	64.4	SE-1	68.5	SE-1		
				67.8	BRK	66.2	SE-1	67.6	SE-1		
ASLP-87	DS-71	11/2/94	11/2/94	68.7	BRK	67.5	SE-1	66.7	SE-1	PASS	
				68.7	BRK	68.3	SE-1	67.2	SE-1		
				69.1	BRK	67.4	SE-1	66.8	SE-1		
				67.5	BRK	66.2	SE-1	66.4	SE-1		
				67.1	BRK	66.3	SE-1	66.6	SE-1		
ASLP-88	DS-74	11/2/94	11/2/94	68.4	BRK	68.1	SE-1	68.6	SE-1	PASS	
				66.9	BRK	66.3	SE-1	67.6	SE-1		
				68.3	BRK	63.3	SE-1	63.2	SE-1		
				66.0	BRK	64.8	SE-1	65.7	SE-1		
				65.1	BRK	63.7	SE-1	66.6	SE-1		
ASLP-89	DS-79	11/2/94	11/2/94	66.2	BRK	65.5	SE-1	65.3	SE-1	PASS	
				67.5	BRK	65.6	SE-1	62.3	SE-1		
				67.8	BRK	65.8	SE-1	64.9	SE-1		
				66.2	BRK	64.6	SE-1	63.0	SE-1		
				63.6	BRK	64.1	SE-1	64.4	SE-1		
ASLP-90	DS-54	11/3/94	11/3/94	71.6	BRK	69.7	SE-1	69.9	SE-1	PASS	
				73.9	BRK	71.3	SE-1	69.9	SE-1		
				74.6	BRK	70.8	SE-1	70.5	SE-1		
				73.2	BRK	71.6	SE-1	70.2	SE-1		
				73.1	BRK	65.7	SE-1	67.2	SE-1		

DATE:	12-5-94
CHECKED:	[illegible]
REVIEWED:	[illegible]

GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-91	DS-62	11/3/94	11/3/94	68.6	BRK	68.4	SE-1	64.5	SE-1	PASS	
				70.7	BRK	67.7	SE-1	63.9	SE-1		
				70.9	BRK	67.8	SE-1	64.2	SE-1		
				70.2	BRK	65.9	SE-1	64.7	SE-1		
				68.1	BRK	65.3	SE-1	64.6	SE-1		
ASLP-92	DS-73	11/3/94	11/3/94	70.4	BRK	68.3	SE-1	68.1	SE-1	PASS	
				71.3	BRK	67.8	SE-1	68.7	SE-1		
				71.9	BRK	68.3	SE-1	68.3	SE-1		
				70.7	BRK	65.2	SE-1	65.0	SE-1		
				67.6	BRK	65.0	SE-1	64.9	SE-1		
ASLP-93	DS-75	11/3/94	11/3/94	66.2	BRK	65.7	SE-1	65.7	SE-1	PASS	
				65.7	BRK	66.5	SE-1	65.8	SE-1		
				65.7	BRK	66.0	SE-1	65.5	SE-1		
				66.9	BRK	64.9	SE-1	64.0	SE-1		
				65.8	BRK	63.2	SE-1	63.8	SE-1		
ASLP-94	DS-77	11/3/94	11/3/94	78.2	BRK	75.3	SE-1	76.2	SE-1	PASS	
				78.1	BRK	74.1	SE-1	75.7	SE-1		
				79.7	BRK	74.0	SE-1	72.0	SE-1		
				77.8	BRK	74.0	SE-1	75.9	SE-1		
				75.4	BRK	72.2	SE-1	71.7	SE-1		
ASLP-95	DS-78	11/3/94	11/3/94	68.8	BRK	68.0	SE-1	68.1	SE-1	PASS	
				69.4	BRK	68.1	SE-1	66.1	SE-1		
				67.9	BRK	66.3	SE-1	66.7	SE-1		
				68.1	BRK	66.9	SE-1	67.6	SE-1		
				67.9	BRK	65.2	SE-1	66.3	SE-1		

DATE:	12·5·94
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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-96	DS-80	11/3/94	11/3/94	67.3	BRK	66.5	SE-1	68.1	SE-1	PASS	
				69.1	BRK	66.8	SE-1	67.6	SE-1		
				68.7	BRK	66.7	SE-1	68.1	SE-1		
				67.4	BRK	63.2	SE-1	63.9	SE-1		
				64.4	BRK	61.7	SE-1	64.3	SE-1		
ASLP-97	DS-81	11/3/94	11/3/94	67.4	BRK	66.5	SE-1	68.5	SE-1	PASS	
				67.6	BRK	65.4	SE-1	66.8	SE-1		
				65.8	BRK	64.6	SE-1	68.3	SE-1		
				67.0	BRK	64.1	SE-1	67.2	SE-1		
				65.5	BRK	62.4	SE-1	64.5	SE-1		
ASLP-98	DS-82	11/3/94	11/3/94	69.9	BRK	69.9	SE-1	69.9	SE-1	PASS	
				68.9	BRK	68.8	SE-1	69.4	SE-1		
				69.1	BRK	69.0	SE-1	69.5	SE-1		
				68.9	BRK	68.8	SE-1	70.8	SE-1		
				70.3	BRK	65.7	SE-1	64.5	SE-1		
ASLP-99	DS-84	11/3/94	11/3/94	71.6	BRK	69.4	SE-1	68.8	SE-1	PASS	
				72.4	BRK	66.9	SE-1	67.7	SE-1		
				72.2	BRK	69.9	SE-1	69.2	SE-1		
				70.5	BRK	67.4	SE-1	68.6	SE-1		
				67.3	BRK	68.1	SE-1	69.2	SE-1		
ASLP-100	DS-85	11/3/94	11/3/94	76.1	BRK	65.7	SE-1	72.5	SE-1	PASS	Peel A-2 Low Strength and/or Adhesion Failure
				75.5	BRK	24.3	AD	69.2	SE-1		
				76.0	BRK	70.4	AD-BRK	74.9	SE-1		
				75.3	BRK	72.0	SE-1	73.9	SE-1		
				76.8	BRK	70.2	AD-BRK	72.4	SE-1		

DATE: 12-5-94
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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-101	DS-86	11/3/94	11/3/94	70.4	BRK	66.3	SE-1	68.3	SE-1	PASS	
				67.9	BRK	66.0	SE-1	69.1	SE-1		
				68.2	BRK	64.2	SE-1	68.6	SE-1		
				69.9	BRK	64.9	SE-1	68.5	SE-1		
				67.7	BRK	64.2	SE-1	65.8	SE-1		
ASLP-102	DS-87	11/3/94	11/3/94	69.6	BRK	65.5	SE-1	67.9	SE-1	PASS	
				68.7	BRK	67.5	SE-1	68.2	SE-1		
				69.9	BRK	66.5	SE-1	67.0	SE-1		
				66.0	BRK	65.9	SE-1	67.6	SE-1		
				62.7	BRK	64.8	SE-1	66.3	SE-1		
ASLP-103	DS-88	11/3/94	11/3/94	67.9	BRK	66.3	SE-1	68.0	SE-1	PASS	
				68.8	BRK	65.7	SE-1	66.3	SE-1		
				68.4	BRK	65.2	SE-1	67.1	SE-1		
				66.4	BRK	64.5	SE-1	67.3	SE-1		
				66.5	BRK	63.5	SE-1	66.2	SE-1		
ASLP-104	DS-90	11/3/94	11/3/94	69.2	BRK	67.2	SE-1	68.9	SE-1	PASS	
				69.8	BRK	64.7	SE-1	62.5	SE-1		
				69.5	BRK	66.3	SE-1	65.4	SE-1		
				69.4	BRK	66.5	SE-1	66.0	SE-1		
				67.1	BRK	63.9	SE-1	65.9	SE-1		
ASLP-105	DS-91	11/3/94	11/3/94	71.2	BRK	67.9	SE-1	69.8	SE-1	PASS	
				70.0	BRK	68.5	SE-1	69.5	SE-1		
				69.6	BRK	68.1	SE-1	68.9	SE-1		
				67.8	BRK	66.2	SE-1	68.2	SE-1		
				68.0	BRK	66.0	SE-1	65.7	SE-1		

DATE: 12-5-94
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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-106	DS-102	11/3/94	11/3/94	71.0	BRK	69.1	SE-1	68.3	SE-1	PASS	
				71.3	BRK	68.5	SE-1	69.5	SE-1		
				71.3	BRK	66.9	SE-1	70.3	SE-1		
				71.6	BRK	68.1	SE-1	71.9	SE-1		
				69.2	BRK	66.8	SE-1	71.0	SE-1		
ASLP-107	DS-103	11/3/94	11/3/94	68.1	BRK	69.9	SE-1	68.5	SE-1	PASS	
				68.9	BRK	69.5	SE-1	66.3	SE-1		
				66.8	BRK	67.7	SE-1	69.1	SE-1		
				69.8	BRK	66.8	SE-1	65.9	SE-1		
				68.5	BRK	65.4	SE-1	64.7	SE-1		
ASLP-108	DS-104	11/3/94	11/3/94	70.6	BRK	66.2	SE-1	69.2	SE-1	PASS	
				71.0	BRK	69.7	SE-1	69.4	SE-1		
				70.4	BRK	69.3	SE-1	66.9	SE-1		
				68.2	BRK	70.1	SE-1	69.9	SE-1		
				67.1	BRK	68.3	SE-1	69.0	SE-1		
ASLP-109	DS-105	11/3/94	11/3/94	70.0	BRK	66.6	SE-1	67.2	SE-1	PASS	
				67.6	BRK	66.5	SE-1	64.7	SE-1		
				68.1	BRK	65.9	SE-1	66.4	SE-1		
				67.6	BRK	65.3	SE-1	65.2	SE-1		
				67.7	BRK	63.7	SE-1	66.2	SE-1		
ASLP-110	DS-106	11/3/94	11/3/94	74.0	BRK	67.7	SE-1	62.3	SE-1	PASS	
				72.5	BRK	70.7	SE-1	66.9	SE-1		
				74.3	BRK	69.8	SE-1	66.8	SE-1		
				70.6	BRK	68.9	SE-1	67.4	SE-1		
				68.9	BRK	63.9	SE-1	63.9	SE-1		

DATE: 12-5-94
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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-111	DS-107	11/3/94	11/3/94	70.2	BRK	69.4	SE-1	68.1	SE-1	PASS	
				69.0	BRK	66.8	SE-1	67.8	SE-1		
				65.6	BRK	68.8	SE-1	67.3	SE-1		
				67.2	BRK	66.5	SE-1	66.9	SE-1		
				69.5	BRK	65.3	SE-1	66.8	SE-1		
ASLP-112	DS-108	11/3/94	11/3/94	74.8	BRK	65.6	AD	69.9	SE-1	FAIL	Peel A-1,2,3 Low Strength and/or Adhesion Failure SEE DS-108 N1, P1
				74.0	BRK	36.2	AD	71.8	SE-1		
				72.3	BRK	57.4	AD	73.7	SE-1		
				74.4	BRK	56.6	AD-BRK	72.9	SE-1		
				69.2	BRK	72.0	SE-1	72.1	SE-1		
ASLP-113	DSE-3	11/3/94	11/3/94	71.7	BRK1	61.7	SE-3			PASS	Extrusion Weld
				70.5	BRK1	64.1	SE-3				
				70.9	BRK1	65.3	SE-3				
				69.0	BRK1	63.8	SE-3				
				69.9	BRK1	62.5	SE-3				
ASLP-114	DSE-4	11/3/94	11/3/94	72.1	BRK1	25.1	AD-1			PASS	Extrusion Weld Peel 1 Low Strength and/or Ahesion Failure
				70.8	BRK1	57.1	SE-3				
				72.4	BRK1	43.7	SE-3				
				71.0	BRK1	62.1	SE-3				
				67.6	BRK1	70.0	SE-3				
ASLP-115	DSE-5	11/3/94	11/3/94	71.7	BRK1	67.6	SE-3			PASS	Extrusion Weld
				68.2	BRK1	66.3	SE-3				
				68.2	BRK1	65.6	SE-3				
				69.4	BRK1	64.9	SE-3				
				70.7	BRK1	66.9	SE-3				

DATE: 12-5-94
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GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-116	DS-72	11/4/94	11/4/94	64.6	BRK	71.8	SE-1	72.6	SE-1	PASS	
				74.4	BRK	70.9	SE-1	71.2	SE-1		
				73.2	BRK	72.6	SE-1	72.9	SE-1		
				73.0	BRK	70.5	SE-1	73.6	SE-1		
				71.2	BRK	71.2	SE-1	71.2	SE-1		
ASLP-117	DS-76	11/4/94	11/4/94	70.5	BRK	69.9	SE-1	71.8	SE-1	PASS	
				72.8	BRK	70.6	SE-1	69.4	SE-1		
				74.5	BRK	72.1	SE-1	69.9	SE-1		
				72.4	BRK	72.6	SE-1	71.4	SE-1		
				71.0	BRK	72.3	SE-1	70.1	SE-1		
ASLP-118	DS-83	11/4/94	11/4/94	69.3	BRK	70.1	SE-1	69.5	SE-1	PASS	
				69.2	BRK	68.3	SE-1	69.1	SE-1		
				68.2	BRK	66.7	SE-1	68.4	SE-1		
				68.5	BRK	67.6	SE-1	68.1	SE-1		
				67.7	BRK	66.4	SE-1	66.2	SE-1		
ASLP-119	DS-89	11/4/94	11/4/94	72.1	BRK	70.3	SE-1	69.4	SE-1	PASS	
				72.5	BRK	69.1	SE-1	69.9	SE-1		
				73.5	BRK	71.9	SE-1	71.0	SE-1		
				72.3	BRK	71.1	SE-1	70.7	SE-1		
				73.5	BRK	68.9	SE-1	69.8	SE-1		
ASLP-120	DS-59N1	11/4/94	11/4/94	71.4	BRK	69.6	SE-1	69.7	SE-1	PASS	
				71.2	BRK	69.9	SE-1	69.9	SE-1		
				70.0	BRK	69.3	SE-1	70.3	SE-1		
				70.0	BRK	67.4	SE-1	65.6	SE-1		
				68.3	BRK	65.3	SE-1	70.1	SE-1		

DATE: 12-5-94
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REVIEWED: [illegible]

GOLDER ASSOCIATES INC.
DESTRUCTIVE TESTING SUMMARY
ABB-ES/SULLIVAN/MO
947-6174

GOLDER TEST NUMBER	SITE TEST NUMBER	DATE RECEIVED GOLDER	DATE TESTED GOLDER	SHEAR		PEEL ADHESION (A)		PEEL ADHESION (B)		SAMPLE RESULT P/F	REMARKS
				SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE	SPECIMEN LOAD (lb/in)	SPECIMEN BREAK CODE		
ASLP-121	DS-59P1	11/4/94	11/4/94	71.7	BRK	65.7	AD-BRK	69.9	SE-1	PASS	
				72.4	BRK	67.7	SE-1	68.9	SE-1		
				72.2	BRK	69.7	SE-1	69.4	SE-1		
				72.2	BRK	65.4	AD-BRK	66.1	SE-1		
				69.2	BRK	65.7	SE-1	68.1	SE-1		
ASLP-122	DS-108N1	11/8/94	11/8/94	74.3	BRK	74.5	SE-1	74.6	SE-1	PASS	
				77.4	BRK	73.3	SE-1	72.2	SE-1		
				72.7	BRK	74.0	SE-1	72.3	SE-1		
				72.4	BRK	75.3	SE-1	75.5	SE-1		
				75.5	BRK	74.4	SE-1	73.5	SE-1		
ASLP-123	DS-108P1	11/8/94	11/8/94	76.5	BRK	74.4	SE-1	73.0	SE-1	PASS	
				72.7	BRK	74.3	SE-1	78.0	SE-1		
				74.0	BRK	75.6	SE-1	71.6	SE-1		
				72.8	BRK	77.1	SE-1	71.8	SE-1		
				74.8	BRK	72.2	SE-1	71.6	SE-1		

DATE: 12·5·94
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APPENDIX J

GEOMEMBRANE REPAIR SUMMARY

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT				REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
1 A	P1 / P2	330' E OF W AT	WS	10/03/94	P	2X5	AIR	24	TM	10/04/94	DRB
1 B	P1 / P2	469' E OF W AT	IO	10/03/94	P	1.5X1.5	AIR	24	TM	10/04/94	DRB
1 C	P1 / P2	482' E OF W AT	IO	10/03/94	P	2X3.5	AIR	24	TM	10/04/94	DRB
1 D	P1 / P2	622' E OF W AT	IO	10/03/94	P	1.5X3	AIR	24	DRB	10/04/94	DRB
1 E	P1 / P2	633' E OF W AT	IO	10/03/94	C	2X4	AIR	24	DRB	10/04/94	DRB
1 F	P1 / P2	647' E OF W AT	IO	10/03/94	P	1.5X1.5	AIR	24	DRB	10/04/94	DRB
1 G	P1 / P2	823' - 841' E OF W AT	IO	10/04/94	C,P,G&W	1X1,2.5X20+3'	SS	24	TM	10/04/94	DRB
1 H	P1 / P2	896' E OF W AT	WS	09/30/94	P	2X5	AIR	24	TM	10/04/94	DRB
1 I	P1 / P2	980' E OF W AT	BO	09/30/94	P	2X2	AIR	24	TM	10/04/94	DRB
1 J	P1 / P2	998' E OF W AT	BO	09/30/94	P	1.5X1.5	AIR	24	TM	10/04/94	DRB
1 K	P1 / P2	1060' E OF W AT	IO	-	-	COVERED BY 1-M		-	-	-	-
1 M	P1 / P2	1071' - 1117' E OF W AT	IO	10/04/94	C	2X60	VP	1	TM	10/04/94	DRB
1 N	P1 / P2	1163' E OF WAT	FM	10/14/94	P	5X1.5,1.5X6.5	NY	1	TM	10/14/94	DRB
1 P	P1 / P2	1224' - 1238' E OF W AT	IO & FM	10/04/94	C	2X14	NY	1	TM	10/04/94	DRB
1 Q	P1 / P2	1269' E OF W AT	IO	10/04/94	P	1X1.5	NY	1	TM	10/04/94	DRB
1 R	P1 / P2	435' E OF W AT	DS-1	10/03/94	P	2X5	AIR	24	TM	10/04/94	DRB
1 S	P1 / P2	910' E OF W AT	DS-2	09/30/94	P	2X4.5	AIR	24	TM	10/04/94	DRB
1 T	P2 / P3	205' E OF W AT	IO	09/30/94	P	2X3	NY	1	DRB	10/04/94	DRB
1 W	P2 / P3	239' E OF W AT	IO	09/30/94	P	2X3	NY	1	DRB	10/04/94	DRB
1 X	P2 / P3	411' E OF W AT	IO	-	-	COVERED BY 7-J	-	-	-	-	-
2 A	P2 / P3	423' E OF W AT	IO	-	-	COVERED BY 7-J	-	-	-	-	-
2 B	P2 / P3	544' E OF W AT	IO	-	-	COVERED BY 7-J	-	-	-	-	-
2 C	P2 / P3	689' E OF W AT	IO	10/03/94	P	2X4	AIR	24	DRB	10/04/94	DRB
2 D	P2 / P3	826' E OF W AT	IO	10/03/94	P	2X5	AIR	24	DRB	10/04/94	DRB
2 E	P2 / P3	854' TO 861' E OF W AT	IO	10/04/94	C	2.5X11	SS	24	TM	10/04/94	DRB
2 F	P2 / P3	875' E OF W AT	FM	09/30/94	P	2X4.5,2.5X2.5	AIR	24	TM	10/04/94	DRB

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT				REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
2 G	P2 / P3	19' W OF EEOS	BO	10/04/94	P	1.5X1.5	NY	1	TM	10/04/94	DRB
2 H	P2 / P3	60' E OF W AT	DS-3	09/30/94	P	2X5	NY	1	DRB	10/04/94	DRB
2 I	P2 / P3	530' E OF W AT	DS-4	-	-	COVERED BY 7-J	-	-	-	-	-
2 J	P2 / P3	1000' E OF W AT	DS-5	09/30/94	P	2X4.5	AIR	24	TM	10/04/94	DRB
2 K	P3 / P4	225' E OF W AT	DS-6	10/03/94	P	2X4.5	AIR	24	TM	10/04/94	DRB
2 M	P3 / P4	649' E OF W AT	DS-7	10/03/94	P	2X5	AIR	24	DRB	10/04/94	DRB
2 N	P3 / P4	1036' E OF W AT	DS-8	09/30/94	P	2X4.5	AIR	24	TM	10/04/94	DRB
2 P	P3 / P4	775' E OF W AT	IO	10/03/94	P	2X7	AIR	24	DRB	10/04/94	DRB
2 Q	P3 / P4	1002' E OF W AT	D	10/04/94	P	1.5X2	NY	1	TM	10/04/94	DRB
2 R	P5	@ W AT, 12' S OF P1	D	09/30/94	P	2X2	NY	1	DRB	10/06/94	TM
2 S	P5	8' E OF W AT, 12' S OF P1	D	09/30/94	P	2X2	NY	1	DRB	10/06/94	DRB
2 T	P5	16' E OF W AT, 12' S OF P1	D	09/30/94	P	2X2	NY	1	DRB	10/06/94	DRB
2 W	P5	24' E OF W AT, 12' S OF P1	D	09/30/94	P	2X2	NY	1	DRB	10/06/94	DRB
2 X	P1 / P5	520' E OF W AT	FM	10/03/94	P, G&W	2X3+1X1,1X1+7'	AIR	24	TM	10/05/94	DRB
3 A	P1 / P5	318' E OF W AT	DS-9	10/05/94	P	2X5	NY	1	DRB	10/06/94	TM
3 B	P1 / P5	788' E OF W AT	DS-10	10/03/94	P	2X5	AIR	24	DRB	10/04/94	DRB
3 C	P1 / P5	1258' E OF W AT	DS-11	10/04/94	P	2X4.5	NY	1	TM	10/05/94	DRB
3 D	P5 / P6	5' E OF W AT	BO	-	-	COVERED BY 3-F		-	-	-	-
3 E	P5 / P6	11' E OF W AT	BO	-	-	COVERED BY 3-F		-	-	-	-
3 F	P5 / P6	16' E OF W AT	BO	09/30/94	C	2X34	NY	1	DRB	10/06/94	DRB
3 G	P5 / P6	22' E OF W AT	BO	-	-	COVERED BY 3-F		-	-	-	-
3 H	P5 / P6	29' E OF W AT	BO	-	-	COVERED BY 3-F		-	-	-	-
3 I	P5 / P6	49' E OF W AT	D	10/03/94	P	2X5	AIR	24	TM	10/06/94	TM
3 J	P5 / P6	285' E OF W AT	DS-12	10/05/94	P	2X5	NY	1	DRB	10/06/94	TM
3 K	P5 / P6	755' E OF W AT	DS-13	10/04/94	P	1.5X9	SS	24	TM	10/05/94	DRB
3 M	P5 / P6	792' E OF W AT	FM	10/04/94	P, G&W	2X2,1X1+4'	SS	24	TM	10/05/94	DRB

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT							REPAIR						VACUUM TEST	
DEFECT CODE		SEAM OR PANEL NUMBER			MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
3	N	P5	/	P6	800' E OF W AT	BO	10/04/94	P	2X3	SS	24	TM	10/05/94	DRB
3	P	P5	/	P6	841' - 850' E OF W AT	IO	-	-	COVERED BY 8-J	-	-	-	-	-
3	Q	P5	/	P6	835'E OF W AT	BO	-	-	COVERED BY 3-P		-	-	-	-
3	R	P5	/	P6	1225' E OF W AT	DS-14	10/04/94	P	2X5	NY	1	TM	10/05/94	DRB
3	S	P5	/	P6	EEOS TO 7' W	IO	10/04/94	P	2.5X3	VP	1	TM	10/05/94	DRB
3	T	P2	/	P3	@ WEOS	IO	09/30/94	C	2X6	NY	1	DRB	10/04/94	DRB
3	W	P3	/	P4	@ WEOS	IO	09/30/94	C	2X8	NY	1	DRB	10/04/94	DRB
4	A	P6			385' E OF W AT	SI	10/05/94	C	3X21	VP	1	TM	10/05/94	DRB
4	B	P6	/	P7	109' E OF W AT	IO	10/06/94	P	1.5X1.5	VP	1	TM	10/06/94	TM
4	C	P6	/	P7	198' E OF W AT	BO	10/06/94	P	2.5X6	VP	1	TM	10/06/94	TM
4	D	P6	/	P7	225' E OF W AT	BO	10/06/94	P	2X2	VP	1	TM	10/06/94	TM
4	E	P6	/	P7	240' E OF W AT	BO	10/06/94	P	1.5X2	VP	1	TM	10/06/94	TM
4	F	P6	/	P7	266' E OF W AT	FTS	10/06/94	P	1X1.5	VP	1	TM	10/06/94	TM
4	G	P6	/	P7	352' E OF W AT	DS-15	10/05/94	P	2X5	NY	1	TM	10/12/94	DRB
4	H	P7	/	P8	@ P9	T	10/06/94	P	3X5	VP	1	TM	10/06/94	TM
4	I	P6	/	P7	785' E OF W AT	WS	-	-	COVERED BY 8-M	-	-	-	-	-
4	J	P7	/	P9	258' E OF WEOS	DS-16	10/05/94	P	2X4.5	NY	1	TM	10/07/94	DRB
4	K	P6	/	P7	832' E OF W AT	DS-17	-	-	COVERED BY 8-I	-	-	-	-	-
4	M	P6	/	P7	1200' E OF W AT	IO	10/05/94	P	1X1	SS	24	DRB	10/12/94	DRB
4	N	P9	/	P10	157' W OF EEOS	BO	10/06/94	P	2X3	VP	1	TM	10/07/94	DRB
4	P	P9	/	P10	50' W OF EEOS	DS-18	10/06/94	P	2X5	VP	1	TM	10/07/94	DRB
4	Q	P9	/	P10	366' W OF EEOS	IO	10/14/94	P	1.5X3	SS	24	DRB	10/14/94	DRB
4	R	P10	/	P11	87' W OF EEOS	DS-19	10/06/94	P	2X5	VP	1	TM	10/07/94	DRB
4	S	P10	/	P11	358' W OF EEOS	WS	10/06/94	P	1.5X1.5	VP	1	TM	10/12/94	DRB
4	T	P9	/	P10	520' W OF EEOS	DS-20	10/06/94	P	2X4.5	VP	1	TM	10/06/94	TM
4	W	P10	/	P11	150' E OF W AT	BO	10/06/94	P	1X1.5	VP	1	TM	10/06/94	TM

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT				REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
4 X	P10 / P11	557' W OF EEOS	BO	10/06/94	P	2X4.5	VP	1	TM	10/06/94	TM
5 A	P10 / P11	56' E OF W AT	BO	10/06/94	P	2X4.5	AIR	8	TM	10/06/94	TM
5 B	P10 / P11	41' E OF W AT	BO	10/06/94	P	2X3.5	AIR	8	TM	10/06/94	TM
5 C	P8 / P10	@ W AT	BO	10/06/94	P	1.5X2.5	AIR	8	TM	10/06/94	TM
5 D	P10 / P11	@ 550' W OF EEOS	DS-21	10/06/94	P	2.5X4	VP	1	TM	10/06/94	TM
5 E	P10 / P13	4' N OF SEOS	BO	10/05/94	P	2X9	SS	24	DRB	10/07/94	DRB
5 F	P11	51' W OF EEOP, 4' S OF P10	D	10/06/94	P	1X1	VP	1	TM	10/12/94	TM
5 G	P7 / P12	17' W OF EEOS	IO	10/05/94	P	1X1.5	SS	24	DRB	10/05/94	DRB
5 H	P7 / P12	28' E OF WEOS	DS-22	10/04/94	P	2X5	SS	24	TM	10/05/94	DRB
5 I	P9 / P12	@ P13	T	10/04/94	P	2X2	SS	24	TM	10/05/94	DRB
5 J	P7 / P9	@ P12	T	10/04/94	P	2.5X3.5	SS	24	TM	10/05/94	DRB
5 K	P9 / P10	@ P13	T	10/05/94	P	2.5X9	SS	24	DRB	10/07/94	DRB
5 M	P10 / P13	@ P14	T	-	-	COVERED BY 5-E	-	-	-	-	-
5 N	P10 / P11	@ P14	T	10/05/94	P	2X5.5	SS	24	DRB	10/07/94	DRB
5 P	P13 / P15	83' W OF EEOS	DS-23	10/05/94	P	2X5	SS	24	DRB	10/07/94	DRB
5 Q	P11 / P16	249' W OF EEOS	DS-24	10/06/94	P	2X4.5	VP	1	TM	10/07/94	DRB
5 R	P11 / P16	550' W OF EEOS	BO	10/06/94	P	2X2	VP	1	TM	10/06/94	TM
5 S	P10 / P11	@ W AT	BO	10/06/94	P	1X1	AIR	8	TM	10/06/94	TM
6 A	P17 / P18	278' W OF EEOS	DS-25	10/06/94	P	2X5	VP	1	TM	10/07/94	DRB
6 B	P16 / P17	55' W OF EEOS	DS-26	10/06/94	P	2X4	VP	1	TM	10/07/94	DRB
6 C	P16 / P17	525' W OF EEOS	DS-27	10/06/94	P	2X5.5	VP	1	TM	10/06/94	TM
6 D	P18 / P19	400' W OF EEOS	FM	10/06/94	P	2X4	AIR	8	TM	10/06/94	TM
6 E	P18 / P19	450' W OF EEOS	FM	10/06/94	P	3X3.5	AIR	8	TM	10/06/94	TM
6 F	P18 / P19	290' W OF EEOS	DS-28	10/06/94	P	2X5	VP	1	TM	10/06/94	TM
6 G	P18 / P19	0 - 8' W OF EEOS	D	10/06/94	P	4X7	SS	24	DRB	10/07/94	DRB
6 H	P19 / P20	324' W OF EEOS	WS	10/06/94	P	1.5X2	AIR	8	TM	10/06/94	TM

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT					REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
6 I	P19 / P20	52' W OF EEOS	DS-29	10/06/94	P	2.5X5	VP	1	TM	10/07/94	DRB
6 J	P19 / P20	522' W OF EEOS	DS-30	10/06/94	P	2.5X5	AIR	8	TM	10/06/94	TM
6 K	P1 / 1-M	15' W OF EEOS	DSE-2	10/04/94	P	2X6	NY	1	TM	10/04/94	DRB
6 M	P6 / 3-P	3' E OF WEOS	DSE-1	-	-	COVERED BY 8-J	-	-	-	-	-
6 N	P12	130' E OF WEOS	CUT	10/05/94	P	4X16	SS	24	DRB	10/07/94	DRB
6 P	P5	@ W AT, 0 - 8' N OF P6	EXT	10/04/94	P	9X5	VP	1	TM	10/05/94	DRB
6 Q	P6 / P7	550' E OF W AT	PT	10/05/94	P	2X4	NY	1	TM	10/07/94	DRB
6 R	P6 / P7	608' E OF W AT	PT	10/05/94	P	1X1.5	NY	1	TM	10/12/94	DRB
6 S	P25 / P27	6' E OF WEOS	WS	10/06/94	P	1X2	SS	24	DRB	10/07/94	DRB
6 T	P20 / P26	3' W OF EEOS	WS	10/06/94	P	1.5X2	AIR	8	TM	10/06/94	TM
7 A	P22 / P23	98' W OF EEOS	DS-31	10/06/94	P	2X5	SS	24	DRB	10/07/94	DRB
7 B	P25 / P27	95' E OF WEOS	DS-32	10/06/94	P	2X5	SS	24	DRB	10/07/94	DRB
7 C	P6	@ EAT	EXT	10/05/94	P	4X8	SS	24	DRB	10/05/94	DRB
7 D	P12	@ E END	EXT	10/05/94	P	5X11	SS	24	DRB	10/05/94	DRB
7 E	P12	@ SE EDGE	EXT	10/05/94	P	4X25	SS	24	DRB	10/12/94	DRB
7 F	P20 / P27	5' E OF WEOS	WS	10/06/94	P	2X1.5	AIR	8	TM	10/06/94	TM
7 G	P20 / P26	15' W OF EEOS	DS-33	10/06/94	P	2X4	AIR	8	TM	10/06/94	TM
7 H	P2 / P3	550' E OF W AT	DS-4N1	-	-	COVERED BY 7-J	-	-	-	-	-
7 I	P2 / P3	404' E OF W AT	DS-4P1	10/05/94	P	3X5.5,1X1.5	VP	1	TM	10/05/94	DRB
7 J	P2 / P3	404' TO 550' E OF W AT	FS	-		REFER TO FUSION SEAMING		-	-	-	-
7 K	P6 / P7	@ 4A	T	10/05/94	C	3X11	VP	1	TM	10/05/94	DRB
7 M	P15 / P21	131' E OF WEOS	DS-34	10/06/94	P	2X5	SS	24	DRB	10/07/94	DRB
7 N	P3 / 7-J	@ EEOS	NW	10/05/94	P	3X6	NY	1	TM	10/05/94	DRB
7 P	P2 / 7-J	33' W OF EEOS	PT	10/05/94	P	3X3	VP	1	TM	10/05/94	DRB
7 Q	P2 / 7-J	99' W OF EEOS	PT	10/05/94	P	3X3	VP	1	TM	10/05/94	DRB
7 R	P3 / 7-J	15' W OF EEOS	BO	10/05/94	P	2.5X3.5	NY	1	TM	10/05/94	DRB

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT					REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
7 S	P3 / 7-J	32' W OF EEOS	BO	10/05/94	P	2X6	VP	1	TM	10/05/94	DRB
7 T	P2 / 7-J	27' W OF EEOS	PT	10/05/94	P	2X2	VP	1	TM	10/05/94	DRB
7 W	P14 / P16	@ P21	T	10/06/94	P	2.5X4	SS	24	DRB	10/07/94	DRB
7 X	P11 / P14	@ P16	T	10/06/94	P	1.5X1.5	SS	24	DRB	10/07/94	DRB
8 A	P21 / P22	@ P16/P17	INT	10/06/94	P	2X5	SS	24	DRB	10/07/94	DRB
8 B	P22 / P23	@ P17/P18	INT	10/06/94	P	2.5X2.5	SS	24	DRB	10/07/94	DRB
8 C	P24 / P25	@ P19	T	10/06/94	P	2X4	SS	24	DRB	10/07/94	DRB
8 D	P19 / P20	@ P25	T	10/06/94	P	2X8	SS	24	DRB	10/07/94	DRB
8 E	P20 / P25	@ P27	T	10/06/94	P	2X3	SS	24	DRB	10/07/94	DRB
8 F	P13 / P14	@ P15	T	10/06/94	P	2.5X3	SS	24	DRB	10/07/94	DRB
8 G	P14 / P15	@ P21	T	10/06/94	P	2X2	SS	24	DRB	10/07/94	DRB
8 H	P8 / P9	@ P10	T	10/06/94	P	2X2	VP	1	TM	10/06/94	TM
8 I	P6 / P7	@ DS-17 - 4K	FS	10/06/94	C	3X8	SS	24	DRB	10/07/94	DRB
8 J	P5 / P6	ON CAP 3P	FS	10/06/94	C	4.5X22	SS	24	DRB	10/07/94	DRB
8 K	P7 / 4-I	1' E OF WEOS	DSE-1P1	-	-	COVERED BY 8-M	-	-	-	-	-
8 M	P7 / 4-I	ON CAP 4I	FS	10/06/94	C	4X13	SS	24	DRB	10/07/94	DRB
8 N	P5 / 3-P	6' W OF EEOS	DSE-1N1	-	-	COVERED BY 8-J	-	-	-	-	-
8 P	P20 / P26	220' W OF EEOS	PT	10/06/94	P	1X1.5	AIR	8	TM	10/06/94	TM
8 Q	P20 / P26	282' W OF EEOS	PT	10/06/94	P	1.5X1.5	AIR	8	TM	10/06/94	TM
8 R	P20 / P26	12' E OF W AT	PT	10/06/94	P	1.5X1.5	AIR	8	TM	10/06/94	TM
8 S	P21	@ EAT 1' N OF P22	D	10/06/94	P	3X4	SS	24	DRB	10/07/94	DRB
9 A	P4 / P28	5' E OF W AT	WS	10/14/94	P	2X2.5	NY	1	TM	10/14/94	DRB
9 B	P4 / P28	19' E OF W AT	DS-35	10/14/94	P	2X4.5	NY	1	TM	10/14/94	DRB
9 C	P4 / P28	125' E OF W AT	BO	10/14/94	P	2.5X10	NY	1	TM	10/14/94	DRB
9 D	P4 / P28	489' E OF W AT	DS-36	10/14/94	P	2.5X4.5	NY	1	TM	10/14/94	DRB
9 E	P28 / P29	42' E OF W AT	BO	10/14/94	P, G&W	3X2,1.5X1.5+1'	NY	1	TM	10/14/94	DRB

