

APPENDIX D

**GEOMEMBRANE INSTALLER AND
LABORATORY QUALIFICATIONS**

- Short list of key projects

Rick Vins - Supervisor

St. Johns Landfill Cap, St. Johns, OR 40 mil HDPE Textured/Smooth Geocomposite(1,500,00 Sqf)	5,000,000 Sqf
Town of Sprague Waste Water Lagoons, Sprague, WA 40 mil White on Black HDPE Smooth/Textured	1,800,000 Sqf
Jefferson County Landfill Cap, Port Townsend, WA 80 mil HDPE Textured Geocomposite (600,000 Sqf)	600,000 Sqf
Hobart Landfill Cap, Hobart, Wa 60 mil HDPE Textured/Smooth Geotextile (500,000 Sqf) Geocomposite (400,000 Sqf)	900,000 Sqf
Thurston County landfill, Lacey, WA 80 mil HDPE	200,000 Sqf
City of Yerrington Waste Water lagoons, Yerrington, NV 80 mil HDPE Smooth	350,000 Sqf
PP & L Banner Island, Allentown, PA 40 mil VLDPE Smooth Geotextile (2,7000,000 Sqf) Geocomposite (2,700,000 Sqf)	2,700,000 Sqf
Hanford Nuclear site, Hanford, Wa 80 mil HDPE Textured/Smooth Geotextile (250,000 Sqf) Geocomposite (250,00 Sqf)	500,000 Sqf

10-15-98 13:31
Bill Lightle - Supervisor

Hazelton, B.C. - Waste Water Treatment Facility - May 1998
40 mil HDPE smooth 250,000 SF
Wayne Watson Construction Co.

Willachoochee, GA - Waste Water Treatment
Facility - Aug 1998
60 mil HDPE smooth 400,000 SF
Douglas Plumbing and Electric Co. Ltd.

North Adams, MA - Landfill Cap - Sept. 1998
40 mil HDPE textured 1,300,000 SF
R. Bates and Sons Co. Ltd.

Green Acres, KY - Landfill Cap - 1997
60 mil HDPE Textured 800,000 SF
Simbeck Associates

West Lebanon, NH
Landfill Cell - July 1998
60 mil HDPE 800,000 f²
Geocomposite 800,000 f²
GCL 500,000 f²

RWS Scarborough, ME
Landfill Cap - Apr. 1998
40 mil HDPE 1,400,000 f²
Geocomposite 1,250,000 f²
GCL 150,000 f²

Everett Landfill & Tire Fire Site, Everett WA
60 mil HDPE Textured - Jan. 1998 293,000 f²

S.F. Phosphates, Rock Springs, WY
Phosphate Solution Ponds - Oct. 1997
60 mil HDPE 900,000 f²
Geotextile 900,000 f²

Scott/Finch Landfill, Ganesvoort, NY
Landfill Cell - Sept. 1997
60 mil HDPE Smooth 880,000 f²
60 mil HDPE Textured 685,000 f²
Geonet 450,000 f²
Geocomposite 345,000 f²

TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

TODD PUTNAM

of

SOIL & MATERIAL IST

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC.
TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

Radiological Safety

1. Principles and practices of radiation protection.
2. Leak testing procedures.
3. Mathematics and calculations basic to the use and measurement of radioactivity.
4. Biological effects of radiation.
5. Radioactivity measurement standardization and monitoring techniques and instruments.
6. Accident and incident procedures.
7. Procedures for nuclear gauge storage and transportation.
8. General safety precautions.

Gauge Operation

1. Instrument theory
2. Operating procedures
3. Maintenance
4. Field application
5. Gauge calibration

CERTIFICATE #: 052920

4/09/92

DATE

INSTRUCTOR

Frank D. Jones

FRANK D. JONES

WILLIAM F. TROXLER

PRESIDENT

Highlights of Qualifications

- ☐ Competent in NYS DOT, ASTM, AASHTO and ACI Standard Specifications
- ☐ Experience in quality control field inspection and laboratory testing
- ☐ Proficient in reading blueprints and schematics
- ☐ Detailed and accurate in report writing

Experience

Engineering Field Technician • Present - 1997

Soil & Material Testing, Inc., Castleton, New York

- ☐ Field Inspections include soils, concrete, rebar, forms, steel, fireproofing, masonry and asphalt
- ☐ Laboratory Testing of concrete aggregates, concrete and soils
- ☐ Field Inspection of concrete including; batch weights and materials at plant, slump testing, % air content, temperature and casting of cylinders
- ☐ Field Inspection of rebar including comparing specifications to forms to verify the conformance of bar size, placing and cover
- ☐ Precast Plant Inspection

Structures Operator • 1997-1996

New York State Canal Corporation

Chief Operator and Engineering Technician • 1996-1988

Fourth Branch Associates, Albany, NY

Engineering Technician • 1972-1988

Kenneth J Fraser & Associates, P.C., Rensselaer, NY

Engineering Technician • 1966-1972

Parsons, Brinkerhoff, Quade & Douglas, Albany, NY

Certifications

- ☐ American Concrete Institute Grade I, Field Testing Technician
- ☐ Fundamentals of Safety and Operation of Nuclear Density/ Moisture Gauge

Projects

- ☐ TANY 97-96B; I-87 Over SB Central Park Avenue - Barriers
February 1998
- ☐ New FBI Building, Albany, NY
Fall 1997- Spring 1998
- ☐ Columbia Memorial Hospital, Hudson, NY
Fall 1997- Spring 1998

TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

GENE L. MORTON

of

SOIL & MATERIAL TESTING

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC.
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Gauge Operation

1. Instrument theory
2. Operating procedures
3. Maintenance
4. Field application
5. Gauge calibration

CERTIFICATE #: 078827

GEORGE MARSHALL

INSTRUCTOR

8/27/97

DATE

WILLIAM P. TROXLER

PRESIDENT

DAVID M. WEMPLE
 SOIL & MATERIAL TESTING, INC.
 CASTLETON, NEW YORK 12033

RESUME:

- | | | |
|------------|------|---|
| June | 1970 | Received N.Y.S. Regents diploma from New Lebanon Central School |
| 1972 | 1974 | Received AAS Degree in Civil Technology from Hudson Valley Community College, Troy, New York-Includes Field & Laboratory Testing Courses. |
| June | 1978 | a) Soil & Material Testing, Inc. as Laboratory and Field Testing Technician. |
| to Present | | b) Field duties included - soils, concrete, rebar, forms, steel, (structural, metal decks, joists, sheer connectors), sprayed on fireproofing, roofing, masonry, and paving. |
| | | c) Laboratory Testing on Concrete and Concrete Aggregates-including: gradation, LA Abrasion, soundness, organic impurities, mix design, and strength tests. |
| | | d) Performance of proctor tests and field density tests, utilizing both sand cone and nuclear methods. |
| | | e) Performance of concrete inspection including plant inspection of batching procedures, aggregate tests and field inspection of pours consisting of slump and air tests and the casting of test cylinders. |
| | | f) Performance of asphalt field inspection including the use of the nuclear density meter and obtaining core samples for density analysis. |
| | | g) Field technician on soil boring rigs, involving boring layout and classification of samples |
| | | h) Inspection of concrete reinforcing steel |
| June | 1974 | Wood Brothers as foreman in charge of concrete foundation |
| June | 1978 | and framing |

Page #2

Resume

David M. Wemple
Soil & Material Testing, Inc.
Castleton, New York 12033

MAJOR PROJECTS HAVE INCLUDED:

June 1978 to May 1980	Driller doing Soil Samples and Environmental Monitoring
May 1980 to Sept. 1980	Resident Engineer for N.Y.S. at Electric City Concrete, Scotia, New York. Checking Aggregate Gradations and Batch Weights.
Sept. 1980 to March 1981	Laboratory Manager doing Trial Mixes for Concrete Mix Designs. Weighing out, Batching, & Testing Concrete.
March 1981 to Oct. 1981	Senior Engineering Technician for IBM Kingston - Building #025.
Oct. 1981 to April 1982	Laboratory Manager doing L.A. Abrasion, Soundness, Organic Impurities, and Mix Designs.
Apr. 1982 to Sept. 1984	Senior Engineer Technician IBM Kingston - Building #914, #915, #916, and #005N.
Sept. 1985 to Mar. 1986	Chief Engineer Technician for General Electric R&D, Ossining, New York. Inspection - On-Site Laboratory Set Up. Performed Aggregate Gradations and Mortar Strength Tests.
Mar. 1986 to Aug. 1986	Chief Engineer Technician Poughkeepsie Galleria, Poughkeepsie, New York, Soils, Concrete, Rebar, Forms, Structural Steel, Fire-Proofing Roofing, Masonry, and Paving. On site Laboratory Set Up, Performed Soils & Aggregate Testing, Strength Tests on Concrete and Rebar.
Aug. 1986 to Apr. 1987	Chief Engineer Technician For Berkshire Mall, Lanesboro, Ma.
Apr. 1987 to Nov. 1989	Resident Engineer Cabot Street Bridge, Holyoke, Ma.
Nov. 1988 to Mar. 1989	Chief Engineer Technician Emerald Square Mall, N.Attleboro, Ma.

Page #3

Resume

David M. Wemple
 Soil & Material Testing, Inc.
 Castleton, New York 12033

MAJOR PROJECTS HAVE INCLUDED: (Continued)

Mar. 1989 to Sept. 1989 Chief Engineer Technician Independence Mall, Kingston, Ma.

Sept. 1989 to Apr. 1990 Chief Engineer Technician Altresco Company Co-Generation Plant, Pittsfield, Ma.

Apr. 1990 to Jul. 1990 Chief Engineer Technician Bradlees Store, Independence Mall, Kingston, Ma.

May 1991 to Oct 1992 Chief Engineer Technician Silver City Galleria, Taunton Ma.

Oct. 1992 to Oct. 1993 Chief Engineer Technician Latham Farms, Albany, New York

May 1994 to Oct. 1994 Chief Engineer Technician Crossgates Mall, Guilderland, New York

Feb. 1995 to Present Chief Engineer Technician Holyoke Mall, Holyoke MA.

CERTIFICATIONS:

Troxler Electronic Laboratories-Nuclear Density Gauge

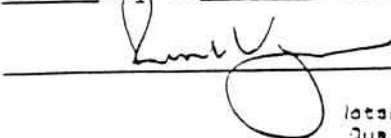
American Concrete Institute, Concrete Field Testing Technician Grade I

Massachusetts Class "A" License #02158A

American Concrete Institute, Concrete Construction Inspector Level II


 David M. Wemple

Sworn and subscribed before me this 30 day of December 1997



DONALD E. RUSH
 Notary Public State of New York
 Qualified in Rensselaer County
 Commission Expires May 31, 1998
 Soil & Material Testing, Inc.

TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

DAVID M. WEMPLIE

of

SOIL AND MATERIAL TESTING, INC.

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC.
TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

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7. Procedures for nuclear gauge storage and transportation.
8. General safety precautions.

Gauge Operation

1. Instrument theory
2. Operating procedures
3. Maintenance
4. Field application
5. Gauge calibration

W. F. Troxler
INSTRUCTOR

W. F. TROXLER
PRESIDENT

4/17/84
DATE

NO 6834

Q/C RESOURCE

Training Course Certification

This is to certify that

Walter W. Bertram Jr.

has successfully completed the user's course as required by the U.S. Nuclear Regulatory Commission and the Agreement States, in the Fundamentals of Safety and Gage operation, for the use of nuclear moisture/density equipment.
The course covered:

Atomic Physics	Transportation	Operation
Radiation Safety	Risk	Field Applications
Dose/Shielding Calculations	ALARA	Calibration
Accidents/Storage	Measurement Theory	Maintenance

March 7, 1996

Date of Training

0756

Certificate Number

Philip C. Palilla
Instructor - Philip C. Palilla

TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

JOEL CANONICO
of

EMPIRE SOILS INVESTIGATIONS

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC.
TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

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7. Procedures for nuclear gauge storage and transportation.
8. General safety precautions.

Gauge Operation

1. Instrument theory
2. Operating procedures

Phil Palilla
PHIL PALILLA

INSTRUCTOR

07/30/90
DATE

No 35416

WILLIAM F. TROXLER
PRESIDENT

TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

Jared Mieczkowski
of

Soil & Material Testing

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC.
TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

Radiological Safety

- | | |
|--|---|
| 1. Principles and practices of radiation protection. | 5. Radioactivity measurement standardization and monitoring techniques and instruments. |
| 2. Leak testing procedures. | 6. Accident and incident procedures. |
| 3. Mathematics and calculations basic to the use and measurement of radioactivity. | 7. Procedures for nuclear gauge storage and transportation. |
| 4. Biological effects of radiation. | 8. General safety precautions. |
| 1. Instrument theory. | Gauge Operation |
| 2. Operating procedures | 4. Field application |
| 3. Maintenance | 5. Gauge calibration |

Certificate #: 5360

6/4/98
DATE

William F. Toppler
PRESIDENT

Greg Garner
Greg Garner
INSTRUCTOR

TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

Gerald Crouch

of

Soil & Material Testing

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC.
TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

Radiological Safety

- | | |
|--|---|
| 1. Principles and practices of radiation protection. | 5. Radioactivity measurement standardization and monitoring techniques and instruments. |
| 2. Leak testing procedures. | 6. Accident and incident procedures. |
| 3. Mathematics and calculations basic to the use and measurement of radioactivity. | 7. Procedures for nuclear gauge storage and transportation. |
| 4. Biological effects of radiation. | 8. General safety precautions. |
| 1. Instrument theory | 9. Gauge operation. |
| 2. Operating procedures | 4. Field application. |
| 3. Maintenance | 5. Gauge calibration. |

Certificate # : 03886

6/4/98
DATE

William F. Troxler
PRESIDENT

Greg Karpner
Greg Karpner
INSTRUCTOR

33 0144410204 P.02
GESTION B.M.P. BEAUREGARD INC.
LES ENTREPRISES BMP BEAUREGARD
ET ASSOCIÉS INC.
E-MAIL : BMPTRANSP@VIDEOTRON.CA

5204 SALABERRY, CARIGNAN, QUÉ. J3L 3P9
TÉL: (514) 592-4150 FAX: (514) 447-3254
1-800-567-0708

Carignan, Qc. Canada
September 29th, 1998

Mr. Mike Hayes
KUBRICKY CONSTRUCTION, INC.
237 Bay Street
Glens Falls, NY. 12801

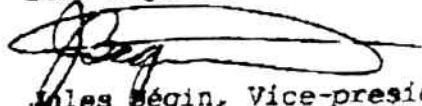
Fax: (518) 792-2458

Good morning Mr. Hayes,

In reference to our delivery of the liner for the Moreau Landfill project, B.M.P. Beauregard certifies that we have transported over 1,000,000 square feet of geomembrane liner.

Please call me at 1-800-567-0708 if you have questions or require more information.

Best regards,



Jules Bégin, Vice-president
Business Development

APPENDIX E

GEOMEMBRANE QUALITY CONTROL TEST RESULTS

NEW LINING SOLUTIONS, INC.

" Where the little things make the difference. "

New Lining Solutions Inc.

Supervisor/Master Seamer - Short List of Key Projects

Erwin Tsosie - Supervisor/Master Seamer

97- SF Phosphates, Rock Springs,WY Dam Extention 60mil HDPE Smooth Textile 10oz	750,000 Sqf
97- Circle Four Farm, Milford,UT Lagoon Liners 40mil HDPE Smooth	1,500,000 Sqf
97- Chicago Grade Landfill, Atascadero,CA Landfill Cell 60mil HDPE Textured Textile 10oz	500,000 Sqf
96- Calabasas Landfill,LA County CA 80mil HDPE Smooth & Textured Claymax Textile	1,200.000Sqf
95- Bear track FMC Gold Leach Pad, Salmon,ID 60mil HDPE Smooth & Textured	800,000Sqf
95- Gagle Foods Processing,Camilla,GA 60mil & 50mil HDPE Floating cover	650,000 Sqf
95-Northampton landfill, Northampton,MA 40mil HDPE Textured cap 60mil HDPE Textured & Smooth Cell Geocomposite	914,000 Sqf 300,000 Sqf 150,000 Sqf
95- Lowell Landfill, Lowell,MA 40mil HDPE Cap Project Done in phases	1,000,000Sqf

NEW LINING SOLUTIONS, INC.

" Where the little things make the difference. "

New Lining Solutions - Technician Resume

Technician - Tom Shupe

Project:

North Adams Landfill Cap, North Adams, MA

40mil HDPE Textured & Smooth

1,300,000 Sqf

Contractor: R. Bates Construction

Contact: Chris McGowan

Engineer: Tigh & Bond

New Lining Solutions Site Supervisor Bill Lightle

**THE TOWN OF MOREAU
LANDFILL CLOSURE REPAIRS
Moreau, N.Y.
Project No. SU 99035**

REPORT ON QUALITY CONTROL PROCEDURES CONDUCTED ON SITE

Prepared for:

KUBRICKY CONSTRUCTION CORP.

By:



APRIL 2000

**THE TOWN OF MOREAU
LANDFILL CLOSURE REPAIRS
Moreau, N.Y.
Project No. SU 99035**

REPORT ON QUALITY CONTROL PROCEDURES CONDUCTED ON SITE

Prepared for:

**KUBRICKY CONSTRUCTION CORP.
237 Bay Street
Glens Falls, NY 12801**

By:

**SOLMAX GEOSYNTHETICS INC.
129 Ball Circle
Syracuse, NY 13213**

APRIL, 2000

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1. INTRODUCTION

SOLMAX GEOSYNTHETICS INC., for KUBRICKY CONSTRUCTION CORP prepared the following report.

This report contains a description as well as a certification of all work conducted by SOLMAX GEOSYNTHETICS, INC., installer of all geosynthetics. It also contains the record drawings of the Landfill cap geomembrane installation. All installation work conducted on the geosynthetics took place between November 3 and December 10, 1998.

2. REFERENCES

- Construction drawings and installation specs, as prepared by STEARNS & WHEELER, LLC;
- Report on all quality control procedures conducted by the manufacturer of the geomembrane, SOLMAX INTERNATIONAL INC.;
- Report on quality control procedures conducted and documented on site by SOLMAX GEOSYNTHETICS, INC.
- Approved panel layouts, quality control manuals and shop submittals as prepared SOLMAX GEOSYNTHETICS, INC. and SOLMAX GEOSYNTHETICS INC;

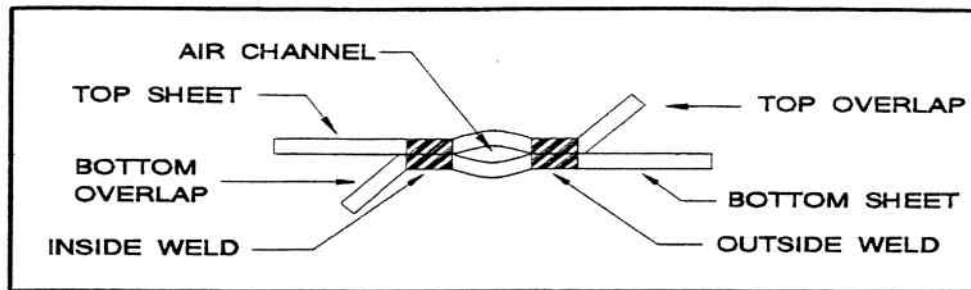


Figure 1 - DOUBLE -TRACK GEOMEMBRANE WELD

In restrictive areas where this process could not be adequately applied, such as corners and close patches, manual extrusion fillet welding was employed instead. (See Fig. 2)

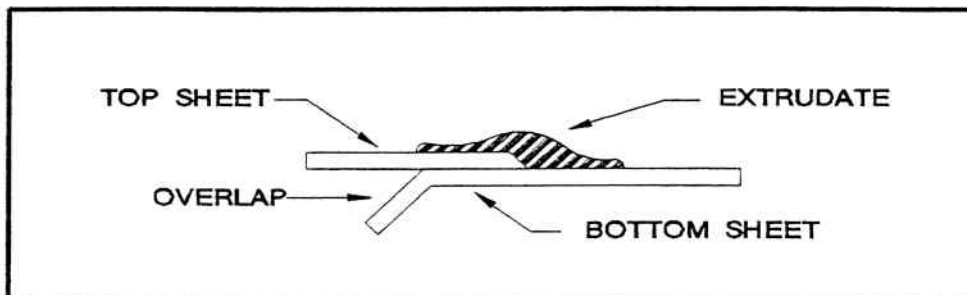


Figure 2 - FILLET-EXTRUDED GEOMEMBRANE WELD

4.3 Geomembrane quality controls

4.3.1 Geomembrane manufacturing process

The geomembrane manufactured by SOLMAX INTERNATIONAL INC. was submitted to rigorous quality controls. The specific weight, melt flow index and stress crack resistance were the properties tested on the LLDPE resin. All other properties were tested on each geomembrane roll. The results of these quality control measures are included in Appendix I.

4.3.2 On-site geomembrane installation

4.3.2.1 Welding trial tests

Trial tests were performed on trial seams prior to any on-site seaming in order to quantify the calibration of the welding equipment. On each sample, two peel tests and two shear tests were performed. A peel test is conducted by submitting a one inch-wide strip of seam to a tensile effort on a calibrated, portable tensiometer, and trying to "peel", or open, the seam (see Fig. 3). The portable tensiometer has a grip separation of one (1) inch and the crosshead speed used is two (2) inches per minute. A shear test is similar, but the tension is applied in the plane of the seam (see Fig. 4). The peel test gives a good indication of the quality of the seam while the shear test shows the behavior of the seam after field seaming is completed.

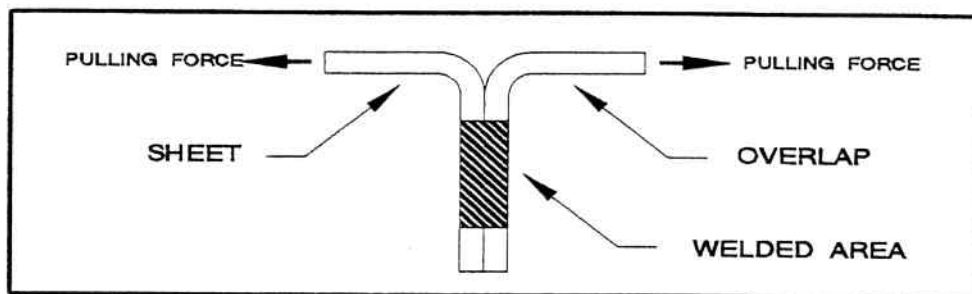


Figure 3 - PEEL TEST

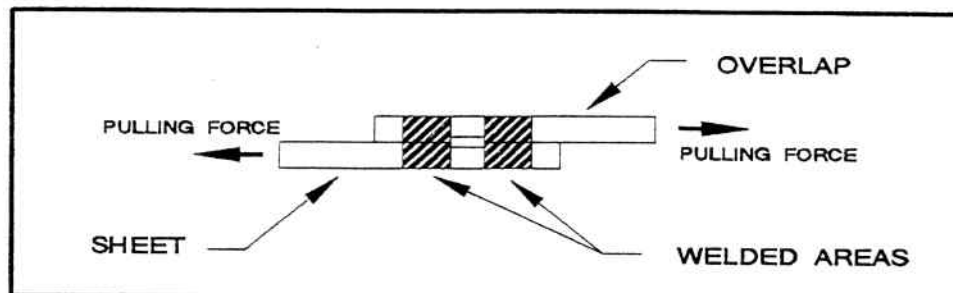


Figure 4 - SHEAR TEST

For each trial test, the QC Inspector will record date, time, ambient and operating temperature, equipment number, speed setting, and operator, peel and shear values and type of break. The only type of break acceptable is designated as "FTB", as per the US-EPA classification for types of breaks, available in Appendix VII of this report. The seams were made only after a satisfactory trial test had been obtained. All the results of these tests are given, in Appendix IV of this report.

Type of test	No. of results	Average	Standard Deviation	Specifications
Peel				
Fusion:	11	106 ppi	16 ppi	Avg. ≥ 50 ppi
Extrusion:	100	81 ppi	19 ppi	All values ≥ 48 ppi
Shear				
Fusion:	11	116 ppi	11 ppi	Avg. ≥ 60 ppi
Extrusion:	100	94 ppi	16 ppi	All values ≥ 55 ppi

Table 1 - Field trial test results

4.3.2.2 On-site non-destructive testing

The continuity of all seams (100%) was verified by non-destructive methods. These methods include the air-pressure test, the vacuum-box test and the hydraulic test. Any seam, repair or pipe penetration that failed one of these tests was rebuilt or repaired until a satisfactory result was obtained. All the results of these tests are included in Appendix II of this report.

a) Air-pressure test

Air-pressure testing was employed wherever possible (See Fig. 5). This non-destructive test consists of injecting air of predetermined pressure in the center air channel of fusion welded seams. If the seam is continuous there will be very little or no drop of pressure. If a leak is present within the area under pressure, it is located and repaired. This type of non-destructive test is faster than the vacuum-box test, less observer-dependent and represents a supplementary mechanical resistance test since the geomembrane sheets are pulled away from each other by the air pressure in the channel.

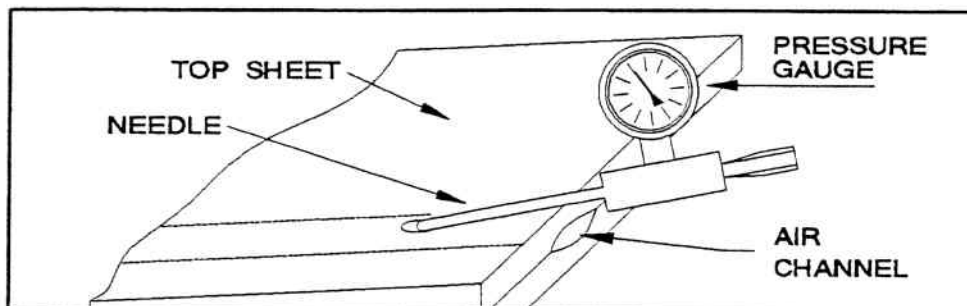


Figure 5 - AIR-PRESSURE TEST

b) Vacuum-box test

Wherever the air-pressure test could not be used, the vacuum-box test was employed. In this test, a film of soapy water is sprinkled over the area to be tested. A box fitted with a transparent upper cover and a neoprene lower rim is placed over that same area and connected to a vacuum pump; a negative pressure of 5 psi is then applied (see Fig. 6). If there is a puncture or discontinuous seam within this area, bubbles will appear and be detected by the observer.

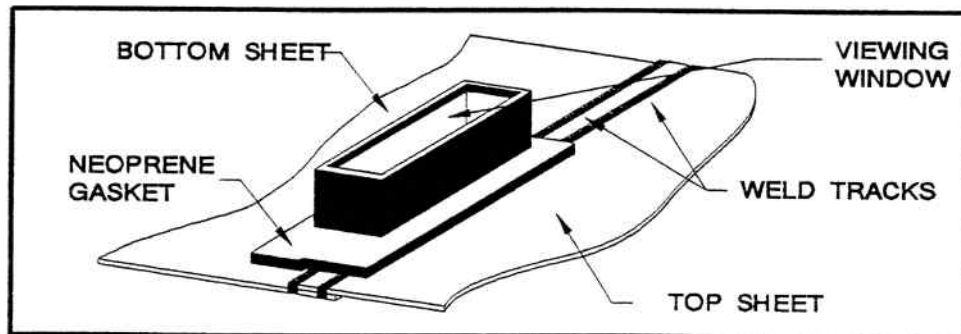
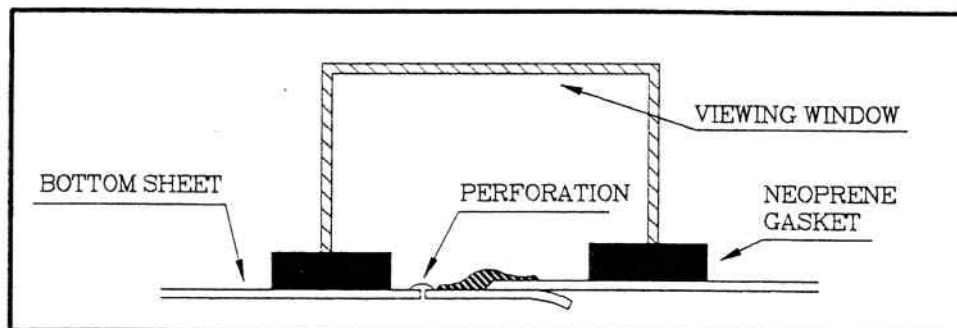


Figure 6 - VACUUM-BOX TEST



Typical cross section

4.3.2.3 On-site destructive tests

Finally, a destructive testing program was applied, where seam samples taken from the installed geomembrane were tested on site for peel and shear strength on a calibrated, portable tensiometer. On each sample, two peel tests and two shear tests were performed. If the samples passed the tests, the destructive sample is then cut out and sent on to the independent laboratory for further testing. The loading was recorded on a computer readout, which displays the peak value of the sample being tested. Average load is determined by taking the mean peak value of all samples tested.

The field seams represent a total length of 8,859 linear feet; therefore, the destructive test frequency was 1 / 422 feet of seam. All the results from these tests are included, in Appendix IV of this report.

Type of test	No. of Results	Average	Standard Deviation	Specifications
Peel:	63	86 ppi	9 ppi	Avg. ≥ 50 ppi All values ≥ 48 ppi
Shear:	42	81 ppi	14 ppi	Avg. ≥ 50 ppi All values ≥ 48 ppi

Table 2 - Field destructive test results

Destructive samples were tested at TRI/Environmental for independent laboratory testing. The samples were tested for Peel and Shear strength according to ASTM D4437 (as modified by NSF-54). All the results of these tests are included, in Appendix V of this report.

4.4 Repair procedures

All materials were visually inspected for blemishes, punctures and other defects or damages that may have occurred during transport or panel placement. Any defect or damage was marked with a white indelible ink marker and later repaired as per the procedures described in this section.

Demobilization was not authorized until SOLMAX GEOSYNTHETICS, INC and STEARNS & WHEELER, LLC completed a last visual inspection of the installation work. Any defect revealed by any step of the Quality Control Program was repaired and verified according to the prescribed procedures:

- All pockmarks, pinholes, T-seams, etc., smaller than the tip of the extruder were covered with an extrusion bead;
- All punctures, holes, tears, etc., wider than the tip of the extruder were repaired with extrusion-welded patches;
- Any seam revealed as defective by the Quality Control Program was entirely rebuilt through a fusion and/or extrusion seaming process.

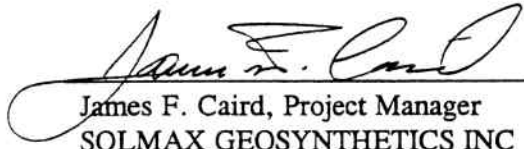
Prior to any fillet extrusion welding, the geomembrane was buffed to insure better adhesion of the extruded material. All repairs were visually inspected and verified by a non-destructive testing method, as described in section 4.3.2.2.

4.5 Record drawings

The record drawing of the geomembrane showing all panels, panel identification, pipe penetrations and destructive test locations is included in Appendix VI of this report.

5. CERTIFICATION

SOLMAX GEOSYNTHETICS INC. certifies having installed all the geosynthetics on The Town of Moreau Landfill according to the plans and specifications provided by STEARNS & WHEELER and approved panel layouts, quality control manuals and shop submittals provided by SOLMAX GEOSYNTHETICS, INC. All installation work conducted by SOLMAX GEOSYNTHETICS, INC. meets or exceeds the standards of the geosynthetic industry.


James F. Caird, Project Manager
SOLMAX GEOSYNTHETICS INC

4/7/00
Date


David Mancini, QA/QC Manager
SOLMAX GEOSYNTHETICS INC.

4-7-00
Date



SOLMAX INTERNATIONAL INC.