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT					REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
9 F	P28 / P29	258' E OF EEOS	DS-37	10/14/94	P	2X4.5	NY	1	TM	10/14/94	DRB
9 G	P28 / P29	535' E OF W AT	BO	10/14/94	P	2X2	NY	1	TM	10/14/94	DRB
9 H	P29 / P30	29' W OF EEOS	DS-38	10/14/94	P	2X4.5	NY	1	TM	10/14/94	DRB
9 I	P29 / P30	509' W OF EEOS	DS-39	10/14/94	P	2X4.5	NY	1	TM	10/14/94	DRB
9 J	P30 / P31	274' W OF EEOS	DS-40	10/14/94	P	2X4.5	NY	1	TM	10/14/94	DRB
9 K	P4 / P32	36' E OF WEOS	DS-41	10/14/94	P	2X4.5	SS	24	TM	10/14/94	DRB
9 M	P4	1015' E OF W AT, 115' S OF P32	D	10/14/94	P	1X1	NY	1	TM	10/14/94	DRB
9 N	P32 / P33	50' E OF WEOS	DS-42	10/14/94	P	2X4.5	SS	24	TM	10/14/94	DRB
9 P	P33 / P35	50' E OF WEOS	FM	10/14/94	P	2X4.5	NY	1	TM	10/14/94	DRB
9 Q	P33 / P35	133' E OF WEOS	DS-43	10/14/94	P	2X4.5	NY	1	TM	10/14/94	DRB
9 R	P31	EAST END	EXT	-	REFER TO FUSION SEAMING			-	-	-	-
9 S	P4 / P28	200' E OF W AT	PT	10/14/94	P	2.5X2.5	NY	1	TM	10/14/94	DRB
9 T	P31 / 9-R	7' S OF NEOS	DS-44	10/14/94	P	2X4.5	SS	24	TM	10/14/94	DRB
9 W	P30 / P35	7' S OF NEOS	D	10/14/94	P	2.5X6.5	SS	24	TM	10/14/94	DRB
9 X	P30 / P31	@ P35/9-R	INT	10/14/94	P	2.5X2.5	SS	24	TM	10/14/94	DRB
10 A	P30 / P33	@ P35	T	10/14/94	P	3X7	SS	24	DRB	10/14/94	DRB
10 B	P29 / P30	@ P33	T	10/14/94	P	2.5X5.5	SS	24	DRB	10/14/94	DRB
10 C	P4 / P28	@ P32	T	10/14/94	P	2X12	SS	24	DRB	10/14/94	DRB
10 D	P31 / P38	125' E OF W AT	BO	-	-	COVERED BY 10-E	-	-	-	-	-
10 E	P31 / P38	129' E OF W AT	BO	10/14/94	C	2X17	NY	1	TM	10/14/94	DRB
10 F	P31 / P38	137' E OF W AT	BO	-	-	COVERED BY 10-E	-	-	-	-	-
10 G	P31 / P37	243' E OF WEOS	DS-45	10/14/94	P	2X4.5	NY	1	TM	10/14/94	DRB
10 H	P31 / P37	@ 9-R	T	10/14/94	P	2.5X2.5	SS	24	TM	10/14/94	DRB
10 I	P38 / P39	15' E OF WEOS	DS-46	10/14/94	P	2X4.5	NY	1	TM	10/14/94	DRB
10 J	P28 / P29	583' E OF W AT	PT	10/14/94	P	1.5X1.5	NY	1	TM	10/14/94	DRB
10 K	P28 / P29	601' E OF W AT	PT	10/14/94	P	1.5X1.5	NY	1	TM	10/14/94	DRB

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT					REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
10 M	P37 / P39	285' E OF WEOS	DS-47	10/14/94	P	2X4.5	NY	1	TM	10/14/94	DRB
10 N	P28 / P29	@ P32/P33	INT	10/14/94	P	2.5X12	SS	24	DRB	10/14/94	DRB
10 P	P28	3' W OF P32, 12' S OF P29	D	10/14/94	P	3.5X6	SS	24	DRB	10/14/94	DRB
10 Q	P37 / P39	8' W OF EEOS	WS	10/27/94	C	2.5X8	SS	24	TM	11/01/94	BDH
10 R	P6 / P7	745' E OF W AT	PT	10/14/94	P	2X2	SS	24	DRB	10/14/94	DRB
10 S	P39 / P40	250' E OF W AT	DS-48	10/14/94	P	2X4.5	NY	1	TM	10/14/94	DRB
11 A	P37 / P38	@ P31	T	10/14/94	P	2X2	NY	1	TM	10/14/94	DRB
11 B	P36 / 9-R	@ P37	T	10/14/94	P	2X2	SS	24	DRB	10/14/94	DRB
11 C	P33 / P34	@ P35	T	10/14/94	P	1.5X1.5	NY	1	TM	10/14/94	DRB
11 D	P33 / P34	@ P32	T	10/14/94	P	1X1	NY	1	TM	10/14/94	DRB
11 E	P34 / P35	20' E OF WEOS	PT	10/14/94	P	1.5X2.5	NY	1	TM	10/14/94	DRB
11 F	P37 / P38	@ P39	T	10/14/94	P	1.5X2	NY	1	TM	10/14/94	DRB
11 G	P35 / P36	@ 9-R	T	10/14/94	P	2X2	SS	24	DRB	10/14/94	DRB
11 H	P6 / P7	760' E OF WAT	D	10/14/94	P	1X1	SS	24	DRB	10/14/94	DRB
11 I	P7	707' E OF WAT, 1' S OF P6	BS	10/14/94	P	3X4	SS	24	TM	10/14/94	DRB
11 J	P2	307' E OF WAT, 3' S OF P3	BS	10/14/94	P	3X3	NY	1	TM	10/14/94	DRB
11 K	P4	92' E OF WAT, 11' S OF P28	BS	10/29/94	BS	2.5X3	NY	1	DRB	11/02/94	BDH
11 M	P30	750' E OF WAT, 8' N OF P29	BS	10/28/94	BS	3X3	VP	1	DRB	11/01/94	BDH
11 N	P12	85' W OF EAT, 7' N OF SAT	SI	10/21/94	P	1.5X1.5	AIR	1	TM	10/25/94	DRB
11 P	P11	16' S OF P10, 39' W OF EEOP	SI	10/21/94	P	2X2	AIR	1	TM	11/01/94	BDH
11 Q	P16	150' W OF EEOP, 1' N OF P17	BS	11/01/94	BS	4X4	NY	1	TM	11/01/94	BDH
11 R	P41 / P42	448' E OF WEOS	WS	11/01/94	P	3X4	SS	24	TM	11/01/94	BDH
11 S	P41 / P42	413' E OF WEOS	DS-49	11/01/94	P	2.5X5	SS	24	TM	11/01/94	BDH
11 T	P41 / P42	351' E OF WEOS	WS	11/01/94	P	1.5X1.5	SS	24	TM	11/01/94	BDH
11 W	P41 / P42	298' E OF WEOS	WS	11/01/94	P	2X1.5	SS	24	TM	11/01/94	BDH
11 X	P41 / P42	230' E OF WEOS	FTS	11/01/94	P	4X4	VP	1	TM	11/03/94	TM

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT				REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
12 A	P42 / P43	38' W OF EEOP	WS	11/01/94	P	2X3	SS	24	TM	11/01/94	BDH
12 B	P42 / P43	178' W OF EEOP	WS	11/01/94	P	2X2	SS	24	TM	11/01/94	BDH
12 C	P42 / P43	131' W OF EEOP	DS-50	11/01/94	P	2X4	SS	24	TM	11/01/94	BDH
12 D	P45 / P46	15' N OF SEOS DS-51	DS-51	10/29/94	P	2X6	VP	1	DRB	11/03/94	TM
12 E	P53 / P54	27' N OF SEOS	BO	10/29/94	P	2X4	NY	1	DRB	11/03/94	TM
12 F	P43 / P52	12' W OF EEOS	WS	10/29/94	P	4X15	VP	1	DRB	11/03/94	TM
12 G	P42 / P43	173' W OF EEOP	FTS	11/01/94	P	1X1	SS	24	TM	11/01/94	BDH
12 H	P42 / P43	258' W OF EEOP	BO	11/01/94	P	1X1	VP	1	TM	11/03/94	TM
12 I	P52 / P55	5' N OF SEOS	DS-52	10/29/94	P	2.5X5	VP	1	DRB	11/03/94	TM
12 J	P42 / P43	20' E OF WEOS	BO	10/29/94	P	2.5X2.5	VP	1	DRB	11/03/94	TM
12 K	P42 / P43	408' W OF EEOP	DS-53	11/01/94	P	2.5X5.5	VP	1	TM	11/03/94	TM
12 M	P26 / P50	3' W OF EEOS	IO	-	-	COVERED BY 27-H		-	-	-	-
12 N	P26 / P53	15' W OF EEOS	DS-54	10/29/94	P	2X5	NY	1	DRB	11/03/94	TM
12 P	P42 / P43	4' W OF EEOS	BO	-	-	COVERED BY 18-N		-	-	-	-
12 Q	P41 / P42	29' W OF EEOS	FTS	11/01/94	P	1.5X1.5	SS	24	TM	11/01/94	BDH
12 R	P27 / P41	75' W OF EEOP	WS	-	-	COVERED BY 16-R		-	-	-	-
12 S	P27 / P41	119' W OF EEOP	IO	11/01/94	P	1X1	SS	24	TM	11/01/94	BDH
12 T	P27 / P41	310' W OF EEOP	BO	11/01/94	C	1.5X13	NY	1	TM	11/03/94	TM
12 W	P26 / P41	33' E OF WEOS	BO	11/01/94	P	1X1.5	VP	1	TM	11/03/94	TM
12 X	P27 / P41	69' W OF EEOP	BO	11/01/94	P	1X1	SS	24	TM	11/01/94	BDH
13 A	P43 / P56	30' W OF EEOS	IO	11/10/94	P	1X2	VP	1	DRB	11/10/94	DRB
13 B	P43 / P56	96' W OF EEOS	IO	11/03/94	P	2.5X8.5	SS	24	DRB	11/03/94	TM
13 C	P43 / P56	106' W OF EEOS	BO	11/03/94	P	2X2	SS	24	DRB	11/03/94	TM
13 D	P43 / P56	112' W OF EEOS	BO	11/03/94	P	2X4.5	SS	24	DRB	11/03/94	TM
13 E	P43 / P56	176' W OF EEOS	BO	-	-	COVERED BY 36-K	-	-	-	-	-
13 F	P43 / P56	179' W OF EEOS	FTS	-	-	COVERED BY 36-K	-	-	-	-	-

FILENAME-REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT					REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
13 G	P43 / P56	220' W OF EEOS	WS	-	-	COVERED BY 13-H		-	-	-	-
13 H	P43 / P56	198' TO 220' W OF EEOS	IO	11/01/94	C	2X30	SS	24	BDH	11/03/94	TM
13 I	P27 / P41	34' E OF WEOS	DS-55	11/01/94	P	2X5	VP	1	TM	11/03/94	TM
13 J	P57 / P58	357' W OF EEOS	DS-56	11/01/94	P	2.5X5	VP	1	TM	11/03/94	TM
13 K	P56 / P57	199' W OF EEOS	DS-57	11/01/94	P	2X5	SS	24	BDH	11/03/94	TM
13 M	P43 / P46	607' W OF EEOS	DS-58	11/02/94	P	2.5X5	VP	1	TM	11/03/94	TM
13 N	P59 / P61	9' W OF EEOS	BO	11/02/94	P	2X2	SS	24	TM	11/09/94	DRB
13 P	P60 / P62	35' W OF EEOS	BO	11/01/94	P	2X5	SS	24	TM	11/03/94	TM
13 Q	P60 / P62	269' W OF EEOS	IO	11/01/94	P	3X1.5	VP	1	TM	11/03/94	TM
13 R	P43 / P56	160' W OF EEOS	DS-59	-	-	COVERED BY 36-K	-	-	-	-	-
13 S	P62 / P64	5' W OF EEOS	D	11/01/94	P	2X2	VP	1	TM	11/03/94	TM
13 T	P64	15' W OF EEOP, 1' N OF P65	D	11/01/94	P	1X1	VP	1	TM	11/03/94	TM
13 W	P62 / P64	75' W OF EEOS	IO	11/01/94	P	2X3.5	VP	1	TM	11/03/94	TM
13 X	P62 / P64	90' W OF EEOS	IO	11/01/94	P	1.5X1.5	VP	1	TM	11/03/94	TM
14 A	P63	142' W OF EEOP, 1' N OF P65	D	11/02/94	P	1X1.5	SS	24	TM	11/03/94	TM
14 B	P63 / P64	@ P65	T & IO	11/01/94	C	2.5X9	VP	1	TM	11/03/94	TM
14 C	P64 / P65	40' W OF EEOS	IO	11/01/94	P	2X6	VP	1	TM	11/03/94	TM
14 D	P62 / P64	100' W OF EEOS	IO	11/01/94	P	1.5X1	VP	1	TM	11/03/94	TM
14 E	P64 / P65	@ P66	T	11/01/94	P	2X5	VP	1	TM	11/03/94	TM
14 F	P66	3' W OF EEOP, 7' S OF P64	D	11/01/94	P	1X1	VP	1	TM	11/03/94	TM
14 G	P67 / P68	25' W OF EEOS	IO	11/02/94	P	2X4	SS	24	DRB	11/03/94	DRB
14 H	P59 / P60	14' S OF NEOS	DS-60	11/02/94	P	2.5X4.5	SS	24	TM	11/03/94	TM
14 I	P58 / P60	423' W OF EEOS	DS-61	11/01/94	P	2X4.5	VP	1	TM	11/03/94	TM
14 J	P60 / P62	10' W OF EEOS	DS-62	11/01/94	P	2X5	SS	24	BDH	11/03/94	TM
14 K	P62 / P64	251' W OF EEOS	DS-63	11/01/94	P	2.5X5	VP	1	TM	11/03/94	TM
14 M	P64 / P65	50' W OF EEOS	DS-64	11/01/94	P	2X4.5	VP	1	TM	11/03/94	TM

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT						REPAIR						VACUUM TEST	
DEFECT CODE		SEAM OR PANEL NUMBER		MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
14	N	P65 /	P67	169' W OF EEOS	DS-65	11/01/94	P	2X5	SS	24	BDH	11/10/94	DRB
14	P	P67 /	P68	235' W OF EEOS	DS-66	11/02/94	P	2X5	SS	24	BDH	11/03/94	DRB
14	Q	P68 /	P69	102' W OF EEOS	DS-67	11/01/94	P	2.5X4.5	SS	24	TM	11/03/94	DRB
14	R	P60		1' W OF P59, 8' S OF P58	D	11/02/94	P	1X1	SS	24	TM	11/03/94	TM
14	S	P70		19' E OF WAT, 1' S OF P55	D	10/29/94	P	2X2	VP	1	DRB	11/03/94	TM
14	T	P70 /	P71	@ WAT	BO	11/02/94	P	1.5X1.5	NY	1	TM	11/03/94	TM
14	W	P72		42' E OF WAT, 3' S OF P71	D	11/02/94	P	1X1	NY	1	TM	11/03/94	TM
14	X	P73		22' W OF P, 1' N OF P74	D	11/02/94	P	1X1.5	NY	1	TM	11/03/94	TM
15	A	P41		5' W OF EEOP, 1' S OF P27	D	11/01/94	P, G&W	1X1	SS	24	TM	11/01/94	BDH
15	B	P26 /	P41	@ P44	T	10/29/94	P	3X3	NY	1	DRB	11/03/94	TM
15	C	P26 /	P44	@ NE CORNER	T	10/29/94	P	3X4	NY	1	DRB	11/03/94	TM
15	D	P41 /	P42	@ P44	T	10/29/94	P	3X7	VP	1	DRB	11/03/94	TM
15	E	P42 /	P43	@ P48	T	10/29/94	P	4X13	VP	1	DRB	11/03/94	TM
15	F	P48 /	P49	@ P26	T	10/29/94	P	2X2	VP	1	DRB	11/03/94	TM
15	G	P55		12' N OF P70, 18' W OF P52	D	10/29/94	P	1.5X1.5	VP	1	DRB	11/03/94	TM
15	H	P76 /	P77	21' E OF WAT	D	11/02/94	P	1X1.5	NY	1	TM	11/03/94	DRB
15	I	P67 /	P68	@ P77/P78	INT	11/02/94	P	2X2	NY	1	TM	11/03/94	DRB
15	J	P43 /	P56	40' W OF EEOS	IO	11/01/94	P	1.5X2	SS	24	TM	11/10/94	DRB
15	K	P58 /	P60	10' E OF WEOS	FTS	11/02/94	P	2X2	NY	1	TM	11/03/94	TM
15	M	P68		1' S OF P67, 6' W OF E END	D	11/02/94	P	2X2	SS	24	BDH	11/09/94	DRB
15	N	P72 /	P73	18' W OF EEOS	DS-68	11/02/94	P	2X5	NY	1	TM	11/03/94	TM
15	P	P64 /	P75	12' N OF SEOS	DS-69	11/02/94	P	2X5	NY	1	TM	11/03/94	TM
15	Q	P68 /	P69	@ P79	T	11/01/94	P	(5X3)+(3X1)	SS	24	TM	11/03/94	DRB
15	R	P79 /	P80	@ P81	T	11/01/94	P	2.5X4	VP	1	TM	11/03/94	DRB
15	S	P68 /	P79	287' W OF EEOS	D	11/01/94	P	1.5X1.5	VP	1	TM	11/03/94	DRB
15	T	P68 /	P79	320' W OF EEOS	D	11/01/94	P	1.5X2.5	VP	1	TM	11/03/94	DRB

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT					REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
15 W	P80 / P81	@ P82	T	11/01/94	P	2.5X4.5	VP	1	TM	11/03/94	DRB
15 X	P83 / P84	40' E OF WEOS	BO	11/02/94	P	2X1.5	SS	24	DRB	11/09/94	DRB
16 A	P85 / P86	28' E OF WEOS	BO	11/02/94	P	1.5X1.5	SS	24	DRB	11/09/94	DRB
16 B	P87 / P88	77' E OF WEOS	BO	11/08/94	P	1X1	NY	1	DRB	11/09/94	DRB
16 C	P67 / P83	10' S OF NEOS	BO	11/02/94	P	2X4	SS	24	BDH	11/09/94	DRB
16 D	P65 / P67	@ P83/P90	INT	11/02/94	P	4X4	SS	24	BDH	11/09/94	DRB
16 E	P67 / P68	@ P83/P84	INT	11/02/94	P	4X4	SS	24	BDH	11/09/94	DRB
16 F	P68	13' S OF P67, 3' W OF P84	D	11/02/94	P	1X2	SS	24	BDH	11/09/94	DRB
16 G	P91 / P92	@ P93	T	11/01/94	P	(3X4)+(3X2)	SS	24	TM	11/03/94	DRB
16 H	P87 / P88	@ P82/P91	INT	11/02/94	P	2.5X3	SS	24	DRB	11/09/94	DRB
16 I	P89 / P92	ENTIRE SEAM	IO	11/02/94	C	4.5X25	SS	24	DRB	11/09/94	DRB
16 J	P79 / P80	164' W OF EEOS	DS-70	11/01/94	P	2.5X4.5	VP	1	TM	11/03/94	DRB
16 K	P80 / P82	27' W OF EEOS	DS-71	11/01/94	P	2.5X5	SS	24	TM	11/09/94	DRB
16 M	P84 / P85	62' E OF WEOS	DS-72	11/02/94	P	2X5	SS	24	DRB	11/09/94	DRB
16 N	P83 / P90	14' E OF WEOS	DS-73	11/02/94	P	2X5	SS	24	TM	11/09/94	DRB
16 P	P82 / P91	333' W OF EEOS	DS-74	11/01/94	P	2X4.5	VP	1	TM	11/03/94	DRB
16 Q	P91 / P92	11' E OF WEOS	DS-75	11/02/94	P	2X5	SS	24	BDH	11/03/94	DRB
16 R	P27 / P41	EEOS TO 12-R	IO	11/01/94	C	2X67	SS	24	TM	11/01/94	BDH
16 S	P101 / P102	15' E OF WEOS	BO	11/10/94	P	1.5X1.5	VP	1	DRB	11/10/94	DRB
16 T	P101 / P102	19' E OF WEOS	BO	-	-	COVERED BY 35-D		-	-	-	-
16 W	P99 / P100	12' E OF WEOS	DS-76	11/10/94	P	2X5	VP	1	DRB	11/10/94	DRB
16 X	P90 / P106	48' E OF WEOS	WS	11/02/94	P	2.5X2.5	SS	24	DRB	11/09/94	DRB
17 A	P108 / P109	6' E OF WAT	BO	11/02/94	P	2X2	NY	1	TM	11/03/94	DRB
17 B	P110 / P111	42' E OF WAT	BO	11/02/94	P	1X1.5	NY	1	TM	11/03/94	DRB
17 C	P113 / P114	6' E OF WAT	BO	11/03/94	P	1.5X1.5	VP	1	TM	11/03/94	DRB
17 D	P113 / P114	19' E OF WAT	BO	11/03/94	P	1.5X4	VP	1	TM	11/03/94	DRB

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT				REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
17 E	P92 / P115	36' W OF EEOS	BO	11/10/94	P	1X2	NY	1	DRB	11/10/94	DRB
17 F	P116 / P118	19' W OF EEOS	BO	11/04/94	P	1.5X3	VP	1	TM	11/10/94	DRB
17 G	P117	24' E OF P116, 1' N OF P118	D	11/04/94	BS	3X3.5	VP	1	TM	11/10/94	DRB
17 H	P120	4' E OF P119, 4' S OF P118	D	11/03/94	P	1.5X2	VP	1	TM	11/07/94	DRB
17 I	P120	10' E OF P119, 4' S OF P118	D	11/03/94	P	1.5X2	VP	1	TM	11/07/94	DRB
17 J	P120	16' E OF P119, 4' S OF P118	D	11/03/94	P	1X1.5	VP	1	TM	11/07/94	DRB
17 K	P120	22' E OF P119, 4' S OF P118	D	11/03/94	P	1X1	VP	1	TM	11/07/94	DRB
17 M	P118 / P119	@ P120	T	11/03/94	P	1.5X3	VP	1	TM	11/07/94	DRB
17 N	P105	5' E OF P61, 9' N OF P107	D	11/02/94	P	1.5X3	SS	24	TM	11/10/94	DRB
17 P	P43 / P99	9' S OF NEOS	DS-77	11/10/94	P	2.5X5	VP	1	DRB	11/10/94	DRB
17 Q	P110 / P111	56' W OF EEOS	DS-78	11/02/94	P	2.5X5.5	NY	1	TM	11/03/94	DRB
17 R	P93 / P115	22' W OF EEOS	DS-79	11/02/94	P	2X5	SS	24	BDH	11/03/94	DRB
17 S	P115 / P117	102' W OF EEOS	DS-80	11/08/94	P	2X5	NY	1	DRB	11/09/94	DRB
17 T	P117 / P118	80' W OF EEOS	DS-81	11/08/94	P	2X5	NY	1	DRB	11/09/94	DRB
17 W	P118 / P120	40' W OF EEOS	DS-82	11/08/94	P	2X5	NY	1	DRB	11/09/94	DRB
17 X	P118 / P119	7' E OF WEOS	DS-83	11/02/94	P	2X4.5	NY	1	TM	11/10/94	DRB
18 A	P121 / P122	10' E OF WEOS	BO	11/08/94	P	3X8	NY	1	DRB	11/09/94	DRB
18 B	P89 / P121	12' W OF EEOS	BO	11/08/94	P	1X1	NY	1	DRB	11/09/94	DRB
18 C	P121 / P122	29' E OF WEOS	IO	11/08/94	P	2X2	NY	1	DRB	11/09/94	DRB
18 D	P121 / P122	51' E OF WEOS	DS-84	11/08/94	P	2X5	NY	1	DRB	11/09/94	DRB
18 E	P130	3' E OF P128, 12' S OF P129	D	11/08/94	P	1.5X1.5	NY	1	DRB	11/09/94	DRB
18 F	P130	13' E OF P128, 12' S OF P129	D	11/08/94	P	1X1.5	NY	1	DRB	11/09/94	DRB
18 G	P127 / P129	11' E OF WEOS	IO	11/08/94	P	1X2	NY	1	DRB	11/09/94	DRB
18 H	P128 / P130	10' S OF NEOS	DS-85	11/08/94	P	2X5	NY	1	DRB	11/09/94	DRB
18 I	P131 / P132	@ P133	T	11/04/94	P	2X4	VP	1	TM	11/07/94	DRB
18 J	P132 / P133	@ P134	T	11/03/94	P	2X5	VP	1	TM	11/03/94	TM

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT				REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
18 K	P133 / P135	12' E OF WEOS	BO	11/03/94	P	3X8	VP	1	TM	11/03/94	TM
18 M	P25 / P27	@ P94	T	10/29/94	P	4X7	SS	24	DRB	11/01/94	BDH
18 N	P42 / P98	5' N OF SEOS TO P98/P99	IO	11/10/94	C	2X15	VP	1	DRB	11/10/94	DRB
18 P	P59 / P61	4' W OF EEOS	WS	11/02/94	P	1X1.5	SS	24	TM	11/09/94	DRB
18 Q	P61 / P63	@ P105/P107	INT	11/02/94	P	2.5X3	SS	24	TM	11/09/94	DRB
18 R	P90 / P106	@ P65	T	11/02/94	P	3X3	SS	24	TM	11/09/94	DRB
18 S	P135 / P136	155' W OF EEOS	WS	11/08/94	C	3X11	NY	1	DRB	11/09/94	DRB
18 T	P120 / P125	ENTIRE SEAM	NW	-	-	COVERED BY 18-W		-	-	-	-
18 W	P120 / P131	8' W OF EEOS	BO	11/08/94	P	3X14	NY	1	DRB	11/09/94	DRB
18 X	P120 / P131	32' W OF EEOS	BO	11/08/94	P	2X5	NY	1	DRB	11/09/94	DRB
19 A	P120 / P131	49' W OF EEOS	BO	11/08/94	P	2X4	NY	1	DRB	11/09/94	DRB
19 B	P120 / P131	95' W OF EEOS	BO	11/08/94	P	3X3	NY	1	DRB	11/09/94	DRB
19 C	P135 / P136	279' W OF EEOS	BO	11/07/94	P	3X18	NY	1	DRB	11/07/94	DRB
19 D	P135 / P136	297' W OF EEOS	IO	11/07/94	P	2X2.5	NY	1	DRB	11/07/94	DRB
19 E	P120 / P131	281' TO WEOS	IO	-	-	COVERED BY 37-H	-	-	-	-	
19 F	P136 / P138	233' W OF EEOS	WS	11/07/94	P	3X7	NY	1	DRB	11/07/94	DRB
19 G	P138	200' W OF EEOP, 3' S OF P136	SI	11/07/94	P	1.5X1.5	NY	1	DRB	11/07/94	DRB
19 H	P136 / P138	262' W OF EEOS	IO	11/07/94	P	2X2.5	NY	1	DRB	11/07/94	DRB
19 I	P132 / P133	100' W OF EEOS	DS-86	11/03/94	P	2.5X4.5	VP	1	TM	11/03/94	TM
19 J	P133 / P135	142' W OF EEOS	DS-87	11/08/94	P	2X5	NY	1	DRB	11/09/94	DRB
19 K	P135 / P136	64' W OF EEOS	DS-88	11/08/94	P	2.5X5	NY	1	DRB	11/09/94	DRB
19 M	P120 / P131	128' W OF EEOS	DS-89	11/08/94	P	2.5X5	NY	1	DRB	11/09/94	DRB
19 N	P135 / P136	564' W OF EEOS	DS-90	11/03/94	P	2X5	VP	1	TM	11/03/94	TM
19 P	P136 / P138	304' W OF EEOS	DS-91	11/07/94	P	2X5	NY	1	DRB	11/07/94	DRB
19 Q	P140 / P141	3' S OF NAT	BO	10/27/94	P	3X6.5	SS	24	TM	10/31/94	BDH
19 R	P30	3' W OF P35, 2' N OF P33	HT	10/27/94	P	1X1	SS	24	TM	11/02/94	BDH

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT				REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
19 S	P135	293' W OF EEOP, 9' N OF P136	MD	11/07/94	G&W	5"	NY	1	DRB	11/07/94	DRB
19 T	P2	977' E OF WAT, 11' S OF P3	D	10/29/94	P	2X2	SS	24	DRB	11/09/94	DRB
19 W	P2	981' E OF WAT, 9' N OF P1	BS	10/29/94	BS	5X5.5	SS	24	DRB	11/09/94	DRB
19 X	P150 / P151	19' S OF NAT	DS-92	10/27/94	P	2X5	SS	24	DRB	10/31/94	BDH
20 A	P167	9' S OF NAT, 1' W OF P166	D	10/27/94	P	1.5X1.5	NY	1	TM	11/01/94	BDH
20 B	P167	23' S OF NAT, 2' W OF P166	D	10/27/94	P	2.5X7.5	NY	1	TM	11/01/94	BDH
20 C	P166 / P167	28' S OF NAT	DS-93	-	-	COVERED BY 20-B		-	-	-	-
20 D	P176	45' S OF NAT, 5' W OF P175	D	10/27/94	P	1X1.5	NY	1	DRB	11/02/94	BDH
20 E	P177	26' S OF NAT, 2' W OF P178	D	10/27/94	P	2X2	NY	1	DRB	11/02/94	BDH
20 F	P176	22' S OF NAT, 4' E OF P177	D	10/27/94	P	2X2	NY	1	DRB	11/02/94	BDH
20 G	P178	21' S OF NAT, 3' W OF P177	D	10/27/94	P	2X2	NY	1	DRB	11/02/94	BDH
20 H	P179	35' S OF NAT, 2' W OF P178	D	10/27/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
20 I	P179	38' S OF NAT, 1' W OF P178	D	10/27/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
20 J	P179	12' S OF NAT, 5' W OF P178	D	11/08/94	P	1.5X1.5	NY	1	DRB	11/08/94	DRB
20 K	P181	30' S OF NAT, 9' E OF P182	D	10/28/94	P	1X1.5	NY	1	TM	11/02/94	BDH
20 M	P174 / P175	46' S OF NAT	BO, WS	10/27/94	P	2X3.5	NY	1	DRB	11/01/94	TM
20 N	P183	5' W OF P182, 4' S OF NAT	D	10/28/94	P	2X2	VP	1	TM	11/02/94	BDH
20 P	P183	5' W OF P182, 25' S OF NAT	D	10/27/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
20 Q	P174 / P175	10' S OF NAT	DS-94	10/27/94	P	2X5	NY	1	DRB	11/02/94	BDH
20 R	P180 / P181	13' S OF NAT	DS-95	10/28/94	P	2.5X5	NY	1	TM	11/02/94	BDH
20 S	P184	19' S OF ANT, 10' W OF P183	D	10/28/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
20 T	P171	@ S END	EXT	-	REFER TO FUSION & EXTRUSION SEAMING			-	-	-	-
20 W	P141 / P142	4' S OF NAT	PT	10/27/94	P	1X1.5	SS	24	TM	10/31/94	BDH
20 X	P144 / P145	11' S OF NAT	PT	10/27/94	P	1.5X2	SS	24	TM	10/31/94	BDH
21 A	P146 / P147	1' S OF NAT	PT	-	-	COVERED BY 23-W	-	-	-	-	
21 B	P146 / P147	13' TO 19' S OF NAT	FS	10/27/94	P	2.5X6.5	SS	24	TM	10/31/94	BDH

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT					REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
21 C	P195 / P196	@ NAT	BO	10/28/94	P	2X3	VP	1	DRB	11/02/94	BDH
21 D	P195 / P196	30' S OF NAT	BO	10/28/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
21 E	P195 / P196	26' S OF NAT	BO	10/28/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
21 F	P40 / P192	WEOS TO 15' E	IO	10/28/94	C	3X17	NY	1	TM	11/02/94	BDH
21 G	P40 / P192	11' W OF EEOS	BO	10/27/94	P	2X2.5	NY	1	TM	11/01/94	BDH
21 H	P168 / P192	7' W OF EEOS	D	10/27/94	P	1.5X3.5	NY	1	TM	11/01/94	BDH
21 I	P168 / P192	9' E OF WEOS	D	10/27/94	P	1.5X2	NY	1	TM	11/01/94	BDH
21 J	P172 / P192	@ 20-T	T	10/27/94	P	2X2	NY	1	TM	11/01/94	BDH
21 K	P200 / P201	3' S OF NAT	BO	10/28/94	P	1.5X4	VP	1	DRB	11/02/94	BDH
21 M	P200 / P201	8' S OF NAT	BO	10/28/94	P	2X2	VP	1	DRB	11/02/94	BDH
21 N	P37 / P158	84' E OF WOS	BO	10/27/94	P	1X1	SS	24	TM	11/01/94	BDH
21 P	P37 / P158	77' E OF WEOS	BO	10/27/94	P	1X1	SS	24	TM	11/01/94	BDH
21 Q	P37 / P158	73' E OF WEOS	BO	10/27/94	P	1X1	SS	24	TM	11/01/94	BDH
21 R	P37 / 158	67' E OF WEOS	BO	10/27/94	P	1X1	SS	24	TM	11/01/94	BDH
21 S	P158	48' E OF WEOP, 5' N OF P37	D	10/27/94	P	1X1	SS	24	TM	11/01/94	BDH
21 T	P185	5' S OF NAT, 1' W OF P184	D	10/28/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
21 W	P39	3' W OF P158, 12' S OF P40	D	10/27/94	P	2X4.5	SS	4	TM	11/01/94	BDH
21 X	P40 / P158	WEOS TO 13' E	IO, BO	10/27/94	C	4X14	SS	24	TM	11/01/94	BDH
22 A	P148 / P149	10' S OF NAT	PT	10/27/94	P	2X2	SS	24	DRB	10/31/94	BDH
22 B	P156 / P157	5' S OF NAT	PT	-	-	COVERED BY 26-P	-	-	-	-	
22 C	P37 / P158	153' E OF WEOS	PT	10/28/94	P	1.5X1.5	SS	24	DRB	11/01/94	BDH
22 D	P37 / P158	135' E OF WEOS	PT	10/28/94	P	2X2	SS	24	DRB	11/01/94	BDH
22 E	P158	131' E OF WEOS, 2' N OF P37	SI	10/28/94	P	1X1	SS	24	DRB	11/01/94	BDH
22 F	P163 / P164	@ P159	T	-	-	COVERED BY 25-D		-	-	-	-
22 G	P164 / P165	@ P159	T	-	-	COVERED BY 26-R	-	-	-	-	
22 H	P198	6' S OF NAT, 7' E OF P199	MD	10/28/94	P	2X2	VP	1	DRB	11/02/94	BDH

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT						REPAIR						VACUUM TEST	
DEFECT CODE		SEAM OR PANEL NUMBER			MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
22	I	P167	/	P168	@ P192	T	10/27/94	P	1.5X3	NY	1	TM	11/01/94	BDH
22	J	P168	/	P169	@ P192	T	10/27/94	P	1.5X1.5	NY	1	TM	11/01/94	BDH
22	K	P169	/	P170	@ P192	T	10/27/94	P	1.5X4.5	NY	1	TM	11/01/94	BDH
22	M	P170	/	20-T	4' N OF P192	PT	10/27/94	P	1X1.5	NY	1	TM	11/01/94	BDH
22	N	P160	/	P161	30' S OF NAT	PT	10/27/94	P	2X2	SS	24	DRB	10/31/94	BDH
22	P	P160	/	P161	1' S OF NAT	PT	10/27/94	P	2X2	SS	24	DRB	10/31/94	BDH
22	Q	P172	/	P173	@ P192	T	10/27/94	P	2X3.5	NY	1	TM	11/01/94	BDH
22	R	P173	/	P174	@ P192	T	10/27/94	P	1X1.5	NY	1	TM	11/01/94	BDH
22	S	P175	/	P192	ENTIRE SEAM	NT	10/27/94	P	2X5	NY	1	DRB	11/01/94	BDH
22	T	P148	/	P149	25' S OF NAT	PT	10/27/94	P	2X2	SS	24	DRB	10/31/94	BDH
22	W	P181	/	P182	@ P192	T	10/28/94	P	2X2	VP	1	TM	11/02/94	BDH
22	X	P183	/	P184	@ P192	T	10/28/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
23	A	P158	/	P159	3' E OF WEOS	BO	-	-	COVERED BY 26-R	-	-	-	-	BDH
23	B	P165	/	P166	@ P159	T	-	-	COVERED BY 26-R	-	-	-	-	
23	C	P40	/	P159	@ P158	T	10/27/94	P	2X2	SS	24	DRB	11/01/94	BDH
23	D	P39	/	P202	@ WAT	BO	10/28/94	P	2X4.5	NY	1	DRB	11/02/94	BDH
23	E	P39	/	P40	@ P201	T	10/28/94	P	3.5X6	VP	1	DRB	11/02/94	BDH
23	F	P187	/	P192	19' E OF WEOS	DS-96	10/28/94	P	2X8	NY	1	TM	11/02/94	BDH
23	G	P40	/	P192	310' E OF WEOS	DS-97	10/28/94	P	2X5	NY	1	TM	11/02/94	BDH
23	H	P159	/	P165	7' E OF WEOS	DS-98	-	-	COVERED BY 26-R	-	-	-	-	
23	I	P180	/	P181	@ P192	T	10/27/94	P	2X3	NY	1	TM	11/02/94	BDH
23	J	P40	/	P200	3' W OF EEOS	BO	10/28/94	P	2X5.5	VP	1	DRB	11/02/94	BDH
23	K	P40	/	P198	5' E OF WEOS	BO, FM	10/28/94	P	3X9	VP	1	DRB	11/02/94	BDH
23	M	P40	/	P197	1' W OF EEOS	BO	10/28/94	P	2X6	VP	1	DRB	11/02/94	BDH
23	N	P40	/	P196	12' E OF WEOS	FM	10/28/94	P	2X7.5	VP	1	DRB	11/02/94	BDH
23	P	P40	/	P193	3' E OF WEOS	IO	-	-	COVERED BY 23-Q		-	-	-	-