Polyethylene Geomembrane Certification

10-Feb-00

Customer: Solmax Geosynthetics Inc.

Type of material: 40 mil textured VFPE

Project Name: Town of Moreau Landfill

Product code: Solmax 840T

Reference No.: 4862

Solmax International Inc. hereby certifies that all polyethylene geomembrane rolls to be shipped to the above project meet or exceed the specifications listed below. All specifications represent minimum values, unless otherwise specified. Quality Control testing was conducted according to the following test methods and frequencies:

Resin Specifications

Resin Density:	ASTM D1505	>0.91, <0.925 g/cc	1 / Batch
Melt Index:	ASTM D1238	0.6 g/10 minutes (Maximum)	1 / Batch
Oxidative Induction Time (OIT):	ASTM D3895	100 minutes	1 / Batch

Roll Specifications

Geomembrane Thickness:	ASTM D5994	40 ±10% mil (Minimum)	Every Roll
Sheet Density:	ASTM D1505	<0.932 g/cc (Maximum)	Every 12 000 lbs
Carbon Content:	ASTM D1603	2 to 3 %	Every 12 000 lbs
Carbon Black Dispersion:	ASTM D5596	Category 1 or 2	Every 12 000 lbs
Tensile Strength at Yield:	ASTM D638	N/A	Every 12 000 lbs
Elongation at Yield:	ASTM D638	N/A	Every 12 000 lbs
Tensile Strength at Break:	ASTM D638	75 psi	Every 12 000 lbs
Elongation at Break:	ASTM D638	400 %	Every 12 000 lbs
Tear Resistance:	ASTM D1004	18 Lbs.	Every 12 000 lbs
Puncture Resistance:	ASTM D4833	50 Lbs.	Every 12 000 lbs
ESCR-NCTL:	ASTM D5397	200 hours	1 / Batch
Dimensional Stability:	ASTM D1204	+/- 2 %	Every 12 000 lbs

Chantal Gagnon, Quality supervisor
Solmax International Inc.



SOLMAX INTERNATIONAL INC

10-Feb-00

2801 Marie Victorin, Varennes, Quebec, Canada J3X 1P7

Manufacturing Quality Control Test Results - Resin

Project Name: Town of Moreau Landfill

Project No.: SU99035

Reference No.: 4862

Lot No	Melt index (D1238)	Density (D1505)	SP-NCTL (ASTM D 5397)	
Specification	0.6 g/10 minutes	>0.91, <0.925 g/cc	> 400 hrs	
J068573	0.443	0.921	>400	Roll Tested 13550-1
J068602	0.384	0.921	>400	Roll Tested 14086-1



SOLMAX INTERNATIONAL INC

2801 Marie Victorin, Varennes, Quebec, Canada J3X 1P7

List of Geomembrane Rolls

20-Sep-99

Project Name: Town of Moreau Landfill

Project No.: SU99035

Reference No. 4862

Date Manufactured	Roll No	Product Code	Lot No	Gauge Average mils	Length ft.	Width ft.
17-Aug-99	13585	Solmax 840T	J068573	41.9	780	22
15-Sep-99	14118	Solmax 840T	J068602	40.3	780	22
16-Sep-99	14119	Solmax 840T	J068602	41.3	780	22
16-Sep-99	14120	Solmax 840T	J068602	40.9	780	22
16-Sep-99	14121	Solmax 840T	J068602	41.2	780	22
16-Sep-99	14123	Solmax 840T	J068602	41.4	780	22
16-Sep-99	14124	Solmax 840T	J068602	43.7	780	22
16-Sep-99	14125	Solmax 840T	J068602	42.5	780	22
16-Sep-99	14126	Solmax 840T	J068602	40.7	780	22



Manufacturing Quality Control Test Results - Rolls

Roll No: **13585**

Lot No: J068573

Product Code: Solmax 840T

Date Manufactured: 17-Aug-99

Project Name: Town of Moreau Landfill

Project No: SU99035

Reference No: 4862

<u>Property</u>	<u>Test Method</u>	<u>Test Result</u>	<u>Specification</u>
Thickness	ASTM D5994	Average: 41.9 mil Minimum: 39 mil	> 38 mil > 34 mil
Asperity Height	GRI-GM12	Inner Avg: 18.9 mil Outer Avg: 19.3 mil	>10 mil
Sheet Density	ASTM D1505	0.930 g/cc	< 0.932 g/cc
Carbon Black Content	ASTM D4218	2.40 %	2 to 3 %
Carbon Black Dispersion	ASTM D5596	Category 1: 10 of 10 views Category 2: N/A of 10 views	Category 1 or 2
Tensile Properties	ASTM D638 2.0 in. Gage Length Type IV; 2 ipm	Yield Strength - MD: 81.0 ppi - XD: 82.0 ppi Yield Elongation - MD: 21.1 % - XD: 21.4 % Break Strength - MD: 143 ppi - XD: 134 ppi Break Elongation - MD: 567 % - XD: 538 %	N/A N/A 75 ppi 400 %
Tear Resistance	ASTM D1004	- MD: 32.02 Lbs - XD: 30.60 Lbs	18 lbs
Puncture Resistance	FTMS 101C	67.62 Lbs	50 lbs
Dimensional Stability	ASTM D1204	- MD: -0.1 % - XD: 0.03 %	± 2 %

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Manufacturing Quality Control Test Results - Rolls

Roll No: 14118

Lot No: J068602

Product Code: Solmax 840T

Date Manufactured: 15-Sep-99

Project Name: Town of Moreau Landfill

Project No: SU99035

Reference No: 4862

<u>Property</u>	<u>Test Method</u>	<u>Test Result</u>	<u>Specification</u>
Thickness	ASTM D5994	Average: 40.3 mil	> 38 mil
		Minimum: 37 mil	> 34 mil
Asperity Height	GRI-GM12	Inner Avg: 22.4 mil	> 10 mil
		Outer Avg: 23.1 mil	
Sheet Density	ASTM D1505	0.932 g/cc	< 0.932 g/cc
Carbon Black Content	ASTM D4218	2.37 %	2 to 3 %
Carbon Black Dispersion	ASTM D5596	Category 1: 10 of 10 views	Category 1 or 2
		Category 2: N/A of 10 views	
Tensile Properties	ASTM D638 2.0 in. Gage Length Type IV; 2 ipm	Yield Strength - MD: 82.5 ppi	N/A
		- XD: 83.8 ppi	
		Yield Elongation - MD: 19.1 %	N/A
		- XD: 20.1 %	
		Break Strength - MD: 156 ppi	75 ppi
		- XD: 118 ppi	
		Break Elongation - MD: 590 %	400 %
		- XD: 442 %	
		- MD: 32.12 Lbs	18 lbs
		- XD: 33.26 Lbs	
Tear Resistance	ASTM D1004		
Puncture Resistance	FTMS 101C	71.19 Lbs	50 lbs
Dimensional Stability	ASTM D1204	- MD: -0.32 %	± 2 %
		- XD: -0.01 %	


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**SOLMAX INTERNATIONAL INC.**

2801 Marie-Victorin, Varennes, QC, Canada J3X 1P7

20-Sep-99

Manufacturing Quality Control Test Results - Rolls**Roll No:** 14119**Lot No:** J068602**Product Code:** Solmax 840T**Date Manufactured:** 16-Sep-99**Project Name:** Town of Moreau Landfill**Project No:** SU99035**Reference No:** 4862

<u>Property</u>	<u>Test Method</u>	<u>Test Result</u>	<u>Specification</u>
Thickness	ASTM D5994	Average: 41.3 mil	> 38 mil
		Minimum: 38 mil	> 34 mil
Asperity Height	GRI-GM12	Inner Avg: 20.3 mil	>10 mil
		Outer Avg: 20.4 mil	
Sheet Density	ASTM D1505	0.932 g/cc	< 0.932 g/cc
Carbon Black Content	ASTM D4218	2.37 %	2 to 3 %
Carbon Black Dispersion	ASTM D5596	Category 1: 10 of 10 views	Category 1 or 2
		Category 2: N/A of 10 views	
Tensile Properties	ASTM D638 2.0 in. Gage Length Type IV; 2 ipm	Yield Strength - MD: 82.5 ppi	N/A
		- XD: 83.8 ppi	
		Yield Elongation - MD: 19.1 %	N/A
		- XD: 20.1 %	
		Break Strength - MD: 156 ppi	75 ppi
		- XD: 118 ppi	
		Break Elongation - MD: 590 %	400 %
		- XD: 442 %	
Tear Resistance	ASTM D1004	- MD: 32.12 Lbs	18 lbs
		- XD: 33.26 Lbs	
Puncture Resistance	FTMS 101C	71.19 Lbs	50 lbs
Dimensional Stability	ASTM D1204	- MD: -0.32 %	± 2 %
		- XD: -0.01 %	


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Manufacturing Quality Control Test Results - Rolls

Roll No: 14120

Lot No: J068602

Product Code: Solmax 840T

Date Manufactured: 16-Sep-99

Project Name: Town of Moreau Landfill

Project No: SU99035

Reference No: 4862

<u>Property</u>	<u>Test Method</u>	<u>Test Result</u>	<u>Specification</u>
Thickness	ASTM D5994	Average: 40.9 mil Minimum: 39 mil	> 38 mil > 34 mil
Asperity Height	GRI-GM12	Inner Avg: 18.2 mil Outer Avg: 19.8 mil	>10 mil
Sheet Density	ASTM D1505	0.931 g/cc	< 0.932 g/cc
Carbon Black Content	ASTM D4218	2.47 %	2 to 3 %
Carbon Black Dispersion	ASTM D5596	Category 1: 10 of 10 views Category 2: N/A of 10 views	Category 1 or 2
Tensile Properties	ASTM D638 2.0 in. Gage Length Type IV; 2 ipm	Yield Strength - MD: 85.0 ppi - XD: 84.1 ppi Yield Elongation - MD: 19.5 % - XD: 19.4 % Break Strength - MD: 159 ppi - XD: 141 ppi Break Elongation - MD: 592 % - XD: 551 %	N/A N/A 75 ppi 400 %
Tear Resistance	ASTM D1004	- MD: 32.12 Lbs - XD: 33.26 Lbs	18 lbs
Puncture Resistance	FTMS 101C	71.19 Lbs	50 lbs
Dimensional Stability	ASTM D1204	- MD: -0.32 % - XD: -0.01 %	± 2 %

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Manufacturing Quality Control Test Results - Rolls

Roll No: 14121

Lot No: J068602

Product Code: Solmax 840T

Date Manufactured: 16-Sep-99

Project Name: Town of Moreau Landfill

Project No: SU99035

Reference No: 4862

<u>Property</u>	<u>Test Method</u>	<u>Test Result</u>	<u>Specification</u>
Thickness	ASTM D5994	Average: 41.2 mil	> 38 mil
		Minimum: 38 mil	> 34 mil
Asperity Height	GRI-GM12	Inner Avg: 17.1 mil	> 10 mil
		Outer Avg: 17.5 mil	
Sheet Density	ASTM D1505	0.931 g/cc	< 0.932 g/cc
Carbon Black Content	ASTM D4218	2.47 %	2 to 3 %
Carbon Black Dispersion	ASTM D5596	Category 1: 10 of 10 views	Category 1 or 2
		Category 2: N/A of 10 views	
Tensile Properties	ASTM D638 2.0 in. Gage Length Type IV; 2 ipm	Yield Strength - MD: 85.0 ppi	N/A
		- XD: 84.1 ppi	
		Yield Elongation - MD: 19.5 %	N/A
		- XD: 19.4 %	
		Break Strength - MD: 159 ppi	75 ppi
		- XD: 141 ppi	
		Break Elongation - MD: 592 %	400 %
		- XD: 551 %	
Tear Resistance	ASTM D1004	- MD: 32.12 Lbs	18 lbs
		- XD: 33.26 Lbs	
Puncture Resistance	FTMS 101C	71.19 Lbs	50 lbs
Dimensional Stability	ASTM D1204	- MD: -0.32 %	± 2 %
		- XD: -0.01 %	

QC
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Manufacturing Quality Control Test Results - Rolls

Roll No: **14123**

Lot No: J068602

Product Code: Solmax 840T

Date Manufactured: 16-Sep-99

Project Name: Town of Moreau Landfill

Project No: SU99035

Reference No: 4862

<u>Property</u>	<u>Test Method</u>	<u>Test Result</u>	<u>Specification</u>
Thickness	ASTM D5994	Average: 41.4 mil	> 38 mil
		Minimum: 40 mil	> 34 mil
Asperity Height	GRI-GM12	Inner Avg: 17.6 mil	>10 mil
		Outer Avg: 18.6 mil	
Sheet Density	ASTM D1505	0.932 g/cc	< 0.932 g/cc
Carbon Black Content	ASTM D4218	2.38 %	2 to 3 %
Carbon Black Dispersion	ASTM D5596	Category 1: 10 of 10 views	Category 1 or 2
		Category 2: N/A of 10 views	
Tensile Properties	ASTM D638 2.0 in. Gage Length Type IV; 2 ipm	Yield Strength - MD: 86.8 ppi	N/A
		- XD: 86.8 ppi	
		Yield Elongation - MD: 20.2 %	N/A
		- XD: 18.5 %	
		Break Strength - MD: 161 ppi	75 ppi
		- XD: 133 ppi	
		Break Elongation - MD: 596 %	400 %
		- XD: 518 %	
		- MD: 33.03 Lbs	18 lbs
		- XD: 32.58 Lbs	
Puncture Resistance	FTMS 101C	72.26 Lbs	50 lbs
Dimensional Stability	ASTM D1204	- MD: -0.24 %	± 2 %
		- XD: 0.01 %	


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**Manufacturing Quality Control Test Results - Rolls**Roll No: **14124**

Lot No: J068602

Product Code: Solmax 840T

Date Manufactured: 16-Sep-99

Project Name: Town of Moreau Landfill

Project No: SU99035

Reference No: 4862

<u>Property</u>	<u>Test Method</u>	<u>Test Result</u>	<u>Specification</u>
Thickness	ASTM D5994	Average: 43.7 mil	> 38 mil
		Minimum: 40 mil	> 34 mil
Asperity Height	GRI-GM12	Inner Avg: 16.9 mil	>10 mil
		Outer Avg: 18.6 mil	
Sheet Density	ASTM D1505	0.932 g/cc	< 0.932 g/cc
Carbon Black Content	ASTM D4218	2.85 %	2 to 3 %
Carbon Black Dispersion	ASTM D5596	Category 1: 10 of 10 views	Category 1 or 2
		Category 2: N/A of 10 views	
Tensile Properties	ASTM D638 2.0 in. Gage Length Type IV; 2 ipm	Yield Strength - MD: 87.4 ppi	N/A
		- XD: 89.7 ppi	
		Yield Elongation - MD: 16.6 %	N/A
		- XD: 17.8 %	
		Break Strength - MD: 168 ppi	75 ppi
		- XD: 134 ppi	
		Break Elongation - MD: 592 %	400 %
		- XD: 498 %	
Tear Resistance	ASTM D1004	- MD: 33.03 Lbs	18 lbs
		- XD: 32.58 Lbs	
Puncture Resistance	FTMS 101C	72.26 Lbs	50 lbs
Dimensional Stability	ASTM D1204	- MD: -0.24 %	± 2 %
		- XD: 0.01 %	


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**SOLMAX INTERNATIONAL INC.**

20-Sep-99

2801 Marie-Victorin, Varennes, QC, Canada J3X 1P7

Manufacturing Quality Control Test Results - Rolls**Roll No:** 14125**Lot No:** J068602**Product Code:** Solmax 840T**Date Manufactured:** 16-Sep-99**Project Name:** Town of Moreau Landfill**Project No:** SU99035**Reference No:** 4862