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT				REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
23 Q	P40 / P193	7' E OF WEOS	FM	10/28/94	C	3X10	NY	1	TM	11/02/94	BDH
23 R	P167	S END	EXT	10/27/94	EXT	5.5X18	NY	1	TM	11/01/94	BDH
23 S	P191 / P192	@ P203	T	10/28/94	P	2X3	NY	1	TM	11/02/94	BDH
23 T	P146 / P147	SEOS TO 21B	FS	10/28/94	C	2X8	SS	24	DRB	10/31/94	BDH
23 W	P146 / P147	21A TO 21B	FS	10/28/94	C	2X11	SS	24	DRB	10/31/94	BDH
24 A	P148 / P185	@ P192	T	10/28/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
24 B	P185 / P186	@ P192	T	10/28/94	P	1.5X2	NY	1	TM	11/02/94	BDH
24 C	P186 / P187	@ P192	T	-	-	COVERED BY 23-F		-	-	-	-
24 D	P181 / P192	2' W OF EEOS	PT	10/28/94	P	1X1	NY	1	TM	11/02/94	BDH
24 E	P191	1' S OF NAT, 5' W OF P190	D	10/28/94	P	1X1	NY	1	TM	11/02/94	BDH
24 F	P187 / P188	@ P192	T	10/28/94	P	1X1.5	NY	1	TM	11/02/94	BDH
24 G	P188 / P189	@ P192	T	10/28/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
24 H	P189 / P190	@ P192	T	10/28/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
24 I	P190 / P191	@ P192	T	10/28/94	P	1.5X2	NY	1	TM	11/02/94	BDH
24 J	P32 / P34	@ P149	T	10/28/94	P	1.5X1.5	SS	24	DRB	10/31/94	BDH
24 K	P139 / P140	@ P2	T	10/28/94	P	2X2	SS	24	DRB	10/31/94	BDH
24 M	P140 / P141	@ P2	T	10/28/94	P	2X5	SS	24	DRB	10/31/94	BDH
24 N	P2 / P142	ENTIRE SEAM	NW	10/28/94	P	3X12	SS	24	DRB	10/31/94	BDH
24 P	P142 / P143	@ P3	T	10/28/94	P	2X2	SS	24	DRB	10/31/94	BDH
24 Q	P143 / P144	@ P3	T	10/28/94	P	1.5X1.5	SS	24	DRB	10/31/94	BDH
24 R	P4 / P32	@ P147	T	10/28/94	P	1X1	SS	24	DRB	10/31/94	BDH
24 S	P149 / P150	@ P34	T	10/28/94	P	2X2	SS	24	DRB	10/31/94	BDH
24 T	P150 / P151	@ P34	T	10/28/94	P	1.5X1.5	SS	24	DRB	10/31/94	BDH
24 W	P34 / P151	@ P152	T	10/28/94	P	1.5X1.5	SS	24	DRB	10/31/94	BDH
24 X	P152 / P153	@ P35	T	10/28/94	P	1.5X1.5	SS	24	DRB	10/31/94	BDH
25 A	P200 / P201	13' N OF SEOS	DS-99	10/28/94	P	2X6	VP	1	DRB	11/02/94	BDH

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT				REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
25 B	P36 / P155	15' E OF WEOS	DS-100	10/28/94	P	2X5.5	SS	24	DRB	10/31/94	BDH
25 C	P2 / P139	3'W OF EAT	WS	10/28/94	P	2X3	SS	24	DRB	10/31/94	BDH
25 D	P158 / P159	@ P163	T	10/28/94	P	3X7	VP	1	DRB	11/01/94	BDH
25 E	P160 / P161	@ P37	T	10/28/94	P	2X4	SS	24	DRB	10/31/94	BDH
25 F	P36 / P37	@ P157	T	10/28/94	P	2X8	SS	24	DRB	10/31/94	BDH
25 G	P35 / P36	@ P154	T	10/28/94	P	3X4	SS	24	DRB	10/31/94	BDH
25 H	P148 / P149	@ P32	T	10/28/94	P	3X6	SS	24	DRB	10/31/94	BDH
25 I	P147 / P148	@ P32	T	10/28/94	P	3X3	SS	24	DRB	10/31/94	BDH
25 J	P3 / P145	ENTIRE SEAM	NW	10/28/94	P	2X5.5	SS	24	DRB	10/31/94	BDH
25 K	P145 / P146	10' N OF SEOS	DS-101	-	-	COVERED BY 25-M		-	-	-	-
25 M	P145 / P146	SEOS TO 25K	FS	10/28/94	C	2.5X9	SS	24	DRB	10/31/94	BDH
25 N	P189 / P190	1' S OF NAT	PT	10/28/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
25 P	P39 / P201	4' E OF WEOS	BO	10/28/94	P	3X6	VP	1	DRB	11/02/94	BDH
25 Q	P192 / P193	@ P203	T	10/28/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
25 R	P186 / P187	@ NAT	D	10/28/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
25 S	P193 / P194	8' N OF SEOS	BO	10/28/94	P	1.5X1.5	NY	1	TM	11/02/94	BDH
25 T	P194 / P195	@ P40	T	10/28/94	P	1.5X2	NY	1	TM	11/02/94	BDH
25 W	P193 / P203	@ NAT	D	10/28/94	P	3X4	NY	1	TM	11/02/94	BDH
25 X	P40 / P194	10' E OF WEOS	PT	10/28/94	P	2X2	NY	1	TM	11/02/94	BDH
26 A	P162 / P163	@ P158	T	10/28/94	P	1X2	SS	24	DRB	11/01/94	BDH
26 B	P161 / P162	@ P158	T	10/28/94	P	2X2	SS	24	DRB	11/01/94	BDH
26 C	P37 / P158	@ P161	T	10/28/94	P	2X4	SS	24	DRB	10/31/94	BDH
26 D	P157 / P160	@ P37	T	10/28/94	P	2X3	SS	24	DRB	10/31/94	BDH
26 E	P156 / P157	@ P36	T	-	-	COVERED BY 25-F		-	-	-	-
26 F	P155 / P156	@ P36	T	10/28/94	P	1X1	SS	24	DRB	10/31/94	BDH
26 G	P154 / P155	@ P36	T	10/28/94	P	1X1	SS	24	DRB	10/31/94	BDH

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT				REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
26 H	P153 / P154	@ P35	T	10/28/94	P	1X1	SS	24	DRB	10/31/94	BDH
26 I	P147 / P148	@ NAT	PT	10/28/94	P	2X2	SS	24	DRB	10/31/94	BDH
26 J	P34 / P35	@ P152	T	10/28/94	P	1.5X1.5	SS	24	DRB	10/31/94	BDH
26 K	P197 / P198	@ NAT	PT	10/28/94	P	2X2	VP	1	DRB	11/02/94	BDH
26 M	P200 / P201	@ P40	T	10/28/94	P	2X2	VP	1	DRB	11/02/94	BDH
26 N	P201	@ NAT	EXT	10/28/94	EXT	20'	NY	1	DRB	11/02/94	BDH
26 P	P156 / P157	@ NAT TO 5' S	BS	10/28/94	BS	5' TO 9'	SS	24	DRB	10/31/94	BDH
26 Q	P2	520' E OF WAT, 2' S OF P3	BS	10/29/94	BS	3X3	NY	1	DRB	11/02/94	BDH
26 R	P159 / P165	W OF P159/P166 TO 7' E OF P159/P1	FS	10/29/94	C	3X36	SS	24	DRB	11/01/94	BDH
26 S	P27 / P41	304' FROM EAT	PT	-	-	COVERED BY 12-T		-	-	-	-
27 A	P197 / P198	@ P40	T	10/28/94	P	2X3	VP	1	DRB	11/02/94	BDH
27 B	P198 / P199	10' N OF SEOS	PT	10/28/94	P	2.5X2.5	VP	1	DRB	11/02/94	BDH
27 C	P198 / P199	1' S OF NAT	PT	10/28/94	P	2X2	VP	1	DRB	11/02/94	BDH
27 D	P195 / P196	@ P40	T	10/28/94	P	2X2	NY	1	TM	11/02/94	BDH
27 E	P205 / P206	16' S OF NEOS	DS-102	11/08/94	P	2X5	NY	1	DRB	11/09/94	DRB
27 F	P52 / P53	@ P55	T	10/29/94	P	2.5X2.5	VP	1	DRB	11/03/94	TM
27 G	P50 / P51	@ P26	T	10/29/94	P	2X2	VP	1	DRB	11/03/94	TM
27 H	P49 / P50	@ P26	T	10/29/94	P	2X5	VP	1	DRB	11/03/94	TM
27 I	P47 / P48	@ P26	T	10/29/94	P	2X3	VP	1	DRB	11/03/94	TM
27 J	P46 / P47	@ P26	T	10/29/94	P	2X2	NY	1	DRB	11/03/94	TM
27 K	P45 / P46	@ P26	T	10/29/94	P	2X2	NY	1	DRB	11/03/94	TM
27 M	P44 / P45	@ P26	T	-	-	COVERED BY 27-H	-	-	-	-	TM
27 N	P44	4' S OF P26, 1' E OF P45	D	10/29/94	P	2X2	NY	1	DRB	11/03/94	TM
27 P	P20	317' W OF EEOP, 4' S OF P19	BS	11/01/94	BS	4X4	NY	1	TM	11/03/94	TM
27 Q	P43 / P49	@ P50	T	10/29/94	P	2X2	VP	1	DRB	11/03/94	TM
27 R	P7	143' E OF WAT, 5' N OF P8	BS	10/29/94	BS	4X4	NY	1	DRB	11/10/94	DRB

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GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT						REPAIR						VACUUM TEST	
DEFECT CODE		SEAM OR PANEL NUMBER			MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
27	S	P48	/	P49	@ P43	T	10/29/94	P	2X2	VP	1	DRB	11/03/94	TM
27	T	P47	/	P48	@ P42	PT	10/29/94	P	1.5X1.5	VP	1	DRB	11/03/94	TM
27	W	P46	/	P47	@ P42	T	10/29/94	P	2X2	VP	1	DRB	11/03/94	TM
27	X	P46	/	P42	6' W OF EEOS	PT	10/29/94	P	2X2	VP	1	DRB	11/03/94	TM
28	A	P26	/	P53	@ P54	T	10/29/94	P	2X2	NY	1	DRB	11/03/94	TM
28	B	P53	/	P54	@ P55	T	10/29/94	P	2X2	VP	1	DRB	11/03/94	TM
28	C	P26	/	P52	@ P53	T	10/29/94	P	2X2	VP	1	DRB	11/03/94	TM
28	D	P51	/	P52	@ P26	T	10/29/94	P	2X2	VP	1	DRB	11/03/94	TM
28	E	P43	/	P51	@ P52	T	10/29/94	P	2X2	VP	1	DRB	11/03/94	TM
28	F	P50	/	P51	@ P43	T	10/29/94	P	2X2	VP	1	DRB	11/03/94	TM
28	G	P41	/	P42	180' W OF EEOS	PT	11/01/94	P	1.5X1.5	SS	24	TM	11/01/94	BDH
28	H	P231			5' E OF WEOP, 6' N OF AT	D	11/07/94	P	1X1	NY	1	DRB	11/07/94	DRB
28	I	P231			100' W OF EEOP, 1' S OF P227	D	11/07/94	P	2X3	NY	1	DRB	11/07/94	DRB
28	J	P42	/	P43	100' W OF EEOS	PT	11/01/94	P	1.5X1.5	SS	24	TM	11/01/94	BDH
28	K	P42	/	P43	95' W OF EEOS	PT	11/01/94	P	1.5X1.5	SS	24	TM	11/01/94	BDH
28	M	P138	/	P214	WEOS TO 16' E	IO	11/07/94	C	3X17	NY	1	DRB	11/09/94	DRB
28	N	P231			120' W OF EEOP, 1'S OF P227	D	11/07/94	P	1.5X1.5	NY	1	DRB	11/07/94	DRB
28	P	P223	/	P225	64' W OF EEOS	DS-105	11/03/94	P	2X4.5	VP	1	TM	11/03/94	TM
28	Q	P81	/	P110	ENTIRE SEAM	NW	11/02/94	C	3X6	NY	1	TM	11/03/94	DRB
28	R	P82	/	P110	ENTIRE SEAM	IO	11/02/94	C	2.5X20	NY	1	TM	11/03/94	DRB
28	S	P113	/	P115	ENTIRE SEAM	IO	11/02/94	C	4X27	NY	1	TM	11/03/94	DRB
28	T	P116	/	P216	ENTIRE SEAM	NW	11/02/94	C	3.5X5	NY	1	TM	11/03/94	DRB
28	W	P119	/	P217	1' S OF NEOS	D	-	-	COVERED BY 33-G		-	-	-	-
28	X	P119	/	P217	8' N OF NEOS	D	-	-	COVERED BY 37-D		-	-	-	DRB
29	A	P45	/	P46	@ P42	T	10/29/94	P	2X2	VP	1	DRB	11/03/94	TM
29	B	P44	/	P45	@ P42	T	10/29/94	P	2X2	VP	1	DRB	11/03/94	TM

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT					REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
29 C	P222 / P223	68' W OF EEOS	DS-103	11/03/94	P	2X4.5	VP	1	TM	11/03/94	TM
29 D	P158 / P159	45' E OF WEOS	DS-104	10/29/94	P	2.5X6	SS	24	DRB	11/01/94	BDH
29 E	P218 / P227	14' E OF WEOS	IO	11/07/94	P	2X5	NY	1	DRB	11/07/94	DRB
29 F	P224 / P227	50' TO 58' W OF EEOS	IO	11/07/94	C	2X8	NY	1	DRB	11/07/94	DRB
29 G	P224 / P227	104' N OF EEOS	IO	11/07/94	P	1X1	NY	1	DRB	11/07/94	DRB
29 H	P224 / P227	156' W OF EEOS	BO	11/03/94	P	2X4	VP	1	TM	11/03/94	TM
29 I	P224 / P227	@ P226	T	11/03/94	P	2X4.5	VP	1	TM	11/03/94	TM
29 J	P138 / P224	3' W OF EEOS	BO	11/07/94	P	2X4	NY	1	DRB	11/07/94	DRB
29 K	P138 / P226	EEOS TO 7' W	IO	11/03/94	P	7X2	VP	1	TM	11/03/94	TM
29 M	P159 / P164	9' E OF WEOS	DS-98-N1	10/29/94	P	2X4	SS	24	DRB	11/01/94	BDH
29 N	P159 / P166	17' E OF WEOS	DS-98-P1	10/29/94	P	2.5X6	SS	24	DRB	11/01/94	BDH
29 P	P215 / P218	6' S OF NEOS	DS-106	11/07/94	P	2X5	NY	1	DRB	11/09/94	DRB
29 Q	P204	@ NORTH END	EXT	-	REFER TO FUSION SEAMING			-	-	-	-
29 R	P137 / P206	13' W OF EEOS	IO	11/08/94	P	1.5X2	NY	1	DRB	11/09/94	DRB
29 S	P205 / P206	@ P136/P137	INT	11/08/94	P	3X4	NY	1	DRB	11/09/94	DRB
29 T	P204 / P205	@ 29-Q	T	11/08/94	P	3X5.5	NY	1	DRB	11/09/94	DRB
29 W	P207 / P208	@ P137	T	11/08/94	P	2X2	NY	1	DRB	11/09/94	DRB
29 X	P137 / P208	4' W OF EEOS	BO	11/08/94	P	1.5X1.5	NY	1	DRB	11/09/94	DRB
30 A	P208 / P209	@ P137	T	11/08/94	P	3X4	NY	1	DRB	11/09/94	DRB
30 B	P137 / P210	3' W OF EEOS	BO	11/08/94	C	2X10	NY	1	DRB	11/09/94	DRB
30 C	P137 / P210	8' W OF EEOS	WS	-	-	COVERED BY 30-B		-	-	-	-
30 D	P138 / P218	@ P215	T	11/07/94	P	3X7	NY	1	DRB	11/09/94	DRB
30 E	P135 / 29-Q	ENTIRE SEAM	NW	11/03/94	P	3X6	SS	24	DRB	11/09/94	DRB
30 F	P135 / P129	@ P128/P204	INT	11/03/94	P	3X4	SS	24	DRB	11/09/94	DRB
30 G	P128 / P129	@ P130	T	11/08/94	P	3X4.5	NY	1	DRB	11/09/94	DRB
30 H	P133 / P135	@ P127	T	11/03/94	P	2.5X5.5	SS	24	DRB	11/09/94	DRB

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GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT				REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
30 I	P126 / P133	8' S OF NEOS	BO	11/03/94	P	2X5	SS	24	DRB	11/09/94	DRB
30 J	P131 / P133	P126	T	11/08/94	P	3.5X7	NY	1	DRB	11/09/94	DRB
30 K	P118 / P124	ENTIRE SEAM	NW	11/08/94	P	3X4	NY	1	DRB	11/09/94	DRB
30 M	P117 / P118	@ P122/P123	INT	11/08/94	P	3.5X8	NY	1	DRB	11/09/94	DRB
30 N	P92 / P121	ENTIRE SEAM	NW	-	-	COVERED BY 16-I		-	-	-	-
30 P	P80 / P82	@ P86/P87	INT	-	-	COVERED BY 16-I		-	-	-	DRB
30 Q	P231	EAST END	EXT	11/07/94	EXT	2.5X7	NY	1	DRB	11/09/94	DRB
30 R	P227 / P231	75' W OF EEOS	IO	11/07/94	P	1.5X2.5	NY	1	DRB	11/07/94	DRB
30 S	P227 / P230	37' W OF EEOS	BO	11/03/94	P	3X5	VP	1	TM	11/03/94	TM
30 T	P227 / P229	@ P230	T	11/03/94	P	4X4	VP	1	TM	11/03/94	TM
30 W	P227 / P228	@ P229	T	11/03/94	P	2.5X3	VP	1	TM	11/03/94	TM
30 X	P227 / P231	164' OF EOS	DS-107	11/07/94	P	3X4.5	NY	1	DRB	11/07/94	DRB
31 A	P118 / P216	14' N OF SEOS	DS-108	11/02/94	P	2X4.5	NY	1	TM	11/03/94	DRB
31 B	P25 / P27	@ EAT	PT	11/03/94	P	2X5	SS	24	DRB	11/10/94	DRB
31 C	P57 / P58	@ P102	T	11/04/94	P	2.5X2.5	SS	24	DRB	11/09/94	DRB
31 D	P58 / P59	@ P60	T	11/02/94	P	1.5X1.5	SS	24	TM	11/03/94	TM
31 E	P59 / P60	@ P61	T	11/02/94	P	2X2	SS	24	TM	11/03/94	TM
31 F	P60 / P61	@ P62	T	11/01/94	P	2X2	SS	24	BDH	11/03/94	TM
31 G	P62	2' W OF P61, 6' S OF P60	D	11/01/94	P	2X2	SS	24	BDH	11/03/94	TM
31 H	P61 / P62	@ P63	T	11/01/94	P	1X2	SS	24	BDH	11/03/94	TM
31 I	P26 / P27	@ P20	T	11/01/94	P	1.5X1.5	VP	1	TM	11/03/94	TM
31 J	P26 / P27	@ P41	T	11/01/94	P	1.5X1.5	VP	1	TM	11/03/94	TM
31 K	P63 / P64	@ P62	T	11/01/94	P	2X2.5	VP	1	TM	11/03/94	TM
31 M	P65 / P66	@ P67	T	11/01/94	P	1.5X2	VP	1	TM	11/03/94	TM
31 N	P41 / 16-R	18' W OF EEOS	DSE-3	11/01/94	P	2.5X5.5	SS	24	TM	11/01/94	BDH
31 P	P27	2' W OF P94, 2' S OF P25	WR	11/01/94	P	(1X1)+3	SS	24	TM	11/01/94	BDH

FILENAME-REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT				REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
31 Q	P70 / P71	@ P56/P57	INT	11/02/94	P	2X2	NY	1	TM	11/03/94	TM
31 R	P57 / P58	@ P71/P72	INT	11/02/94	P	1.5X1.5	NY	1	TM	11/03/94	TM
31 S	P58 / P60	@ P72/P73	INT	11/02/94	P	2X2	NY	1	TM	11/03/94	TM
31 T	P60 / P62	@ P73/P74	INT	11/02/94	P	2X2	NY	1	TM	11/03/94	TM
31 W	P62 / P64	@ P74/P75	INT	11/02/94	P	2X2	NY	1	TM	11/03/94	TM
31 X	P64 / P66	@ P75/P76	INT	11/02/94	P	2X2	NY	1	BDH	11/03/94	TM
32 A	P62	2' W OF P61, 6' N OF P63	D	11/01/94	P	1X1	SS	24	BDH	11/03/94	TM
32 B	P27 / P94	ON 18M	VL	11/10/94	G&W	1"	VP	1	DRB	11/10/94	DRB
32 C	P211 / P212	@ P138	T	11/08/94	P	2X2	NY	1	DRB	11/09/94	DRB
32 D	P212 / P213	@ P138	T	11/08/94	P	2X2	NY	1	DRB	11/09/94	DRB
32 E	P215 / P218	@ P227	T	11/07/94	P	2X2	NY	1	DRB	11/09/94	DRB
32 F	P218 / P224	@ P227	T	11/07/94	P	1.5X1.5	NY	1	DRB	11/07/94	DRB
32 G	P230 / P231	@ P227	T	11/07/94	P	1X1	NY	1	DRB	11/07/94	DRB
32 H	P136 / P137	@ P138	T	11/08/94	P	2X2	NY	1	DRB	11/09/94	DRB
32 I	P117	195' W OF EEOP, 10' NN OF P118	D	11/10/94	P	2X4	NY	1	DRB	11/10/94	DRB
32 J	P67	305' W OF EEOP, 12' N OF P68	BS	11/10/94	BS	3.5X4	VP	1	DRB	11/10/94	DRB
32 K	P97 / P98	@ P42	T	11/04/94	P	2X2.5	SS	24	DRB	11/10/94	DRB
32 M	P41 / P42	@ P97	T	11/04/94	P	2X2.5	SS	24	DRB	11/10/94	DRB
32 N	P56 / P99	ENTIRE SEAM	NT	11/10/94	P	2X5	VP	1	DRB	11/10/94	DRB
32 P	P56 / P101	ENTIRE SEAM	NT	11/04/94	P	2X5	SS	24	DRB	11/09/94	DRB
32 Q	P132 / P219	8' S OF NEOS	DS-108-P1	-	-	COVERED BY 37-C		-	-	-	-
32 R	P114 / P116	10' S OF NEOS	DS-108-N1	-	-	COVERED BY 37-G		-	-	-	-
33 A	P68 / P108	ENTIRE SEAM	NW	11/02/94	C	2.5X5.5	NY	1	TM	11/03/94	DRB
33 B	P66 / P67	@ P76/P77	INT	11/02/94	P	2X2	NY	1	TM	11/03/94	DRB
33 C	P79 / P81	@ P108/P109	INT	11/02/94	P	2.5X3	NY	1	TM	11/03/94	DRB
33 D	P91 / P112	ENTIRE SEAM	IO	11/02/94	P	3X3.5	NY	1	TM	11/03/94	DRB

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GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT					REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
33 E	P69 / P79	@ P80	T	11/01/94	P	2X2.5	SS	24	TM	11/03/94	DRB
33 F	P63 / P65	@ P106	T	11/02/94	P	2X2	SS	24	TM	11/09/94	DRB
33 G	P118 / P217	ENTIRE SEAM	NT	11/02/94	C	3X4.5	NY	1	TM	11/03/94	DRB
33 H	P119 / P219	ENTIRE SEAM	NT	-	-	COVERED BY 37-C	-	-	-	-	DRB
33 I	P132 / P222	ENTIRE SEAM	NT	-	-	COVERED BY 37-C	-	-	-	-	DRB
33 J	P27 / 12-T	4' E OF WEOS	FTS	11/01/94	P	2X2	VP	1	TM	11/03/94	TM
33 K	P64	EEOP TO 19' W @ C/L	D	11/01/94	C	2X19	VP	1	TM	11/03/94	TM
33 M	P11		EE	11/01/94	P	1.5X1.5	NY	1	TM	11/03/94	TM
33 N	P92 / P93	@ P115	T	11/01/94	P	2X2	SS	24	TM	11/03/94	DRB
33 P	P81	8' S OF P79, 3' W OF P80	D	11/01/94	P	1.5X1.5	VP	1	TM	11/03/94	DRB
33 Q	P48	4' E OF P49, 7' N OF P43	BS	11/02/94	BS	3.5X4	NY	1	TM	11/03/94	TM
33 R	P20 / 6-J	1' E OF WEOS	DSE-4	11/02/94	P	2X5	NY	1	TM	11/03/94	TM
33 S	P134 / P221	ENTIRE SEAM	NT	11/02/94	C	3X5	NY	1	TM	11/03/94	DRB
33 T	P135 / P222	ENTIRE SEAM	NT	11/02/94	C	3.5X5	NY	1	TM	11/03/94	DRB
33 W	P115 / 28-S	6' N OF SEOS	DSE-5	11/02/94	P	2X5	NY	1	TM	11/03/94	DRB
33 X	P68 / P69	@ P84/P85	INT	11/02/94	P	3X3	SS	24	BDH	11/09/94	DRB
34 A	P72 / P73	4' E OF WAT	PT	11/02/94	P	1.5X1.5	NY	1	TM	11/03/94	TM
34 B	P78	2' W OF P68, 4' N OF P108	MD	11/02/94	P	1.5X1.5	NY	1	TM	11/03/94	DRB
34 C	P109 / P110	1' E OF WAT	PT	11/02/94	P	1.5X1	NY	1	TM	11/03/94	DRB
34 D	P114 / P216	2' E OF WAT	PT	11/03/94	P	1.5X1.5	VP	1	TM	11/03/94	TM
34 E	P216 / P217	2' E OF WAT	PT	11/03/94	P	1.5X1.5	VP	1	TM	11/03/94	TM
34 F	P217 / P219	2' E OF WAT	PT	11/03/94	P	1.5X1.5	VP	1	TM	11/03/94	TM
34 H	P119 / P120	@ P132	T	11/03/94	P	2X3	VP	1	TM	11/07/94	DRB
34 I	P116 / P117	@ P118	T	11/04/94	P	1.5X3	VP	1	TM	11/07/94	DRB
34 J	P116 / P117	@ P115	T	11/04/94	P	1.5X2	VP	1	TM	11/10/94	DRB
34 K	P133 / P134	@ P135	T	11/03/94	P	1.5X1.5	VP	1	TM	11/03/94	TM

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT				REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
34 M	P135 / P136	289' W OF EEOS	PT	-	-	COVERED BY 19-C		-	-	-	-
34 N	P135 / P136	527' W OF EEOS	PT	11/03/94	P	1.5X1.5	VP	1	TM	11/03/94	TM
34 P	P220 / P221	1' E OF WAT	PT	11/03/94	P	1.5X1.5	VP	1	TM	11/03/94	TM
34 Q	P225 / P228	1' E OF WAT	PT	11/03/94	P	1.5X1.5	VP	1	TM	11/03/94	TM
34 R	P221 / P222	1' E OF WAT	PT	11/03/94	P	1.5X1.5	VP	1	TM	11/03/94	TM
34 S	P228 / P229	1' E OF WAT	PT	11/03/94	P	1X1.5	VP	1	TM	11/03/94	TM
34 T	P227 / P229	19' W OF EEOS	PT	11/03/94	P	2X2	VP	1	TM	11/03/94	TM
34 W	P229 / P230	1' N OF SAT	PT	11/03/94	P	1.5X1.5	VP	1	TM	11/03/94	TM
34 X	P230 / P231	1' N OF SAT	PT	11/07/94	P	1X1	NY	1	DRB	11/07/94	DRB
35 A	P212 / P213	2' N OF SAT	PT	11/08/94	P	1X2	NY	1	DRB	11/09/94	DRB
35 B	P208 / P209	2' N OF SAT	PT	11/08/94	P	2X2	NY	1	DRB	11/09/94	DRB
35 C	P98 / P99	@ P43	T	11/10/94	P	2X2	VP	1	DRB	11/10/94	DRB
35 D	P101 / P102	@ EAT	D	11/10/94	P	3X6	VP	1	DRB	11/10/94	DRB
35 E	P101 / P102	@ P57	T	11/04/94	P	2X2	SS	24	DRB	11/09/94	DRB
35 F	P102 / P103	@ P58	T	11/04/94	P	2.5X2.5	SS	24	DRB	11/09/94	DRB
35 G	P58 / P59	@ P103	T	11/04/94	P	2.5X2.5	SS	24	DRB	11/09/94	DRB
35 H	P103 / P104	@ P59	T	11/04/94	P	2X2	SS	24	DRB	11/09/94	DRB
35 I	P105 / P107	@ EAT	PT	11/08/94	P	2X3	NY	1	DRB	11/09/94	DRB
35 J	P106 / P107	@ P63	T	11/04/94	P	2.5X2	SS	24	DRB	11/09/94	DRB
35 K	P65 / P90	@ 18-R	PT	11/04/94	P	1X1	SS	24	DRB	11/09/94	DRB
35 M	P63 / P106	@ 33-F	PT	11/04/94	P	1X1	SS	24	DRB	11/09/94	DRB
35 N	P69 / P85	@ 33-X	PT	11/08/94	P	1X1	NY	1	DRB	11/09/94	DRB
35 P	P85 / P86	EAT	PT	11/08/94	P	1X1	NY	1	DRB	11/09/94	DRB
35 Q	P129 / P130	2' W OF EAT	PT	11/08/94	P	1X1	NY	1	DRB	11/09/94	DRB
35 R	P126 / P127	@ P133	T	11/08/94	P	1.5X1.5	NY	1	DRB	11/09/94	DRB
35 S	P23 / P24	3' W OF EAT	D	11/03/94	P	1X6	SS	24	DRB	11/10/94	DRB

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT					REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER	MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
35 T	P127 / P129	@ EAT	PT	11/08/94	P	1X2	NY	1	DRB	11/09/94	DRB
35 W	P128 / P204	3' N OF SAT	PT	11/08/94	P	2X3	NY	1	DRB	11/09/94	DRB
35 X	P206 / P207	2' N OF SAT	PT	11/08/94	P	1.5X1.5	NY	1	DRB	11/09/94	DRB
36 A	P117	30' W OF EEOP, 9' S OF P115	D	11/08/94	P	2X2	NY	1	DRB	11/09/94	DRB
36 B	P121 / P122	@ P115	T	11/08/94	P	3X3	NY	1	DRB	11/09/94	DRB
36 C	P115 / P117	@ P122	T	11/08/94	P	2.5X2.5	NY	1	DRB	11/09/94	DRB
36 D	P136 / P223	ENTIRE SEAM	NT	11/02/94	C	3X4	NY	1	TM	11/03/94	TM
36 E	P138 / P225	ENTIRE SEAM	NT	11/03/94	P	2.5X5	VP	1	TM	11/03/94	TM
36 F	P226 / P228	ENTIRE SEAM	NT	11/03/94	P	3X4	VP	1	TM	11/03/94	TM
36 G	P67	40' E OF WEOP, 12' S OF P66	BS	11/10/94	BS	3X3	NY	1	DRB	11/10/94	DRB
36 H	P116	10' E OF WEOP, 3' N OF P118	BS	11/04/94	BS	3X3	VP	1	TM	11/10/94	DRB
36 I	P43 / P56	142' W OF EEOS	DS-59-P1	-	-	COVERED BY 36-K		-	-	-	-
36 J	P43 / P56	183' W OF EEOS	DS-59-N1	-	-	COVERED BY 36-K		-	-	-	-
36 K	P43 / P56	142' TO 183' W OF EEOS	FS	11/03/94	C	2X46	SS	24	DRB	11/03/94	TM
36 M	P227 / P229	9' W OF EEOS	D	11/03/94	P	1.5X1	VP	1	TM	11/03/94	TM
36 N	P120	5' S OF P118, 30' OF P119	D	11/03/94	P	1X1	VP	1	TM	11/07/94	DRB
36 P	P206 / P207	@ P137	T	11/08/94	P	1.5X2	NY	1	DRB	11/09/94	DRB
36 Q	P209 / P210	@ P137	T	-	-	COVERED BY 30-B		-	-	-	-
36 R	P137 / P211	ENTIRE SEAM	NT	11/08/94	P	2.5X3.5	NY	1	DRB	11/09/94	DRB
36 S	P58 / P60	145' W OF EEOS	BS	11/10/94	BS	3.5X3.5	VP	1	DRB	11/01/94	TM
36 T	P132	4' W OF P131, 8' S OF P121	D	11/04/94	P	1X1	VP	1	TM	11/07/94	DRB
37 A	P213 / P214	@ P138	T	11/07/94	P	2X3.5	NY	1	DRB	11/09/94	DRB
37 B	P137 / P138	6' S OF NEOS	IO	11/08/94	P	1X2	NY	1	DRB	11/09/94	DRB
37 C	P132 / P219	FROM 32-Q TO NEOS	FS	11/10/94	C	2.5X13	NY	1	DRB	11/10/94	DRB
37 D	P119 / P217	ENTIRE SEAM	FS	11/10/94	C	2X20	NY	1	DRB	11/10/94	DRB
37 E	P118 / P216	31-A TO SEOS	FS	11/10/94	C	2X12	NY	1	DRB	11/10/94	DRB

FILENAME=REPAIRS.WK1

GEOMEMBRANE REPAIR SUMMARY
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT					REPAIR						VACUUM TEST	
DEFECT CODE	SEAM OR PANEL NUMBER			MAPPED LOCATION	DEFECT TYPE	DATE	REPAIR TYPE	APPROX. SIZE (FEET)	WELDING TECH	WELDING MACHINE	QA MON.	DATE	QA MON.
37	F	P118 /	P216	31-A TO NEOS	FS	11/10/94	C	2X5	NY	1	DRB	11/10/94	DRB
37	G	P114 /	P116	32-R TO SEOS	FS	11/10/94	C	2X17	NY	1	DRB	11/10/94	DRB
37	H	P120 /	P131	281' WEOS	VL	11/10/94	C	3X25	NY	1	DRB	11/10/94	DRB
37	I	P63		3' W OF EOP @ 35-J	D	11/10/94	P	2X2	VP	1	DRB	11/10/94	DRB
37	J	P69 /	P85	1' N OF SEOS	PT	11/08/94	P	1.5X1.5	NY	1	DRB	11/09/94	DRB
37	K	P127 /	P129	@ P135	T	11/08/94	P	3X3	NY	1	DRB	11/09/94	DRB
37	N	P87 /	P88	2' E OF WEOS @ 16-H	PT	11/08/94	P	1X1	NY	1	DRB	11/09/94	DRB
37	P	P158 /	P159	@ EEOS @ 25-D	IO	11/08/94	P	2X5	NY	1	DRB	11/08/94	DRB
37	Q	P39 /	P158	@ 10-Q	PT	11/08/94	P	1.5X1.5	NY	1	DRB	11/08/94	DRB
37	R	P37 /	P158	@ 10-Q	PT	11/08/94	P	1X1	NY	1	DRB	11/08/94	DRB
38	A	P118		122' W OF EEOS, 3' S OF NEOS	BS	11/10/94	BS	3X3	NY	1	DRB	11/10/94	DRB
38	B	P7		@ 27-R	EE	11/10/94	P	1X1	NY	1	DRB	11/10/94	DRB
38	C	P172		@ NAT AROUND CON. MANHOLE	BS	11/11/94	BS	9X12	VP	1	TM	11/01/94	TM

Note 1. Defect types are abbreviated:

BO	Burnout	EE	Earthwork Equipment Damage	INT	Intersection of 4 or more panels
CO	Change Overlap	EXT	Extension	NT	Not Tested
CUT	Deliberate Cut on Liner	FS	Failed Seam Length	NW	Not Welded
D	Damage	FTS	Field Test Strip	T	Three Panel Intersection
DP-#	Destructive Test Location, Fusion Seam	HT	Heat Tack Burn	VL	Vacuum Leak
DPE-#	Destructive Test Location, Extrusion Seam	IO	Insufficient Overlap	WS	Welder Restart

Note 2. Repair types are abbreviated: P=Patch; C=Cap; G&W=Grind and Weld.