<u>Property</u>	<u>Test Method</u>	<u>Test Result</u>	<u>Specification</u>
Thickness	ASTM D5994	Average: 42.5 mil	> 38 mil
		Minimum: 41 mil	> 34 mil
Asperity Height	GRI-GM12	Inner Avg: 17.6 mil	>10 mil
		Outer Avg: 19.9 mil	
Sheet Density	ASTM D1505	0.932 g/cc	< 0.932 g/cc
Carbon Black Content	ASTM D4218	2.72 %	2 to 3 %
Carbon Black Dispersion	ASTM D5596	Category 1: 10 of 10 views	Category 1 or 2
		Category 2: N/A of 10 views	
Tensile Properties	ASTM D638 2.0 in. Gage Length Type IV; 2 ipm	Yield Strength - MD: 87.4 ppi	N/A
		- XD: 89.7 ppi	
		Yield Elongation - MD: 16.6 %	N/A
		- XD: 17.8 %	
		Break Strength - MD: 168 ppi	75 ppi
		- XD: 134 ppi	
		Break Elongation - MD: 592 %	400 %
		- XD: 498 %	
		- MD: 33.03 Lbs	18 lbs
		- XD: 32.58 Lbs	
Tear Resistance	ASTM D1004		
Puncture Resistance	FTMS 101C	72.26 Lbs	50 lbs
Dimensional Stability	ASTM D1204	- MD: -0.24 %	± 2 %
		- XD: 0.01 %	

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Manufacturing Quality Control Test Results - Rolls

Roll No: 14126

Lot No: J068602

Product Code: Solmax 840T

Date Manufactured: 16-Sep-99

Project Name: Town of Moreau Landfill

Project No: SU99035

Reference No: 4862

<u>Property</u>	<u>Test Method</u>	<u>Test Result</u>	<u>Specification</u>
Thickness	ASTM D5994	Average: 40.7 mil	> 38 mil
		Minimum: 36 mil	> 34 mil
Asperity Height	GRI-GM12	Inner Avg: 20.7 mil	> 10 mil
		Outer Avg: 22.5 mil	
Sheet Density	ASTM D1505	0.932 g/cc	< 0.932 g/cc
Carbon Black Content	ASTM D4218	2.79 %	2 to 3 %
Carbon Black Dispersion	ASTM D5596	Category 1: 10 of 10 views	Category 1 or 2
		Category 2: N/A of 10 views	
Tensile Properties	ASTM D638 2.0 in. Gage Length Type IV; 2 ipm	Yield Strength - MD: 82.8 ppi	N/A
		- XD: 83.2 ppi	
		Yield Elongation - MD: 18.4 %	N/A
		- XD: 18.1 %	
		Break Strength - MD: 146 ppi	75 ppi
		- XD: 123 ppi	
		Break Elongation - MD: 569 %	400 %
		- XD: 497 %	
Tear Resistance	ASTM D1004	- MD: 33.68 Lbs	18 lbs
		- XD: 32.71 Lbs	
Puncture Resistance	FTMS 101C	69.58 Lbs	50 lbs
Dimensional Stability	ASTM D1204	- MD: -0.21 %	± 2 %
		- XD: -0.01 %	


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SOLMAX INTERNATIONAL INC.

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Manufacturing Quality Control Test Results - Resin

20-Sep-99

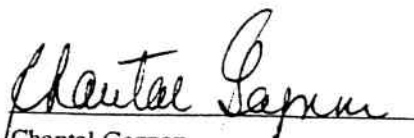
Project Name: Town of Moreau Landfill

Reference No.: 4862

Customer PO: SU99035

Solmax International Inc. hereby certifies that the polyethylene resin used for this project meets or exceeds the requirements listed below. All specifications represent minimum values, unless otherwise specified.

Batch No	Lot No	Density (D1505)	Melt index (D1238)	OIT (D3895)
160	H098381	0.9195 g/cc	0.48 g/10min	173 min
168	H098412	0.9203 g/cc	0.33 g/10min	187 min


Chantal Gagnon
Quality Supervisor



SOLMAX INTERNATIONAL INC.

2801 Marie-Victorin, Varennes, Quebec, Canada J3X 1P7

List of Geomembrane Rolls

20-Sep-99

Project Name: Town of Moreau Landfill

Reference No.: 4862

Customer PO #: SU99035

Roll No	Lot No	Date Manufactured	Product Code	Gauge Average mils	Length ft.	Width ft.
10356	168	17-Dec-98	Solmax 840T	45.0	780	22.3
9806	160	15-Nov-98	Solmax 840T	41.8	780	22
9811	160	15-Nov-98	Solmax 840T	42.5	780	22



SOLMAX INTERNATIONAL INC.

2801 Marie-Victorin, Varennes, Quebec, Canada J3X 1P7

Manufacturing Quality Control Test Results - Rolls

20-Sep-99

Project Name: Town of Moreau Landfill
Reference No: 4862
Customer Po #: SU99035

Roll No: 10356

Product Code: Solmax 840T
Batch No: 168
Date Manufactured: 17-Dec-98

Physical Properties

Thickness (ASTM D5994)

Average: 45.0 mil
Minimum: 43.0 mil

Asperity Height (GRI-GM12)

Inner Average: 20.35 mil
Outer Average: 20.8 mil

Carbon Black

Content (D4218): 2.18 %
Dispersion (D5596): Category 1

Dimensional Stability (D1204)

- MD: -0.23 %
- XD: 0.06 %

Sheet Density (D1505): 0.931 g/cc

Mechanical Properties

Tensile (D638, 2.0 in. GL, 2 ipm)

Yield Strength - MD: N/A ppi
- XD: N/A ppi

Break Strength - MD: 143.6 ppi
- XD: 126.6 ppi

Yield Elongation - MD: N/A %
- XD: N/A %

Break Elongation - MD: 536 %
- XD: 499 %

Tear Resistance (D1004) - MD: 32.6 lbs.
- XD: 33.1 lbs.

Puncture Resistance (FTMS 101): 71.3 lbs.



SOLMAX INTERNATIONAL INC.

2801 Marie-Victorin, Varennes, Quebec, Canada J3X 1P7

Manufacturing Quality Control Test Results - Rolls

20-Sep-99

Project Name: Town of Moreau Landfill

Reference No: 4862

Customer Po #: SU99035

Roll No: 9806

Product Code: Solmax 840T

Batch No: 160

Date Manufactured: 15-Nov-98

Physical Properties

Thickness (ASTM D5994)

Average: 41.8 mil

Minimum: 39.0 mil

Asperity Height (GRI-GM12)

Inner Average: 18.05 mil

Outer Average: 18.25 mil

Carbon Black

Content (D4218): 2.34 %

Dispersion (D5596): Category 1

Dimensional Stability (D1204)

- MD: -0.20 %

- XD: 0.04 %

Sheet Density (D1505): 0.931 g/cc

Mechanical Properties

Tensile (D638, 2.0 in. GL, 2 ipm)

Yield Strength - MD: N/A ppi

- XD: N/A ppi

Yield Elongation - MD: N/A %

- XD: N/A %

Break Strength - MD: 153.8 ppi

- XD: 117.7 ppi

Break Elongation - MD: 621 %

- XD: 507 %

Tear Resistance (D1004) - MD: 30.1 lbs.

- XD: 29.7 lbs.

Puncture Resistance (FTMS 101): 64.8 lbs.



SOLMAX INTERNATIONAL INC.

2801 Marie-Victorin, Varennes, Quebec, Canada J3X 1P7

Manufacturing Quality Control Test Results - Rolls

20-Sep-99

Project Name: Town of Moreau Landfill

Reference No: 4862

Customer Po #: SU99035

Roll No: 9811

Product Code: Solmax 840T

Batch No: 160

Date Manufactured: 15-Nov-98

Physical Properties

Thickness (ASTM D5994)

Average: 42.5 mil

Minimum: 39.0 mil

Asperity Height (GRI-GM12)

Inner Average: 19 mil

Outer Average: 18 mil

Carbon Black

Content (D4218): 2.40 %

Dispersion (D5596): Category 1

Dimensional Stability (D1204)

- MD: -0.18 %

- XD: 0.03 %

Sheet Density (D1505): 0.932 g/cc

Mechanical Properties

Tensile (D638, 2.0 in. GL, 2 ipm)

Yield Strength - MD: N/A ppi

- XD: N/A ppi

Yield Elongation - MD: N/A %

- XD: N/A %

Break Strength - MD: 148.1 ppi

- XD: 119.9 ppi

Break Elongation - MD: 606 %

- XD: 513 %

Tear Resistance (D1004) - MD: 31.0 lbs.

- XD: 29.3 lbs.

Puncture Resistance (FTMS 101): 66.3 lbs.

To: CHANTAL
From: Jim



GEOMEMBRANE TEST RESULTS
Water Vapor Transmission
ASTM E96

Project Name : Town of Moreau

Material : 40 mil textured geomembrane

WRONG VALVE?

Samples ID	Results	Comments
14125	0.212 g/m2/day	Pass
13585	0.024 g/m2/day	Pass


Chantal Gagnon, Quality Supervisor
Solmax International Inc.

TRANSMISSION VERIFICATION REPORT

TIME : 05/01/2000 04:39
NAME : SOLMAX GEOSYNTHETICS
FAX : 3154731251
TEL : 3154731245

DATE, TIME
FAX NO./NAME
DURATION
PAGE(S)
RESULT
MODE

05/01 04:39
MANUFACTURING
00:00:18
01
OK
STANDARD
ECM

11/29/1999

Materiaux Techniques
James

4691 Commercial Dr Ste. 345

New Hartford NY 13413

BOL 190698 PO

Ref: Town of Moreau Landfill

This is to certify that Product 3 X 3, a woven polypropylene geotextile produced by Synthetic Industries, will meet the following certifiable minimum average values when tested in accordance with the proper ASTM test methods. A minimum average roll value is calculated as the mean minus two standard deviations, yielding a 97.5 percent confidence level.

<u>Physical Property</u>	<u>Test Method</u>	<u>MARV</u>	<u>SI Unit</u>
Mass Per Unit Area	ASTM D-5261 oz/yd ² - (g/m ²)	9.00	(305.1)
Thickness	ASTM D-5199 mils - (mm)	19	(0.4826)
Tensile Strength (Grab)	ASTM D-4632 lb - (N)	400 X 350	(1780) X (1557.5)
Wide Width Tensile	ASTM D-4595 lb-in - (kN/m)	300 X 300	(52.56) X (52.56)
Elongation	ASTM D-4632 %	15 X 10	
Trapezoidal Tear	ASTM D-4533 lb - (N)	180 X 180	(801) X (801)
Mullen Burst	ASTM D-3786 psi - (Kpa)	800	(5515.2)
Puncture Strength	ASTM D-4833 lb - (N)	180	(801)
AOS	ASTM D-4751 US Sieve - (mm)	30	0.6
Permittivity	ASTM D-4491 SEC-1	0.24	
Permeability -	ASTM D-4491 cm - (sec)	0.02	
Water Flow Rate	ASTM D-4491 gpm/ft - (lpm/m ²)	15	(611.17)
Abrasion Resistance	ASTM D-4886 % Retained	70	
UV Resistance-4	ASTM D-4355 % Retained	80	

Sincerely



Warren Sickler

Senior Technical Manager

Geosynthetics Products Division

Seller makes no warranty express or implied concerning the product furnished hereunder other than at the time of delivery it shall be of the quality and specification stated hereon. ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS EXPRESSLY EXCLUDED AND TO THE EXTENT THAT IF IT IS CONTRARY TO THE FOREGOING SENTENCE ANY IMPLIED WARRANTY OF MERCHANTABILITY IS EXPRESSLY EXCLUDED. Any recommendations made by the Seller concerning uses or applications of said product are believed reliable and Seller makes no warranty of results to be obtained. If the product does not meet Synthetic Industries current published specifications, and the Customer gives notice to Synthetic Industries before installing the product, then Synthetic Industries will replace the product without charge or refund the purchase price. This Data Sheet supersedes all previous Data Sheets for this style and is subject to change without notice. The effective date for this product data is 7/20/1999

Synthetic Industries, Inc.

4019 Industry Drive • Chattanooga, Tennessee • 37416 • USA

Telephone • 423-899-0444 • Fax • 423-899-7619 • 1-800-621-0444



BOL # 190898

Roll Number	ASTM D-4632 Grab Tensile (lbs) WXF	ASTM D-4632 Elongation (%) WXF	ASTM D-5261 Mass/Unit Area Lbs	ASTM D-4533 Trap Tear (Lbs) WXF
7759170	514 X 381	20 X 21	9.7	247 X 208
7759195	504 X 398	20 X 21	10.4	238 X 327
7759198	504 X 398	20 X 21	10.4	238 X 327
7759209	504 X 398	20 X 21	10.4	238 X 327
7759210	504 X 398	20 X 21	10.4	238 X 327
7837837	488 X 374	19 X 20	10.4	238 X 327
7838520	498 X 374	19 X 20	10	238 X 327
7828521	498 X 374	19 X 20	10	192 X 187
7861528	463 X 367	21 X 21	10	192 X 187
7861646	453 X 367	21 X 21	10.5	192 X 187
7837707	428 X 352	20 X 22	10.6	192 X 187
7837744	428 X 352	20 X 22	10	192 X 187
7837773	428 X 352	20 X 22	10	192 X 187
7859630	428 X 352	20 X 22	10	192 X 187
7859634	428 X 352	20 X 22	10	192 X 187
7859638	428 X 352	20 X 22	10	230 X 197
7859641	428 X 352	20 X 22	10	230 X 197
7859657	428 X 352	20 X 22	10	230 X 197
7859676	428 X 352	20 X 22	10	230 X 197
7859688	428 X 352	20 X 22	10	230 X 197
7859710	428 X 352	20 X 22	10	230 X 197
7861378	428 X 352	20 X 22	10	230 X 197
7861381	428 X 352	20 X 22	10	230 X 197
7861390	428 X 352	20 X 22	10	230 X 197
7861416	422 X 387	19 X 26	10	230 X 197
7861418	422 X 387	19 X 26	10.1	230 X 197
7861419	422 X 387	19 X 26	10.1	230 X 197
7861422	422 X 387	19 X 26	10.1	230 X 197
7861435	422 X 387	19 X 26	10.1	230 X 197
7859570	436 X 370	21 X 23	10.1	230 X 197
7859599	436 X 370	21 X 23	10.1	230 X 197
7859602	436 X 370	21 X 23	10.1	230 X 197
7859603	436 X 370	21 X 23	10.1	230 X 197
7859606	436 X 370	21 X 23	10.1	230 X 197
7861364	436 X 370	21 X 23	10.1	230 X 197
7861365	436 X 370	21 X 23	10.1	230 X 197
7861367	436 X 370	21 X 23	10.1	230 X 197
7859780	476 X 413	18 X 21	10.1	230 X 197
7859784	476 X 413	18 X 21	10.1	230 X 197
7859785	476 X 413	18 X 21	10.1	230 X 197
7859788	476 X 413	18 X 21	10.1	230 X 197
7859792	476 X 413	18 X 21	10.1	230 X 197
7859796	476 X 413	18 X 21	10.1	230 X 197
7859798	476 X 413	18 X 21	10.1	230 X 197
7859799	476 X 413	18 X 21	10.1	230 X 197
7859821	476 X 413	18 X 21	10.1	230 X 197
7859834	476 X 413	18 X 21	10.1	230 X 197
7861500	476 X 413	18 X 21	10.1	230 X 197
7861506	476 X 413	18 X 21	10.1	230 X 197

WIDE WIDTH TENSILE

G3X3

Roll #	WIDE WIDTH TENSILE		
	WARP		FILL
7759170	345.2	X	275.8
7759195	381.8	X	308.2
7759198	381.8	X	308.2
7759209	381.8	X	308.2
7759210	381.8	X	308.2
7837707	361.2	X	264
7837744	361.2	X	264
7837773	361.2	X	264
7837837	377.4	X	297
7838520	377.4	X	297
7838521	377.4	X	297
7859570	341.2	X	290.8
7859599	341.2	X	290.8
7859602	341.2	X	290.8
7859603	341.2	X	290.8
7859606	341.2	X	290.8
7859630	361.2	X	264
7859634	361.2	X	264
7859638	361.2	X	264
7859641	361.2	X	264
7859657	361.2	X	264
7859676	361.2	X	264
7859688	361.2	X	264
7859710	361.2	X	264
7859780	339.3	X	306.6
7859784	339.3	X	306.6
7859785	339.3	X	306.6
7859788	339.3	X	306.6
7859792	339.3	X	306.6
7859796	339.3	X	306.6
7859798	339.3	X	306.6
7859799	339.3	X	306.6
7859821	339.3	X	306.6
7859834	339.3	X	306.6
7861364	341.2	X	290.8
7861365	341.2	X	290.8
7861367	341.2	X	290.8
7861378	341.2	X	290.8
7861381	361.2	X	264
7861390	361.2	X	264
7861416	356	X	335
7861418	356	X	335
7861419	356	X	335
7861422	356	X	335
7861435	356	X	335

01/07/2000

Synthetic Industries

9:26 AM

Page 2

WIDE WIDTH TENSILE

G3X3

Roll #	WIDE WIDTH TENSILE		
	WARP		FILL
7861500	339.3	X	306.6
7861506	339.3	X	306.6
7861526	313.6	X	330.4
7861540	313.6	X	330.4
		X	



SYNTHETIC INDUSTRIES

Geosynthetic Products Division

1/7/2000

Materiaux Techniques Cote In
 G. Cagnon
 2801 Marie-Victorin
 Varennes PQ J3X 1P7 Cana
 BOL 80012288 PO
 Ref:

This is to certify that Product 3 X 3, a woven polypropylene geotextile produced by Synthetic Industries, will meet the following certifiable minimum average values when tested in accordance with the proper ASTM test methods. A minimum average roll value is calculated as the mean minus two standard deviations, yielding a 97.5 percent confidence level.