FILENAME=REPAIRS.WK1

GEOSYNTHETIC CQA MONITORING
DEFECT AND REPAIR TYPES AND MAPPING NOTES
SULLIVAN LANDFILL CLOSURE PROJECT
SULLIVAN, MISSOURI

DEFECT AND REPAIR TYPES		MAPPING NOTES	
BO	FUSION WELDER BURNOUT	W	WEST
BS	BOOT/SKIRT FOR FML PENETRATION	E	EAST
CO	CHANGE OF OVERLAP	S	SOUTH
CR	CREASE	N	NORTH
D	GENERAL FIELD DAMAGE	AT	ANCHOR TRENCH
DS-000	DESTRUCTIVE TEST NUMBER	@	AT
	PRIMARY-FUSION	EOS	END OF SEAM
DSE-000	DESTRUCTIVE TEST NUMBER	INT	INTERSECTION
	PRIMARY EXTRUSION	W/	WITH
EE	EARTHWORK EQUIPMENT DAMAGE	SOS	START OF SEAM
EXT	EXTENSION	O	OF
FM	FISHMOUTH	P	PANEL
FS	FAILED SEAM LENGTH	SEOS	SOUTH END OF SEAM
FTS	FAILED TEST STRIP	NEOS	NORTH END OF SEAM
HT	HEAT TRACK BURN	EEOS	EAST END OF SEAM
INT	FOUR PANEL INTERSECTION	WEOS	WEST END OF SEAM
IO	INSUFFICIENT OVERLAP (UNDER SPEC.)	SEOP	SOUTH END OF PANEL
MD	MANUFACTURER/DELIVERY DAMAGE	NEOP	NORTH END OF PANEL
NW	NOT WELDED	EEOP	EAST END OF PANEL
NT	NOT TESTED	WEOP	WEST END OF PANEL
OL	EQUIPMENT OIL LEAK	E1	EXISTING LINER (TIE-IN)
PT	PRESSURE TEST CUT	CUT	DELIBERATE CUT ON LINER
SI	SUBGRADE IRREGULARITY		
SL	SLAG ON TEXTURED SHEET		
T	THREE PANEL INTERSECTION		
VL	VACUUM TEST LEAK		
WR	WRINKLE		
WS	WELDER START		
C	CAP		
P	PATCH		
GW	GRIND AND WELD		
RS	RECONSTRUCTED SEAM		
P\RS	PATCH AND RECONSTRUCTED SEAM		

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B:\REPCODES.WK1

SULLIVAN, MO LANDFILL CLOSURE

FINAL CONSTRUCTION REPORT

VOLUME V
APPENDICES G, H, AND I

Prepared for:

SULLIVAN LANDFILL PRP GROUP

Prepared by:

ABB Environmental Services, Inc.
Portland, ME

Project No. 8960-02

RECEIVED
JUL 13 1995
HAZARDOUS WASTE PROGRAM
MISSOURI DEPARTMENT OF
NATURAL RESOURCES

July 1995

ABB Environmental Services, Inc.

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PROJECT TRIP REPORT

Client: TRW Inc.
1900 Richmond Road
Cleveland, OH 44124
Attn: Mr. C.T. Bingham

Project: SULLIVAN LANDFILL CLOSURE
Sullivan, Missouri

Reporting Period: March 29, 1995 - March 31, 1995

On Site Activities:

Date: Wednesday March 29, 1995

Site Conditions: Sunny/Windy Temperature: 50's

1. On site in Sullivan at 11:00.
2. Mark Spraul (OBGT) on site at 11:30. We walked the site and discussed some of the items needing attention.
3. Dave Mosby (MDNR) on site at 14:30. We walked the site. Mr. Mosby took photographs. He commented that site conditions appeared fine. He left the site at 15:15.
4. Began preparation of the final punchlist.
5. Off site at 16:00.

Date: Thursday March 30, 1995

Site Conditions: Sunny Temperature Range 46 - 55

1. On site at 07:30.
2. Mark Spraul on site at 11:00. Completed inspection of the site. Formalized punchlist for distribution (See attached).

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Fax (207) 772-4762

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3. Checked level in the 10,000 gallon u.s.t.; Approximately 5,000 gallons has been collected since March 20, 1995.

4. Took pictures of site conditions.

5. Reviewed and revised OBGT's 9th pay requisition. Draft faxed to Jon Rauschkolb for issuance.

6. Off site at 17:00.

Date: Friday March 31, 1995

Site Conditions: Overcast; Temperature: 36

1. Spoke to M. Spraul. OBGT to have crew on site starting next week to work on punchlist items. OBGT will not be able to complete all the items until the site dries out some. OBGT will notify ABB-ES as they complete the remaining items.

Submitted by,

Bradlee T. Farrin
Resident Engineer

c.c A. McCusker
M. Stelmack

ABB
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WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: January 29, 1995 **REPORT NO.** 35

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr

==========

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	260 C.D.
COMPLETION DAYS REMAINING:	-13 C.D.

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TRW, INC.
C.T. Bingham

ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday January 23, 1995 **WEATHER:** N/A

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** N/A

WORK PERFORMED:

* Continued hauling vegetative material. Placed approximately 1,260 c.y. along south half of site.

ABB Environmental Services, Inc.

110 Free Street
P.O. Box 7050
Portland, Maine 04112-7050

Telephone (207) 775-5400

Fax (207) 772-4762

* Site cleanup.

DATE: Tuesday January 24, 1995 **WEATHER:** Sunny

SITE CONDITIONS: Mostly Dry **TEMP. RANGE:** 30's

WORK PERFORMED:

* Continued hauling vegetative material. Placed approximately 1,850 c.y. along south half of site.
* Site cleanup.
* Removed 5,000 gallons of leachate from the 10,000 gallon U.S.T.

DATE: Wednesday January 25, 1995 **WEATHER:** Sunny

SITE CONDITIONS: Mostly Dry **TEMP. RANGE:** 27 - 38

WORK PERFORMED:

* Continued hauling vegetative material. Placed approximately 2,450 c.y. along south half of site.
* Excavated for perimeter drainage ditch along south side of site. Installed erosion control mat and stone check dams.
* Site cleanup.
* Removed 5,000 gallons of leachate from the 10,000 gallon U.S.T.

DATE: Thursday January 26, 1995 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 19 - 40

WORK PERFORMED:

* Completed hauling vegetative material. Placed approximately 1,300 c.y. along south half of site.

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* Excavated for perimeter drainage ditch along west side of site. Installed erosion control mat and stone check dams.

* Completed temporary mulching and disking of the site.

NOTE:

* Dave Mosby from MDNR on site.

NOTE:

* Reached SUBSTANTIAL COMPLETION of the project.

DATE: Friday January 27, 1995 **WEATHER:** N/A

SITE CONDITIONS: Dry **TEMP. RANGE:** N/A

WORK PERFORMED:

* Excavated for perimeter drainage ditch along west side of site. Installed erosion control mat and stone check dams.

* Site cleanup.

WORK SCHEDULED DURING NEXT REPORTING PERIOD:

o Continue maintenance of erosion control devices.

o Complete site cleanup and demobilize the site until spring.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ABB Environmental Services, Inc.

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WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: January 22, 1994 **REPORT NO.** 34

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr

==========

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	253 C.D.
COMPLETION DAYS REMAINING:	-9 C.D.

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J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday January 16, 1995 **WEATHER:** N/A

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** N/A

WORK PERFORMED:

* There was no placement of vegetative material due to conditions at the site and at the source.

ABB Environmental Services, Inc.

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P.O. Box 7050
Portland, Maine 04112-7050

Telephone (207) 775-5400

Fax (207) 772-4762

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* Excavated for perimeter drainage ditch along east side of site. Installed erosion control mat and stone check dams.

* Site cleanup.

DATE: Tuesday January 17, 1995 **WEATHER:** Overcast

SITE CONDITIONS: Muddy **TEMP. RANGE:** 41 - 52

WORK PERFORMED:

* Resumed hauling vegetative material. Placed approximately 1,200 c.y. along south half of site.

* Excavated for perimeter drainage ditch along east side of site. Installed erosion control mat and stone check dams.

* Installed chain link fence around 10,000 gallon U.S.T..

NOTE:

* Dave Mosby from MDNR on site.

DATE: Wednesday January 18, 1995 **WEATHER:** Overcast/Rain

SITE CONDITIONS: Muddy **TEMP. RANGE:** 34 - 30

WORK PERFORMED:

* Continued hauling vegetative material. Placed approximately 1,620 c.y. along south half of site.

* Excavated for perimeter drainage ditch along east side of site. Installed erosion control mat and stone check dams.

* Flushed sediment from culverts on Emma Lane.

DATE: Thursday January 19, 1995 **WEATHER:** Freezing Rain

SITE CONDITIONS: Icy **TEMP. RANGE:** 30's

WORK PERFORMED:

* No work was performed due to weather conditions.

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NOTE:

* Monthly Progress Meeting held at the Holiday Inn in St. Louis due to road conditions in the Sullivan area. J. Mentink of the city was notified.

DATE: Friday January 20, 1995 **WEATHER:** N/A

SITE CONDITIONS: Icy **TEMP. RANGE:** N/A

WORK PERFORMED:

* No work was performed due to site conditions.

WORK SCHEDULED DURING NEXT REPORTING PERIOD:

- Continue maintenance of erosion control devices.
- Complete placement of the vegetative layer.
- Complete mulching as finished areas become available.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

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WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: January 15, 1994 **REPORT NO.** 33

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr

==========

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	246 C.D.
COMPLETION DAYS REMAINING:	-2 C.D.

==========

DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
C.T. Bingham

ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday January 9, 1995 **WEATHER:** Overcast

SITE CONDITIONS: Muddy **TEMP. RANGE:** 18 - 30

WORK PERFORMED:

* There was no placement of vegetative material due to conditions at the site and at the source.

ABB Environmental Services, Inc.

110 Free Street
P.O. Box 7050
Portland, Maine 04112-7050

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Fax (207) 772-4762

ASEA BROWN BOVERI

* Resumed placement of processed borrow on the west slope.
* Placed erosion control mat on west end of north ditch line.
* Site cleanup.

DATE: Tuesday January 10, 1995 **WEATHER:** Foggy/Overcast

SITE CONDITIONS: Muddy **TEMP. RANGE:** 27 - 42

WORK PERFORMED:

* Completed hauling processed common borrow material on the west slope. Placed approximately 197 c.y..
* Resumed hauling vegetative material. Placed approximately 2,190 c.y. along south half of site.
* Installed bumper posts around monitoring wells 102 & 105.

DATE: Wednesday January 11, 1995 **WEATHER:** Foggy/Sunny

SITE CONDITIONS: Muddy **TEMP. RANGE:** 42 - 56

WORK PERFORMED:

* Continued hauling vegetative material. Only placed approximately 510 c.y. because trucks were shut off due to muddy condition of Route 66. Contractor worked to clean up the pavement.
* Continued hauling processed common borrow material on the east slope. Placed approximately 56 c.y..
* Installed two settlement platforms.
* Placed concrete for bumper posts.

DATE: Thursday January 12, 1995 **WEATHER:** Partly Sunny

SITE CONDITIONS: Muddy **TEMP. RANGE:** 43 - 62

WORK PERFORMED:

* Continued hauling vegetative material. Placed approximately 2,190 c.y. along south half of site.

ABB
ASEA BROWN BOVERI

* Completed hauling processed common borrow material on the east slope. Placed approximately 178 c.y..
* Installed four settlement platforms.
* Began installation of chain link fence around the underground storage tank.

DATE: Friday January 13, 1995 **WEATHER:** Rain

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 37 - 47

WORK PERFORMED:

* No work was performed due to weather conditions.

WORK SCHEDULED DURING NEXT REPORTING PERIOD:

- Continue maintenance of erosion control devices.
- Continue placement of the vegetative layer.
- Continue mulching as finished areas become available.
- Complete setting settlement platforms as finished areas become available.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: January 8, 1994 **REPORT NO.** 32

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr

==========

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	239 C.D.
COMPLETION DAYS REMAINING:	5 C.D.

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DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
C.T. Bingham

ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday January 2, 1995 **WEATHER:** N/A

SITE CONDITIONS: N/A **TEMP. RANGE:** N/A

WORK PERFORMED:

* Continued hauling vegetative material. Placed approximately 2,290 c.y. along north half of site.

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Portland, Maine 04112-7050

Telephone (207) 775-5400

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ABB
ASEA BROWN BOVERI

DATE: Tuesday January 3, 1995 **WEATHER:** Overcast

SITE CONDITIONS: Frozen **TEMP. RANGE:** 18 - 26

WORK PERFORMED:

* Continued hauling processed common borrow material. Placed approximately 619 c.y. on the south slope.
* Continued hauling vegetative material. Placed approximately 3,020 c.y. along south half of site.
* Removed 2,000 gallons of leachate from the 10,000 gallon storage tank.
* Mulched approximately 4.5 acres. Couldn't disk due to frozen site conditions.

DATE: Wednesday January 4, 1995 **WEATHER:** Sunny

SITE CONDITIONS: Frozen **TEMP. RANGE:** 5 - 22

WORK PERFORMED:

* Continued hauling vegetative material. Placed approximately 2,050 c.y. along south half of site.
* Mulched approximately 7.5 acres.
* Resume placement of drainage material.

DATE: Thursday January 5, 1995 **WEATHER:** Sunny

SITE CONDITIONS: Frozen **TEMP. RANGE:** 8 - 24

WORK PERFORMED:

* On site at 07:00.
* Continued hauling vegetative material. Placed approximately 2,370 c.y. along south half of site.
* Completed placement of drainage material.

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ASEA BROWN BOVERI

DATE: Friday January 6, 1995 **WEATHER:** Freezing Rain

SITE CONDITIONS: Icy **TEMP. RANGE:** N/A

WORK PERFORMED:

* No work was performed due to weather conditions.

WORK SCHEDULED DURING NEXT REPORTING PERIOD:

- Continue maintenance of erosion control devices.
- Continue placement of the vegetative layer.
- Complete placement of the common borrow material.
- Continue mulching as finished areas become available.
- Begin setting settlement platforms as finished areas become available.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ABB
ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: January 1, 1994 **REPORT NO.** 31

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr

==========

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	232 C.D.
COMPLETION DAYS REMAINING:	12 C.D.

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DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
C.T. Bingham

ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday December 26, 1994 **WEATHER:** N/A

SITE CONDITIONS: N/A **TEMP. RANGE:** N/A

WORK PERFORMED:

* No work was performed due to observance of the Christmas Holiday.

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ASEA BROWN BOVERI

DATE: Tuesday December 27, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 35 - 61

WORK PERFORMED:

* Continued hauling processed common borrow material. Placed approximately 863 c.y. on the south slope.

* Resumed hauling vegetative material from Landing's source. Began hauling from the Tyree property. Use of Tyree's material requires the contractor to use a 4 oz. geotextile fabric between the drainage and vegetative layers as approved by ABB-ES. Placed approximately 2,100 c.y along the north side of the site.

DATE: Wednesday December 28, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 42 - 58

WORK PERFORMED:

* On site at 06:30.

* Continued hauling processed common borrow material. Placed approximately 206 c.y. on the west & south slopes.

* Continued hauling vegetative material from both sources. Placed approximately 3,120 c.y. along north side of site.

* Resumed pushing drainage material out to the required depth on the southwest corner of the site.

DATE: Thursday December 29, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Dry **TEMP. RANGE:** 36 - 38

WORK PERFORMED:

* On site at 07:00.

* Continued hauling processed common borrow material. Placed approximately 225 c.y. on the west & south slopes.

* Continued hauling vegetative material from both sources. Placed approximately 2,480 c.y. along north side of site.

* Installed bumper posts around Monitoring Well 103.

ABB
ASEA BROWN BOVERI

DATE: Friday December 30, 1994 **WEATHER:** Partly Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 28 - 43

WORK PERFORMED:

* On site at 06:30.
* Continued hauling processed common borrow material. Placed approximately 178 c.y. on the south slope.
* Continued hauling vegetative material from both sources. Placed approximately 2,870 c.y. along north half of the site.
* Installed bumper posts around Monitoring Well 104.

WORK SCHEDULED DURING NEXT REPORTING PERIOD:

- Continue maintenance of erosion control devices.
- Complete placement of the drainage layer.
- Continue placement of the vegetative layer.
- Complete placement of the common borrow material.
- Continue mulching as finished areas become available.
- Begin setting settlement platforms as finished areas become available.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: December 25, 1994 **REPORT NO.** 30

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr

==========

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	225 C.D.
COMPLETION DAYS REMAINING:	19 C.D.

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DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
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ABB-ES
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J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday December 19, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 28 - 33

WORK PERFORMED:

* On site at 06:30.
* Continued hauling processed common borrow material. Placed approximately 488 c.y. on the west slope.

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ASEA BROWN BOVERI

* No vegetative material was placed due to extremely muddy conditions at the source. No effort was made by the contractor during the weekend to prepare for hauling material.
* Installed 600 l.f. of 4" perimeter drainage pipe.
* Electricians on site to connect telemetry wiring from the pump stations to the control panel at the storage tank.
* Placed stone check dams in the north ditchline.

DATE: Tuesday December 20, 1994 **WEATHER:** Rain

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 38 - 41

WORK PERFORMED:

* On site at 06:30.
* Continued hauling processed common borrow material. Placed approximately 347 c.y. on the west slope.
* No vegetative material was placed due to weather and site conditions.
* Installed 15" c.m.p. across access road at pump station #1 location.

DATE: Wednesday December 21, 1994 **WEATHER:** Rain/Overcast

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 43 - 47

WORK PERFORMED:

* On site at 06:30.
* Continued hauling processed common borrow material. Placed approximately 459 c.y. on the west slope.
* No vegetative material was placed due to weather and site conditions.
* Installed 18" c.m.p. across access road at pump station #2 location.

ASEA BROWN BOVERI

DATE: Thursday December 22, 1994 **WEATHER:** Foggy/Overcast

SITE CONDITIONS: Muddy **TEMP. RANGE:** 40's

WORK PERFORMED:

* Continued hauling processed common borrow material. Placed approximately 347 c.y. on the south slope.
* No vegetative material was placed due to site conditions.
* Installed 300 l.f. of 4" perimeter drainage pipe.

DATE: Friday December 23, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Muddy **TEMP. RANGE:** 40's

WORK PERFORMED:

* Pumped and removed 5,000 gallons of leachate from the 10,000 gallon storage tank.
* Continued hauling processed common borrow material. Placed approximately 366 c.y. on the south slope.
* No vegetative material was placed due to site conditions.

DRAINAGE MATERIAL PERMEABILITY RESULTS FOR THIS REPORTING PERIOD:

- Sample DL 105 = 4.5×10^{-2} cm/sec.
- Sample DL 107 = 2.5×10^{-2} cm/sec.
- Sample DL 108 = 3.3×10^{-2} cm/sec.
- Sample DL 109 = 3.5×10^{-2} cm/sec.
- Sample DL 110 = 3.2×10^{-2} cm/sec.
- Sample DL 111 = 2.5×10^{-2} cm/sec.
- Sample DL 112 = 4.0×10^{-2} cm/sec.
- Sample DL 113 = 2.1×10^{-2} cm/sec.
- Sample DL 114 = 4.5×10^{-2} cm/sec.
- Sample DL 115 = 5.0×10^{-2} cm/sec.

* **This completes testing of the drainage layer.**

WORK SCHEDULED DURING NEXT REPORTING PERIOD:

- Continue maintenance of erosion control devices.
- Complete placement of the drainage layer.
- Continue placement of the vegetative layer.
- Continue placement of the common borrow material.
- Continue mulching as finished areas become available.
- Begin setting settlement platforms as finished areas become available.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ABB
ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: December 18, 1994 **REPORT NO.** 29

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr

==========

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	218 C.D.
COMPLETION DAYS REMAINING:	26 C.D.

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TRW, INC.
C.T. Bingham

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M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday December 12, 1994 **WEATHER:** Partly Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 27 - 48

WORK PERFORMED:

* Continued placing vegetative material along north side of site. Hauled approximately 400 c.y.

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ASEA BROWN BOVERI

* Pumped and removed 2,800 gallons of leachate from the 10,000 gallon storage tank.
* Began hauling processed common borrow material. Placed approximately 121 c.y. on the west slope.
* Continued placing drainage material out to the required depth.
* Collected and shipped five samples of the drainage material to ABB-ES in Portland, ME. for permeability testing.

DATE: Tuesday December 13, 1994 **WEATHER:** Partly Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 24 - 33

WORK PERFORMED:

* On site at 06:30.
* Continued placing vegetative material along north side of site. Hauled approximately 680 c.y.
* Continued hauling processed common borrow material. Placed approximately 235 c.y. on the west slope.
* Installed 118 l.f. of 4" perimeter drainage pipe.
* Continued placing drainage material out to the required depth. Completed deployment of the 12 oz. cushion pad.

DATE: Wednesday December 14, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 23 - 42

WORK PERFORMED:

* On site at 06:30.
* Continued placing vegetative material along north side of site. Hauled approximately 880 c.y.
* Continued hauling processed common borrow material. Placed approximately 253 c.y. on the west slope.
* Continued placing drainage material out to the required depth.

ASEA BROWN BOVERI

* Began installation of erosion control mat in north ditchline.
* Mulched and disked approximately 4 acres of the completed topsoil.

DATE: Thursday December 15, 1994 **WEATHER:** Partly Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 39 - 56

WORK PERFORMED:

* On site at 07:00.
* Continued placing vegetative material along north side of site. Hauled approximately 740 c.y.
* Continued hauling processed common borrow material. Placed approximately 66 c.y. on the west slope.
* Installed 1,172 l.f. of 4" perimeter drainage pipe.
* Resumed hauling and continued placing drainage material out to the required depth. Hauled approximately 1,153 c.y..
* Continued installation of erosion control mat in north ditchline.

NOTE:

* Monthly Progress Meeting held and minutes distributed.

DATE: Friday December 16, 1994 **WEATHER:** Heavy Rain

SITE CONDITIONS: Extremely Muddy **TEMP. RANGE:** 44 - 57

WORK PERFORMED:

* On site at 07:00.
* Pumped and removed 5,000 gallons of leachate from the 10,000 gallon storage tank.
* Collected storm water samples for the fourth quarter sampling requirements.
* No topsoil due to weather conditions.
* Remainder of crew sent home at 11:00. OBGT notified ABB that no work would take place this weekend due to site conditions.

ABB
ASEA BROWN BOVERI

WORK SCHEDULED DURING NEXT REPORTING PERIOD:

- Continue maintenance of erosion control devices.
- Complete placement of the drainage layer.
- Continue placement of the vegetative layer.
- Continue placement of the common borrow material.
- Continue mulching as finished areas become available.
- Begin setting settlement platforms as finished areas become available.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: December 11, 1994 **REPORT NO.** 28

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr & J. Rauschkolb

==========

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	211 C.D.
COMPLETION DAYS REMAINING:	33 C.D.

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DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
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M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday December 5, 1994 **WEATHER:** Overcast/Misting

SITE CONDITIONS: Dry **TEMP. RANGE:** 40's

WORK PERFORMED:

* Continued placing vegetative material along north side of site. Hauled approximately 1,360 c.y.

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Telephone (207) 775-5400

Fax (207) 772-4762

ASEA BROWN BOVERI

* Pumped and removed 7,500 gallons of leachate from the following collection points:
  a) Storage Tank = 5,500 gallons
  b) Seep #7 = 2,000 gallons

* Installed 30" culvert across Emma Lane.

* Site cleanup.

* Constructed access ramp on west side of site to resume placement of drainage material.

* Installed 110 l.f. of the 4" perforated perimeter drainage pipe.

DATE: Tuesday December 6, 1994 **WEATHER:** Overcast/Misting

SITE CONDITIONS: Dry **TEMP. RANGE:** 41 - 44

WORK PERFORMED:

* On site at 06:30.

* Resumed placing drainage material and deployment of the 12 oz. geotextile cushion pad as needed. Hauled approximately 796 c.y..

* Continued placing vegetative material along north side of site. Hauled approximately 1,180 c.y.

* Collected and shipped nine samples of the drainage material to ABB-ES in Portland, ME. for permeability testing.

* Pump Station #1 was not operating properly. Representative from supplier scheduled for 12/7/94 to be on site. System was shut down until then.

DATE: Wednesday December 7, 1994 **WEATHER:** Windy/Flurries

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 35 - 34

WORK PERFORMED:

* On site at 06:30.

* Continued placing drainage material and deployment of the 12 oz. geotextile cushion pad as needed. Hauled approximately 1,251 c.y..

* Collected and shipped four samples of the drainage material to ABB-ES in Portland, ME. for permeability testing.

ASEA BROWN BOVERI

* No vegetative material was hauled due to site conditions at the source as a result of the rain received the night before.

* Representative from pump supplier on site. Checked all stations and system was up and running at 17:00 hours.

DATE: Thursday December 8, 1994 **WEATHER:** Overcast/Rain

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 34 - 41

WORK PERFORMED:

* On site at 06:30.

* Continued placing drainage material and deployment of the 12 oz. geotextile cushion pad as needed. Hauled approximately 1,044 c.y..

* Resumed placing vegetative material along north side of site. Hauled approximately 780 c.y.

* Collected and shipped five samples of the drainage material to ABB-ES in Portland, ME. for permeability testing.

DATE: Friday December 9, 1994 **WEATHER:** Drizzle/Overcast

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 41 - 46

WORK PERFORMED:

* On site at 06:00.

* Continued placing drainage material and deployment of the 12 oz. geotextile cushion pad as needed. Hauled approximately 1,044 c.y..

* No vegetative material was hauled due to site conditions at the source as a result of the rain received the night before.

DRAINAGE MATERIAL PERMEABILITY RESULTS FOR THIS REPORTING PERIOD:

- Sample DL 82 = 5.0×10^{-2} cm/sec.
- Sample DL 83 = 2.4×10^{-2} cm/sec.
- Sample DL 84 = 2.2×10^{-2} cm/sec.
- Sample DL 85 = 2.2×10^{-2} cm/sec.
- Sample DL 86 = 1.3×10^{-2} cm/sec.

- Sample DL 87 = 1.7×10^{-2} cm/sec.
- Sample DL 88 = 3.5×10^{-2} cm/sec.
- Sample DL 89 = 3.5×10^{-2} cm/sec.
- Sample DL 90 = 4.3×10^{-2} cm/sec.
- Sample DL 91 = 2.4×10^{-2} cm/sec.
- Sample DL 92 = 3.0×10^{-2} cm/sec.
- Sample DL 93 = 3.2×10^{-2} cm/sec.
- Sample DL 94 = 3.7×10^{-2} cm/sec.
- Sample DL 95 = 3.5×10^{-2} cm/sec.
- Sample DL 96 = 3.7×10^{-2} cm/sec.
- Sample DL 97 = 3.8×10^{-2} cm/sec.
- Sample DL 98 = 3.8×10^{-2} cm/sec.
- Sample DL 99 = 3.6×10^{-2} cm/sec.
- Sample DL 100 = 4.0×10^{-2} cm/sec.
- Sample DL 101 = 2.8×10^{-2} cm/sec.
- Sample DL 102 = 3.6×10^{-2} cm/sec.
- Sample DL 103 = 3.8×10^{-2} cm/sec.
- Sample DL 104 = 3.5×10^{-2} cm/sec.
- Sample DL 106 = 3.1×10^{-2} cm/sec.

WORK SCHEDULED DURING NEXT REPORTING PERIOD:

- Continue maintenance of erosion control devices.
- Complete placement of the 12 oz. geotextile fabric and drainage layer.
- Continue placement of the vegetative layer.
- Begin placement of the common borrow material.
- Begin seeding and mulching as finished areas become available.
- Begin setting settlement platforms as finished areas become available.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ABB
ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: December 4, 1994 **REPORT NO.** 27

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr & J. Rauschkolb

==========

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	204 C.D.
COMPLETION DAYS REMAINING:	40 C.D.

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DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
C.T. Bingham

ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday November 28, 1994 **WEATHER:** Windy/Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 45 - 55

WORK PERFORMED:

* Continued deployment of the 12 oz. geotextile cushion pad, and pushing drainage material out to the required depth.

ABB Environmental Services, Inc.

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P.O. Box 7050
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Telephone (207) 775-5400

Fax (207) 772-4762

* Pumped and removed 7,500 gallons of leachate from the following collection points:
  a) Storage Tank = 5,000 gallons
  b) Seep #6 = 700 gallons
  c) Seep #7 = 1,800 gallons

* Set up and performed pressure test on 1-1/2" force main. Test PASSED.

* Attempted hauling of vegetative material, but conditions at source were to muddy.

DATE: Tuesday November 29, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 33 - 56

WORK PERFORMED:

* On site at 06:30.

* Continued deployment of the 12 oz. geotextile cushion pad, and pushing drainage material out to the required depth.

* Installed 450 l.f. of the 4" perforated perimeter drainage pipe.

* Began hauling vegetative material. Approximatly 690 c.y. placed.

DATE: Wednesday November 30, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 27 - 56

WORK PERFORMED:

* On site at 06:00.

* Pumped and removed 7,800 gallons of leachate from the following collection points:
  a) Storage Tank = 5,000 gallons
  b) Seep #6 = 700 gallons
  c) Seep #7 = 2,100 gallons

* Continued deployment of the 12 oz. geotextile cushion pad, and pushing drainage material out to the required depth.

* Installed 300 l.f. of the 4" perforated perimeter drainage pipe.

* Continued hauling vegetative material. Approximatly 1,020 c.y. placed.

* Electricians on site running power and control wires to the pump stations.

DATE: Thursday December 1, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 44 - 65

WORK PERFORMED:

* On site at 06:00.
* Continued deployment of the 12 oz. geotextile cushion pad, and pushing drainage material out to the required depth.
* Installed 479 l.f. of the 4" perforated perimeter drainage pipe.
* Continued hauling vegetative material. Approximatly 1,060 c.y. placed.
* Electricians on site running power and control wires to the pump stations.

DATE: Friday December 2, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 43 - 64

WORK PERFORMED:

* On site at 06:00.
* Continued deployment of the 12 oz. geotextile cushion pad, and pushing drainage material out to the required depth.
* Installed 105 l.f. of the 4" perforated perimeter drainage pipe.
* Continued hauling vegetative material. Approximatly 1,090 c.y. placed.
* Electricians on site running power and control wires to the pump stations.

DATE: Saturday December 3, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Dry **TEMP. RANGE:** 50's

WORK PERFORMED:

* Continued hauling vegetative material. Approx. 810 c.y. placed.

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WORK SCHEDULED DURING NEXT REPORTING PERIOD:

- Complete installation of the leachate collection system. Including start up of the pump stations.
- Continue maintenance of erosion control devices.
- Continue placement of the 12 oz. geotextile fabric and drainage layer.
- Continue placement of the vegetative layer.
- Begin placement of the common borrow material.
- Begin seeding and mulching as finished areas become available.
- Begin setting settlement platforms as finished areas become available.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

PERIOD ENDING: November 27, 1994 **REPORT NO.** 26

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr & J. Nazzal

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	202 C.D.
COMPLETION DAYS REMAINING:	42 C.D.

DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
C.T. Bingham

ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

CONSTRUCTION ACTIVITIES

DATE: Monday November 21, 1994 **WEATHER:** Windy/Sunny

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 41-57

WORK PERFORMED:

* On site at 06:15.
* Continued deployment of the 12 oz. geotextile cushion pad, and pushing drainage material out to the required depth.

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Portland, Maine 04112-7050

Telephone (207) 775-5400

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* Pumped and removed 7,800 gallons of leachate from the following collection points:
  a) Storage Tank = 5,800 gallons
  b) Seep #6 = 400 gallons
  c) Seep #7 = 1,600 gallons

* Installed 803 l.f. of the 4" perforated perimeter drainage pipe.

* Electricians installing control panels at pump stations 2 & 3.

* Collected and shipped six drainage samples to Portland, Me. for permeability testing.

DATE: Tuesday November 22, 1994 **WEATHER:** Partly Sunny

SITE CONDITIONS: Drying **TEMP. RANGE:** 30 - 46

WORK PERFORMED:

* On site at 06:00.

* Continued deployment of the 12 oz. geotextile cushion pad, and pushing drainage material out to the required depth.

* Installed 164 l.f. of the 4" perforated perimeter drainage pipe.

* Electricians installing control panels at pump stations 1 & 2.

* Collected and shipped five drainage samples to Portland, Me. for permeability testing.

DATE: Wednesday November 23, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 29 - 47

WORK PERFORMED:

* On site at 06:00.

* Pumped and removed 7,500 gallons of leachate from the following collection points:
  a) Storage Tank = 5,000 gallons
  b) Seep #6 = 500 gallons
  c) Seep #7 = 2,000 gallons

* Continued deployment of the 12 oz. geotextile cushion pad, and pushing drainage material out to the required depth.

* Installed 164 l.f. of the 4" perforated perimeter drainage pipe.

DATE: Thursday November 23, 1994 **WEATHER:** N/A

SITE CONDITIONS: N/A **TEMP. RANGE:** N/A

WORK PERFORMED:

* No work was performed due to observance of the Thanksgiving Holiday.

DATE: Friday November 18, 1994 **WEATHER:** N/A

SITE CONDITIONS: N/A **TEMP. RANGE:** N/A

WORK PERFORMED:

* No work performed. Project shut down by contractor as an additional holiday.

DRAINAGE MATERIAL PERMEABILITY RESULTS FOR THIS REPORTING PERIOD:

- Sample DL 77 = 4.5×10^{-2} cm/sec.
- Sample DL 78 = 5.0×10^{-2} cm/sec.
- Sample DL 79 = 4.6×10^{-2} cm/sec.
- Sample DL 80 = 4.5×10^{-2} cm/sec.
- Sample DL 81 = 4.4×10^{-2} cm/sec.

WORK SCHEDULED DURING NEXT REPORTING PERIOD:

- Continue installation of the leachate collection system. Including power and control wiring.
- Continue maintenance of erosion control devices.
- Continue placement of the 12 oz. geotextile fabric and drainage layer.
- Begin placement of the vegetative layer.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ABB
ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

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PERIOD ENDING: November 20, 1994 **REPORT NO.** 25

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr & J. Nazzal

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CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	195 C.D.
COMPLETION DAYS REMAINING:	49 C.D.

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DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
C.T. Bingham

ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday November 14, 1994 **WEATHER:** Rain/Overcast

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 50's

WORK PERFORMED:

* Continued deployment of the 12 oz. geotextile cushion pad, as well as pushing drainage material out to the required depth.

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* Pumped and removed 5,000 gallons of leachate from the 10,000 gallon storage tank.

* Contractor worked on maintenance and repair of erosion control devices.

* Set air release manhole, and excavated for installation of pump station #1.

DATE: Tuesday November 15, 1994 WEATHER: Overcast

SITE CONDITIONS: Drying TEMP. RANGE: 44 - 57

WORK PERFORMED:

* On site at 05:30.

* Continued installation of 1-1/2" force main from pump station #3 towards pump station #2. Installed 429 l.f. as well as removing 8 c.y. of rock excavation.

* Continued deployment of the 12 oz. geotextile cushion pad, as well as pushing drainage material out to the required depth.

* Pumped and removed 5,000 gallons of leachate from the 10,000 gallon storage tank.

* Installed 100 l.f. of the 4" perforated perimeter drainage pipe.

DATE: Wednesday November 16, 1994 WEATHER: Sunny

SITE CONDITIONS: Dry TEMP. RANGE: 34 - 60

WORK PERFORMED:

* On site at 06:00.

* Pumped and removed 7,800 gallons of leachate from the following collection points:
  a) Storage Tank = 5,000 gallons
  b) Seep #6 = 800 gallons
  c) Seep #7 = 2,000 gallons

* Continued deployment of the 12 oz. geotextile cushion pad, as well as pushing drainage material out to the required depth. Resumed hauling drainage material. Approximately 660 c.y. hauled to the site.

* Concrete placed for pump station #1 slab.

* Electricians began installing their pull boxes in preparation of pulling power and control wires.

* Continued installation of 1-1/2" force main from pump station #2 towards the air release manhole. Installed 107 l.f. as well as removing 7 c.y. of rock excavation.

* Installed 182 l.f. of the 4" perforated perimeter drainage pipe.

NOTE:

* J. Fox, M. Stelmack, C. Bingham, and J. Rauschkolb all arrived on site for the monthly update meeting.

DATE: Thursday November 17, 1994 WEATHER: Foggy/Sunny

SITE CONDITIONS: Dry TEMP. RANGE: 39 - 58

WORK PERFORMED:

* On site at 06:00.

* Pumped and removed 5,000 gallons of leachate from the 10,000 gallon storage tank.

* Continued deployment of the 12 oz. geotextile cushion pad, as well as pushing drainage material out to the required depth.