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Sincerely

Warren Sickler
 Senior Technical Manager
 Geosynthetics Products Division

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Synthetic Industries, Inc.

4019 Industry Drive • Chattanooga, Tennessee • 37416 • USA
 Telephone • 423-899-0444 • Fax • 423-899-7619 • 1-800-621-0444

BOL #	80012288	EL501		ASTM D-5261 MASS/UNIT AREA LBS	ASTM D-4533 TRAP TEAR (LBS WXF
		ASTM D-4632 GRAB TENSILE (LBS) WXF	ASTM D-4632 ELONGATION (%) WXF		
7826154	492 X 411	19 X 21	10.1	207 X 260	
7826163	492 X 411	19 X 21	10.1	207 X 260	
7826193	492 X 411	19 X 21	10.1	207 X 260	
7826209	492 X 411	19 X 21	10.1	207 X 260	
7825418	498 X 374	19 X 20	10	261 X 216	
7825420	498 X 374	19 X 20	10	261 X 216	
7826325	498 X 374	19 X 20	10	261 X 216	
7825369	494 X 379	20 X 22	10.1	252 X 304	
7825390	494 X 379	20 X 22	10.1	252 X 304	
7826423	494 X 379	20 X 22	10.1	252 X 304	
7826424	494 X 379	20 X 22	10.1	252 X 304	
7827426	458 X 376	19 X 21	9.9	219 X 189	
7827436	458 X 376	19 X 21	9.9	219 X 189	
7826096	453 X 367	21 X 21	10.5	214 X 237	
7826100	453 X 367	21 X 21	10.5	214 X 237	
7826366	453 X 367	21 X 21	10.5	214 X 237	
7826490	453 X 367	21 X 21	10.5	214 X 237	
7826505	453 X 367	21 X 21	10.5	214 X 237	
7826510	453 X 367	21 X 21	10.5	214 X 237	
7826524	453 X 367	21 X 21	10.5	214 X 237	

APPENDIX II

QUALITY CONTROL PROCEDURES CONDUCTED BY SOLMAX GEOSYNTHETICS, INC.



PROJECT NAME: MOREAU REPAIRS
PROJECT No: SU99035
QC Inspector: MANCINI
TENSIONMETER No: 9602
PAGE: 1 to 1

TRIAL No	DATE	TIME	AMBIENT TEMPERATURE	EQUIPMENT No	EQUIPMENT TEMPERATURE	EQUIPMENT SPEED ('/min)	TECHNICIAN	PEEL FAIL	PEEL RESISTANCE	SHEAR FAIL	SHEAR RESISTANCE	
F1	11/3/99	2:30	45°F	9834	750°F	5	BA	104 SE	107 SE	104 SE	110 SE	113 SE
F2	11/4/99	7:30	38°F	9834	700°F	6	BB	107 SE	102 SE	110 SE	120 SE	122 SE
F3	11/4/99	1:22	45°F	9834	700°F	6	BB	100 SE	104 SE	103 SE	109 SE	117 SE
F4	11/4/99	2:12	45°F	9845	700°F	6	BA	110 SE	110 SE	106 SE	117 SE	118 SE
F5	11/17/99	1:00	40°F	9834	700°F	6	BB	108 SE	118 SE	116 SE	133 SE	131 SE
F6	11/18/99	8:00	35°F	9834	700°F	6	BB	108 SE	112 SE	116 SE	117 SE	121 SE
F7	11/18/99	8:00	35°F	9845	700°F	6	CC	93 SE	94 SE	90 SE	118 SE	122 SE
F8	11/18/99	12:45	40°F	9834	700°F	6	BB	103 SE	107 SE	104 SE	110 SE	115 SE
F9	11/18/99	1:00	40°F	9845	700°F	6	CC	95 SE	103 SE	100 SE	107 SE	104 SE
F10	11/19	8:00	34°F	9845	700°F	6	CC	112 SE	117 SE	119 SE	109 SE	111 SE
F11	11/19/99	8:00	34°F	9834	700°F	6	BB	106 SE	103 SE	100 SE	111 SE	115 SE

EXTRUSION THERMAL TEST

PROJECT NAME: MOREAU REPAIRS
 PROJECT No: SU99035
 QC Inspector: MASTRO
 TENSIONMETRE No: 007
 PAGE: 1 to 3

TRIAL No	DATE	TIME	AMBIENTE TEMPERATURE	EQUIPMENT No	EQUIPMENT TEMPERATURE	PRE-HEAT TEMPERATURE	TECHNICIAN	PEEL FAIL	PEEL RESISTANCE	SHEAR FAIL	SHEAR RESISTANCE
E1	4/20/99	10:00	50°F	E-207	250°C	6	BA	NO	74 SE	NO	104 SE
E2	4/20/99	1:15	50°F	E-207	250°C	6	CC	NO	68 SE	NO	87 SE
E3	4/21/99	7:45	48°F	E-207	250°C	6	CC	NO	76 SE	NO	72 SE
E4	4/21/99	1:35	60°F	E-207	250°C	6	BA	NO	72 SE	NO	76 SE
E5	4/22/99	7:30	47°F	E-207	250°C	6	CC	NO	72 SE	NO	80 SE
E6	4/22/99	1:40	54°F	E-207	250°C	6	BA	NO	74 SE	NO	82 SE
E7	5/3/99	11:00	75°F	E-207	245°C	6	CC	NO	55 SE	NO	72 SE
E8	5/3/99	2:00	75°F	E-207	245°C	6	BA	NO	52 SE	NO	76 SE
E9	5/4/99	8:00	70°F	E-711	245°C	225°C	CC	NO	60 SE	NO	77 SE
E10	5/5/99	7:30	65°F	E-711	255°C	230°C	CC	NO	55 SE	NO	74 SE
E11	5/5/99	1:00	67°F	E-711	250°C	230°C	CC	NO	54 SE	NO	74 SE
E12	5/12/99	7:30	70°F	E-711	255°C	245°C	BA	NO	55 SE	NO	75 SE
E13	5/12/99	7:30	70°F	E-711	255°C	245°C	CC	NO	57 SE	NO	72 SE
E14	5/13/99	10:00	70°F	E-711	255°C	245°C	BA	NO	56 SE	NO	75 SE
E15	5/14/99	7:30	68°F	E-711	255°C	245°C	CC	NO	56 SE	NO	76 SE
E16	5/18/99	7:45	67°F	E-711	255°C	245°C	BA	NO	51 SE	NO	76 SE
E17	5/19/99	7:40	69°F	E-711	255°C	245°C	CC	NO	52 SE	NO	75 SE

EXTRUSION TRIAL TEST

PROJECT NAME: MOREAU REPAIRS
 PROJECT No: SU99035
 QC Inspector: MANCINI
 TENSIOMETRE No: 9524
 PAGE: 2 to 3

TRIAL No	DATE	TIME	AMBIENTE TEMPERATURE	EQUIPMENT No	EQUIPMENT TEMPERATURE	PRE-HEAT TEMPERATURE	TECHNICIAN	PEEL FAIL	PEEL RESISTANCE	SHEAR FAIL	SHEAR RESISTANCE	
E18	5/20/99	8:00	67°F	E-711	255°C	245°C	BA	NO	50 SE	NO	75 SE	80 SE
E19	5/21/99	7:30	70°F	E-711	255°C	245°C	CC	NO	50 SE	NO	79 SE	77 SE
E20	11/3/99	10:40	40°F	E-21	250°C	180°C	CC	NO	83 SE	NO	112 SE	112 SE
E21	11/4/99	11:30	40°F	E-21	250°C	200°C	BB	NO	88 SE	NO	111 SE	121 SE
E22	11/5/99	7:30	35°F	E-21	250°C	170°C	BB	NO	104 SE	NO	121 SE	116 BRK
E23	11/5/99	7:40	35°F	E-21	250°C	160°C	CC	NO	100 SE	NO	125 SE	118 SE
E24	11/22/99	8:30	45°F	E-21	250°C	150°C	BB	NO	102 SE	NO	106 SE	110 SE
E25	11/22/99	8:30	45°F	E-24	250°C	156°C	CC	NO	108 SE	NO	110 SE	108 SE
E26	11/22/99	12:50	50°F	E-21	245°C	150°C	BB	NO	110 SE	NO	117 SE	120 SE
E27	11/22/99	12:50	50°F	E-24	250°C	156°C	CC	NO	119 SE	NO	111 SE	116 SE
E28	11/23/99	8:00	37°F	E-24	250°C	160°C	CC	NO	93 SE	NO	111 SE	116 SE
E29	11/23/99	8:00	37°F	E-21	245°C	150°C	BB	NO	83 SE	NO	99 SE	103 SE
E30	11/24/99	8:30	45°F	E-21	245°C	150°C	BB	NO	79 SE	NO	95 SE	91 SE
E31	11/24/99	8:30	45°F	E-24	250°C	160°C	CC	NO	82 SE	NO	94 SE	97 SE
E32	11/29/99	8:00	25°F	E-21	260°C	180°C	BB	NO	81 SE	NO	94 SE	100 SE
E33	11/29/99	1:00	30°F	E-21	260°C	180°C	BB	NO	84 SE	NO	92 SE	90 SE
E34	11/30/99	8:00	20°F	E-21	260°C	180°C	BB	NO	86 SE	NO	100 SE	92 SE

PROJECT NAME: MOREAU REPAIRS
 PROJECT No: SU99035
 QC Inspector: COLLINS
 TENSIOMETRE No: 9602
 PAGE: 3 to 3

TRIAL No	DATE	TIME	AMBIENTE TEMPERATURE	EQUIPMENT No	EQUIPMENT TEMPERATURE	PRE-HEAT TEMPERATURE	TECHNICIAN	PEEL FAIL	PEEL RESISTANCE	SHEAR FAIL	SHEAR RESISTANCE
E35	11/30/99	12:45	27°F	E-21	260°C	180°C	BB	NO	83 SE	NO	94 SE
E36	12/1/99	8:00	20°F	E-21	260°C	180°C	BB	NO	79 SE	NO	87 SE
E37	12/1/99	1:00	25°F	E-21	260°C	180°C	BB	NO	81 SE	NO	92 SE
E38	12/2/99	8:00	25°F	E-21	260°C	180°C	BB	NO	107 SE	NO	125 SE
E39	12/2/99	12:40	30°F	E-21	260°C	180°C	BB	NO	103 SE	NO	110 SE
E40	12/3/99	8:00	25°F	E-21	260°C	180°C	BB	NO	99 SE	NO	115 SE
E41	12/3/99	1:00	30°F	E-21	260°C	180°C	BB	NO	88 SE	NO	111 SE
E42	12/6/99	8:00	40°F	E-21	245°C	140°C	BB	NO	83 SE	NO	98 SE
E43	12/7/99	7:45	25°F	E-21	250°C	150°C	BB	NO	88 SE	NO	99 SE
E44	12/7/99	12:30	40°F	E-21	245°C	140°C	BB	NO	80 SE	NO	88 SE
E45	12/8/99	8:00	25°F	E-21	250°C	150°C	BB	NO	83 SE	NO	90 SE
E46	12/8/99	12:30	35°F	E-21	245°C	150°C	BB	NO	85 SE	NO	99 SE
E47	12/9/99	8:00	30°F	E-21	250°C	150°C	BB	NO	101 SE	NO	108 SE
E48	12/9/99	1:00	35°F	E-21	245°C	145°C	BB	NO	90 SE	NO	100 SE
E49	12/10/99	8:00	30°F	E-21	245°C	150°C	BB	NO	85 SE	NO	94 SE
E50	12/10/99	1:00	35°F	E-21	245°C	150°C	BB	NO	88 SE	NO	96 SE



PROJECT NAME: MOREAU REPAIRS
PROJECT No: SU99035
QC Inspector: MANCINI
PAGE: 1 to 3

SEAM No	DATE OF SEAMING	TIME OF SEAMING	SEAM LENGTH	TRIAL No	TECHNICIAN	TEST DATE	TEST TIME	NON-DESTRUCTIVE TEST	STARTING PRESSURE	ENDING PRESSURE	NON-DESTRUCTIVE TESTING DETAILS	ACCEPTED (Y/N)
EXIST/CR1	11/3/99	11:14	192	E1	CC	11/5/99	PM/	VACUUM BOX	-5	-5	FULL SEAM	Y
CR1/CR2	11/3/99	3:00	186	F1	BB	11/4/99	9:55/10:00	PRESSURE TEST	30	30	Tie-in to R1	Y
CR2/CR3	11/4/99	8:30	199	F2	BB	11/4/99	10:04/10:09	PRESSURE TEST	30	29	R1 To SEOS	Y
CR3/CR4	11/4/99	9:15	210	F2	BB	11/4/99	10:14/10:19	PRESSURE TEST	30	30	Tie-in to R3	Y
CR4/CR5	11/4/99	10:05	222	F2	BB	11/4/99	10:18/10:23	PRESSURE TEST	30	28	R3 TO SEOS	Y
CR5/CR6	11/4/99	1:30	223	F3	BB	11/4/99	10:24/10:29	PRESSURE TEST	30	30	FULL SEAM	Y
CR6/CR7	11/4/99	1:55	235	F3	BB	11/4/99	10:43/10:48	PRESSURE TEST	30	30	FULL SEAM	Y
CR7/CR8	11/4/99	2:40	246	F3	BB	11/4/99	1:54/1:59	PRESSURE TEST	30	28	FULL SEAM	Y
CR8/CR9	11/4/99	2:42	257	F4	BA	11/5/99	2:33/2:38	PRESSURE TEST	30	29	FULL SEAM	Y
EXIST/CR9	11/5/99	AM	22	E3	BB	11/5/99	9:41/9:46	PRESSURE TEST	30	30	FULL SEAM	Y
EXIST/CR8	11/5/99	AM	22	E3	BB	11/5/99	9:54/9:59	PRESSURE TEST	29	27	FULL SEAM	Y
EXIST/CR7	11/5/99	AM	22	E3	BB	11/5/99	PM/	VACUUM TEST	-5	-5	FULL SEAM	Y
EXIST/CR6	11/5/99	AM	22	E3	BB	11/5/99	PM/	VACUUM BOX	-5	-5	FULL SEAM	Y
EXIST/CR5	11/5/99	AM	22	E3	BB	11/5/99	PM/	VACUUM BOX	-5	-5	FULL SEAM	Y
EXIST/CR4	11/5/99	AM	22	E3	BB	11/5/99	PM/	VACUUM BOX	-5	-5	FULL SEAM	Y
EXIST/CR3	11/5/99	AM	22	E3	BB	11/5/99	PM/	VACUUM BOX	-5	-5	FULL SEAM	Y
EXIST/CR2	11/5/99	AM	22	E3	BB	11/5/99	PM/	VACUUM BOX	-5	-5	FULL SEAM	Y
CR10/CR11	11/17/99	1:30	181	F5	BB	11/18/99	7:59/8:04	PRESSURE TEST	27	26	FULL SEAM	Y
CR11/CR12	11/17/99	2:00	186	F5	BB	11/18/99	7:58/8:04	PRESSURE TEST	30	29	FULL SEAM	Y
CR12/CR13	11/17/99	2:30	192	F5	BB	11/18/99	7:58/8:04	PRESSURE TEST	31	30	FULL SEAM	Y
CR13/CR14	11/17/99	3:00	197	F5	BB	11/18/99	8:15/8:19	PRESSURE TEST	30	30	FULL SEAM	Y
CR14/CR15	11/17/99	3:30	197	F5	BB	11/18/99	8:16/8:21	PRESSURE TEST	30	27	FULL SEAM	Y