* Continued hauling drainage material. Approximately 850 c.y. hauled to the site.

* Continued installation of 1-1/2" force main from pump station #2 towards the air release manhole. Installed 261 l.f. as well as removing 13 c.y. of rock excavation.

* Installed 163 l.f. of the 4" perforated perimeter drainage pipe.

* Electricians continued installing their pull boxes in preparation of pulling power and control wires.

* Set pump station #1.

NOTE:

* Monthly progress meeting held on site. Minutes to be distributed.

DATE: Friday November 18, 1994 WEATHER: Sunny

SITE CONDITIONS: Dry TEMP. RANGE: 46 - 67

WORK PERFORMED:

* On site at 06:00.

* Pumped and removed 5,000 gallons of leachate from the 10,000 gallon storage tank.

* Continued deployment of the 12 oz. geotextile cushion pad, as well as pushing drainage material out to the required depth.

* Continued hauling drainage material. Approximately 980 c.y. hauled to the site.

* Continued installation of 1-1/2" force main from the air release manhole towards pump station #1. Installed 164 l.f. as well as removing 7 c.y. of rock excavation.

* Site grading and cleaning.

DATE: Saturday November 19, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Dry **TEMP. RANGE:** 44 - 54

WORK PERFORMED:

* Continued deployment of the 12 oz. geotextile cushion pad, and pushing drainage material out to the required depth.

* Continued hauling drainage material. Approximately 890 c.y. hauled to the site.

* Site grading and cleaning.

WORK SCHEDULED DURING NEXT REPORTING PERIOD:

- Continue installation of the leachate collection system. Including power and control wiring.
- Continue maintenance of erosion control devices.
- Continue placement of the 12 oz. geotextile fabric and drainage layer.
- Begin placement of the vegetative layer.
- Begin placement of the common borrow material.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ABB
ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: November 13, 1994 **REPORT NO.** 24

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr & J. Nazzal

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CONTRACT COMPLETION TIME: 244 C.D.

TIME EXTENSIONS: 0 C.D.

CALENDAR DAYS ELAPSED: 188 C.D.

COMPLETION DAYS REMAINING: 56 C.D.

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DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
C.T. Bingham

ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday November 7, 1994 **WEATHER:** Clear/Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 50's

WORK PERFORMED:

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 800 c.y..

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* Continued pushing drainage material out to the required depth.

* Pumped and removed 7,500 gallons of leachate from the following collection points:
  a) Storage Tank = 5,000 gallons
  b) Seep #6 = 500 gallons
  c) Seep #7 = 2,000 gallons

* Began installation of 1-1/2" force main from the terminous manhole towards pump station #3. Installed 120 l.f. as well as removing 11.9 c.y. of rock excavation.

* SLT continued working on detailing and testing as well as tracking one destructive sample that has repeatedly failed.

DATE: Tuesday November 8, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 50's

WORK PERFORMED:

* On site at 07:00.

* SLT worked on detailing, patching, and testing of the VLDPE.

* Continued installation of 1-1/2" force main from the terminous manhole towards pump station #3. Installed 490 l.f. as well as removing 54.5 c.y. of rock excavation.

* Continued pushing drainage material out to the required depth.

* Contractor worked on maintenance and repair of erosion control devices.

NOTE:

* Joseph Trunko (MDNR) on site for annual inspection.

DATE: Wednesday November 9, 1994 **WEATHER:** Rain

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 50's

WORK PERFORMED:

* On site at 07:00.

* SLT worked on detailing, patching, and testing of the VLDPE.

* Began installation of 4" perforated perimeter drainage pipe. Installed 200 l.f..
* Continued pushing drainage material out to the required depth.

DATE: Thursday November 10, 1994 **WEATHER:** Cloudy/Showers

SITE CONDITIONS: Wet **TEMP. RANGE:** 40 - 50

WORK PERFORMED:

* On site at 07:00.
* Pumped and removed 5,000 gallons of leachate from the 10,000 gallon storage tank.
* Continued pushing drainage material out to the required depth.
* SLT worked on detailing, patching, and testing of the VLDPE.

DATE: Friday November 11, 1994 **WEATHER:** N/A

SITE CONDITIONS: N/A **TEMP. RANGE:** N/A

WORK PERFORMED:

* Only work performed today was by SLT completing their work. Both SLT and GCS demobilized.
* Pumped and removed 5,000 gallons of leachate from the 10,000 gallon storage tank.

DRAINAGE MATERIAL PERMEABILITY RESULTS FOR THIS REPORTING PERIOD:

- Sample DL 60 = 4.0×10^{-2} cm/sec.
- Sample DL 61 = 4.8×10^{-2} cm/sec.
- Sample DL 62 = 5.0×10^{-2} cm/sec.
- Sample DL 63 = 5.0×10^{-2} cm/sec.
- Sample DL 64 = 4.8×10^{-2} cm/sec.
- Sample DL 65 = 4.8×10^{-2} cm/sec.
- Sample DL 66 = 4.4×10^{-2} cm/sec.
- Sample DL 67 = 4.1×10^{-2} cm/sec.
- Sample DL 68 = 3.7×10^{-2} cm/sec.
- Sample DL 69 = 4.7×10^{-2} cm/sec.
- Sample DL 70 = 4.2×10^{-2} cm/sec.
- Sample DL 71 = 5.0×10^{-2} cm/sec.

- Sample DL 72 = 4.0×10^{-2} cm/sec.
- Sample DL 73 = 4.0×10^{-2} cm/sec.
- Sample DL 74 = 4.2×10^{-2} cm/sec.
- Sample DL 75 = 4.1×10^{-2} cm/sec.
- Sample DL 76 = 4.7×10^{-2} cm/sec.

WORK SCHEDULED DURING NEXT REPORTING PERIOD:

- Continue installation of the leachate collection system.
- Continue maintenance of erosion control devices.
- Continue placement of the 12 oz. geotextile fabric and drainage layer.
- Begin placement of the vegetative layer.
- Begin placement of the common borrow material.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: November 6, 1994 **REPORT NO.** 23

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr & J. Nazzal

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CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	181 C.D.
COMPLETION DAYS REMAINING:	63 C.D.

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DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
C.T. Bingham

ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday October 31, 1994 **WEATHER:** Rain

SITE CONDITIONS: Wet **TEMP. RANGE:** 50's

WORK PERFORMED:

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 1,500 c.y..

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* Collected storm water samples and shipped them to NET laboratories for analysis.

* Installed 80 l.f. of 4" non-perforated pipe from the 10,000 gallon storage tank to manhole #1. Continued out of manhole #1 towards the terminous manhole. Installed an additional 80 l.f..

* Continued pushing drainage material out to the required depth.

DATE: Tuesday November 1, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 36 - 64

WORK PERFORMED:

* On site at 06:15.

* Collected five samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.

* Installed 200 l.f. of 4" non-perforated pipe out of manhole #1 towards the terminous manhole.

* SLT worked on detailing, patching, and testing of the VLDPE.

* Continued installation of the gas vent risers.

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 1,686 c.y..

DATE: Wednesday November 2, 1994 **WEATHER:** Windy/Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 48 - 72

WORK PERFORMED:

* On site at 06:00.

* Pumped and removed 2,800 gallons of leachate from the following collection points:
  a) Storage Tank = 700 gallons
  b) Seep #6 = 400 gallons
  c) Seep #7 = 1,700 gallons

* Installed 120 l.f. of 4" non-perforated pipe out of manhole #1 towards the terminous manhole.

* SLT worked on detailing, patching, and testing of the VLDPE.

* Continued installation of the gas vent risers.

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 2,162 c.y..

* Collected five samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.

DATE: Thursday November 3, 1994 **WEATHER:** Cloudy/Showers

SITE CONDITIONS: Wet **TEMP. RANGE:** 58 - 70

WORK PERFORMED:

* On site at 06:30.

* Installed 110 l.f. of 4" non-perforated pipe out of manhole #1 to the terminous manhole. Removed 5.1 c.y. of rock excavation.

* SLT worked on detailing, patching, and testing of the VLDPE until 2:00 p.m. when they had to shut down due to rain.

* Continued installation of the gas vent risers.

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 931 c.y.. Trucks shut off due to lack of approved area to continue building access road.

* Collected six samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.

* Worked on repair and maintenance of erosion control devices.

DATE: Friday November 4, 1994 **WEATHER:** Showers/Rain

SITE CONDITIONS: Dry **TEMP. RANGE:** 61 -71

WORK PERFORMED:

* On site at 05:30.

* Continued installation of the gas vent risers.

* Continued pushing drainage material out to the required depth.

* Collected five samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.

* Set the terminous manhole. Continue out with the 1-1/2" force main towards pump station #3.

* Pumped and removed 2,800 gallons of leachate from the following collection points:
  a) Storage Tank = 1,600 gallons
  b) Seep #6 = 400 gallons
  c) Seep #7 = 800 gallons
* SLT worked on detailing and testing. Majority of crew demobilized. Two technicians remained to finish any outstanding items.

DRAINAGE MATERIAL PERMEABILITY RESULTS FOR THIS REPORTING PERIOD:

- Sample DL 50 = 5.0×10^{-2} cm/sec.
- Sample DL 51 = 4.8×10^{-2} cm/sec.
- Sample DL 52 = 4.1×10^{-2} cm/sec.
- Sample DL 53 = 5.0×10^{-2} cm/sec.
- Sample DL 54 = 4.6×10^{-2} cm/sec.
- Sample DL 55 = 4.2×10^{-2} cm/sec.
- Sample DL 56 = 4.3×10^{-2} cm/sec.
- Sample DL 57 = 4.2×10^{-2} cm/sec.
- Sample DL 58 = 4.2×10^{-2} cm/sec.
- Sample DL 59 = 4.8×10^{-2} cm/sec.
- Sample DL 60 = 4.0×10^{-2} cm/sec.

WORK SCHEDULED DURING NEXT REPORTING PERIOD:

- Continue installation of the leachate collection system.
- Continue maintenance of erosion control devices.
- Continue placement of the 12 oz. geotextile fabric and drainage layer.
- Begin placement of the vegetative layer.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ABB
ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

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PERIOD ENDING: October 30, 1994 **REPORT NO.** 22

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr & M. Spraul

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CONTRACT COMPLETION TIME: 244 C.D.

TIME EXTENSIONS: 0 C.D.

CALENDAR DAYS ELAPSED: 174 C.D.

COMPLETION DAYS REMAINING: 70 C.D.

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DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
C.T. Bingham

ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday October 24, 1994 **WEATHER:** Mostly Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 51 - 62

WORK PERFORMED:

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 1,179 c.y..

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* Pumped and removed 5,000 gallons of leachate from the following collection points:
  a) Manhole #1 = 2,000 gallons
  b) Seep #6 = 2,000 gallons
  c) Seep #7 = 1,000 gallons

* Continued deployment of VLDPE geomembrane. Deployment was on the southern half of the site. Approximately 78,513.5 s.f. was deployed.

* Concrete ballast placed for 10,000 gallon storage tank.

* Collected six samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.

DATE: Tuesday October 25, 1994 **WEATHER:** Partly Sunny/Windy

SITE CONDITIONS: Dry **TEMP. RANGE:** 36 - 60

WORK PERFORMED:

* On site at 06:00.

* Pumped and removed 2,000 gallons of leachate from the following collection points:
  a) Manhole #1 = 1,200 gallons
  b) Seep #6 = 450 gallons
  c) Seep #7 = 350 gallons

* Continued deployment of VLDPE geomembrane. Deployment was on the southern half of the site. Approximately 93,906 s.f. was deployed.

* Collected five samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.

DATE: Wednesday October 26, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 34 - 63

WORK PERFORMED:

* On site at 06:30.

* Pumped and removed 1,100 gallons of leachate from the following collection points:
  a) Manhole #1 = 500 gallons
  b) Seep #6 = 200 gallons
  c) Seep #7 = 400 gallons

* Continued deployment of VLDPE geomembrane. Deployment was on the northern edge of the site. Approximately 60,489 s.f. was deployed.

* Resumed installation of gas vent risers.

* 6" of sand was placed over concrete ballast for a cushion. The 10,000 gallon storage tank was set and begun backfilling.

* There was no hauling of drainage material, but OBGT began pushing the material from the access roads out to the required depth of 1'-0".

NOTE:

* C.T. Bingham, D.Farris, J. Rauschkolb, & M. Stelmack on site.

DATE: Thursday October 27, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 34 - 63

WORK PERFORMED:

* On site at 06:30.

* Continued deployment of VLDPE geomembrane. Deployment was on the northern edge of the site. Approximately 9,870 s.f. was deployed. SLT began catching up on detailing and testing items.

* Continued installation of gas vent risers.

* Continued pushing drainage material out to the required depth.

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 847 c.y..

NOTE:

* Monthly Progress Meeting held on site.

DATE: Friday October 28, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 43 -74

WORK PERFORMED:

* On site at 06:00.

* Continued installation of the gas vent risers.

* Continued placing drainage material out to the required depth.

* Completed deployment of VLDPE geomembrane. Deployment was on the southern edge of the site. Approximately 56,236 s.f. was deployed. SLT continued detailing and testing items.

* Continued pushing drainage material out to the required depth.

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 1,241 c.y..

* Pumped and removed 1,100 gallons of leachate from the following collection points:
  a) Manhole #1 = 300 gallons
  b) Seep #6 = 200 gallons
  c) Seep #7 = 600 gallons

DATE: Saturday October 29, 1994 **WEATHER:** Partly Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 56 - 68

WORK PERFORMED:

- The only work performed was by SLT doing detailing, patching, and testing.

DRAINAGE MATERIAL PERMEABILITY RESULTS FOR THIS REPORTING PERIOD:

- Sample DL 35 = 3.5×10^{-2} cm/sec.
- Sample DL 36 = 4.0×10^{-2} cm/sec.
- Sample DL 37 = 3.7×10^{-2} cm/sec.
- Sample DL 38 = 4.0×10^{-2} cm/sec.
- Sample DL 39 = 4.5×10^{-2} cm/sec.
- Sample DL 40 = 4.7×10^{-2} cm/sec.
- Sample DL 41 = 4.7×10^{-2} cm/sec.
- Sample DL 42 = 4.8×10^{-2} cm/sec.
- Sample DL 43 = 4.5×10^{-2} cm/sec.
- Sample DL 44 = 4.5×10^{-2} cm/sec.
- Sample DL 45 = 4.5×10^{-2} cm/sec.
- Sample DL 46 = 4.3×10^{-2} cm/sec.
- Sample DL 47 = 4.5×10^{-2} cm/sec.
- Sample DL 48 = 4.0×10^{-2} cm/sec.
- Sample DL 49 = 5.0×10^{-2} cm/sec.

WORK SCHEDULED DURING NEXT REPORTING PERIOD:

- Continue installation of the leachate collection system. Including the 4" non-perforated and the force main.

- Continue maintenance of erosion control devices.
- Continue detailing and testing of the VLDPE geomembrane. Demobilization of SLT and GCS.
- Continue placement of the 12 oz. geotextile fabric and drainage layer.
- Complete installation of the gas vent risers.
- Begin placement of the vegetative layer.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

PERIOD ENDING:	October 23, 1994	REPORT NO.	21
ABB-ES PROJECT NO.:	08940-01		
CONTRACTOR:	O.B.G. Technical Services, Inc.		
CONTRACTOR'S REP.:	T. Duerr & M. Spraul		

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	167 C.D.
COMPLETION DAYS REMAINING:	77 C.D.

DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
C.T. Bingham

ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

CONSTRUCTION ACTIVITIES

DATE:	Monday October 17, 1994	WEATHER:	Showers/Overcast
SITE CONDITIONS:	Wet & Muddy	TEMP. RANGE:	55 - 70

WORK PERFORMED:

* There was no deployment of the VLDPE geomembrane due to weather and site conditions.

ABB Environmental Services, Inc.

110 Free Street
P.O. Box 7050
Portland, Maine 04112-7050

Telephone (207) 775-5400

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* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 1,900 c.y..

* Pumped and removed 5,000 gallons of leachate from the following collection points:
  a) Manhole #1 = 2,500 gallons
  b) Seep #6 = 2,000 gallons
  c) Seep #7 = 500 gallons

* Received shipment of 12 rolls of textured VLDPE geomembrane.

* Continued installation of gas vent risers.

* Collected five samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.

NOTE:

* Notified M. Stelmack that Mr. Voss was concerned about the location of the leachate storage tank. Mr. Voss believed a corner of the tank was on his property. Adams Surveying researched the deed and found a discrepancy between the deed and the county tax map. A decision was made to relocate the tank.

DATE: Tuesday October 18, 1994 **WEATHER:** Overcast/Heavy Rain

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 62 - 72

WORK PERFORMED:

* On site at 06:30.

* Repaired and maintained erosion control devices.

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 1,575 c.y..

* Collected five samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.

* There was no deployment of the VLDPE geomembrane due to weather and site conditions.

DATE: Wednesday October 19, 1994 **WEATHER:** Showers/Sunny

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 64 - 77

WORK PERFORMED:

* On site at 06:00.

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* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 1,925 c.y..
* Collected five samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.
* There was no deployment of VLDPE geomembrane due to site conditions.
* Repaired and maintained erosion control devices.
* Backfilled tank excavation.

NOTE:

* C.T. Bingham on site with two engineers from O'Brien & Gere.

DATE: Thursday October 20, 1994 **WEATHER:** Clear/Sunny

SITE CONDITIONS: Drying **TEMP. RANGE:** 53 - 77

WORK PERFORMED:

* On site at 06:15.
* There was no deployment of VLDPE geomembrane due to site conditions.
* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 1,200 c.y..
* Collected six samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.
* Repaired and maintained erosion control devices.
* Continued installation of gas vent risers.
* Resumed preparing clay surface for deployment of the VLDPE geomembrane.

DATE: Friday October 21, 1994 **WEATHER:** Sunny/Overcast

SITE CONDITIONS: Dry **TEMP. RANGE:** 44 - 75

WORK PERFORMED:

* On site at 06:30.

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* Continued preparing clay surface for deployment of the VLDPE geomembrane including excavating anchor trench as needed.

* Resumed deployment of VLDPE geomembrane. Deployment was on the southern half of the site. Textured material was deployed in the sinkhole drainage area. Approximately 77,761.5 s.f. was deployed.

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 1,425 c.y..

* Collected five samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.

* Continued installation of the gas vent risers.

* Began excavation for leachate storage tank at its new location.

NOTE:

* D. Mosby, V. Harding, and J. Jayyousi from MDNR on site for approximately 1.5 hours.

DATE: Saturday October 22, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 66 - 78

WORK PERFORMED:

* On site at 07:30.

* Continued preparing clay surface for deployment of the VLDPE geomembrane.

* Continued deployment of VLDPE geomembrane. Deployment was on the southern half of the site. Approximately 130,613 s.f. was deployed.

DATE: Sunday October 23, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 53 - 67

WORK PERFORMED:

* On site at 07:00.

* Continued preparing clay surface for deployment of the VLDPE geomembrane including excavating anchor trench as needed.

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* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 985 c.y..

* Repaired and maintained erosion control devices.

* Received shipment of 12 rolls of VLDPE geomembrane.

* Began excavation for the 10,000 gallon leachate storage tank.

DATE: Tuesday October 11, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 41 - 66

WORK PERFORMED:

* On site at 06:00.

* Pumped and removed 5,000 gallons of leachate from the following collection points:
  a) Manhole #1 = 2,000 gallons
  b) Seep #6 = 1,000 gallons
  c) Seep #7 = 2,000 gallons

* Resumed preparing clay surface for deployment of the VLDPE geomembrane including excavating anchor trench as needed.

* Resumed deployment of VLDPE geomembrane. Deployment continued from the west side of the site and proceeded in an easterly direction. Approximately 67,633 s.f. was deployed.

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 1,450 c.y..

* Collected five samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.

* Completed excavation for the 10,000 gallon leachate storage tank. Placed 21 c.y. of concrete for the tank ballast pad.

DATE: Wednesday October 12, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Dry **TEMP. RANGE:** 47 - 72

WORK PERFORMED:

* On site at 06:00.

* Continued preparing clay surface for deployment of the VLDPE geomembrane including excavating anchor trench as needed.

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* Continued deployment of VLDPE geomembrane. Deployment continued from the west side of the site and proceeded in an easterly direction. Approximately 89,535 s.f. was deployed.

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 1,400 c.y..

* Collected five samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.

DATE: Thursday October 13, 1994 **WEATHER:** Rain/Overcast

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 54 - 61

WORK PERFORMED:

* On site at 06:30.

* There was no deployment of VLDPE geomembrane due to weather conditions.

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 1,675 c.y..

* Collected five samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.

* Received shipment of 13 rolls of VLDPE geomembrane.

* Augered hole for installation of gas vent riser #7.

DATE: Friday October 14, 1994 **WEATHER:** Foggy/Overcast

SITE CONDITIONS: Muddy **TEMP. RANGE:** 54 - 66

WORK PERFORMED:

* On site at 06:00.

* There was no deployment of VLDPE geomembrane due to site conditions. SLT concentrated on testing and detail work.

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 1,750 c.y..

* Collected four samples of the drainage material and shipped them to ABB-ES in Portland, Me. for permeability testing.

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* Completed installation of gas vent riser #'s 7 & 5.

PERMEABILITY RESULTS FOR THIS REPORTING PERIOD:

- o Sample DL 1 = 3.4×10^{-2} cm/sec.
- o Sample DL 2 = 2.5×10^{-2} cm/sec.
- o Sample DL 3 = 2.6×10^{-2} cm/sec.
- o Sample DL 4 = 2.6×10^{-2} cm/sec.
- o Sample DL 5 = 4.0×10^{-2} cm/sec.
- o Sample DL 8 = 3.2×10^{-2} cm/sec.
- o Sample DL 9 = 3.0×10^{-2} cm/sec.
- o Sample DL 13 = 5.0×10^{-2} cm/sec.
- o Sample DL 14 = 4.5×10^{-2} cm/sec.

WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- o Continue installation of the leachate collection system. Including setting the 10,000 gallon storage tank.
- o Continue maintenance of erosion control devices.
- o Continue preparation of clay surface for deployment of the VLDPE geomembrane.
- o Continue deployment of the VLDPE geomembrane.
- o Continue placement of the 12 oz. geotextile fabric and drainage layer.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

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* Continued deployment of VLDPE geomembrane. Deployment continued from the northwest side of the site and proceeded in an easterly direction. Approximately 121,730 s.f. was deployed.

* Continued preparing clay surface for deployment of the VLDPE geomembrane including excavating anchor trench as needed.

DATE: Tuesday October 4, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Dry **TEMP. RANGE:** 61 - 76

WORK PERFORMED:

* On site at 06:00.

* Pumped and removed 5,000 gallons of leachate from the following collection points:
  a) Manhole #1 = 1,000 gallons
  b) Seep #6 = 2,000 gallons
  c) Seep #7 = 2,000 gallons

* Continued hauling and placing clay in the southwest corner of the site. Placed approximately 1,424 c.y.

* Continued deployment of VLDPE geomembrane. Deployment continued from the west side of the site and proceeded in an easterly direction. Approximately 67,022 s.f. was deployed.

* Continued preparing clay surface for deployment of the VLDPE geomembrane including excavating anchor trench as needed.

DATE: Wednesday October 5, 1994 **WEATHER:** Partly Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 62 - 72

WORK PERFORMED:

* On site at 06:00.

* Continued hauling and placing clay in the southwest corner of the site. Placed approximately 1,976 c.y.

* Continued deployment of VLDPE geomembrane. Deployment continued from the west side of the site and proceeded in an easterly direction. Approximately 43,263.5 s.f. was deployed.

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* Continued preparing clay surface for deployment of the VLDPE geomembrane including excavating anchor trench as needed.

* Began deployment of the 12 oz. geotextile cushion pad, and placement of the drainage layer. Placed approximately 279.3 c.y..

DATE: Thursday September 29, 1994 **WEATHER:** Windy/Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 61 - 77

WORK PERFORMED:

* On site at 06:00.

* Continued hauling and placing clay in the southwest corner of the site. Placed approximately 1.432 c.y.

* There was no deployment of VLDPE geomembrane due to high winds. SLT concentrated and testing and detail work.

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 850 c.y..

* Pumped and removed 2,800 gallons of leachate from the following collection points:
  a) Manhole #1 = 400 gallons
  b) Seep #6 = 1,000 gallons
  c) Seep #7 = 1,400 gallons

DATE: Friday October 7, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 60 - 88

WORK PERFORMED:

* On site at 06:00.

* Completed hauling and placing clay in the northwest corner of the site. Placed approximately 912 c.y.

* There was no deployment of VLDPE geomembrane due to high winds. SLT concentrated and testing and detail work.

* Continued deployment of the 12 oz. geotextile cushion pad and placement of the drainage layer. Placed approximately 680 c.y..

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PERMEABILITY RESULTS FOR THIS REPORTING PERIOD:

- Sample HB115 = 4.0×10^{-8} cm/sec.
- Sample HB116 = 4.0×10^{-8} cm/sec.
- Sample HB117 = 2.0×10^{-8} cm/sec.
- Sample HB118 = 3.0×10^{-7} cm/sec.
- Sample HB119 = 5.0×10^{-8} cm/sec.
- Sample HB120 = 4.0×10^{-8} cm/sec.
- Sample HB121 = 7.0×10^{-8} cm/sec.
- Sample HB122 = 6.0×10^{-8} cm/sec.
- Sample HB123 = 7.0×10^{-8} cm/sec.
- Sample HB124 = 7.0×10^{-8} cm/sec.
- Sample HB125 = 5.0×10^{-8} cm/sec.
- Sample HB126 = 4.0×10^{-8} cm/sec.
- Sample HB127 = 3.0×10^{-8} cm/sec.
- Sample HB128 = 1.0×10^{-7} cm/sec.

WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Continue installation of the leachate collection system. Including setting the 10,000 gallon storage tank.
- Continue maintenance of erosion control devices.
- Continue preparation of clay surface for deployment of the VLDPE geomembrane.
- Continue deployment of the VLDPE geomembrane.
- Continue placement of the 12 oz. geotextile fabric and drainage layer.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

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WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

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PERIOD ENDING: October 2, 1994 **REPORT NO.** 18

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr & M. Spraul

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CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	146 C.D.
COMPLETION DAYS REMAINING:	98 C.D.

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DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
C.T. Bingham

ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

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CONSTRUCTION ACTIVITIES

DATE: Monday September 26, 1994 **WEATHER:** Rain/Overcast

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 55 - 64

WORK PERFORMED:

* On site at 05:30.
* One full crew day lost due to weather conditions.

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* SLT filled sandbags.

* Pumped and removed 5,000 gallons of leachate from the following collection points:
  a) Manhole #1 = 800 gallons
  b) Seep #6 = 1,400 gallons
  c) Seep #7 = 2,800 gallons

DATE: Tuesday September 27, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 51 - 64

WORK PERFORMED:

* On site at 06:15.

* One full crew day lost due to weather conditions.

* SLT filled sandbags and serviced their equipment. At end of day walked subgrade with representatives from OBGT, SLT, and GCS.

DATE: Wednesday September 28, 1994 **WEATHER:** Sunny/Windy

SITE CONDITIONS: Dry **TEMP. RANGE:** 52 - 76

WORK PERFORMED:

* On site at 06:30.

* Resumed hauling and placing clay in the northwest corner of the site. Placed approximately 1,952 c.y.

* Placed riser sections on manhole #'s 2 & 3.

* Prepared slay surface for liner deployment. Areas were regraded, roots/stones were removed, and surface rolled with a smoothdrum roller.

* Excavated anchor trench for VLDPE geomembrane at west end of site.

DATE: Thursday September 29, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 53 - 84

WORK PERFORMED:

* On site at 05:30.

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* Continued hauling and placing clay in the northwest corner of the site. Placed approximately 2,088 c.y.

* Began deployment of VLDPE geomembrane. Deployment began along the northwest end of the site and proceeded in an easterly direction. Approximately 120,743 s.f. was deployed.

* Continued preparing clay surface for deployment of the VLDPE geomembrane including excavating anchor trench as needed.

DATE: Friday September 30, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 60 - 88

WORK PERFORMED:

* On site at 05:30.

* Continued hauling and placing clay in the northwest corner of the site. Placed approximately 2,088 c.y.

* Continued deployment of VLDPE geomembrane. Deployment continued from the northwest side of the site and proceeded in an easterly direction. Approximately 61,405.5 s.f. was deployed.

* Continued preparing clay surface for deployment of the VLDPE geomembrane including excavating anchor trench as needed.

PERMEABILITY RESULTS FOR THIS REPORTING PERIOD:

- Sample HB98 = 6.0×10^{-8} cm/sec.
- Sample HB99 = 1.0×10^{-7} cm/sec.
- Sample HB100 = 2.0×10^{-7} cm/sec.
- Sample HB101 = 1.0×10^{-7} cm/sec.
- Sample HB102 = 2.0×10^{-7} cm/sec.
- Sample HB103 = 4.0×10^{-7} cm/sec.
- Sample HB104 = 4.0×10^{-8} cm/sec.
- Sample HB105 = 1.0×10^{-7} cm/sec.
- Sample HB106 = 8.0×10^{-8} cm/sec.
- Sample HB107 = 5.0×10^{-8} cm/sec.
- Sample HB108 = 3.0×10^{-8} cm/sec.
- Sample HB109 = 4.0×10^{-8} cm/sec.
- Sample HB110 = 8.0×10^{-8} cm/sec.
- Sample HB111 = 8.0×10^{-8} cm/sec.
- Sample HB112 = 8.0×10^{-8} cm/sec.
- Sample HB113 = 8.0×10^{-8} cm/sec.
- Sample HB114 = 7.0×10^{-8} cm/sec.

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WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Complete placement of the hydraulic barrier.
- Continue installation of the leachate collection system. Including setting the 10,000 gallon storage tank.
- Continue maintenance of erosion control devices.
- Continue preparation of clay surface for deployment of the VLDPE geomembrane.
- Continue deployment of the VLDPE geomembrane.
- Begin placement of the 12 oz. geotextile fabric and drainage layer.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

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WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

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PERIOD ENDING: September 25, 1994 **REPORT NO.** 17

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr & M. Spraul

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CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	139 C.D.
COMPLETION DAYS REMAINING:	105 C.D.

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DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
C.T. Bingham

ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday September 19, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 80's

WORK PERFORMED:

* Placed gas vent material in the north west corner of the site.
* Prepare subgrade in seep #6 location.

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* Continued hauling and placing clay on the northern side of the site. Placed approximately 1,850 c.y.

* Continued preparing clay surface for deployment of geomembrane.

NOTE:

* SLT did not mobilize over the weekend, and left no messages as to their arrival date. Decision made to demobilize GCS.

DATE: Tuesday September 20, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 52 - 85

WORK PERFORMED:

* On site at 06:00.

* Placed gas vent material on the south west corner of the site.

* Installed 71 l.f. of 4" perforated pipe in the seep #6 area.

* Continued hauling and placing clay on the northern side of the site. Placed approximately 2,072 c.y.

* Continued preparing clay surface for deployment of geomembrane.

* Excavated and prepared subgrade for installation of pump station #'s 2 & 3. Concrete placed for pads.

DATE: Wednesday September 21, 1994 **WEATHER:** Sunny/Overcast

SITE CONDITIONS: Dry **TEMP. RANGE:** 58 - 79

WORK PERFORMED:

* On site at 06:00.

* Continued hauling and placing clay on the western end of the access road. Placed approximately 1,264 c.y.

* Installed 396 l.f. of 4" perforated pipe at toe of slope in the ravine to the seep #5 area.

* Set pump station #'s 2 & 3.

* Pumped and removed 10,000 gallons of leachate from the following collection points:
  a) Manhole #1 = 700 gallons
  b) Seep #6 = 1,400 gallons
  c) Seep #7 = 7,900 gallons

DATE: Thursday September 22, 1994 **WEATHER:** Showers

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 52 - 59

WORK PERFORMED:

* On site at 06:00.
* Tried clay placement, but operation shut down due to site conditions.
* Installed 242 l.f. of 4" perforated pipe from pump station #1 location to seep #7.
* SLT arrived on site with a four person crew. Remainder of crew and equipment are scheduled to arrive Saturday.

NOTE:

* Monthly Progress Meeting held, and minutes to be distributed.

DATE: Friday September 23, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Dry **TEMP. RANGE:** 40 - 67

WORK PERFORMED:

* On site at 06:00.
* Resumed hauling and placing clay on the northern side of the site. Placed approximately 1,664 c.y.
* Pumped and removed 10,000 gallons of leachate from the following collection points:
  a) Manhole #1 = 200 gallons
  b) Seep #6 = 500 gallons
  c) Seep #7 = 9,300 gallons
* SLT filling sandbags.
* Graded slope above and area around seep #7.

'ERMEABILITY RESULTS FOR THIS REPORTING PERIOD:

- Sample HB85 = 5.0×10^{-8} cm/sec.
- Sample HB86 = 2.0×10^{-7} cm/sec.
- Sample HB87 = 2.0×10^{-7} cm/sec.
- Sample HB88 = 3.0×10^{-8} cm/sec.
- Sample HB89 = 3.0×10^{-8} cm/sec.

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- Sample HB90 = 1.0×10^{-8} cm/sec.
- Sample HB91 = 1.0×10^{-8} cm/sec.
- Sample HB92 = 1.0×10^{-7} cm/sec.
- Sample HB93 = 1.0×10^{-6} cm/sec.
- Sample HB94 = 9.0×10^{-8} cm/sec.
- Sample HB95 = 8.0×10^{-8} cm/sec.
- Sample HB96 = 2.0×10^{-8} cm/sec.
- Sample HB97 = 6.0×10^{-8} cm/sec.

WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Continue placement of the hydraulic barrier.
- Continue installation of the leachate collection system.
- Continue maintenance of erosion control devices.
- Continue preparation of clay surface for deployment of the VLDPE geomembrane.
- Begin deployment of the VLDPE geomembrane.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

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WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

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PERIOD ENDING: September 18, 1994 **REPORT NO.** 16

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr & M. Spraul

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CONTRACT COMPLETION TIME: 244 C.D.

TIME EXTENSIONS: 0 C.D.

CALENDAR DAYS ELAPSED: 132 C.D.

COMPLETION DAYS REMAINING: 112 C.D.

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DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
C.T. Bingham

ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

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CONSTRUCTION ACTIVITIES

DATE: Monday September 12, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 67 - 90

WORK PERFORMED:

* On site at 06:00.
* Prepared subgrade along the north side of the site.

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110 Free Street
P.O. Box 7050
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Telephone (207) 775-5400

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* Continued hauling and placing clay in and around the sinkhole area. Placed approximately 1,264 c.y.

* Placed gas vent material along the north perimeter of the site.

* Approximately 3,000 gallons of leachate removed from manhole #1, and additional 9,000 gallons removed from seep #5.

NOTE:

* Representative from GCS on site. No update was available on SLT's estimated arrival time. OBGT following up.

DATE: Tuesday September 13, 1994 **WEATHER:** Clear/Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 66 - 92

WORK PERFORMED:

* On site at 06:00.

* Prepared subgrade along the north side of the site.

* Continued hauling and placing clay on the western side of the site. Placed approximately 1,048 c.y.

* Placed gas vent material along the north perimeter of the site.

* Approximately 12,000 gallons of leachate removed from seep #5.

DATE: Wednesday September 14, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 69 - 93

WORK PERFORMED:

* On site at 06:15.

* Continued hauling and placing clay on the western side of the site. Placed approximately 1,410 c.y.

* Placed gas vent material along the north perimeter of the site.

* Began preparing clay surface for deployment of geomembrane.

NOTE:

* SLT crew scheduled to mobilized tomorrow. GCS still on standby.

DATE: Thursday September 15, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 71 - 92

WORK PERFORMED:

* On site at 05:30.
* Continued hauling and placing clay on the northern side of the site. Placed approximately 960 c.y.
* Placed gas vent material along the north perimeter of the site.
* Continued preparing clay surface for deployment of geomembrane.

NOTE:

* SLT on site with a four man crew. They were mobilized only to demonstrate liner seaming and testing to TRW's remedial managers. They left at 16:00. Replacement crew scheduled for Monday September 19, 1994. Decision made to keep GCS until then.

DATE: Friday September 16, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 80's

WORK PERFORMED:

* On site at 05:30.
* Continued hauling and placing clay on the northern side of the site. Placed approximately 1,570 c.y.
* Placed gas vent material along the north perimeter of the site.
* Continued preparing clay surface for deployment of geomembrane.

PERMEABILITY RESULTS FOR THIS REPORTING PERIOD:

- Sample HB79 = 4.0×10^{-8} cm/sec.
- Sample HB80 = 4.0×10^{-8} cm/sec.
- Sample HB81 = 4.0×10^{-7} cm/sec.
- Sample HB82 = 3.0×10^{-7} cm/sec.
- Sample HB83 = 3.0×10^{-8} cm/sec.
- Sample HB84 = 2.0×10^{-8} cm/sec.