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SEAM No	DATE OF SEAMING	TIME OF SEAMING	SEAM LENGTH	TRIAL No	TECHNICIAN	TEST DATE	TEST TIME	NON-DESTRUCTIVE TEST	STARTING PRESSURE	ENDING PRESSURE	NON-DESTRUCTIVE TESTING DETAILS	ACCEPTED (Y/N)
CR15/CR16	11/18/99	8:20	186	F6	BB	11/18/99	12:47/12:52	PRESSURE TEST	32	30	FULL SEAM	Y
CR17/CR18	11/18/99	8:55	22	F6	BB	11/18/99	1:22/1:27	PRESSURE TEST	30	27	WEOS TO R16	Y
CR16/CR18	11/18/99	9:00	57	F7	CC	11/18/99	1:26/1:31	PRESSURE TEST	30	29	R16 TO EEOS	Y
CR16/CR17	11/18/99	9:05	129	F7	CC	11/18/99	12:46/12:51	PRESSURE TEST	27	26	FULL SEAM	Y
CR18/CR19	11/18/99	9:00	57	F6	BB	11/18/99	1:28/1:33	PRESSURE TEST	30	29	FULL SEAM	Y
CR17/CR19	11/18/99	9:10	178	F6	BB	11/18/99	1:17/1:22	PRESSURE TEST	31	29	FULL SEAM	Y
CR19/CR20	11/18/99	9:30	265	F7	CC	11/18/99	1:26/1:31	PRESSURE TEST	31	29	FULL SEAM	Y
CR20/CR21	11/18/99	10:30	286	F6	BB	11/18/99	1:10/1:15	PRESSURE TEST	27	26	SEOS TO R14	Y
CR21/CR22	11/18/99	10:45	299	F7	CC	11/18/99	1:35/1:40	PRESSURE TEST	30	27	R14 TO NEOS	Y
CR22/CR23	11/18/99	12:56	307	F8	BB	11/18/99	1:25/1:30	PRESSURE TEST	30	30	SEOS TO R15	Y
CR23/CR24	11/18/99	1:10	309	F8	BB	11/18/99	1:43/1:48	PRESSURE TEST	30	28	R15 TO NEOS	Y
CR24/CR25	11/18/99	2:10	22	F9	CC	11/18/99	1:57/2:02	PRESSURE TEST	31	27	FULL SEAM	Y
CR25/CR26	11/18/99	2:05	172	F8	BB	11/18/99	2:00/2:05	PRESSURE TEST	30	28	FULL SEAM	Y
CR26/CR27	11/18/99	2:20	132	F8	BB	11/18/99	1:58/2:03	PRESSURE TEST	29	28	SEOS TO R19	Y
CR27/CR28	11/18/99	2:15	172	F9	CC	11/18/99	2:17/2:22	PRESSURE TEST	31	29	R19 TO NEOS	Y
CR28/CR29	11/18/99	2:30	128	F9	CC	11/18/99	2:42/2:47	PRESSURE TEST	30	28	FULL SEAM	Y
CR29/CR30	11/18/99	2:45	296	F8	BB	11/18/99	2:30/2:35	PRESSURE TEST	30	28	FULL SEAM	Y
CR30/CR31	11/18/99	2:50	132	F8	BB	11/18/99	2:51/2:56	PRESSURE TEST	30	29	FULL SEAM	Y
CR31/CR32	11/18/99	2:55	172	F9	CC	11/18/99	2:35/2:40	PRESSURE TEST	29	27	FULL SEAM	Y
CR32/CR33	11/18/99	3:00	128	F9	CC	11/18/99	2:54/2:59	PRESSURE TEST	30	28	FULL SEAM	Y
CR33/CR34	11/18/99	3:05	296	F8	BB	11/18/99	8:19/8:24	PRESSURE TEST	29	27	FULL SEAM	Y
CR34/CR35	11/18/99	3:10	139	F11	BB	11/18/99	8:47/8:52	PRESSURE TEST	30	30	FULL SEAM	Y
CR35/CR36	11/18/99	3:15	22	F10	CC	11/18/99	AM/	VACUUM BOX	-5	-5	WEOS TO R23	Y
CR36/CR37	11/18/99	3:20	286	F6	BB	11/18/99	1:35/1:40	PRESSURE TEST	30	27	R14 TO NEOS	Y
CR37/CR38	11/18/99	3:25	299	F7	CC	11/18/99	1:25/1:30	PRESSURE TEST	30	30	SEOS TO R15	Y
CR38/CR39	11/18/99	3:30	307	F8	BB	11/18/99	1:43/1:48	PRESSURE TEST	30	28	R15 TO NEOS	Y
CR39/CR40	11/18/99	3:35	309	F8	BB	11/18/99	1:57/2:02	PRESSURE TEST	31	27	FULL SEAM	Y
CR40/CR41	11/18/99	3:40	286	F6	BB	11/18/99	2:00/2:05	PRESSURE TEST	30	28	FULL SEAM	Y
CR41/CR42	11/18/99	3:45	309	F8	BB	11/18/99	1:58/2:03	PRESSURE TEST	29	28	SEOS TO R19	Y
CR42/CR43	11/18/99	3:50	286	F6	BB	11/18/99	2:17/2:22	PRESSURE TEST	31	29	R19 TO NEOS	Y
CR43/CR44	11/18/99	3:55	22	F9	CC	11/18/99	2:42/2:47	PRESSURE TEST	30	28	FULL SEAM	Y
CR44/CR45	11/18/99	4:00	172	F8	BB	11/18/99	2:30/2:35	PRESSURE TEST	30	28	FULL SEAM	Y
CR45/CR46	11/18/99	4:05	132	F8	BB	11/18/99	2:51/2:56	PRESSURE TEST	30	29	FULL SEAM	Y
CR46/CR47	11/18/99	4:10	172	F9	CC	11/18/99	2:35/2:40	PRESSURE TEST	29	27	FULL SEAM	Y
CR47/CR48	11/18/99	4:15	128	F9	CC	11/18/99	2:54/2:59	PRESSURE TEST	30	28	FULL SEAM	Y
CR48/CR49	11/18/99	4:20	296	F8	BB	11/18/99	8:19/8:24	PRESSURE TEST	29	27	FULL SEAM	Y
CR49/CR50	11/18/99	4:25	139	F11	BB	11/18/99	8:47/8:52	PRESSURE TEST	30	30	FULL SEAM	Y
CR50/CR51	11/18/99	4:30	22	F10	CC	11/18/99	AM/	VACUUM BOX	-5	-5	WEOS TO R23	Y
CR51/CR52	11/18/99	4:35	286	F6	BB	11/18/99	1:35/1:40	PRESSURE TEST	30	27	R14 TO NEOS	Y
CR52/CR53	11/18/99	4:40	299	F7	CC	11/18/99	1:25/1:30	PRESSURE TEST	30	30	SEOS TO R15	Y
CR53/CR54	11/18/99	4:45	307	F8	BB	11/18/99	1:43/1:48	PRESSURE TEST	30	28	R15 TO NEOS	Y
CR54/CR55	11/18/99	4:50	309	F8	BB	11/18/99	1:57/2:02	PRESSURE TEST	31	27	FULL SEAM	Y
CR55/CR56	11/18/99	4:55	286	F6	BB	11/18/99	2:00/2:05	PRESSURE TEST	30	28	FULL SEAM	Y
CR56/CR57	11/18/99	5:00	309	F8	BB	11/18/99	1:58/2:03	PRESSURE TEST	29	28	SEOS TO R19	Y
CR57/CR58	11/18/99	5:05	286	F6	BB	11/18/99	2:17/2:22	PRESSURE TEST	31	29	R19 TO NEOS	Y
CR58/CR59	11/18/99	5:10	22	F9	CC	11/18/99	2:42/2:47	PRESSURE TEST	30	28	FULL SEAM	Y
CR59/CR60	11/18/99	5:15	172	F8	BB	11/18/99	2:30/2:35	PRESSURE TEST	30	28	FULL SEAM	Y
CR60/CR61	11/18/99	5:20	132	F8	BB	11/18/99	2:51/2:56	PRESSURE TEST	30	29	FULL SEAM	Y
CR61/CR62	11/18/99	5:25	172	F9	CC	11/18/99	2:35/2:40	PRESSURE TEST	29	27	FULL SEAM	Y
CR62/CR63	11/18/99	5:30	128	F9	CC	11/18/99	2:54/2:59	PRESSURE TEST	30	28	FULL SEAM	Y
CR63/CR64	11/18/99	5:35	296	F8	BB	11/18/99	8:19/8:24	PRESSURE TEST	29	27	FULL SEAM	Y
CR64/CR65	11/18/99	5:40	139	F11	BB	11/18/99	8:47/8:52	PRESSURE TEST	30	30	FULL SEAM	Y
CR65/CR66	11/18/99	5:45	22	F10	CC	11/18/99	AM/	VACUUM BOX	-5	-5	WEOS TO R23	Y
CR66/CR67	11/18/99	5:50	286	F6	BB	11/18/99	1:35/1:40	PRESSURE TEST	30	27	R14 TO NEOS	Y
CR67/CR68	11/18/99	5:55	299	F7	CC	11/18/99	1:25/1:30	PRESSURE TEST	30	30	SEOS TO R15	Y
CR68/CR69	11/18/99	6:00	307	F8	BB	11/18/99	1:43/1:48	PRESSURE TEST	30	28	R15 TO NEOS	Y
CR69/CR70	11/18/99	6:05	309	F8	BB	11/18/99	1:57/2:02	PRESSURE TEST	31	27	FULL SEAM	Y
CR70/CR71	11/18/99	6:10	286	F6	BB	11/18/99	2:00/2:05	PRESSURE TEST	30	28	FULL SEAM	Y
CR71/CR72	11/18/99	6:15	309	F8	BB	11/18/99	1:58/2:03	PRESSURE TEST	29	28	SEOS TO R19	Y
CR72/CR73	11/18/99	6:20	286	F6	BB	11/18/99	2:17/2:22	PRESSURE TEST	31	29	R19 TO NEOS	Y
CR73/CR74	11/18/99	6:25	22	F9	CC	11/18/99	2:42/2:47	PRESSURE TEST	30	28	FULL SEAM	Y
CR74/CR75	11/18/99	6:30	172	F8	BB	11/18/99	2:30/2:35	PRESSURE TEST	30	28	FULL SEAM	Y
CR75/CR76	11/18/99	6:35	132	F8	BB	11/18/99	2:51/2:56	PRESSURE TEST	30	29	FULL SEAM	Y
CR76/CR77	11/18/99	6:40	172	F9	CC	11/18/99	2:35/2:40	PRESSURE TEST	29	27	FULL SEAM	Y
CR77/CR78	11/18/99	6:45	128	F9	CC	11/18/99	2:54/2:59	PRESSURE TEST	30	28	FULL SEAM	Y
CR78/CR79	11/18/99	6:50	296	F8	BB	11/18/99	8:19/8:24	PRESSURE TEST	29	27	FULL SEAM	Y
CR79/CR80	11/18/99	6:55	139	F11	BB	11/18/99	8:47/8:52	PRESSURE TEST	30	30	FULL SEAM	Y
CR80/CR81	11/18/99	7:00	22	F10	CC	11/18/99	AM/	VACUUM BOX	-5	-5	WEOS TO R23	Y
CR81/CR82	11/18/99	7:05	286	F6	BB	11/18/99	1:35/1:40	PRESSURE TEST	30	27	R14 TO NEOS	Y
CR82/CR83	11/18/99	7:10	299	F7	CC	11/18/99	1:25/1:30	PRESSURE TEST	30	30	SEOS TO R15	Y
CR83/CR84	11/18/99	7:15	307	F8	BB	11/18/99	1:43/1:48	PRESSURE TEST	30	28	R15 TO NEOS	Y
CR84/CR85	11/18/99	7:20	309	F8	BB	11/18/99	1:57/2:02	PRESSURE TEST	31	27	FULL SEAM	Y
CR85/CR86	11/18/99	7:25	286	F6	BB	11/18/99	2:00/2:05	PRESSURE TEST	30	28	FULL SEAM	Y
CR86/CR87	11/18/99	7:30	309	F8	BB	11/18/99	1:58/2:03	PRESSURE TEST	29	28	SEOS TO R19	Y
CR87/CR88	11/18/99	7:35	286	F6	BB	11/18/99	2:17/2:22	PRESSURE TEST	31	29	R19 TO NEOS	Y
CR88/CR89	11/18/99	7:40	22	F9	CC	11/18/99	2:42/2:47	PRESSURE TEST	30	28	FULL SEAM	Y
CR89/CR90	11/18/99	7:45	172	F8	BB	11/18/99	2:30/2:35	PRESSURE TEST	30	28	FULL SEAM	Y
CR90/CR91	11/18/99	7:50	132	F8	BB	11/18/99	2:51/2:56	PRESSURE TEST	30	29	FULL SEAM	Y
CR91/CR92	11/18/99	7:55	172	F9	CC	11/18/99	2:35/2:40	PRESSURE TEST	29	27	FULL SEAM	Y
CR92/CR93	11/18/99	8:00	128	F9	CC	11/18/99	2:54/2:59	PRESSURE TEST	30	28	FULL SEAM	Y
CR93/CR94	11/18/99	8:05	296	F8	BB	11/18/99	8:19/8:24	PRESSURE TEST	29	27	FULL SEAM	Y
CR94/CR95	11/18/99	8:10	139	F11	BB	11/18/99	8:47/8:52	PRESSURE TEST	30	30	FULL SEAM	Y
CR95/CR96	11/18/99	8:15	22	F10	CC	11/18/99	AM/	VACUUM BOX	-5	-5	WEOS TO R23	Y
CR96/CR97	11/18/99	8:20	286	F6	BB	11/18/99	1:35/1:40	PRESSURE TEST	30	27	R14 TO NEOS	Y
CR97/CR98	11/18/99	8:25	299	F7	CC	11/18/99	1:25/1:30	PRESSURE TEST	30	30	SEOS TO R15	Y
CR98/CR99	11/18/99	8:30	307	F8	BB	11/18/99	1:43/1:48	PRESSURE TEST	30	28	R15 TO NEOS	Y
CR99/CR100	11/18/99	8:35	309	F8	BB	11/18/99	1:57/2:02	PRESSURE TEST	31	27	FULL SEAM	Y
CR100/CR101	11/18/99	8:40	286	F6	BB	11/18/99	2:00/2:05	PRESSURE TEST	30	28	FULL SEAM	Y
CR101/CR102	11/18/99	8:45	309	F8	BB	11/18/99	1:58/2:03	PRESSURE TEST	29	28	SEOS TO R19	Y
CR102/CR103	11/18/99	8:50	286	F6	BB	11/18/99	2:17/2:22	PRESSURE TEST	31	29	R19 TO NEOS	Y
CR103/CR104	11/18/99	8:55	22	F9	CC	11/18/99	2:42/2:47	PRESSURE TEST	30	28	FULL SEAM	Y
CR104/CR105	11/18/99	9:00	172	F8	BB	11/18/99	2:30/2:35	PRESSURE TEST	30	28	FULL SEAM	Y
CR105/CR106	11/18/99	9:05	132	F8	BB	11/18/99	2:51/2:56	PRESSURE TEST	30	29	FULL SEAM	Y
CR106/CR107	11/18/99	9:10	172	F9	CC	11/18/99	2:35/2:40	PRESSURE TEST	29	27	FULL SEAM	Y
CR107/CR108	11/18/99	9:15	128	F9	CC	11/18/99	2:54/2:59	PRESSURE TEST	30	28	FULL SEAM	Y
CR108/CR109	11/18/99	9:20	296	F8	BB	11/18/99	8:19/8:24	PRESSURE TEST	29	27	FULL SEAM	Y
CR109/CR110	11/18/99	9:25	139	F11	BB	11/18/99	8:47/8:52	PRESSURE TEST	30	30	FULL SEAM	Y
CR110/CR111	11/18/99	9:30	22	F10	CC	11/18/99	AM/	VACUUM BOX	-5	-5	WEOS TO R23	Y
CR111/CR112	11/18/99	9:35	286	F6	BB	11/18/99	1:35/1:40	PRESSURE TEST	30	27	R14 TO NEOS	Y
CR112/CR113	11/18/99	9:40	299	F7	CC	11/18/99						