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WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Continue placement of the hydraulic barrier.
- Continue installation of the leachate collection system.
- Continue maintenance of erosion control devices.
- Continue preparation of clay surface for deployment of the VLDPE geomembrane.
- Begin deployment of the VLDPE geomembrane.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ABB
ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: September 11, 1994 **REPORT NO.** 15

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr & M. Spraul

==========

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	125 C.D.
COMPLETION DAYS REMAINING:	119 C.D.

==========

DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
C.T. Bingham

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R. Day
A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday September 5, 1994 **WEATHER:** N/A

SITE CONDITIONS: N/A **TEMP. RANGE:** N/A

WORK PERFORMED:

* No work was performed due to observance of the Labor Day Holiday.

ABB Environmental Services, Inc.

110 Free Street
P.O. Box 7050
Portland, Maine 04112-7050

Telephone (207) 775-5400

Fax (207) 772-4762

DATE: Tuesday September 6, 1994 **WEATHER:** Rain/Overcast

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 63 - 83

WORK PERFORMED:

* No clay was placed due to site conditions.
* Placed gas vent material on the eastern end of the site access road.
* Continued breaking of rock between MH Nos. 3 and 4 in preparation of installation of the 4" perforated pipe.
* Repaired and maintained erosion control devices.

NOTE:

* R. Gavin and B. Williams of O.A. Technical Services on site for sampling of monitoring wells.
* M. Garstang of MDNR on site.

DATE: Wednesday September 7, 1994 **WEATHER:** Clear/Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 50 - 82

WORK PERFORMED:

* On site at 06:00.
* Continued hauling and placing clay on the eastern end of the access road. Placed approximately 2,348 c.y.
* Continued installation of leachate collection pipe between MH Nos. 3 and 4. Installed 200 l.f. of 4" perforated pipe and removed 54.8 c.y. of rock excavation.
* Prepared subgrade in the north east corner of the site.

NOTE:

* R. Gavin and B. Williams of O.A. Technical Services on site for sampling of monitoring wells.

DATE: Thursday September 8, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 55 - 87

WORK PERFORMED:

* On site at 06:00.

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* Continued hauling and placing clay on the eastern end of the access road. Placed approximately 1,408 c.y.

* Continued installation of leachate collection pipe between MH #3 and the cleanout. Installed 120 l.f. of 4" perforated pipe and removed 33.1 c.y. of rock excavation.

* Prepared subgrade along the northern side of the landfill.

* Received shipment of 12 rolls of VLDPE geomembrane.

NOTE:

* Received memo from M. Stelmack to OBGT approving use of the 12 oz. fabric and 2" minus river run gravel for the drainage layer.

DATE: Friday September 9, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 58- 93

WORK PERFORMED:

* On site at 06:00.

* Continued hauling and placing clay on the eastern end of the access road. Placed approximately 1,424 c.y.

* Continued installation of leachate collection pipe between MH #3 and the cleanout. Installed 160 l.f. of 4" perforated pipe and removed 4.4 c.y. of rock excavation.

* Prepared subgrade along the northern side of the landfill.

* Received second shipment of VLDPE geomembrane.

* Pumped approx. 1,500 gal. from manhole #1 to temporary storage tank for disposal on Monday.

PERMEABILITY RESULTS FOR THIS REPORTING PERIOD:

- Sample HB67 = 9.0×10^{-8} cm/sec.
- Sample HB68 = 8.0×10^{-8} cm/sec.
- Sample HB69 = 8.0×10^{-8} cm/sec.
- Sample HB70 = 1.0×10^{-7} cm/sec.
- Sample HB71 = 9.0×10^{-8} cm/sec.
- Sample HB72 = 8.0×10^{-8} cm/sec.
- Sample HB73 = 3.0×10^{-8} cm/sec.

- Sample HB74 = 2.0×10^{-7} cm/sec.
- Sample HB75 = 9.0×10^{-8} cm/sec.
- Sample HB76 = 4.0×10^{-8} cm/sec.
- Sample HB77 = 1.0×10^{-7} cm/sec.
- Sample HB78 = 1.0×10^{-6} cm/sec.

WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Continue placement of the hydraulic barrier.
- Continue installation of the leachate collection system.
- Continue maintenance of erosion control devices.
- Continue preparation of clay surface for deployment of the VLDPE geomembrane.
- Begin deployment of the VLDPE geomembrane.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: September 4, 1994 **REPORT NO.** 14

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr & M. Spraul

==========

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	118 C.D.
COMPLETION DAYS REMAINING:	126 C.D.

==========

DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
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ABB-ES
R. Day
A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday August 29, 1994 **WEATHER:** Rain

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 63 - 69

WORK PERFORMED:

* The only work performed was maintenance of the erosion control devices due to weather conditions.

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Telephone (207) 775-5400

Fax (207) 772-4762

DATE: Tuesday August 30, 1994 **WEATHER:** Rain/Overcast

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 63 - 83

WORK PERFORMED:

* On site at 06:30.
* No clay was placed due to weather and site conditions.
* Prepared subgrade along the northern side of the site.
* Continued installation of leachate collection pipe between MH Nos. 2 and 3. Installed 40 l.f. of 4" perforated pipe and removed 20.7 c.y. of rock excavation.

DATE: Wednesday August 31, 1994 **WEATHER:** Rain/Overcast

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 62 - 78

WORK PERFORMED:

* On site at 06:30.
* No clay was placed due to weather and site conditions.
* Prepared subgrade along the northern side of the site.
* Continued breaking of rock between MH Nos. 2 and 3 in preparation of installation of the 4" perforated pipe.

NOTE:

* E. Starbuck and D. Mosby (MDNR) on site.

DATE: Thursday September 1, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Muddy **TEMP. RANGE:** 58 - 63

WORK PERFORMED:

* On site at 06:00.
* Resumed hauling and placing clay on the south side of the site. Placed approximately 1,904 c.y.
* Continued installation of leachate collection pipe between MH Nos. 2 and 3. Installed 104 l.f. of 4" perforated pipe and removed 46.2 c.y. of rock excavation as well as setting manhole #3. (9 v.f.)

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DATE: Friday September 2, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 62- 78

WORK PERFORMED:

* On site at 06:00.
* Continued hauling and placing clay on the south side of the site. Placed approximately 1,288 c.y.
* Continued installation of leachate collection pipe between MH Nos. 3 and 4. Installed 60 l.f. of 4" perforated pipe and removed 28.1 c.y. of rock excavation.

PERMEABILITY RESULTS COMPLETED THIS REPORTING PERIOD:

- Sample HB64 = 5.0×10^{-8} cm/sec.
- Sample HB65 = 6.0×10^{-8} cm/sec.
- Sample HB66 = 1.0×10^{-7} cm/sec.

WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Continue placement of the hydraulic barrier.
- Continue installation of the leachate collection system.
- Continue maintenance of erosion control devices.
- Continue preparation of clay surface for deployment of the VLDPE geomembrane.
- Mobilize SLT in preparation of deployment of the VLDPE geomembrane.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

- Sample HB32 = 8.0×10^{-8} cm/sec.
- Sample HB33 = 2.0×10^{-8} cm/sec.
- Sample HB34 = 6.0×10^{-8} cm/sec.
- Sample HB35 = 5.0×10^{-7} cm/sec.
- Sample HB36 = 9.0×10^{-8} cm/sec.
- Sample HB37 = 7.0×10^{-8} cm/sec.
- Sample HB38 = 1.0×10^{-7} cm/sec.
- Sample HB39 = 1.0×10^{-6} cm/sec.
- Sample HB40 = 3.0×10^{-7} cm/sec.

WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Continue placement of the hydraulic barrier.
- Removal of leachate and seeps along north side of site.
- Continue installation of the leachate collection system.
- Continue maintenance of erosion control devices.
- Conduct Monthly Progress Meeting.
- Conduct VLDPE Geomembrane Pre-Construction Conference.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Mark J. Stelmack
Project Engineer

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WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: August 14, 1994

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: M. Spraul

==========

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	97 C.D.
COMPLETION DAYS REMAINING:	147 C.D.

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DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
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R. Day
A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday August 8, 1994 **WEATHER:** Hazy/Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 71 - 94

WORK PERFORMED:

- On site at 06:30.
- Collected and shipped five gas vent samples to ABB-ES in Portland, Me. for permeability testing.

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- Continued hauling and placing clay along the north side of the site. Placed approximately 1,350 c.y..
- Continued hauling and placing gas vent material. Placed approximately 2,550 c.y. along the west side of the site.

VISITORS:

- M. Garstang (MDNR) on site.

DATE: Tuesday August 9, 1994 **WEATHER:** Sunny/Rain

SITE CONDITIONS: Dry / Wet **TEMP. RANGE:** 77 - 96

WORK PERFORMED:

- On site at 06:15.
- Collected and shipped five gas vent samples to ABB-ES in Portland, Me. for permeability testing.
- Continued hauling and placing clay along the north side of the site. Placed approximately 1,350 c.y..
- Continued hauling and placing gas vent material. Placed approximately 2,550 c.y. along the west side of the site. Gas vent layer is approximately 95% complete. Areas needing material can not be completed until berms are removed.

DATE: Wednesday August 10, 1994 **WEATHER:** Foggy / Sunny

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 64 - 93

WORK PERFORMED:

- On site at 06:30.
- Collected and shipped four gas vent samples to ABB-ES in Portland, Me. for permeability testing.
- No work performed by OBGT due to inability to gain access to the clay source. Subcontractor did not adequately prepare for rain received overnight. Conditions on site would have allowed for work to continue.

DATE: Thursday August 11, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 72 - 94

WORK PERFORMED:

- On site at 05:30.
- Continued hauling and placing clay along the east side of the site. Placed approximately 2,597 c.y..

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- Recorded settlement data.

DATE: Friday August 12, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 71- 92

WORK PERFORMED:

- On site at 06:15.
- Continued hauling and placing clay along the north side of the site. Placed approximately 1856 c.y..
- Regraded and maintained Emma Lane.

PERMEABILITY RESULTS COMPLETED THIS REPORTING PERIOD:

- Sample HB2 = 8.0×10^{-8} cm/sec.
- Sample HB3 = 2.3×10^{-7} cm/sec.
- Sample HB4 = 1.9×10^{-7} cm/sec.
- Sample HB5 = 6.0×10^{-7} cm/sec.
- Sample HB6 = 9.0×10^{-8} cm/sec.
- Sample HB7 = 9.0×10^{-9} cm/sec.
- Sample HB8 = 2.0×10^{-8} cm/sec.
- Sample HB9 = 5.0×10^{-7} cm/sec.
- Sample HB10 = 4.0×10^{-7} cm/sec.

WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Continue placement of the hydraulic barrier.
- Removal of leachate and seeps along north side of site.
- Begin installation of the leachate collection system.
- Continue maintenance of erosion control devices.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: August 7, 1994 **REPORT NO.** 10

ABB-ES PROJECT NO.: 8940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REPS: Tim Duerr & Mark Spraul

==========

CONTRACT COMPLETION TIME:	**244 C.D.**
TIME EXTENSIONS:	**0 C.D.**
CALENDAR DAYS ELAPSED:	**90 C.D.**
COMPLETION DAYS REMAINING:	**154 C.D.**

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DISTRIBUTION FOR WEEKLY REPORTS

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J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday August 1, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Dry **TEMP. RANGE:** 80's

WORK PERFORMED:

- Continued subgrade preparation by cutting ditchline around the sink hole area.

- Collected and shipped four gas vent samples to ABB-ES in Portland, ME. for permeability testing.
- Continued hauling and placing gas vent material. Placed approximately 3,040 c.y. in the south west corner of the site.
- D. Labbe (ABB-ES) on site to begin permeability testing on the hydraulic barrier.

DATE: Tuesday August 2, 1994 **WEATHER:** Overcast/Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 69 - 90

WORK PERFORMED:

- On site at 06:30.
- Continued subgrade preparation on the west slope. Approximately 1,555 s.y. of the subgrade was compacted and approved.
- Continued hauling and placing gas vent material. Placed approximately 2,225 c.y. in the south west corner of the site.
- Collected and shipped five gas vent samples to ABB-ES in Portland, ME. for permeability testing.
- First truck load of hydraulic barrier (clay) material delivered to the site. Informed T. Duerr that it was unacceptable due to excessive amount of organics and rocks. Tim agreed and corrected the situation.

DATE: Wednesday August 3, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 69 - 91

WORK PERFORMED:

- On site at 06:30.
- Continued hauling and placing gas vent material. Placed approximately 2,350 c.y. in the south west corner of the site.
- Collected and shipped eleven gas vent samples to ABB-ES in Portland, ME. for permeability testing.

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- Resumed hauling and placing clay for a test pad. Permeability testing of the material began with two samples. Continued placing clay on the north side of the site. Placed approximately 640 c.y..

VISITORS:

- M. Garstang (MDNR) on site.

DATE: Thursday July 28, 1994 **WEATHER:** Partly Cloudy

SITE CONDITIONS: Dry **RANGE:** 72 - 86

WORK PERFORMED:

- On site at 06:30.
- Collected and shipped twelve gas vent samples to ABB-ES in Portland, ME. for permeability testing.
- Recorded settlement platform data.
- Continued hauling and placing gas vent material. Placed approximately 2,310 c.y. along the west side of the site.
- Continued hauling and placing clay along the north side of the site. Placed approximately 1,620 c.y..

DATE: Friday July 29, 1994 **WEATHER:** Partly Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 62 - 78

WORK PERFORMED:

- On site at 06:00.
- Continued hauling and placing gas vent material. Placed approximately 2,320 c.y. along the west side of the site.
- Collected and shipped four gas vent samples to ABB-ES in Portland, ME. for permeability testing.
- Continued hauling and placing clay along the north side of the site. Placed approximately 1,590 c.y..

PERMEABILITY RESULTS COMPLETED DURING THIS REPORTING PERIOD:

- Sample HB1 = 1.0×10^{-7} cm/sec.

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WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Complete placement of gas vent material.
- Continue placement of hydraulic barrier material.
- Continue surveying and layout as needed.
- Continue maintenance of erosion control devices.
- Begin installation of the leachate collection system.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: July 31, 1994 **REPORT NO.** 9

ABB-ES PROJECT NO.: 8940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP: Mark Spraul

==========

CONTRACT COMPLETION TIME:	**244 C.D.**
TIME EXTENSIONS:	**0 C.D.**
CALENDAR DAYS ELAPSED:	**83 C.D.**
COMPLETION DAYS REMAINING:	**161 C.D.**

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==========

CONSTRUCTION ACTIVITIES

DATE: Monday July 25, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 80's

WORK PERFORMED:

- Continued subgrade preparation on the southern side of the site. Approximately 3,750 s.y. of the subgrade was compacted and approved.

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Telephone (207) 775-5400

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- Continued hauling and placing gas vent material. Placed approximately 1,170 c.y. along the southern half of the site.
- Collected and shipped five gas vent samples to ABB-ES in Portland, ME. for permeability testing.
- Resumed placing bedding material in and around the sink hole in preparation of installing the geogrid.

DATE: Tuesday July 26, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Dry **TEMP. RANGE:** 70 - 86

WORK PERFORMED:

- On site at 06:10.
- Continued subgrade preparation on the western side of the site. Approximately 3,500 s.y. of the subgrade was compacted and approved.
- Continued hauling and placing gas vent material. Placed approximately 1,140 c.y. on the southern half of the site.
- Collected and shipped five gas vent samples to ABB-ES in Portland, ME. for permeability testing.
- Completed placing bedding material in and around the sink hole in preparation of installing the geogrid. Approximately 1200 s.y. of geogrid was installed along with a geotextile fabric as part of the sink hole reinforcement system. Began placing the 1" minus cover material over the geotextile fabric.

VISITORS:

- Peter Price (MDNR) on site at 17:00. Left at 17:30.

DATE: Wednesday July 27, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 77 - 93

WORK PERFORMED:

- On site at 06:30.
- Continued hauling and placing gas vent material. Placed approximately 1,890 c.y. along the southern side of the site.

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- o Collected and shipped four gas vent samples to ABB-ES in Portland, ME. for permeability testing.
- o Continued subgrade preparation on the western side of the site. Approximately 7,500 s.y. of the subgrade was compacted and approved.

DATE: Thursday July 28, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **RANGE:** 71 - 89

WORK PERFORMED:

- o On site at 06:30.
- o Collected and shipped three gas vent samples to ABB-ES in Portland, ME. for permeability testing.
- o Continued subgrade preparation on the western side of the site. Approximately 8,500 s.y. of the subgrade was compacted and approved.
- o Recorded settlement platform data.
- o Continued hauling and placing gas vent material. Placed approximately 475 along the southern side of the site.

NOTE:

- o Monthly Progress Meeting held and minutes to be distributed.

VISITORS:

- o M. Garstang (MDNR) on site.

DATE: Friday July 29, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 62 -86

WORK PERFORMED:

- o On site at 06:00.
- o Continued hauling and placing gas vent material. Placed approximately 1,655 c.y. along the southern side of the site.
- o Collected and shipped four gas vent samples to ABB-ES in Portland, ME. for permeability testing.

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- Continued subgrade preparation in the south west corner of the site. Approximately 880 s.y. of the subgrade was compacted and approved.

WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Continue placement of gas vent material.
- Begin placement of hydraulic barrier material.
- Continue surveying and layout as needed.
- Continue maintenance of erosion control devices.
- Complete subgrade preparation.
- Begin installation of the leachate collection system.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: July 24, 1994 **REPORT NO.** 8

ABB-ES PROJECT NO.: 7454-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP: Tim Duerr

==========

CONTRACT COMPLETION TIME:	**244 C.D.**
TIME EXTENSIONS:	**0 C.D.**
CALENDAR DAYS ELAPSED:	**76 C.D.**
COMPLETION DAYS REMAINING:	**168 C.D.**

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J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday July 18, 1994 **WEATHER:** Partly Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 80's

WORK PERFORMED:

- Continued subgrade preparation on the southern side of the site. Approximately 13,600 s.y. of the subgrade was compacted and approved.

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- Continued installation of chain link fence.
- Continued hauling and placing gas vent material. Placed approximately 1,470 c.y. along the eastern half of the site.
- Collected and shipped three gas vent samples to ABB-ES in Portland, ME. for permeability testing.

DATE: Tuesday July 19, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 74 - 94

WORK PERFORMED:

- On site at 06:30.
- Continued subgrade preparation on the southern side of the site. Approximately 7,750 s.y. of the subgrade was compacted and approved.
- Continued installation of chain link fence.
- Continued hauling and placing gas vent material. Placed approximately 2,020 c.y. in the north west corner of the site.
- Collected and shipped five gas vent samples to ABB-ES in Portland, ME. for permeability testing.

DATE: Wednesday July 20, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 77 - 93

WORK PERFORMED:

- On site at 06:30.
- Continued subgrade preparation in and around the sink hole.
- Continued installation of chain link fence.
- Continued hauling and placing gas vent material. Placed approximately 1,860 c.y. in the north west corner of the site.
- Collected and shipped five gas vent samples to ABB-ES in Portland, ME. for permeability testing.

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VISITORS:

- Dave Mosby (MDNR) on site at 17:00. Left at 17:30.

DATE: Thursday July 21, 1994 **WEATHER:** Sunny/Shower

SITE CONDITIONS: Wet & Muddy **RANGE:** 71 - 89

WORK PERFORMED:

- On site at 06:30.
- Continued subgrade preparation around the perimeter of the sink hole.
- ***Completed*** installation of chain link fence.
- Continued hauling and placing gas vent material. Placed approximately 1,220 c.y. along the eastern half of the site.
- Collected and shipped four gas vent samples to ABB-ES in Portland, ME. for permeability testing.
- Placed "river run" gravel in sink hole area as a subbase to establish grade for bedding material.

DATE: Friday July 22, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 70 - 89

WORK PERFORMED:

- On site at 06:00.
- Recorded settlement platform data.
- Continued hauling and placing gas vent material. Placed approximately 1,540 c.y. along the southern side of the site.
- Collected and shipped ten gas vent samples to ABB-ES in Portland, ME. for permeability testing.
- Continued subgrade preparation in the south west corner of the site. Approximately 4,800 s.y. of the subgrade was compacted and approved.

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WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Continue placement of gas vent material.
- Install geogrid system over sink hole.
- Continue surveying and layout as needed.
- Continue maintenance of erosion control devices.
- Complete subgrade preparation.
- Monthly Progress Meeting.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ABB
ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: July 17, 1994 **REPORT NO.** 7

ABB-ES PROJECT NO.: 7454-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP: Tim Duerr

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CONTRACT COMPLETION TIME:	**244 C.D.**
TIME EXTENSIONS:	**0 C.D.**
CALENDAR DAYS ELAPSED:	**69 C.D.**
COMPLETION DAYS REMAINING:	**175 C.D.**

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DISTRIBUTION FOR WEEKLY REPORTS

TRW INC.
C.T. Bingham

ABB-ES
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J. Baron

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CONSTRUCTION ACTIVITIES

DATE: Monday July 11, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 69 - 91

WORK PERFORMED:

- On site at 06:30.

ABB Environmental Services, Inc.

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Fax (207) 772-4762

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WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: August 28, 1994 **REPORT NO.** 13

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr & M. Spraul

==========

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	111 C.D.
COMPLETION DAYS REMAINING:	133 C.D.

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C.T. Bingham

ABB-ES
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A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday August 22, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Dry **TEMP. RANGE:** 67 - 83

WORK PERFORMED:

* Continued hauling and placing clay on the east side of the site. Placed approximately 1,624 c.y.

* Pumped and removed 12,000 gallons of leachate from seeps 2 & 2A.

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* Prepared subgrade along the northern side of the site.

* Completed installation of leachate collection pipe between MH Nos. 1 and 2. Installed 24.5 l.f. of 4" perforated pipe and set manhole #2.

VISITORS: K. Hollman (DGLS) on site.

DATE: Tuesday August 23, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 67 - 90

WORK PERFORMED:

* On site at 06:00.

* Continued hauling and placing clay on the east side of the site. Only 336 c.y. placed due to amount of roots. Placement stopped so supplier can get a handle on the problem.

* Pumped and removed 24,000 gallons of leachate from seeps 2 & 3.

* Prepared subgrade along the northern side of the site.

* Continued installation of leachate collection pipe between MH Nos. 2 and 3. Installed 55. l.f. of 4" perforated pipe and removed 23.3 c.y. of rock excavation.

DATE: Wednesday August 24, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 60 - 93

WORK PERFORMED:

* On site at 06:15.

* Continued hauling and placing clay on the east side of the site. Placed approximately 2,016 c.y.

* Pumped and removed 6,000 gallons of leachate from seep 3.

* Continued installation of leachate collection pipe between MH Nos. 2 and 3. Installed 45. l.f. of 4" perforated pipe and removed 21.7 c.y. of rock excavation.

NOTE:

* M. Stelmack and C. Bingham on site for visit by the Sullivan City Council.

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DATE: Thursday August 25, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 64 - 94

WORK PERFORMED:

* On site at 06:45.
* Continued hauling and placing clay on the south side of the site. Placed approximately 1,869 c.y.
* Pumped and removed 24,000 gallons of leachate from seeps 3 & 4.
* Continued installation of leachate collection pipe between MH Nos. 2 and 3. Installed 60. l.f. of 4" perforated pipe and removed 32.6 c.y. of rock excavation.

VISITORS: K. Hollman (DGLS) on site.

NOTES:

* Monthly Progress Meeting held on site with minutes to be distributed.
* Pre-Construction Conference held on site for the VLDPE geomembrane with minutes to be distributed.

DATE: Friday August 26, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 62- 95

WORK PERFORMED:

* On site at 06:00.
* Continued hauling and placing clay on the south side of the site. Placed approximately 1,722 c.y.
* Pumped and removed 24,000 gallons of leachate from seeps 1 & 4.
* Continued installation of leachate collection pipe between MH Nos. 2 and 3. Installed 8. l.f. of 4" perforated pipe .

PERMEABILITY RESULTS COMPLETED THIS REPORTING PERIOD:

- Sample HB41 = 4.0×10^{-7} cm/sec.
- Sample HB42 = 7.0×10^{-8} cm/sec.
- Sample HB43 = 1.0×10^{-7} cm/sec.
- Sample HB44 = 4.0×10^{-8} cm/sec.
- Sample HB45 = 1.0×10^{-7} cm/sec.

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- Sample HB45 = 1.0×10^{-7} cm/sec.
- Sample HB46 = 2.0×10^{-7} cm/sec.
- Sample HB47 = 6.0×10^{-8} cm/sec.
- Sample HB48 = 1.0×10^{-7} cm/sec.
- Sample HB49 = 5.0×10^{-8} cm/sec.
- Sample HB50 = 5.0×10^{-8} cm/sec.
- Sample HB51 = 6.0×10^{-8} cm/sec.
- Sample HB52 = 8.0×10^{-8} cm/sec.
- Sample HB53 = 3.0×10^{-8} cm/sec.
- Sample HB54 = 4.0×10^{-8} cm/sec.
- Sample HB55 = 8.0×10^{-8} cm/sec.
- Sample HB56 = 1.0×10^{-7} cm/sec.
- Sample HB57 = 7.0×10^{-8} cm/sec.
- Sample HB58 = 3.0×10^{-7} cm/sec.
- Sample HB59 = 8.0×10^{-8} cm/sec.
- Sample HB60 = 4.0×10^{-8} cm/sec.
- Sample HB61 = 6.0×10^{-8} cm/sec.
- Sample HB62 = 2.0×10^{-7} cm/sec.
- Sample HB63 = 1.0×10^{-6} cm/sec.

WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Continue placement of the hydraulic barrier.
- Removal of leachate and seeps.
- Continue installation of the leachate collection system.
- Continue maintenance of erosion control devices.
- Begin preparation of clay surface for deployment of the VLDPE geomembrane.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

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WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: August 21, 1994

ABB-ES PROJECT NO.: 08940-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP.: T. Duerr & M. Spraul

==========

CONTRACT COMPLETION TIME:	244 C.D.
TIME EXTENSIONS:	0 C.D.
CALENDAR DAYS ELAPSED:	104 C.D.
COMPLETION DAYS REMAINING:	140 C.D.

==========

DISTRIBUTION FOR WEEKLY REPORTS

TRW, INC.
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R. Day
A. McCusker
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday August 15, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 70 - 85

WORK PERFORMED:

* On site at 06:00.
* Continued hauling and placing clay on the site's north side and at the ravine area. Placed approximately 1,856 c.y.

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* Leachate collection manhole No. 1 and leachate pipe installed.

DATE: Tuesday August 16, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 72 - 86

WORK PERFORMED:

* On site at 05:15.
* Continued hauling/placing clay on the north side. Approximately 1,393 c.y. placed.
* Continued installation of leachate collection pipe between MH Nos. 1 and 2.

VISITORS: M. Garstang (DGLS) on site.

DATE: Wednesday August 17, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 72 - 88

WORK PERFORMED:

* On site at 06:00.
* Continued hauling/placing clay on the north side. Approximately 1,624 c.y. placed.
* Continued installation of leachate collection pipe between MH Nos. 1 and 2. Rock removal included.
* Pumped and hauled off site leachate from seep pond at north end.

DATE: Thursday August 18, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 71 - 91

WORK PERFORMED:

* On site at 06:00.
* Continued hauling and placing clay west of the ravine area. Placed approximately 1,043 c.y..

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* Continued installation of leachate collection pipe between MH Nos. 1 and 2. Installed aprrox. 20 l.f. including approx. 10 c.y. of rock removal.

VISITORS: M. Garstang (DGLS) on site.
C. Bingham (TRW) on site.

DATE: Friday August 19, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 71- 92

WORK PERFORMED:

* On site at 06:00.

* Continued hauling and placing clay near ravine area. Placed approximately 1,729 c.y..

* Continued installation of leachate collection pipe between MH Nos. 1 and 2. Installed aprrox. 74 l.f. including approx. 22 c.y. of rock removal.

* Pumped and hauled off site leachate from seep ponds at north end.

PERMEABILITY RESULTS COMPLETED THIS REPORTING PERIOD:

- Sample HB11 = 5.0×10^{-7} cm/sec.
- Sample HB12 = 3.0×10^{-7} cm/sec.
- Sample HB13 = 3.0×10^{-7} cm/sec.
- Sample HB14 = 3.0×10^{-8} cm/sec.
- Sample HB15 = 1.0×10^{-6} cm/sec.
- Sample HB16 = 5.0×10^{-7} cm/sec.
- Sample HB17 = 3.0×10^{-8} cm/sec.
- Sample HB18 = 3.0×10^{-7} cm/sec.
- Sample HB19 = 1.0×10^{-7} cm/sec.
- Sample HB20 = 5.0×10^{-8} cm/sec.
- Sample HB21 = 1.0×10^{-7} cm/sec.
- Sample HB22 = 5.0×10^{-8} cm/sec.
- Sample HB23 = 3.0×10^{-7} cm/sec.
- Sample HB24 = 1.0×10^{-8} cm/sec.
- Sample HB25 = 2.0×10^{-7} cm/sec.
- Sample HB26 = 1.0×10^{-6} cm/sec.
- Sample HB27 = 3.0×10^{-8} cm/sec.
- Sample HB28 = 7.0×10^{-8} cm/sec.
- Sample HB29 = 2.0×10^{-8} cm/sec.
- Sample HB30 = 1.0×10^{-7} cm/sec.
- Sample HB31 = 3.0×10^{-8} cm/sec.

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- Continued subgrade preparation at the northern end of the site. Compacted and approved approximately 4,500 s.y.
- Continued installation of chain link fence.
- Resumed hauling and place gas vent material. Approximately 375 c.y. placed starting in the southeast corner of the site.
- Performed maintenance on the erosion control devices.

DATE: Tuesday July 12, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 71 - 90

WORK PERFORMED:

- On site at 06:30.
- Continued subgrade preparation along the southern perimeter of the site hole. Compacted and approved approximately 10,000 s.y.
- Continued installation of chain link fence.
- Continued hauling and placing gas vent material. Approximately 550 c.y. placed along the eastern side of the site.

DATE: Wednesday July 13, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 69 - 87

WORK PERFORMED:

- On site at 06:30.
- Continued subgrade preparation along the southern perimeter of the site. Compacted and approved approximately 6,675 s.y.
- Continued installation of chain link fence.
- Continued hauling and placing gas vent material. Approximately 890 c.y. placed continuing along the eastern side of the site.

- Collected and shipped three gas vent samples to ABB-ES in Portland, ME. for permeability testing.

DATE: Thursday July 14, 1994 **WEATHER:** Sunny/Shower

SITE CONDITIONS: Dry **TEMP. RANGE:** 67 - 91

WORK PERFORMED:

- On site at 06:30.
- Continued subgrade preparation around the perimeter of the sink hole.
- Continued installation of chain link fence.
- Continued hauling and place gas vent material. Approximately 1,130 c.y. placed continuing along the eastern side of the site.
- Collected and shipped four gas vent samples to ABB-ES in Portland, ME. for permeability testing.

DATE: Friday July 15, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 69 - 87

WORK PERFORMED:

- On site at 06:00.
- Continued subgrade preparation around the perimeter of the sink hole.
- Continued installation of chain link fence.
- Continued hauling and place gas vent material. Approximately 1,345 c.y. placed continuing along the eastern side of the site.
- Collected and shipped four gas vent samples to ABB-ES in Portland, ME. for permeability testing.
- Recorded settlement platform data.

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WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Continue placement of gas vent material.
- Complete chain link fence installation.
- Continue surveying and layout as needed.
- Continue maintenance of erosion control devices.
- Complete subgrade preparation.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: July 10, 1994 **REPORT NO.** 6

ABB-ES PROJECT NO.: 7454-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP: Tim Duerr

==========

CONTRACT COMPLETION TIME:	**244 C.D.**
TIME EXTENSIONS:	**0 C.D.**
CALENDAR DAYS ELAPSED:	**62 C.D.**
COMPLETION DAYS REMAINING:	**182 C.D.**

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DISTRIBUTION FOR WEEKLY REPORTS

TRW INC.
C.T. Bingham

ABB-ES
A. McCusker
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J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday July 4, 1994 **WEATHER:** N/A

SITE CONDITIONS: N/A **TEMP. RANGE:** N/A

WORK PERFORMED:

- No work performed due to observance of the Fourth of July Holiday.

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DATE: Tuesday July 5, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 78 - 95

WORK PERFORMED:

- Continued subgrade preparation along the east side of the site.
- Continued installation of chain link fence.
- Surveyors laying out location of leachate collection piping.
- Continued assembling temporary settlement platforms.

DATE: Wednesday July 6, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 77 - 94

WORK PERFORMED:

- On site at 06:30.
- Continued installation of chain link fence.
- Continued with subgrade preparation along the east side of the site.
- Installed 24" culvert across the north access road.
- Graded ditch along Emma Lane.
- Completed installation of the settlement platforms.

DATE: Thursday July 7, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 79 - 89

WORK PERFORMED:

- On site at 06:00.
- Continued installation of chain link fence.
- Continued with subgrade preparation along the east side of the site. Walked approx. 28,500 s.y. of subgrade and accepted it as ready for gas vent material.

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- Installed 30" culvert across Emma Lane.

DATE: Friday July 8, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 69 - 87

WORK PERFORMED:

- On site at 06:30.
- Continued installation of chain link fence.
- Continued with subgrade preparation in the north east corner of the site as well as around the sink hole.
- Performed erosion control inspection with M. Spraul. Noted several areas of silt fence needing repair. M. Spraul began repairs.
- Began hauling "river run" gas vent material. Trucks shut off after first round due to wet condition of subgrade.

WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Continue placement of gas vent material.
- Complete chain link fence installation.
- Continue surveying and layout as needed.
- Continue maintenance of erosion control devices.
- Continue subgrade preparation.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: July 3, 1994 **REPORT NO.** 5

ABB-ES PROJECT NO.: 7454-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP: Tim Duerr

==========

CONTRACT COMPLETION TIME:	**244 C.D.**
TIME EXTENSIONS:	**0 C.D.**
CALENDAR DAYS ELAPSED:	**55 C.D.**
COMPLETION DAYS REMAINING:	**189 C.D.**

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DISTRIBUTION FOR WEEKLY REPORTS

TRW INC.
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M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday June 27, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 62 - 90

WORK PERFORMED:

- On site at 06:30.

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- Continued silt fence installation along west perimeter.
- Excavated test pits along the west perimeter of the site.
- Cleared additional area in the south west corner.

DATE: Tuesday June 28, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 70 - 93

WORK PERFORMED:

- On site at 06:30.
- Began subgrade preparation along the east side of the site.
- Resumed installation of chain link fence.
- Surveyors staking subgrade elevations.

DATE: Wednesday June 29, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 70 - 91

WORK PERFORMED:

- On site at 06:30.
- Continued silt fence installation along west & east perimeters.
- Continued installation of chain link fence.
- Continued with subgrade preparation along the east side of the site.
- Surveyors staking subgrade elevations.
- Resumed placing 2" minus subbase material on west access road.
- D. Labbe of ABB-ES on site mobilizing soils field laboratory.

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DATE: Thursday June 30, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 65 - 92

WORK PERFORMED:

- On site at 06:30.
- Continued installation of chain link fence.
- Continued with subgrade preparation along the east side of the site.
- Surveyors completed staking subgrade elevations.
- Continued placing 2" minus subbase material on west access road.
- D. Labbe of ABB-ES on site mobilizing soils field laboratory.
- Relocated decontamination facility.

DATE: Friday July 1, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 65 - 92

WORK PERFORMED:

- On site at 06:30.
- Continued installation of chain link fence.
- Continued with subgrade preparation along the east side of the site.
- Continued placing 2" minus subbase material on west access road.
- D. Labbe of ABB-ES completed mobilizing the soils field laboratory.
- Continued relocation of the decontamination facility.
- Begin installation of the temporary settlement platforms.

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WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Begin placement of gas vent material.
- Continue chain link fence installation.
- Continue surveying and layout as needed.
- Continue installation of erosion control devices.
- Continue subgrade preparation.
- Complete gravel placement on perimeter access road.
- Complete installation of the temporary settlement platforms.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

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WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: June 26, 1994 **REPORT NO.** 4

ABB-ES PROJECT NO.: 7454-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP: Tim Duerr

==========

CONTRACT COMPLETION TIME:	**244 C.D.**
TIME EXTENSIONS:	**0 C.D.**
CALENDAR DAYS ELAPSED:	**48 C.D.**
COMPLETION DAYS REMAINING:	**196 C.D.**

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TRW INC.
C.T. Bingham

ABB-ES
A. McCusker
R. Day
M. Stelmack
J. Baron

==========

CONSTRUCTION ACTIVITIES

DATE: Monday June 20, 1994 **WEATHER:** Hazy\Humid

SITE CONDITIONS: Dry **TEMP. RANGE:** 90's

WORK PERFORMED:

- On site at 10:45. M. Spraul (OBGT) on site.
- Continued silt fence installation along east perimeter.

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- Began grading of ditch line along north perimeter.
- Continued setting fence posts along north perimeter.
- Issued agenda for meeting on June 23,1994.

DATE: Tuesday June 21, 1994 **WEATHER:** Hazy & Humid

SITE CONDITIONS: Dry **TEMP. RANGE:** 75 - 90

WORK PERFORMED:

- On site at 06:30.
- Continued silt fence installation along west & north perimeters.
- Completed grading of ditch line along north perimeter.
- Continued installation of chain link fence.
- MOBARK recycler mobilized and began chipping of trees, brush, and stumps.
- Surveyors staking limits of waste.
- The neighbors were visited and informed of the upcoming activities.

DATE: Wednesday June 22, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 76 - 92

WORK PERFORMED:

- On site at 06:30.
- Continued silt fence installation along west & north perimeters.
- Continued installation of chain link fence.
- MOBARK recycler continued chipping of trees, brush, and stumps.
- Surveyors staking limits of waste.

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- Began placing 2" minus subbase material on south access road.

DATE: Thursday June 23, 1994 **WEATHER:** Hazy & Humid

SITE CONDITIONS: Dry **TEMP. RANGE:** 72 - 88

WORK PERFORMED:

- On site at 06:45.
- Continued silt fence installation east perimeter.
- Continued installation of chain link fence.
- MOBARK recycler continued chipping of trees, brush, and stumps.
- Continued placing 2" minus subbase material on south access road.
- The first Monthly Progress Meeting was held on site and minutes will be distributed.
- Began placing 1" minus material on south access road.

DATE: Friday June 24, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Dry **TEMP. RANGE:** 65 - 88

WORK PERFORMED:

- On site at 06:30.
- Continued silt fence installation east perimeter.
- Continued installation of chain link fence.
- MOBARK recycler continued chipping of trees, brush, and stumps.
- Continued placing 1" minus material on south access road.

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WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Complete chipping of trees, brush, and stumps.
- Continue chain link fence installation.
- Continue surveying and layout.
- Continue installation of erosion control devices.
- Begin subgrade preparation.
- Continue gravel placement on perimeter access road.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

PERIOD ENDING: June 19, 1994 REPORT NO. 3

ABB-ES PROJECT NO.: 7454-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP: Mark Spraul/Tim Duerr

CONTRACT COMPLETION TIME: 244 C.D.

TIME EXTENSIONS: 0 C.D.

CALENDAR DAYS ELAPSED: 41 C.D.

COMPLETION DAYS REMAINING: 203 C.D.

DISTRIBUTION FOR WEEKLY REPORTS

TRW. INC.	ABB-ES
C. T. Bingham	A. McCusker R. Day M. Stelmack

CONSTRUCTION ACTIVITIES

DATE: Monday, June 13, 1994 WEATHER: Hazy/Sunny

SITE CONDITIONS: Dry TEMP. RANGE: 92°-102°

WORK PERFORMED:

- On site at 11:45; M. Spraul (OBGT) on site.
- Clearing along west boundary line of landfill.
- Finished bush hogging the site (Need additional survey).

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- Fencing sub-contractor began digging holes for posts in the area of the office trailers.
- Lost power to site; sub-contractor drilled through electrical service.
- Left voice mail update with C. Bingham.

DATE: Tuesday, June 14, 1994 WEATHER: Sunny/Humid

SITE CONDITIONS: Dry TEMP. RANGE: 84°-94°

WORK PERFORMED:

- On site at 07:30. Power re-connected to trailers by electrician at 2:00 pm.
- T. Duerr (OBGT) on site.
- A 953B tracked loader working on wind-rolling tree along east access road.
- Fence sub-contractor installing fence post along east access road in area of field offices.
- J. Rauschkolb arrived on site at 10:00 am. Discussed with Jon the importance of the hydraulic barrier, drainage, gas vent soils borrow study and sealed geogrid submittals to ABB-ES' office.

DATE: Wednesday, June 15, 1994 WEATHER: Dry/Sunny

SITE CONDITIONS: Dry TEMP. RANGE: 88°-96°

WORK PERFORMED:

- On site at 06:45.
- Continued piling up trees in piles along west and north sides of landfill.
- Survey crew on site establishing final clearing limits along west boundary lines.
- Clearing random trees and brush along west boundary.
- Surveyors on site working on field control.
- Installing posts and post holes along west property line.

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DATE: Thursday, June 16, 1994 WEATHER: Sunny/Humid

SITE CONDITIONS: Dry TEMP. RANGE: 87°-95°

WORK PERFORMED:

- On site at 07:30.
- Continued random clearing along east boundary line.
- Continued tree wind-rolling along the west and north property lines.

DATE: Friday, June 17, 1994 WEATHER: Sunny/Humid

SITE CONDITIONS: Dry TEMP. RANGE: 87°-95°

WORK PERFORMED:

- On site at 07:30.
- Installing fence posts and digging for fence posts along west entrance road.
- Continued tree clearing and tree wind-rolling along the south and east property lines.

WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Continued to install perimeter fencing.
- Complete clearing and continue grubbing.
- Begin chipping operations on trees, brush and stumps.
- Continue surveying and layout.
- Begin installation of erosion control devices.
- Begin subgrade preparation.

Submitted by:

ABB ENVIRONMENTAL SERVICES, INC.

Richard E. Day
Resident Engineer

ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: June 12, 1994 **REPORT NO.** 2

ABB-ES PROJECT NO.: 7454-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP: Mark Spraul

==========

CONTRACT COMPLETION TIME:	**244 C.D.**
TIME EXTENSIONS:	**0 C.D.**
CALENDAR DAYS ELAPSED:	**34 C.D.**
COMPLETION DAYS REMAINING:	**210 C.D.**

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DISTRIBUTION FOR WEEKLY REPORTS

TRW INC.
C.T. Bingham

ABB-ES
A. McCusker
R. Day
M. Stelmack

==========

CONSTRUCTION ACTIVITIES

DATE: Monday June 6, 1994 **WEATHER:** Hazy\Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 70 - 92

WORK PERFORMED:

- On site at 07:00. M. Spraul from OBGT on site.
- Began test pitting at the Unnerstall site. Brucker on site with two technicians.

ABB Environmental Services, Inc.

110 Free Street
P.O. Box 7050
Portland, Maine 04112-7050

Telephone (207) 775-5400

Fax (207) 772-4762

ASEA BROWN BOVERI

- o Began bush hogging the site.
- o Additional existing conditions photos taken.
- o Left voice mail update with C. Bingham.

DATE: Tuesday June 7, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 66 - 94

WORK PERFORMED:

- o On site at 07:30. Power connected to trailers.
- o Continued bush hogging the site.
- o A 953B tracked loader mobilized to start tree clearing along the north side of the property.
- o Continued test pitting at the Unnerstall site for the borrow study.
- o Discussed gas vent material with J. Rauschkolb. Stressed importance of submitting information A.S.A.P.

DATE: Wednesday June 8, 1994 **WEATHER:** Overcast/Rain

SITE CONDITIONS: Wet & Muddy **TEMP. RANGE:** 65 - 798

WORK PERFORMED:

- o On site at 06:45. M. Spraul (OBGT) on site.
- o Continued bush hogging the site.
- o Continued tree clearing.
- o Continued test pitting at the Unnerstall site for the borrow study.

DATE: Thursday June 9, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Muddy **TEMP. RANGE:** 59 - 71

WORK PERFORMED:

- o On site at 07:30. M. Spraul (OBGT) on site.
- o Continued bush hogging the site.

ASEA BROWN BOVERI

- o Continued tree clearing along the west property line.
- o Continued test pitting at the Unnerstall site for the borrow study.
- o Completed and distributed project contact list.
- o Completed and distributed weekly report for week ending June 5th.

DATE: Friday June 10, 1994 **WEATHER:** Overcast

SITE CONDITIONS: Dry **TEMP. RANGE:** 62 - 76

WORK PERFORMED:

- o On site at 07:30. M. Spraul (OBGT) on site.
- o Collected leachate samples from seep #1.
- o Continued tree clearing along the south property line.
- o Continued test pitting at the Unnerstall site for the borrow study.
- o Completed and distributed Pre-Construction Conference minutes.

WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- o Complete test pitting Unnerstall site for borrow study.
- o Complete clearing and grubbing.
- o Continue surveying and layout.
- o Begin installation of erosion control devices.
- o Begin subgrade preparation.

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.

Bradlee T. Farrin
Resident Engineer

ABB
ASEA BROWN BOVERI

WEEKLY CONSTRUCTION PROGRESS REPORT

SULLIVAN LANDFILL CLOSURE

SULLIVAN, MISSOURI

==========

PERIOD ENDING: June 5, 1994 **REPORT NO.** 1

ABB-ES PROJECT NO.: 7454-01

CONTRACTOR: O.B.G. Technical Services, Inc.

CONTRACTOR'S REP: Mark Spraul

==========

CONTRACT COMPLETION TIME:	**244 C.D.**
TIME EXTENSIONS:	**0 C.D.**
CALENDAR DAYS ELAPSED:	**27 C.D.**
COMPLETION DAYS REMAINING:	**217 C.D.**

==========

DISTRIBUTION FOR WEEKLY REPORTS

TRW INC.
C.T. Bingham

ABB-ES
A. McCusker
R. Day
M. Stelmack

==========

CONSTRUCTION ACTIVITIES

DATE: Monday May 30, 1994 **WEATHER:** N\A

SITE CONDITIONS: N\A **TEMP. RANGE:** N\A

WORK PERFORMED:

- No work performed due to observance of the Memorial Day Holiday.

ABB Environmental Services, Inc.

110 Free Street
P.O. Box 7050
Portland, Maine 04112-7050

Telephone (207) 775-5400

Fax (207) 772-4762

ASEA BROWN BOVERI

DATE: Tuesday May 31, 1994 **WEATHER:** N\A

SITE CONDITIONS: N\A **TEMP. RANGE:** N\A

WORK PERFORMED:

- Pre-Construction Conference held at O'Brien & Gere's office in St. Louis at 13:00. C.T. Bingham (TRW), M. Stelmack (ABB), B. Farrin (ABB), T. Duerr (OBGT), J. Fox (OBGT), J. Rauschkolb (OBGT), and M. Spraul (OBGT) all in attendance.
- All parties reconvened at the Sullivan City Hall to inform the City Counsel of the progress to date as well as upcoming activities.

DATE: Wednesday June 1, 1994 **WEATHER:** Sunny

SITE CONDITIONS: Dry **TEMP. RANGE:** 57 - 78

WORK PERFORMED:

- On site at 07:00. M. Spraul (OBGT) on site. Walked site to look at sink hole, seeps, clearing limits, fence location, etc..
- Surveyors from Stack & Assoc. on site locating fence line, roadway centerline, and topo information.
- Took photos of existing conditions.
- Picked up key to gate from J. Butz.

DATE: Thursday June 2, 1994 **WEATHER:** Rain \ Overcast

SITE CONDITIONS: Muddy **TEMP. RANGE:** 50 - 63

WORK PERFORMED:

- On site at 07:00. OBGT's fencing subcontractor on site. They are scheduled to start on Monday June 13th. Expressed need to get submittals in A.S.A.P..
- Visited two of OBGT's potential sources of the gas vent and drainage layer with T. Duerr and J. Rauschkolb.
- Surveyors from Stack & Assoc. on site locating fence line, roadway centerline, and topo information.

ASEA BROWN BOVERI

DATE: Friday June 3, 1994 **WEATHER:** Showers

SITE CONDITIONS: Muddy **TEMP. RANGE:** 57 - 70

WORK PERFORMED:

- On site at 07:15.
- Received notification from M. Stelmack that three proposals were received from the liner QA companies.
- Surveyors from Stack & Assoc. on site gathering topo information.
- Electrical subcontractor on site to run power to the trailers.
- Phones connected to both construction trailers:

  ABB-ES Phone: 314 - 860 - 2441
  Fax : 314 - 860 - 2443
  OBGT Phone : 314 - 860 - 2422
  Fax : 314 - 860 - 2425

- Left voice mail update with C. T. Bingham.

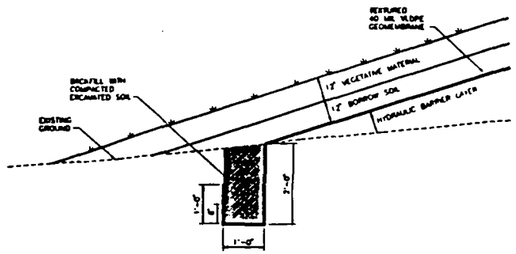
WORK SCHEDULED DURING THE NEXT REPORTING PERIOD:

- Begin test pitting Unnerstall site for borrow study.
- Begin clearing and grubbing.
- Continue surveying and layout.
- Begin installation of erosion control devices.

Submitted By:

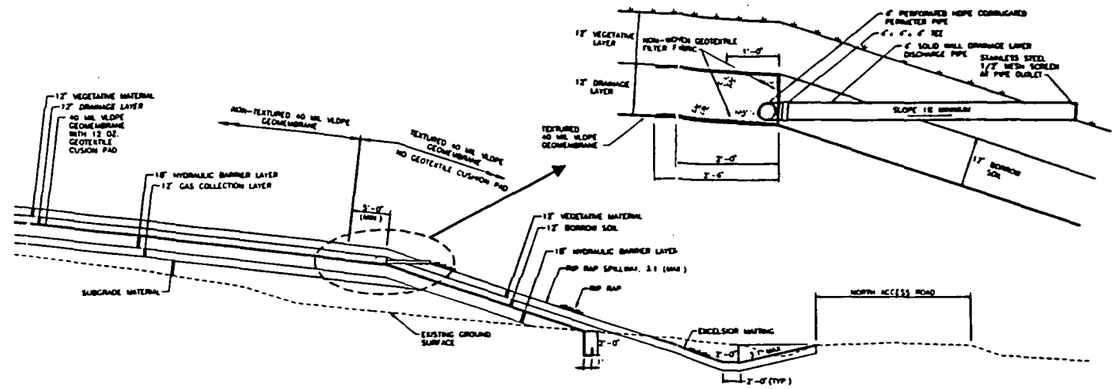
Bradlee T. Farrin
Resident Engineer

PROJECT RECORD DRAWINGS



GEOMEMBRANE EARTH ANCHOR

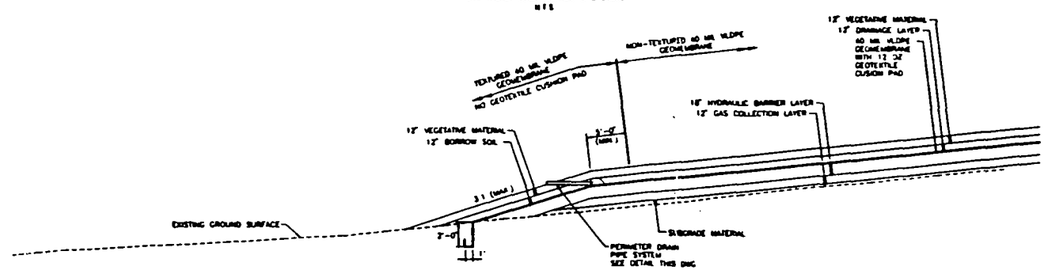
N.T.S.



TYPICAL SIDE SLOPE COVER WITH DRAINAGE DITCH

(NORTHERLY EDGE SECTION @ ℄ 2500)

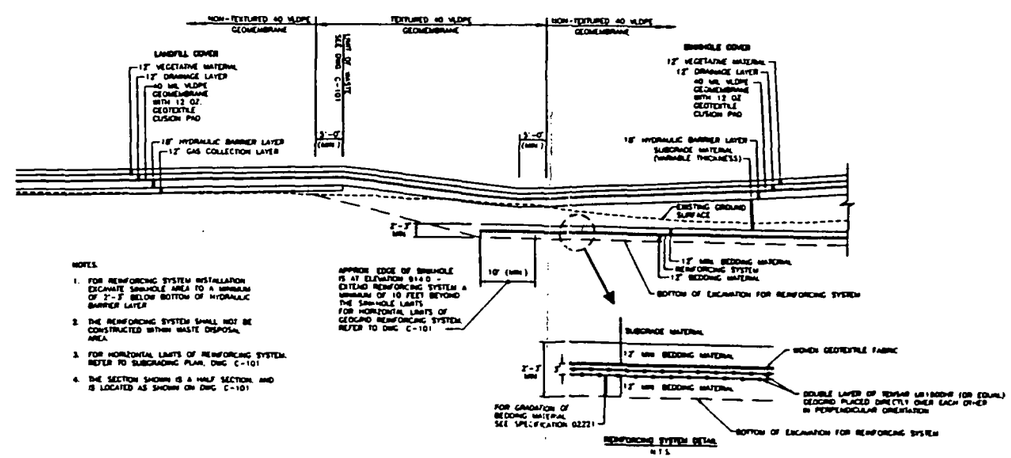
N.T.S.



TYPICAL SIDE SLOPE COVER WITHOUT DRAINAGE DITCH

(SOUTHERLY EDGE SECTION @ ℄ 2500)

N.T.S.



NOTES:

1. FOR REINFORCING SYSTEM INSTALLATION EXCAVATE SINKHOLE AREA TO A MINIMUM OF 2'-3" BELOW BOTTOM OF HYDRAULIC BARRIER LAYER
2. THE REINFORCING SYSTEM SHALL NOT BE CONSTRUCTED WITHIN WASTE DISPOSAL AREA.
3. FOR HORIZONTAL LIMITS OF REINFORCING SYSTEM. REFER TO SUBGRADING PLAN, DWG C-101
4. THE SECTION SHOWN IS A HALF SECTION, AND IS LOCATED AS SHOWN ON DWG C-101

APPROX EDGE OF SINKHOLE IS AT ELEVATION 914.0 - EXTEND REINFORCING SYSTEM A MINIMUM OF 10 FEET BEYOND THE SINKHOLE LIMITS FOR HORIZONTAL LIMITS OF GEOGRID REINFORCING SYSTEM. REFER TO DWG C-101

SINKHOLE CAP SECTION (A) C-101

1" = 10' HORIZ
1" = 10' VERT

REV	DATE	STATUS	INT	BY	CHKD	APPD
1	4/11/95	RECORD DRAWINGS		BM	BTF	MJS
0	3/24/94	SUBMITTED FOR BID'S		PMF		
A	2/04/94	SUBMITTED FOR IDNR REVIEW		PMF	BCR	MJS

ABB Environmental Services, Inc.

CLIENT: SULLIVAN LANDFILL PRP GROUP
SULLIVAN, MISSOURI

DESIGN	B REDFORN	2/94
DRAWN	P FULLION	2/94
CHKD	B SREUNACH	2/94
DEPT HD		
PROCESS		
PROJ MGR		
CLIENT		
SCALE	AS NOTED	

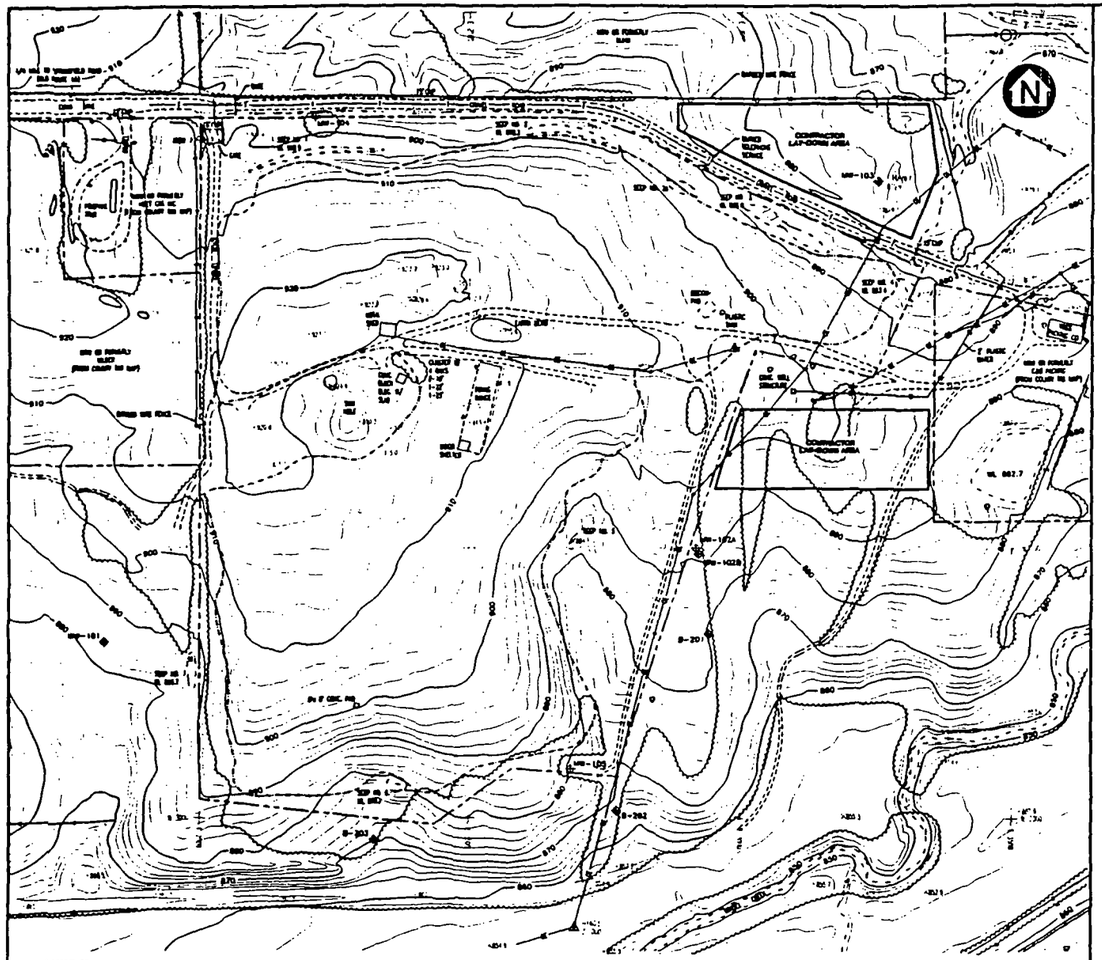
TITLE: SULLIVAN LANDFILL CLOSURE
SULLIVAN, MISSOURI

SECTIONS AND DETAILS 3

PROJ NO 8940-06

DWG NO C-303R

REV 1



NOTE:
EXISTING TOPOGRAPHY AND SURVEY CONTROL TAKEN FROM "TOPOGRAPHIC MAP" DATED OCTOBER 4, 1992, PREPARED FOR MOORE AND ASSOCIATES, CONSULTING ENGINEERS, SULLIVAN, MISSOURI

EXISTING CONDITIONS PLAN

SCALE 1"=50'

SURVEY CONTROL

MARKER	COORDINATES NORTH	COORDINATES EAST	ELEVATION (N.G.V.D.)	DESCRIPTION
IRON 1	3270.00	3000.00	901.227	5/8" IRON ROD W/ ALUMINUM CAP
IRON 2	4486.29	3426.63	-	5/8" IRON ROD W/ ALUMINUM CAP
DISK 1	4466.51	3880.00	-	BRASS DISK IN S.W. CORNER CONC. WALL
DISK 2	3908.45	3842.84	868.783	BRASS DISK IN S.W. CORNER CONC. WALL

MISSOURI

LEGEND

- PROPERTY LINE
- APPROXIMATE LIMIT OF BURIED WASTE
- 880 INDEX CONTOUR
- INTERMEDIATE CONTOUR
- DEPRESSION CONTOUR
- SPOT GRADE
- PAVED ROAD
- UNPAVED ROAD
- BUILDING
- FOUNDATION
- SURFACE DRAINAGE SWALE
- WL 878.7 WATER SURFACE ELEVATION
- SINGLE TREE
- FREEBOARD
- UTILITY POLE
- OVERHEAD ELECTRIC
- CULVERT
- MW-106 GROUNDWATER MONITORING WELL
- B-203 SOIL BORING LOCATION
- WATER COURSE
- LEACHATE SEEP
- FENCE
- UNDERGROUND WATER LINE
- UNDERGROUND TELEPHONE SERVICE

SULLIVAN LANDFILL CLOSURE
SULLIVAN, MISSOURI

RECORD DRAWING ISSUE
INDEX OF RECORD DRAWINGS

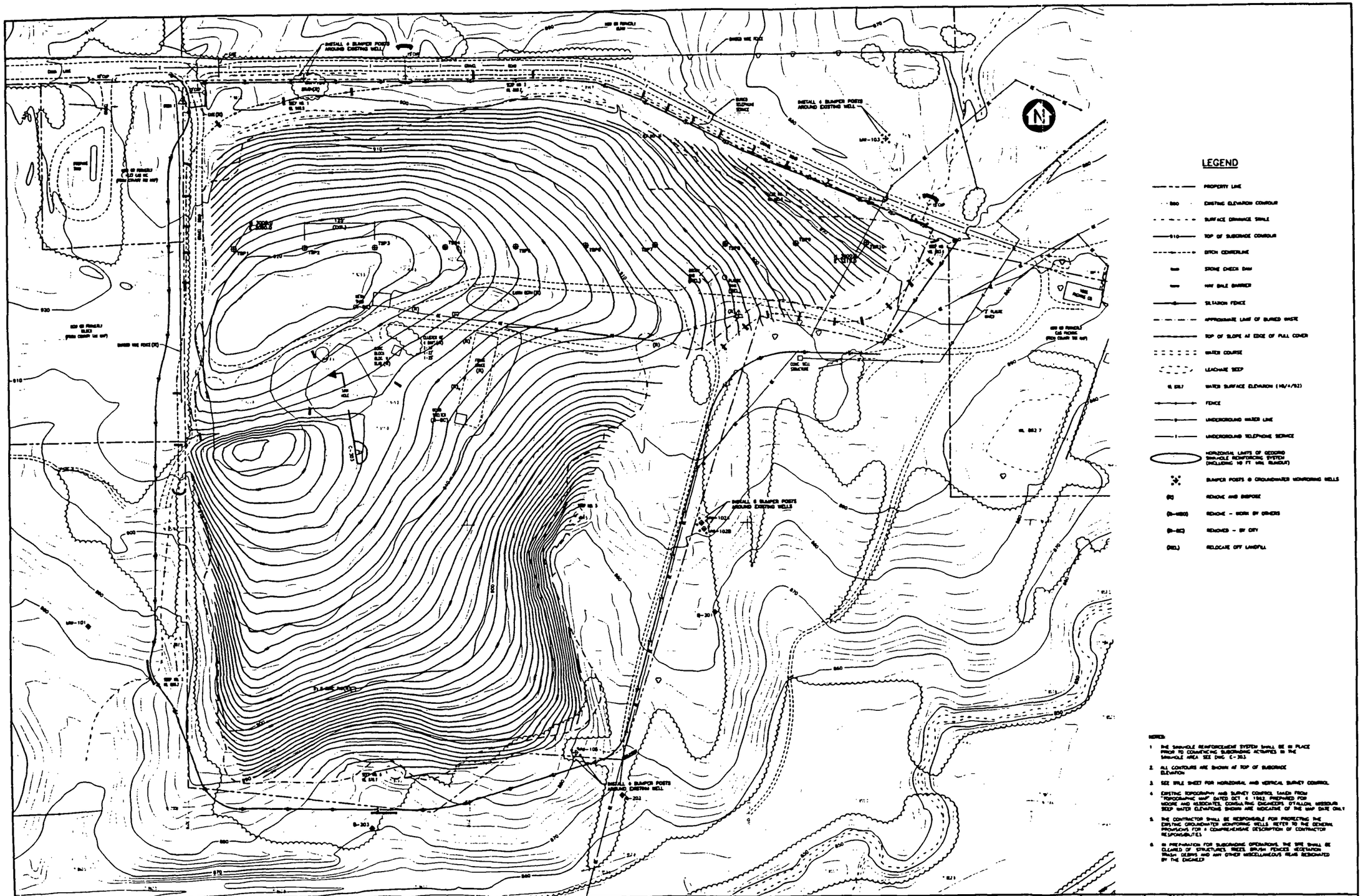
TITLE	DWG. NO.	SHT. NO.
COVER SHEET	-	1
EXISTING SITE CONDITIONS AND SUBGRADING PLAN	C-101R	2
FINAL GRADING PLAN	C-102R	3
LEACHATE COLLECTION SYSTEM	C-103R	4
SECTIONS AND DETAILS 1	C-301R	5
SECTIONS AND DETAILS 2	C-302R	6
SECTIONS AND DETAILS 3	C-303R	7

ABB Environmental Services, Inc.

PORTLAND, MAINE

1995

8940-06



REV	DATE	STATUS	MF	BY	CHKD	APPD
1	4/11/95	RECORD DRAWINGS		RM	BTF	MJS
0	3/24/94	SUBMITTED FOR BIOS		PWF	MJS	MJS
A	2/04/94	SUBMITTED FOR M.D.N.R. REVIEW		PWF	RER	MJS

ABB Environmental Services, Inc.

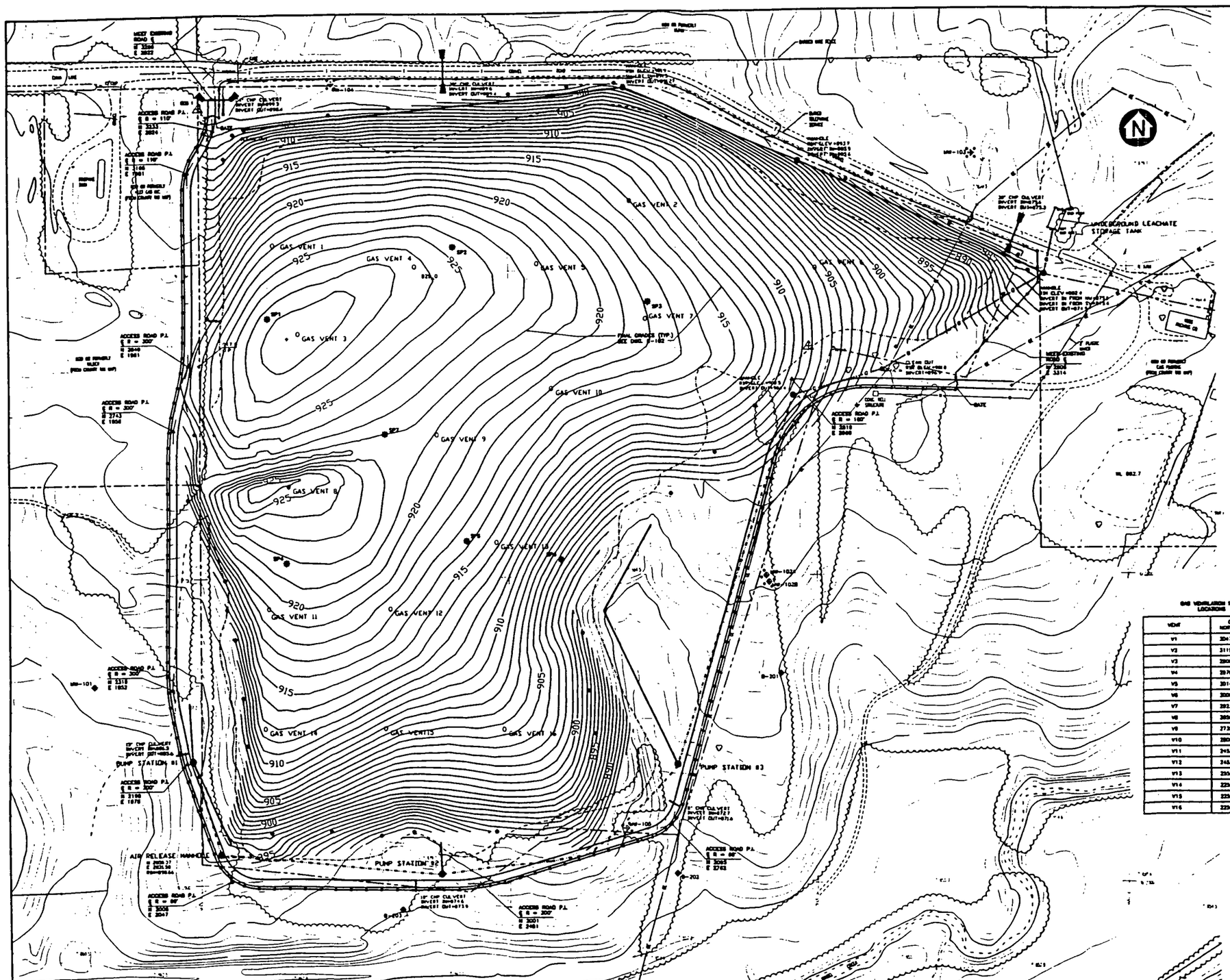
CLIENT: SULLIVAN LANDFILL PRP GROUP
SULLIVAN, MISSOURI

DESIGN	R. REDFERN	2/94
DRAWN	P. FILLION	2/94
CHKD	M. STELMACH	2/94
DEPT HD		
PROCESS		
PROJ MGR		
CLIENT		
SCALE	1" = 60'	

TITLE: SULLIVAN LANDFILL CLOSURE
SULLIVAN, MISSOURI

EXISTING SITE CONDITIONS AND SUBGRADING PLAN

PROJ NO: 8940-06
DWG NO: C-101R
REV: 1



LEGEND

- PROPERTY LINE
- SURFACE DRAINAGE SWALE
- TOP OF SLOPE AND PERIMETER DRAIN LOCATION AT EDGE OF FULL COVER
- SP — PERMANENT SETTLEMENT PLATFORM
- GAS VENT 4 O — GAS VENT LOCATION
- CULVERT PIPE
- BIRCH CONDULINE
- 813.0 — SPOT GRADE
- CHAIN LINK FENCE
- CHAIN LINK FENCE GATE
- PERIMETER ACCESS ROAD
- 924 — AS-BUILT FINISH GRADE CONTOUR
- STONE RIPRAP INLET/OUTLET PROTECTION
- PERIMETER DRAIN OUTLET
- PERIMETER PIPE DRAIN OUTLET
- GRAVITY LEACHATE COLLECTION PIPE
- PRESSURIZED LEACHATE PIPE
- 1 1/2" HDPE FORCE MAIN WITH POWER SUPPLY CONDUIT
- 4" PERFORATED HDPE TRENCH DRAIN
- 4" HDPE GRAVITY SEWER LINE WITH POWER SUPPLY CONDUIT
- PUMP STATION
- MANHOLE
- AIR RELEASE MANHOLE
- UTILITY POLE
- OE — OVERHEAD ELECTRIC
- CHECK VALVE PIT
- CLEANOUT
- BUMPER POSTS @ GROUNDWATER MONITORING WELLS

GAS VENTILATION SHAFT LOCATIONS

VENT	COORDINATES NORTH	COORDINATES EAST
V1	3047.0	2130.0
V2	3119.0	2700.0
V3	2808.0	2160.0
V4	2976.0	2347.0
V5	3014.0	2546.0
V6	3000.0	3000.0
V7	2923.0	2723.0
V8	2850.0	2144.0
V9	2735.0	2383.0
V10	2808.0	2369.0
V11	2452.0	2113.0
V12	2452.0	2348.0
V13	2358.0	2485.0
V14	2256.0	2105.0
V15	2256.0	2298.0
V16	2256.0	2485.0

PERMANENT SETTLEMENT PLATFORM LOCATIONS

SETTLEMENT PLATFORM	COORDINATES NORTH	COORDINATES EAST	ELEVATION
SP1	2925.0	2110.0	931.24
SP2	3040.0	2410.0	926.52
SP3	2850.0	2725.0	921.61
SP4	2525.0	2140.0	926.25
SP5	2525.0	2355.0	920.00
SP6	2525.0	2570.0	918.00
SP7	2735.0	2300.0	925.05

NOTES:

1. SIDE SLOPES SHALL BE CONSTRUCTED AT 3:1 MINIMUM UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. ALL CONTOURS ARE SHOWN AT FINAL GRADE ELEVATION.
3. FOR EROSION AND SEDIMENTATION CONTROL, REFER TO SUBGRADING PLAN, DWG. NO. C-101.
4. SEE MILE SHEET FOR HORIZONTAL AND VERTICAL SURVEY CONTROL.
5. EXISTING TOPOGRAPHY AND SURVEY CONTROL WERE FROM "TOPOGRAPHIC MAP" DATED OCTOBER 4, 1993 PREPARED FOR MOORE AND ASSOCIATES, CONSULTING ENGINEERS, OF FALLON, MISSOURI.
6. PERIMETER DRAIN OUTLETS SHALL BE INSTALLED AT ALL LOW POINTS IN THE PERIMETER DRAIN AND AT MINIMUM 300 FOOT INTERVALS ALONG THE PERIMETER DRAIN.
7. SIDE SLOPE CONTOURS IN THE VICINITY OF THE BIRD HOLE ARE SHOWN AT A 5 FOOT CONTOUR INTERVAL FOR CLARITY.
8. CLEARING LIMITS AND LIMIT OF CONSTRUCTION WILL GENERALLY BE THE CHAIN LINK FENCE LOCATED OUTSIDE THE PERIMETER ACCESS ROAD.

REV	DATE	STATUS				
1	4/11/95	RECORD DRAWINGS	RM	BTF	MJS	
0	3/24/94	SUBMITTED FOR BIDS	PMF			
A	2/04/94	SUBMITTED FOR M D N R REVIEW	PMF	RER	MJS	

ABB Environmental Services, Inc.