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SEAM No	DATE OF SEAMING	TIME OF SEAMING	SEAM LENGTH	TRIAL No	TECHNICIAN	TEST DATE	TEST TIME	NON-DESTRUCTIVE TEST	STARTING PRESSURE	ENDING PRESSURE	NON-DESTRUCTIVE TESTING DETAILS	ACCEPTED (Y/N)
CR29/CR31	11/19/99	8:20	139	F10	CC	11/19/99	8:48/8:53	PRESSURE TEST	30	28	FULL SEAM	Y
CR30/CR31	11/19/99	8:40	148	F10	CC	11/19/99	9:46/9:51	PRESSURE TEST	30	28	FULL SEAM	Y
CR31/CR32	11/19/99	9:00	286	F11	BB	11/19/99	1:47/1:52	PRESSURE TEST	30	28	FULL SEAM	Y
CR32/CR33	11/19/99	9:20	280	F10	CC	11/19/99	12:29/12:34	PRESSURE TEST	30	26	FULL SEAM	Y
CR33/CR34	11/19/99	9:23	272	F11	BB	11/19/99	12:30/12:35	PRESSURE TEST	31	29	FULL SEAM	Y
CR28/CR30	11/19/99	8:40	146	F11	BB	11/19/99	9:46/9:51	PRESSURE TEST	30	29	FULL SEAM	Y
CR34/CR35	11/19/99	9:50	220	F10	CC	11/19/99	12:30/12:35	PRESSURE TEST	27	24	FULL SEAM	Y
CR35/CR36	11/19/99	10:20	22	F10	CC	11/19/99	AM/	VACUUM BOX	-5	-5	FULL SEAM	Y
CR35/CR37	11/19/99	11:00	220	F11	BB	11/19/99	12:40/12:45	PRESSURE TEST	30	28	FULL SEAM	Y
CR36/CR37	11/19/99	11:20	51	F11	BB	11/19/99	2:03/2:08	PRESSURE TEST	30	28	FULL SEAM	Y
CR37/CR38	11/19/99	11:00	267	F10	CC	11/19/99	12:40/12:45	PRESSURE TEST	26	25	FULL SEAM	Y
3CR9/CR40	11/19/99	11:45	181	F11	BB	11/19/99	12:00/12:05	PRESSURE TEST	30	29	FULL SEAM	Y
3CR8/CR40	11/19/99	11:30	83	F11	BB	11/19/99	2:17/2:22	PRESSURE TEST	31	29	FULL SEAM	Y
CR40/CR9	11/19/99	12:00	83	F10	CC	11/19/99	2:23/2:28	PRESSURE TEST	30	28	R28 TO R30	Y
						11/19/99	AM/	VACUUM BOX	-5	-5	R30 TO SEOS	Y
CR39/CR9	11/19/99	12:20	184	F10	CC	11/19/99	2:35/2:40	PRESSURE TEST	30	28	FULL SEAM	Y

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SEAM No	DATE OF SEAMING	TIME OF SEAMING	SEAM LENGTH	TRIAL No	TECHNICIAN	TEST DATE	TEST TIME	NON-DESTRUCTIVE	STARTING PRESSURE	ENDING PRESSURE	NON-DESTRUCTIVE TESTING DETAILS	ACCEPTED (Y/N)
EXIST/CR1	11/3/99	11:14	192	E1	CC	11/5/99	PM/	VACUUM BOX	-5	-5	FULL SEAM	Y
CR1/CR2	11/3/99	3:00	186	F1	BB	11/4/99	9:55/10:00	PRESSURE TEST	30	30	Tie-in to R116	Y
CR2/CR3	11/4/99	8:30	199	F2	BB	11/4/99	10:04/10:09	PRESSURE TEST	30	29	R116 To SEOS	Y
CR3/CR4	11/4/99	9:15	210	F2	BB	11/4/99	10:14/10:19	PRESSURE TEST	30	30	Tie-in to R118	Y
CR4/CR5	11/4/99	10:05	222	F2	BB	11/4/99	10:18/10:23	PRESSURE TEST	30	28	R118 TO SEOS	Y
CR5/CR6	11/4/99	1:30	223	F3	BB	11/4/99	10:24/10:29	PRESSURE TEST	30	30	FULL SEAM	Y
CR6/CR7	11/4/99	1:55	235	F3	BB	11/4/99	10:43/10:48	PRESSURE TEST	30	30	FULL SEAM	Y
CR7/CR8	11/4/99	2:40	246	F3	BB	11/4/99	1:54/1:59	PRESSURE TEST	30	28	FULL SEAM	Y
CR8/CR9	11/4/99	2:42	257	F4	BA	11/4/99	2:33/2:38	PRESSURE TEST	30	29	FULL SEAM	Y
EXIST/CR9	11/5/99	AM	22	E3	BB	11/5/99	9:41/9:46	PRESSURE TEST	30	30	FULL SEAM	Y
EXIST/CR8	11/5/99	AM	22	E3	BB	11/5/99	9:54/9:59	PRESSURE TEST	29	27	FULL SEAM	Y
EXIST/CR7	11/5/99	AM	22	E3	BB	11/5/99	PM/	VACUUM TEST	-5	-5	FULL SEAM	Y
EXIST/CR6	11/5/99	AM	22	E3	BB	11/5/99	PM/	VACUUM BOX	-5	-5	FULL SEAM	Y
EXIST/CR5	11/5/99	AM	22	E3	BB	11/5/99	PM/	VACUUM BOX	-5	-5	FULL SEAM	Y
EXIST/CR4	11/5/99	AM	22	E3	BB	11/5/99	PM/	VACUUM BOX	-5	-5	FULL SEAM	Y
EXIST/CR3	11/5/99	AM	22	E3	BB	11/5/99	PM/	VACUUM BOX	-5	-5	FULL SEAM	Y
EXIST/CR2	11/5/99	AM	22	E3	BB	11/5/99	PM/	VACUUM BOX	-5	-5	FULL SEAM	Y
CR10/CR11	11/17/99	1:30	181	F5	BB	11/18/99	7:59/8:04	PRESSURE TEST	27	26	FULL SEAM	Y
CR11/CR12	11/17/99	2:00	186	F5	BB	11/18/99	7:58/8:04	PRESSURE TEST	30	29	FULL SEAM	Y
CR12/CR13	11/17/99	2:30	192	F5	BB	11/18/99	7:58/8:04	PRESSURE TEST	31	30	FULL SEAM	Y
CR13/CR14	11/17/99	3:00	197	F5	BB	11/18/99	8:15/8:19	PRESSURE TEST	30	30	FULL SEAM	Y
CR14/CR15	11/17/99	3:30	197	F5	BB	11/18/99	8:16/8:21	PRESSURE TEST	30	27	FULL SEAM	Y
CR15/CR16	11/18/99	8:20	186	F6	BB	11/18/99	12:47/12:52	PRESSURE TEST	32	30	FULL SEAM	Y