CLIENT: SULLIVAN LANDFILL PRP GROUP
SULLIVAN, MISSOURI

DESIGN	R. ROPERSON	2/94
DRAWN	P. PILLION	2/94
CHKD	M. STELLHORN	2/94
DCPT MGR		
PROCESS		
PROJ. MGR		
CLIENT		
SCALE	1" = 60'	

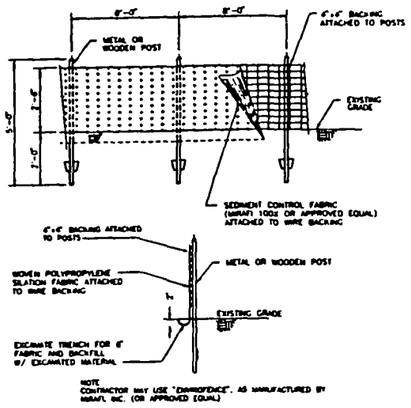
TITLE: SULLIVAN LANDFILL CLOSURE
SULLIVAN, MISSOURI

FINAL GRADING PLAN

PROJ NO 8940-06

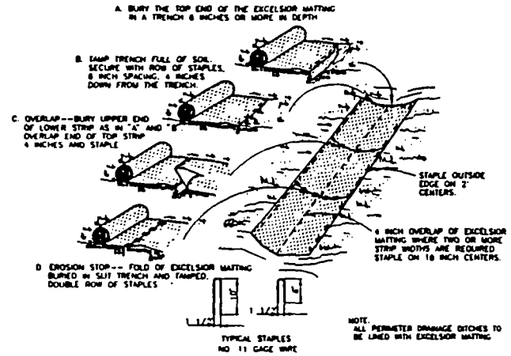
DWG NO C-102R

REV 1



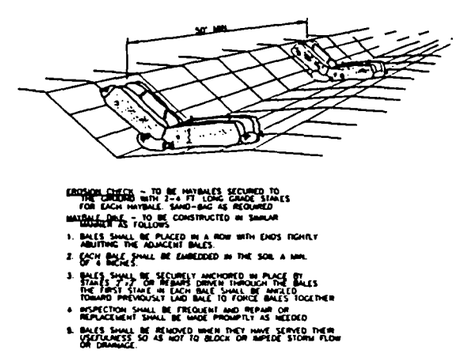
SILTATION FENCE

N.T.S.



TYPICAL
EXCELSIOR MATTING INSTALLATION

N.T.S.



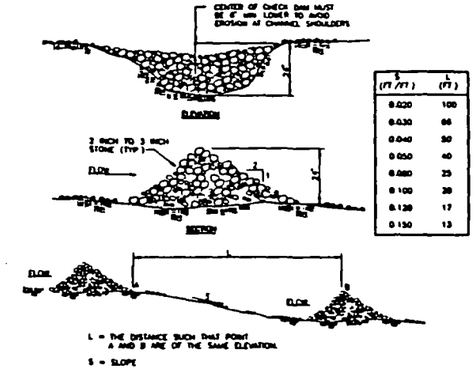
EROSION CHECK - TO BE HAYBALES SECURED TO THE GROUND WITH 2 x 4 FT LONG GRADE STAKES FOR EACH HAYBALE SAND-BAG AS REQUIRED

MATERIAL USE - TO BE CONSTRUCTED IN SIMILAR MANNER AS FOLLOWS

1. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MIN. OF 4 INCHES.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES 2" x 2" OR REBARS DRIVEN THROUGH THE BALES THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER
4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

HAY BALE
EROSION CONTROL

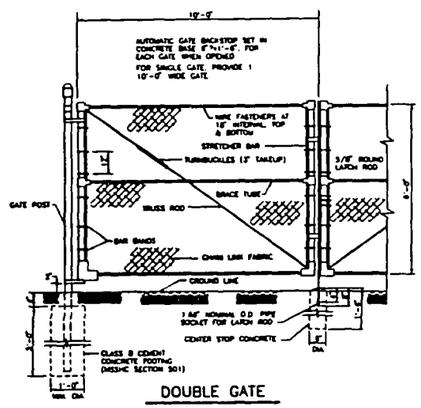
N.T.S.



S (FT/FT)	L (FT)
0.020	100
0.030	66
0.040	50
0.050	40
0.080	25
0.100	20
0.120	17
0.150	13

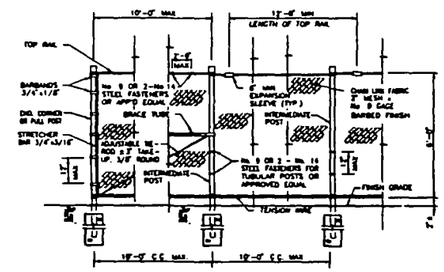
STONE CHECK DAM

N.T.S.



DOUBLE GATE

N.T.S.



DESCRIPTION

END, CORNER AND PULL POSTS FOR FABRIC HEIGHT

6" ROUND (7") SQUARE	3.375" O.D. 2.0"	3.65#/FT 3.60#/FT

INTERMEDIATE POSTS FOR FABRIC HEIGHTS

6" ROUND (1 1/2") H-SECTION	1.90" O.D. 1.875" x 1.625" x 0.113"	2.72#/FT. 2.70#/FT

BRACE TUBES (1 1/2")

1.66" O.D. 2.27#/FT. GALVANIZED STEEL PIPE

STRETCHER BARS

LENGTH TO BE 1" LESS THAN FULL HEIGHT OF FABRIC. ONE STRETCHER BAR FOR EACH GATE AND END POST. TWO STRETCHER BARS FOR CORNERS AND BRACING

TOP RAIL (1 1/2")

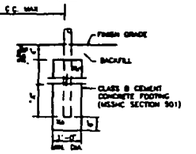
1.66" O.D. 2.27#/FT. GALVANIZED STEEL PIPE

TENSION WIRE

7 GA. GALVANIZED

GATE POSTS

6" WIDE (2 1/2")	2.875" O.D.	5.79#/FT.
6" TO 13" WIDE (3 1/2")	4.00" O.D.	9.11#/FT



FOOTING DETAIL

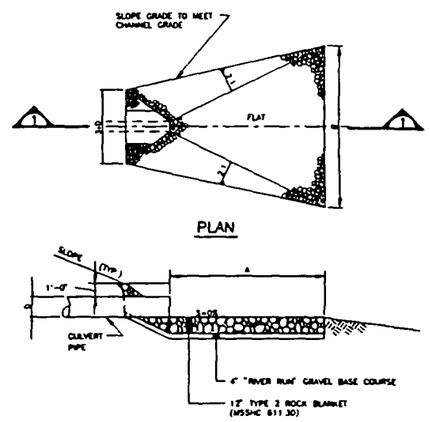
LINE GATE AND END POST BASE

"d" 2'-6" FOR FENCE ≤ 6'
3'-0" FOR ALL END AND GATE POSTS.

NOTE
POST DIMENSIONS SHOWN ARE NOMINAL. O.D. IS THE OUTSIDE DIMENSION

CHAIN LINK FENCE

N.T.S.



PLAN

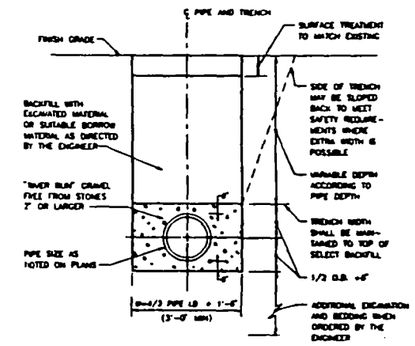
SECTION 1

INLET/OUTLET RIPRAP APRON
(PLAN AND SECTION)

N.T.S.

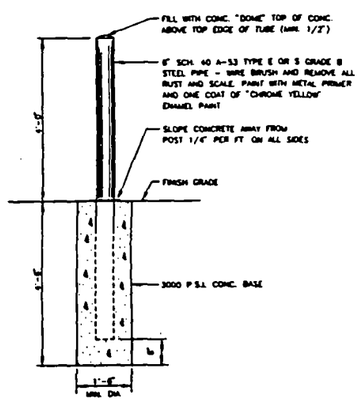
SEE DRAWINGS FOR LOCATION OF PIPES

D (IN)	A (FT)	B (FT)
24	10	6
30	16	10



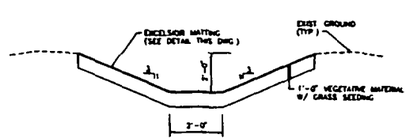
DRAIN CULVERT, FORCE MAIN,
AND LEACHATE GRAVITY PIPE TRENCH

N.T.S.



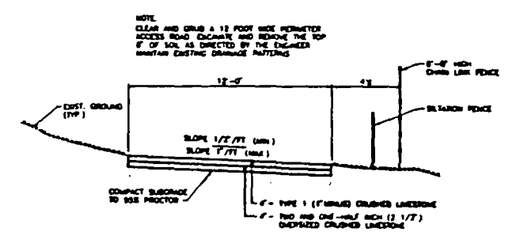
BUMPER POST

N.T.S.



PERIMETER DRAINAGE DITCH

N.T.S.



TYPICAL SECTION
PERIMETER ACCESS ROAD

N.T.S.

REV	DATE	STATUS				
1	4/11/95	RECORD DRAWINGS		RM	SW	MJS
B	3/24/94	SUBMITTED FOR BIDS		PMF		
A	2/04/94	SUBMITTED FOR M D N R REVIEW		PMF	RCR	MJS

ABB Environmental Services, Inc.

CLIENT: SULLIVAN LANDFILL PRP GROUP
SULLIVAN, MISSOURI

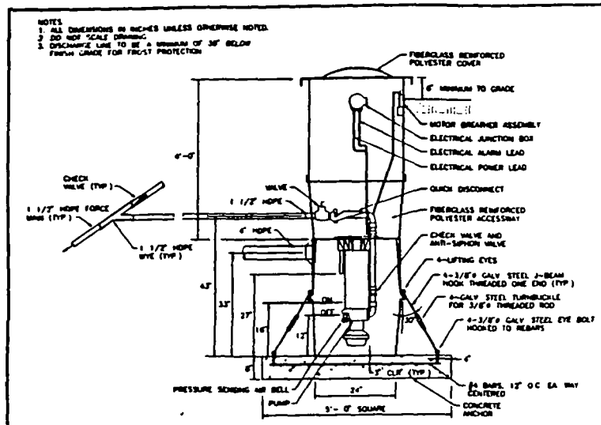
DESIGN	R REDFORN	2/94
DRAWN	P FULLER	2/94
CHKD	G SPELLMAN	2/94
DEPT HD		
PROCESS		
PROJ MGR		
CLIENT		
SCALE	AS NOTED	

TITLE: SULLIVAN LANDFILL CLOSURE
SULLIVAN, MISSOURI

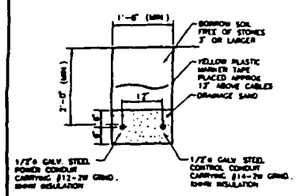
SECTIONS AND DETAILS 1

PROJ NO: 8940-06
DWG NO: C-301R
REV: 1

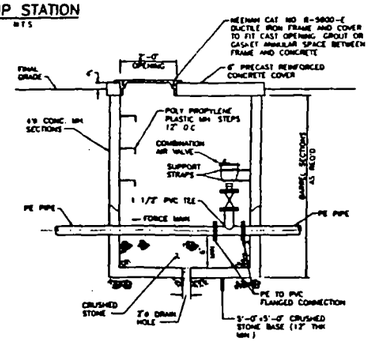
NOTES:
1. ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.
2. DO NOT SCALE DRAWING.
3. DISCHARGE LINE TO BE 6' MINIMUM OF 36" BELOW FINISH GRADE FOR FROST PROTECTION



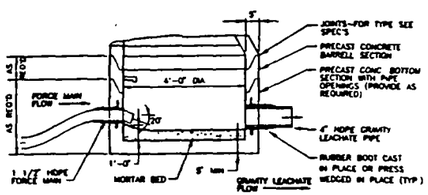
PUMP STATION
NTS



ELECTRICAL POWER AND CONTROL CONDUIT TRENCH
NTS

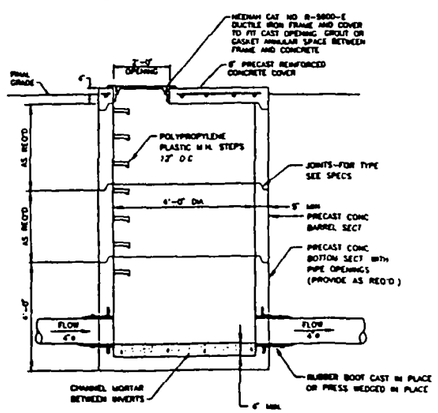


AIR RELEASE MANHOLE
NTS

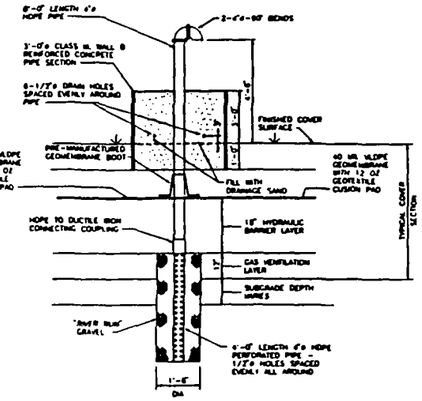


NOTE: PIPE SLOPES AND INVERTS AS NOTED ON PLANS.

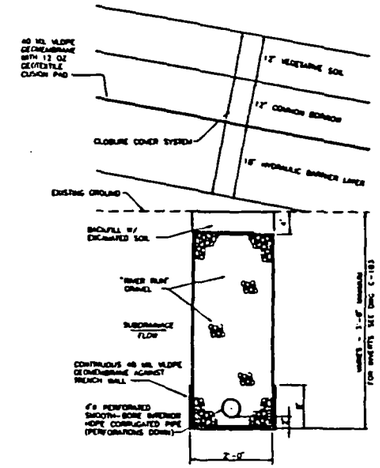
FORCE MAIN TERMINUS MANHOLE
NTS.



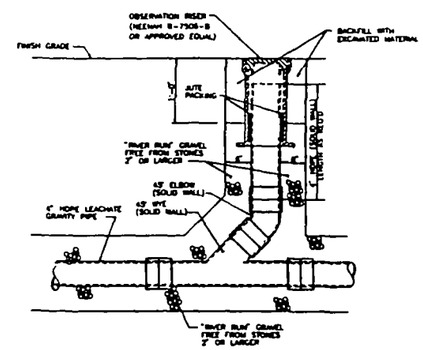
TYPICAL LEACHATE TRANSPORT MANHOLE
N.T.S.



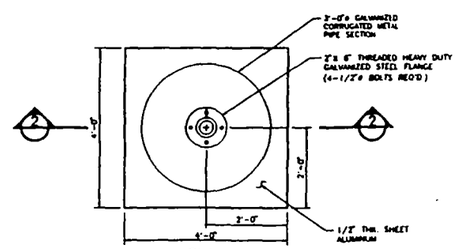
GAS VENTILATION RISER
NTS



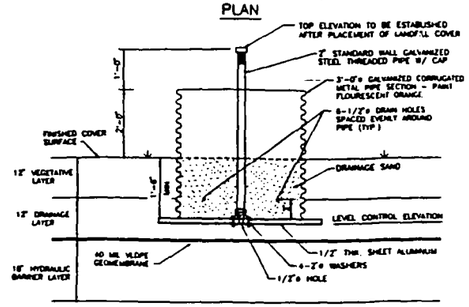
TYPICAL TRENCH DRAIN SECTION
NTS



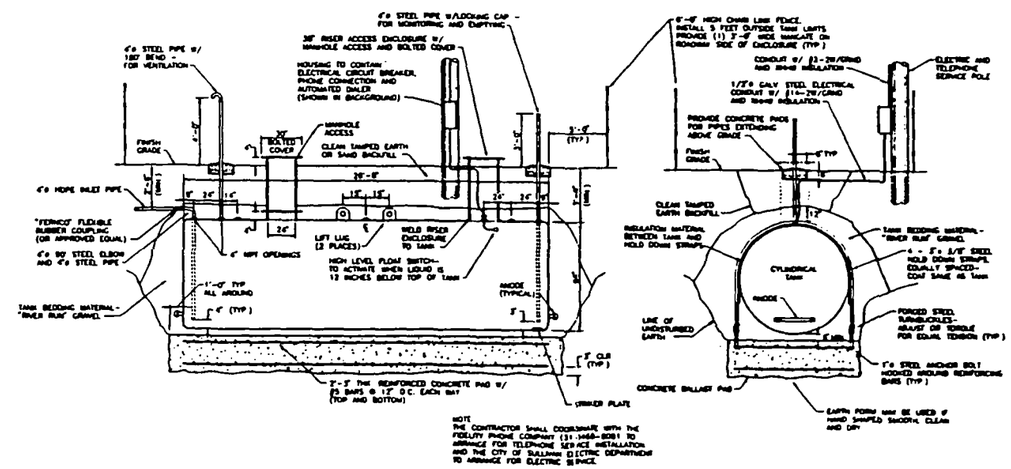
CLEANOUT W/45° WYE
NTS



PLAN



SECTION 2
PERMANENT SETTLEMENT PLATFORM
NTS



NOTE
THE CONTRACTOR SHALL COORDINATE WITH THE FIDELITY PHONE COMPANY (314-468-8081) TO ARRANGE FOR TELEPHONE SERVICE INSTALLATION AND THE CITY OF SULLIVAN ELECTRIC DEPARTMENT TO ARRANGE FOR ELECTRIC SERVICE

10,000 GAL. STEEL TANK INSTALLATION
NTS

REV	DATE	STATUS	MF	BY	CHKD	APPD
1	6/11/95	RECORD DRAWINGS		BM	BRF	MJS
0	3/24/94	SUBMITTED FOR BIDS		PWF		
A	2/04/94	SUBMITTED FOR MDNR REVIEW		PWF	RCR	MJS

ABB Environmental Services, Inc.

CLIENT
SULLIVAN LANDFILL PRP GROUP
SULLIVAN, MISSOURI

DESIGN	B REDFERN	2/94
DRAWN	P FLLION	2/94
CHKD	G STELLHORN	2/94
DEPT HD		
PROCESS		
PROJ MGR		
CLIENT		
SCALE	AS NOTED	

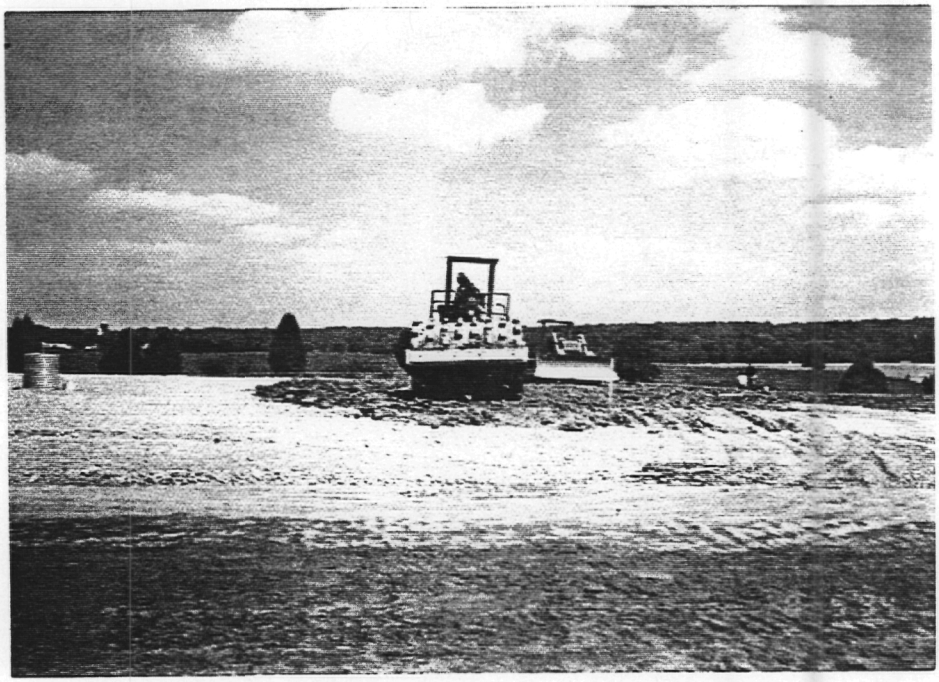
TITLE SULLIVAN LANDFILL CLOSURE
SULLIVAN, MISSOURI

SECTIONS AND DETAILS 2

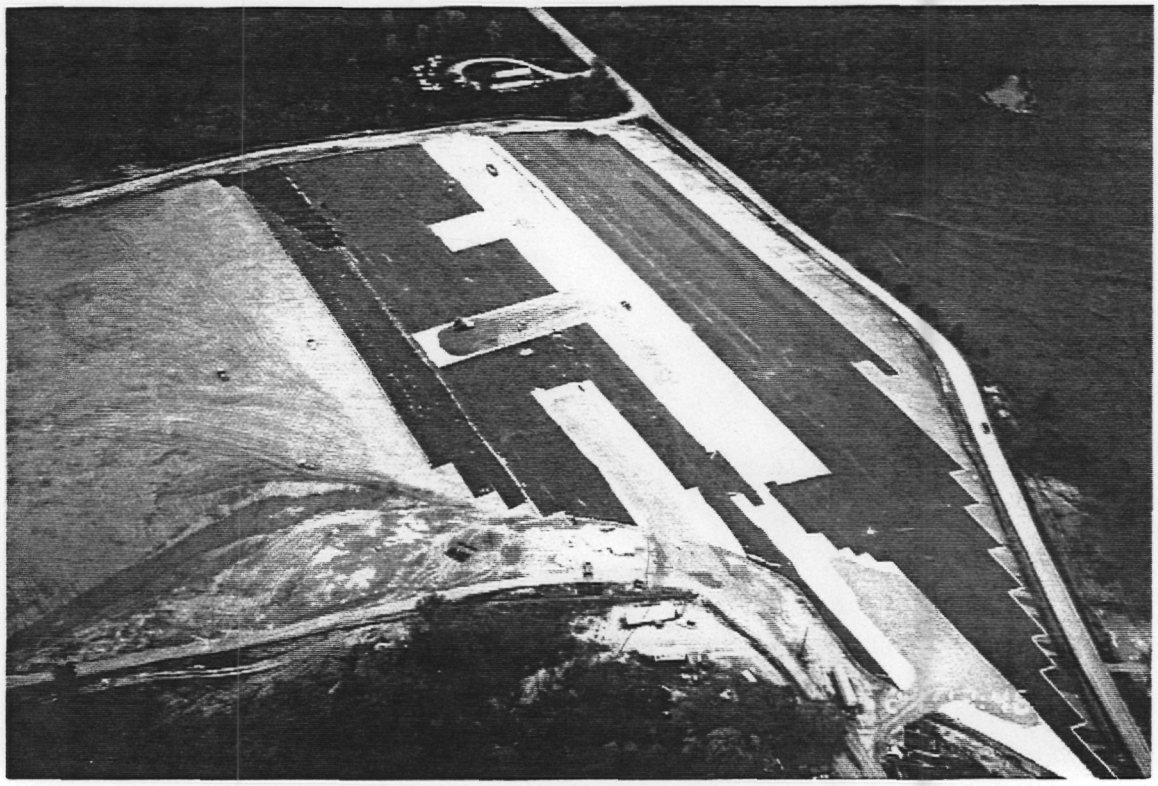
PROJ NO 8940-06
DWG NO C-302R
REV 1

REPRESENTATIVE CONSTRUCTION PHOTOGRAPHS

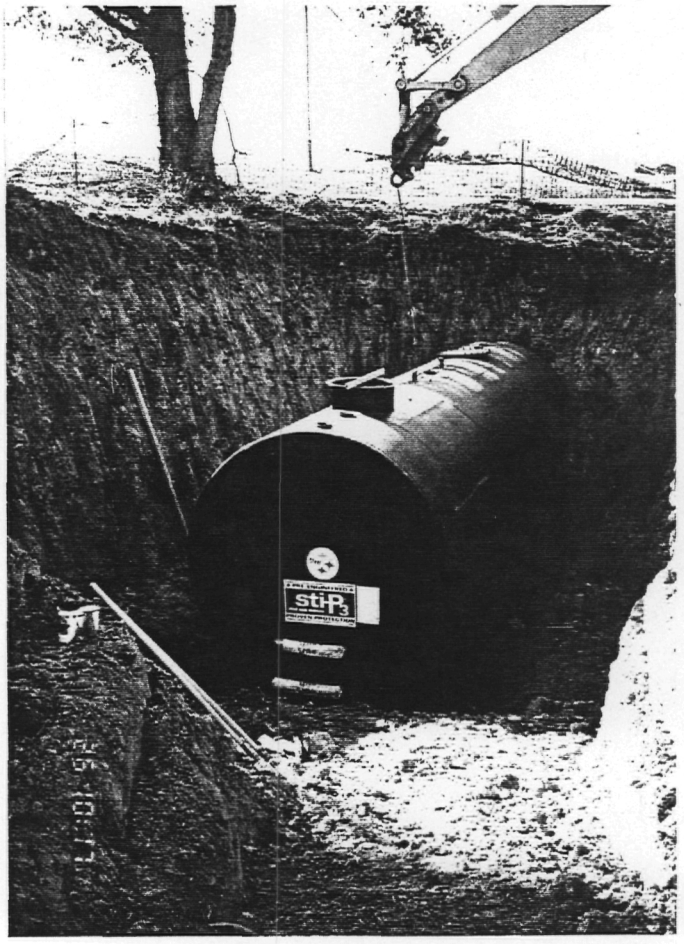
1. Placement of Gas Vent Material over prepared subgrade.



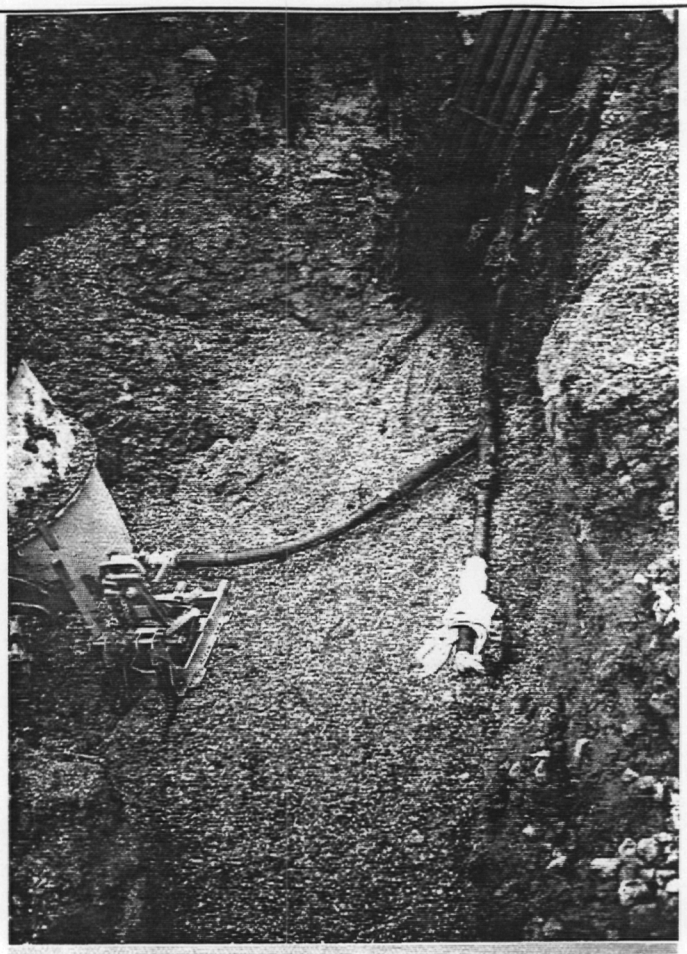
2. Use of Sheepsfoot Roller on Hydraulic Barrier Material.



5. Aerial Progress Photo.

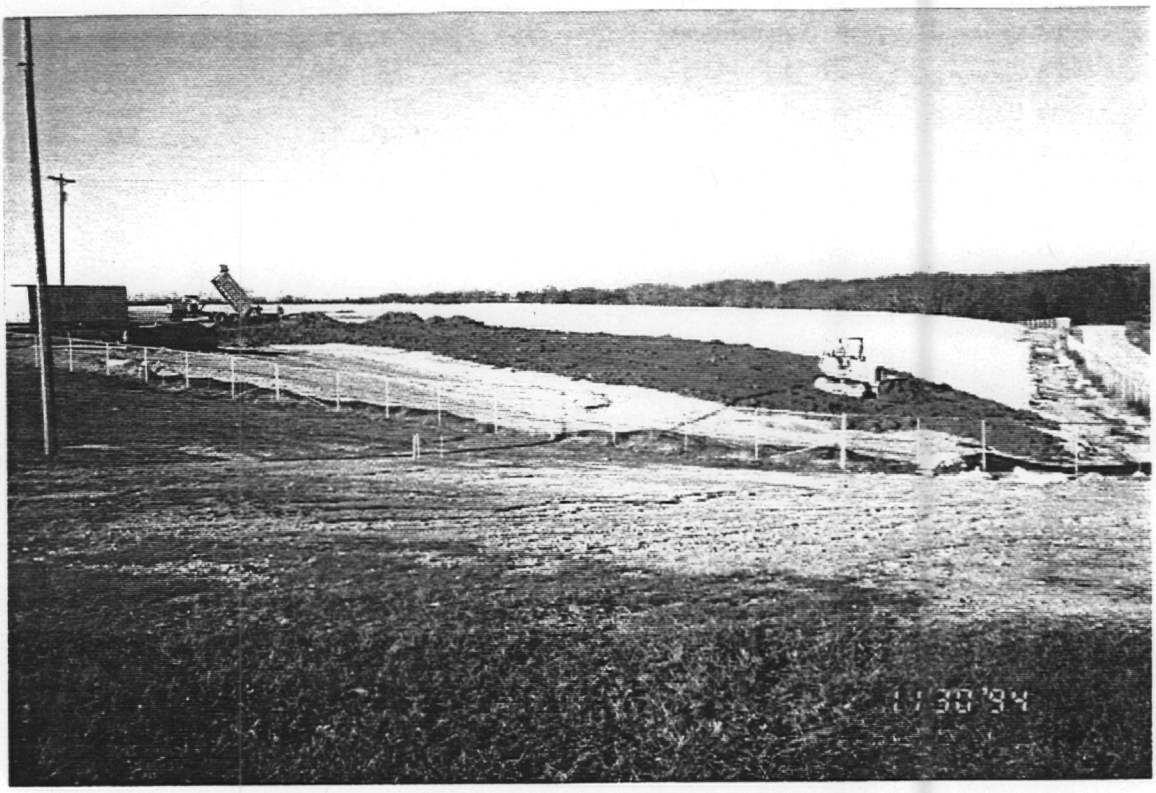


6. Setting of 10,000 Gallon Underground Storage Tank.



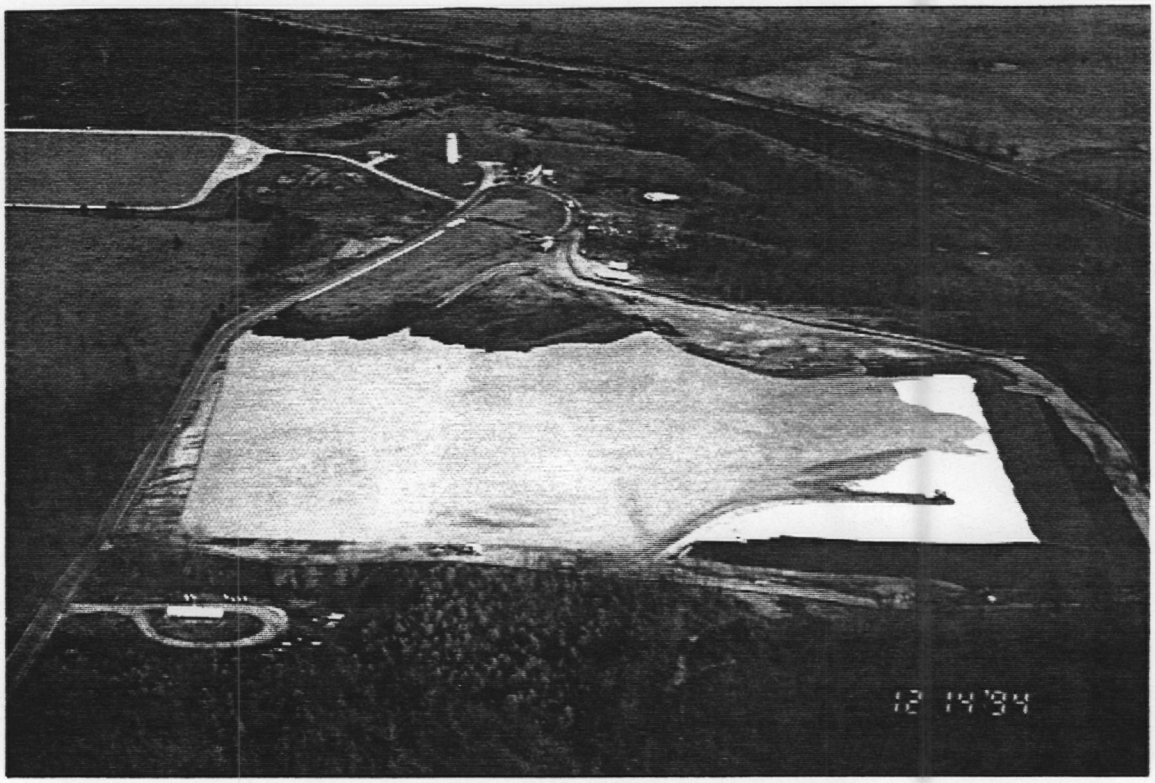
7. Installation of 1 1/2" Force Main Out of Pump Station #2.

8. Atypical HDPE Gas Vent Riser.

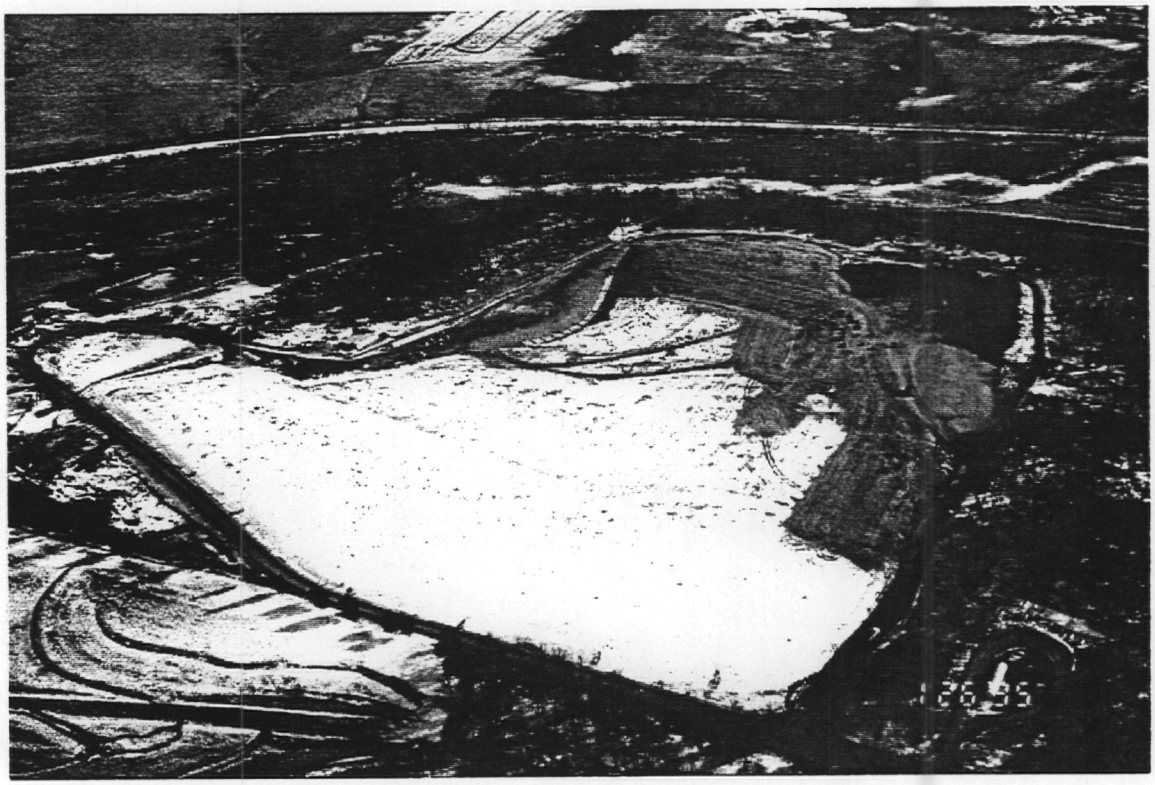


9. Placement of Vegetative Layer Material in Northeast Corner of Site.

10. Mulching of Vegetative Layer



11. Aerial Progress Photo.



12. Aerial Progress Photo.