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SEAM No	DATE OF SEAMING	TIME OF SEAMING	SEAM LENGTH	TRIAL No	TECHNICIAN	TEST DATE	TEST TIME	NON-DESTRUCTIVE	STARTING PRESSURE	ENDING PRESSURE	NON-DESTRUCTIVE TESTING DETAILS	ACCEPTED (Y/N)
CR17/CR18	11/18/99	8:55	22	F6	BB	11/18/99	1:22/1:27	PRESSURE TEST	30	27	WEOS TO R131	Y
CR16/CR18	11/18/99	9:00	57	F7	CC	11/18/99	1:26/1:31	PRESSURE TEST	30	29	R131 TO EOS	Y
CR16/CR17	11/18/99	9:05	129	F7	CC	11/18/99	12:46/12:51	PRESSURE TEST	27	26	FULL SEAM	Y
CR18/CR19	11/18/99	9:00	57	F6	BB	11/18/99	1:28/1:33	PRESSURE TEST	30	29	FULL SEAM	Y
CR17/CR19	11/18/99	9:10	178	F6	BB	11/18/99	1:17/1:22	PRESSURE TEST	31	29	FULL SEAM	Y
CR19/CR20	11/18/99	9:30	265	F7	CC	11/18/99	1:26/1:31	PRESSURE TEST	31	29	FULL SEAM	Y
CR20/CR21	11/18/99	10:30	286	F6	BB	11/18/99	1:10/1:15	PRESSURE TEST	27	26	SEOS TO R129	Y
CR21/CR22	11/18/99	10:45	299	F7	CC	11/18/99	1:35/1:40	PRESSURE TEST	30	27	R129 TO NEOS	Y
CR22/CR23	11/18/99	12:56	307	F8	BB	11/18/99	1:25/1:30	PRESSURE TEST	30	30	SEOS TO R130	Y
CR23/CR24	11/18/99	1:10	309	F8	BB	11/18/99	1:43/1:48	PRESSURE TEST	30	28	R130 TO NEOS	Y
CR24/CR25	11/18/99	2:10	22	F9	CC	11/18/99	1:57/2:02	PRESSURE TEST	31	27	FULL SEAM	Y
CR25/CR26	11/18/99	2:05	172	F8	BB	11/18/99	2:00/2:05	PRESSURE TEST	30	28	FULL SEAM	Y
CR26/CR27	11/18/99	2:20	132	F8	BB	11/18/99	2:58/2:03	PRESSURE TEST	29	28	SEOS TO R134	Y
CR27/CR28	11/18/99	2:15	172	F9	CC	11/18/99	2:17/2:22	PRESSURE TEST	31	29	R134 TO NEOS	Y
CR28/CR29	11/18/99	2:30	128	F9	CC	11/18/99	2:42/2:47	PRESSURE TEST	30	28	FULL SEAM	Y
CR29/CR30	11/18/99	2:45	296	F8	BB	11/18/99	2:30/2:35	PRESSURE TEST	30	28	FULL SEAM	Y
CR30/CR31	11/18/99	2:40	148	F10	CC	11/18/99	2:51/2:56	PRESSURE TEST	30	29	FULL SEAM	Y
CR31/CR32	11/18/99	2:50	139	F11	BB	11/18/99	2:35/2:40	PRESSURE TEST	29	27	FULL SEAM	Y
CR32/CR33	11/18/99	2:55	128	F9	CC	11/18/99	2:54/2:59	PRESSURE TEST	30	28	FULL SEAM	Y
CR33/CR34	11/18/99	3:00	139	F10	CC	11/18/99	2:58/2:03	PRESSURE TEST	29	28	FULL SEAM	Y
CR34/CR35	11/18/99	3:05	148	F11	BB	11/18/99	2:51/2:56	PRESSURE TEST	30	29	FULL SEAM	Y
CR35/CR36	11/18/99	3:10	157	F12	CC	11/18/99	2:42/2:47	PRESSURE TEST	30	28	FULL SEAM	Y
CR36/CR37	11/18/99	3:15	166	F13	BB	11/18/99	2:30/2:35	PRESSURE TEST	30	28	FULL SEAM	Y
CR37/CR38	11/18/99	3:20	175	F14	CC	11/18/99	2:22/2:27	PRESSURE TEST	30	27	FULL SEAM	Y
CR38/CR39	11/18/99	3:25	184	F15	BB	11/18/99	2:14/2:19	PRESSURE TEST	29	26	FULL SEAM	Y
CR39/CR40	11/18/99	3:30	193	F16	CC	11/18/99	2:06/2:11	PRESSURE TEST	29	25	FULL SEAM	Y
CR40/CR41	11/18/99	3:35	202	F17	BB	11/18/99	1:58/2:03	PRESSURE TEST	29	24	FULL SEAM	Y
CR41/CR42	11/18/99	3:40	211	F18	CC	11/18/99	1:50/1:55	PRESSURE TEST	28	23	FULL SEAM	Y
CR42/CR43	11/18/99	3:45	220	F19	BB	11/18/99	1:42/1:47	PRESSURE TEST	28	22	FULL SEAM	Y
CR43/CR44	11/18/99	3:50	229	F20	CC	11/18/99	1:34/1:39	PRESSURE TEST	27	21	FULL SEAM	Y
CR44/CR45	11/18/99	3:55	238	F21	BB	11/18/99	1:26/1:31	PRESSURE TEST	27	20	FULL SEAM	Y
CR45/CR46	11/18/99	4:00	247	F22	CC	11/18/99	1:18/1:23	PRESSURE TEST	27	19	FULL SEAM	Y
CR46/CR47	11/18/99	4:05	256	F23	BB	11/18/99	1:10/1:15	PRESSURE TEST	27	18	FULL SEAM	Y
CR47/CR48	11/18/99	4:10	265	F24	CC	11/18/99	1:02/1:07	PRESSURE TEST	27	17	FULL SEAM	Y
CR48/CR49	11/18/99	4:15	274	F25	BB	11/18/99	1:04/1:09	PRESSURE TEST	27	16	FULL SEAM	Y
CR49/CR50	11/18/99	4:20	283	F26	CC	11/18/99	1:06/1:11	PRESSURE TEST	27	15	FULL SEAM	Y
CR50/CR51	11/18/99	4:25	292	F27	BB	11/18/99	1:08/1:13	PRESSURE TEST	27	14	FULL SEAM	Y
CR51/CR52	11/18/99	4:30	301	F28	CC	11/18/99	1:10/1:15	PRESSURE TEST	27	13	FULL SEAM	Y
CR52/CR53	11/18/99	4:35	310	F29	BB	11/18/99	1:12/1:17	PRESSURE TEST	27	12	FULL SEAM	Y
CR53/CR54	11/18/99	4:40	319	F30	CC	11/18/99	1:14/1:19	PRESSURE TEST	27	11	FULL SEAM	Y
CR54/CR55	11/18/99	4:45	328	F31	BB	11/18/99	1:16/1:21	PRESSURE TEST	27	10	FULL SEAM	Y
CR55/CR56	11/18/99	4:50	337	F32	CC	11/18/99	1:18/1:23	PRESSURE TEST	27	9	FULL SEAM	Y
CR56/CR57	11/18/99	4:55	346	F33	BB	11/18/99	1:20/1:25	PRESSURE TEST	27	8	FULL SEAM	Y
CR57/CR58	11/18/99	5:00	355	F34	CC	11/18/99	1:22/1:27	PRESSURE TEST	27	7	FULL SEAM	Y
CR58/CR59	11/18/99	5:05	364	F35	BB	11/18/99	1:24/1:29	PRESSURE TEST	27	6	FULL SEAM	Y
CR59/CR60	11/18/99	5:10	373	F36	CC	11/18/99	1:26/1:31	PRESSURE TEST	27	5	FULL SEAM	Y
CR60/CR61	11/18/99	5:15	382	F37	BB	11/18/99	1:28/1:33	PRESSURE TEST	27	4	FULL SEAM	Y
CR61/CR62	11/18/99	5:20	391	F38	CC	11/18/99	1:30/1:35	PRESSURE TEST	27	3	FULL SEAM	Y
CR62/CR63	11/18/99	5:25	400	F39	BB	11/18/99	1:32/1:37	PRESSURE TEST	27	2	FULL SEAM	Y
CR63/CR64	11/18/99	5:30	409	F40	CC	11/18/99	1:34/1:39	PRESSURE TEST	27	1	FULL SEAM	Y
CR64/CR65	11/18/99	5:35	418	F41	BB	11/18/99	1:36/1:41	PRESSURE TEST	27	0	FULL SEAM	Y
CR65/CR66	11/18/99	5:40	427	F42	CC	11/18/99	1:38/1:43	PRESSURE TEST	27	-1	FULL SEAM	Y
CR66/CR67	11/18/99	5:45	436	F43	BB	11/18/99	1:40/1:45	PRESSURE TEST	27	-2	FULL SEAM	Y
CR67/CR68	11/18/99	5:50	445	F44	CC	11/18/99	1:42/1:47	PRESSURE TEST	27	-3	FULL SEAM	Y
CR68/CR69	11/18/99	5:55	454	F45	BB	11/18/99	1:44/1:49	PRESSURE TEST	27	-4	FULL SEAM	Y
CR69/CR70	11/18/99	6:00	463	F46	CC	11/18/99	1:46/1:51	PRESSURE TEST	27	-5	FULL SEAM	Y
CR70/CR71	11/18/99	6:05	472	F47	BB	11/18/99	1:48/1:53	PRESSURE TEST	27	-6	FULL SEAM	Y
CR71/CR72	11/18/99	6:10	481	F48	CC	11/18/99	1:50/1:55	PRESSURE TEST	27	-7	FULL SEAM	Y
CR72/CR73	11/18/99	6:15	490	F49	BB	11/18/99	1:52/1:57	PRESSURE TEST	27	-8	FULL SEAM	Y
CR73/CR74	11/18/99	6:20	499	F50	CC	11/18/99	1:54/1:59	PRESSURE TEST	27	-9	FULL SEAM	Y
CR74/CR75	11/18/99	6:25	508	F51	BB	11/18/99	1:56/2:01	PRESSURE TEST	27	-10	FULL SEAM	Y
CR75/CR76	11/18/99	6:30	517	F52	CC	11/18/99	1:58/2:03	PRESSURE TEST	27	-11	FULL SEAM	Y
CR76/CR77	11/18/99	6:35	526	F53	BB	11/18/99	1:50/1:55	PRESSURE TEST	27	-12	FULL SEAM	Y
CR77/CR78	11/18/99	6:40	535	F54	CC	11/18/99	1:52/1:57	PRESSURE TEST	27	-13	FULL SEAM	Y
CR78/CR79	11/18/99	6:45	544	F55	BB	11/18/99	1:54/1:59	PRESSURE TEST	27	-14	FULL SEAM	Y
CR79/CR80	11/18/99	6:50	553	F56	CC	11/18/99	1:56/2:01	PRESSURE TEST	27	-15	FULL SEAM	Y
CR80/CR81	11/18/99	6:55	562	F57	BB	11/18/99	1:58/2:03	PRESSURE TEST	27	-16	FULL SEAM	Y
CR81/CR82	11/18/99	7:00	571	F58	CC	11/18/99	1:50/1:55	PRESSURE TEST	27	-17	FULL SEAM	Y
CR82/CR83	11/18/99	7:05	580	F59	BB	11/18/99	1:52/1:57	PRESSURE TEST	27	-18	FULL SEAM	Y
CR83/CR84	11/18/99	7:10	589	F60	CC	11/18/99	1:54/1:59	PRESSURE TEST	27	-19	FULL SEAM	Y
CR84/CR85	11/18/99	7:15	598	F61	BB	11/18/99	1:56/2:01	PRESSURE TEST	27	-20	FULL SEAM	Y
CR85/CR86	11/18/99	7:20	607	F62	CC	11/18/99	1:58/2:03	PRESSURE TEST	27	-21	FULL SEAM	Y
CR86/CR87	11/18/99	7:25	616	F63	BB	11/18/99	1:50/1:55	PRESSURE TEST	27	-22	FULL SEAM	Y
CR87/CR88	11/18/99	7:30	625	F64	CC	11/18/99	1:52/1:57	PRESSURE TEST	27	-23	FULL SEAM	Y
CR88/CR89	11/18/99	7:35	634	F65	BB	11/18/99	1:54/1:59	PRESSURE TEST	27	-24	FULL SEAM	Y
CR89/CR90	11/18/99	7:40	643	F66	CC	11/18/99	1:56/2:01	PRESSURE TEST	27	-25	FULL SEAM	Y
CR90/CR91	11/18/99	7:45	652	F67	BB	11/18/99	1:58/2:03	PRESSURE TEST	27	-26	FULL SEAM	Y
CR91/CR92	11/18/99	7:50	661	F68	CC	11/18/99	1:50/1:55	PRESSURE TEST	27	-27	FULL SEAM	Y
CR92/CR93	11/18/99	7:55	670	F69	BB	11/18/99	1:52/1:57	PRESSURE TEST	27	-28	FULL SEAM	Y
CR93/CR94	11/18/99	8:00	679	F70	CC	11/18/99	1:54/1:59	PRESSURE TEST	27	-29	FULL SEAM	Y
CR94/CR95	11/18/99	8:05	688	F71	BB	11/18/99	1:56/2:01	PRESSURE TEST	27	-30	FULL SEAM	Y
CR95/CR96	11/18/99	8:10	697	F72	CC	11/18/99	1:58/2:03	PRESSURE TEST	27	-31	FULL SEAM	Y
CR96/CR97	11/18/99	8:15	706	F73	BB	11/18/99	1:50/1:55	PRESSURE TEST	27	-32	FULL SEAM	Y
CR97/CR98	11/18/99	8:20	715	F74	CC	11/18/99	1:52/1:57	PRESSURE TEST	27	-33	FULL SEAM	Y
CR98/CR99	11/18/99	8:25	724	F75	BB	11/18/99	1:54/1:59	PRESSURE TEST	27	-34	FULL SEAM	Y
CR99/CR100	11/18/99	8:30	733	F76	CC	11/18/99	1:56/2:01	PRESSURE TEST	27	-35	FULL SEAM	Y
CR100/CR101	11/18/99	8:35	742	F77	BB	11/18/99	1:58/2:03	PRESSURE TEST	27	-36	FULL SEAM	Y
CR101/CR102	11/18/99	8:40	751	F78	CC	11/18/99	1:50/1:55	PRESSURE TEST	27	-37	FULL SEAM	Y
CR102/CR103	11/18/99	8:45	760	F79	BB	11/18/99	1:52/1:57	PRESSURE TEST	27	-38	FULL SEAM	Y
CR103/CR104	11/18/99	8:50	769	F80	CC	11/18/99	1:54/1:59	PRESSURE TEST	27	-39	FULL SEAM	Y
CR104/CR105	11/18/99	8:55	778	F81	BB	11/18/99	1:56/2:01	PRESSURE TEST	27	-40	FULL SEAM	Y
CR105/CR106	11/18/99	9:00	787	F82	CC	11/18/99	1:58/2:03	PRESSURE TEST	27	-41	FULL SEAM	Y
CR106/CR107	11/18/99	9:05	796	F83	BB	11/18/99	1:50/1:55	PRESSURE TEST	27	-42	FULL SEAM	Y
CR107/CR108	11/18/99	9:10	805	F84	CC	11/18/99	1:52/1:57	PRESSURE TEST	27	-43	FULL SEAM	Y
CR108/CR109	11/18/99	9:15	814	F85	BB	11/18/99	1:54/1:59	PRESSURE TEST	27	-44	FULL SEAM	Y
CR109/CR110	11/18/99	9:20	823	F86	CC	11/18/99	1:56/2:01	PRESSURE TEST	27	-45	FULL SEAM	Y
CR110/CR111	11/18/99	9:25	832	F87	BB	11/18/99	1:58/2:03	PRESSURE TEST	27	-46	FULL SEAM	Y
CR111/CR112	11/18/99	9:30	841	F88	CC	11/18/99						

SEAMING PROCEEDURES

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SEAM No	DATE OF SEAMING	TIME OF SEAMING	SEAM LENGTH	TRIAL No	TECHNICIAN	TEST DATE	TEST TIME	NON-DESTRUCTIVE	STARTING PRESSURE	ENDING PRESSURE	NON-DESTRUCTIVE TESTING DETAILS	ACCEPTED (Y/N)
CR31/CR32	11/19/99	9:00	286	F11	BB	11/19/99	1:47/1:52	PRESSURE TEST	30	28	FULL SEAM	Y
CR32/CR33	11/19/99	9:20	280	F10	CC	11/19/99	12:29/12:34	PRESSURE TEST	30	26	FULL SEAM	Y
CR33/CR34	11/19/99	9:23	272	F11	BB	11/19/99	12:30/12:35	PRESSURE TEST	31	29	FULL SEAM	Y
CR28/CR30	11/19/99	8:40	146	F11	BB	11/19/99	9:46/9:51	PRESSURE TEST	30	29	FULL SEAM	Y
CR34/CR35	11/19/99	9:50	220	F10	CC	11/19/99	12:30/12:35	PRESSURE TEST	27	24	FULL SEAM	Y
CR35/CR36	11/19/99	10:20	22	F10	CC	11/19/99	AM/	VACUUM BOX	-5	-5	FULL SEAM	Y
CR35/CR37	11/19/99	11:00	220	F11	BB	11/19/99	12:40/12:45	PRESSURE TEST	30	28	FULL SEAM	Y
CR36/CR37	11/19/99	11:20	51	F11	BB	11/19/99	2:03/2:08	PRESSURE TEST	30	28	FULL SEAM	Y
CR37/CR38	11/19/99	11:00	267	F10	CC	11/19/99	12:40/12:45	PRESSURE TEST	26	25	FULL SEAM	Y
CR39/CR40	11/19/99	11:45	181	F11	BB	11/19/99	12:00/12:05	PRESSURE TEST	30	29	FULL SEAM	Y
CR38/CR40	11/19/99	11:30	83	F11	BB	11/19/99	2:17/2:22	PRESSURE TEST	31	29	FULL SEAM	Y
CR40/CR9	11/19/99	12:00	83	F10	CC	11/19/99	2:23/2:28	PRESSURE TEST	30	28	R144 TO R147	Y
						11/19/99	AM/	VACUUM BOX	-5	-5	R147 TO SEOS	Y
CR39/CR9	11/19/99	12:20	184	F10	CC	11/19/99	2:35/2:40	PRESSURE TEST	30	28	FULL SEAM	Y
CR38/CR39	11/19/99	11:50	184	F11	BB	11/19/99	2:10/2:15	PRESSURE TEST	30	30	FULL SEAM	Y
CR34/CR36	11/19/99	10:30	52	F11	BB	11/19/99	1:50/1:55	PRESSURE TEST	30	30	R141 TO DT18	Y
						11/19/99	1:55/2:00	PRESSURE TEST	30	30	DT18 TO NEOS	Y
EXIST/CR10-CR39	11/22/99	9:00	880	E6	CC	11/22/99	AM/	VACUUM BOX	-5		FULL SEAM	Y

PROJECT NAME: MOREAU REPAIRS
 PROJECT No: SU99035
 QC Inspector: MASTRO
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REPAIR No	TYPE OF REPAIR	PANEL No	SEAM No	INTERSECTION	LOCATION OF REPAIR	DATE REPAIRED	DATE VERIFIED (TESTED)	ACCEPTED (Y/N)
1	PATCH	225			47' SOUTH, 23' WEST FROM GV-4	4/20/99	4/20/99	Y
2	PATCH	192			95' SOUTH FROM GV-5	4/20/99	4/20/99	Y
3	3 PATCH CLUSTER	191			44' WEST, 40' SOUTH FROM GV-9	4/20/99	4/20/99	Y
4	PATCH	189			40' SOUTH, 5' WEST FROM GV-9	4/20/99	4/20/99	Y
5	NEW GAS VENT (GV-A)	188			66' WEST, 37' SOUTH FROM GV-10	4/20/99	4/20/99	Y
6	NEW GAS VENT (GV-B)	184			34' WEST, 37' SOUTH FROM GV-10	4/20/99	4/20/99	Y
7	PATCH	171			92' SOUTH FROM GV-18	4/20/99	4/20/99	Y
8	EXTRUSION WELD BEAD	170			92' SOUTH, 10' WEST FROM GV-18	4/20/99	4/20/99	Y
9	NEW GAS VENT (GV-C)	51			62' SOUTH, 10' EAST FROM GV-36	4/20/99	4/21/99	Y
10	PATCH	280			89' EAST, 23' NORTH FROM GV-56	4/21/99	4/21/99	Y
11	3 EXTRUSION WELD BEADS	151			28' EAST, 53' NORTH FROM GV-56	4/21/99	4/21/99	Y
12	NEW GAS VENT (GV-D)	56			43' WEST, 36' NORTH FROM GV-36	4/21/99	4/21/99	Y
13	NEW GAS VENT (GV-E)	44			31' WEST, 22' SOUTH FROM GV-F	4/21/99	4/21/99	Y
14	NEW GAS VENT (GV-F)	42			41' SOUTH, 18' EAST FROM GV-37	4/21/99	4/21/99	Y
15	NEW GAS VENT (GV-G)	248			41' SOUTH FROM GV-24	4/21/99	4/22/99	Y
16	NEW GAS VENT (GV-H)	86			37' NORTH, 23' WEST FROM GV-64	4/21/99	4/21/99	Y
17	NEW GAS VENT (GV-I)	92			14' EAST, 40' NORTH FROM GV-68	4/21/99	4/21/99	Y
18	NEW GAS VENT (GV-J)	86			35' EAST, 38' SOUTH FROM GV-69	4/21/99	4/21/99	Y
19	NEW GAS VENT (GV-K)	78			53' NORTH FROM GV-70	4/21/99	4/21/99	Y
20	NEW GAS VENT (GV-L)	9			48' NORTH, 75' WEST FROM GV-41	4/21/99	4/21/99	Y
21	NEW GAS VENT (GV-M)	174			27' NORTH, 15' WEST FROM GV-41	4/21/99	4/21/99	Y
22	PATCH	180			27' NORTH, 15' WEST FROM GV-28	4/22/99	4/22/99	Y
23	NEW GAS VENT (GV-N)	178			44' EAST, 44' NORTH FROM GV-28	4/22/99	4/22/99	Y
24	NEW GAS VENT (GV-O)	176			72' EAST FROM GV-17	4/22/99	4/22/99	Y
25	NEW GAS VENT (GV-P)	164			46' NORTH, 40' WEST FROM GV-35	4/22/99	4/22/99	Y
26	NEW GAS VENT (GV-Q)	165			50' EAST, 35' NORTH FROM GV-34	4/22/99	4/22/99	Y
27	NEW GAS VENT (GV-R)	151			50' WEST, 10' SOUTH FROM GV-44	4/22/99	4/22/99	Y



PROJECT NAME: MOREAU REPAIRS
PROJECT No: SU99035
QC Inspector: MASTRO
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REPAIR No	TYPE OF REPAIR	PANEL No	SEAM No	INTERSECTION	LOCATION OF REPAIR	DATE REPAIRED	DATE VERIFIED (TESTED)	ACCEPTED (Y/N)
28	NEW GAS VENT(GV-S)	87			63' WEST, 22' SOUTH FROM GV-64	4/22/99	4/22/99	Y
29	NEW GAS VENT (GV-T)	87			41' NORTH, 67' EAST FROM GV-75	4/22/99	4/22/99	Y
30	NEW GAS VENT (GV-U)	153			60' WEST, 23' SOUTH FROM GV-47	4/22/99	4/22/99	Y
31	EXTRUSION WELD BEAD				ON PIPE BOOT APRON FOR GV-99E	4/22/99	4/22/99	Y
32	PATCH	44			15' WEST FROM R-31	4/22/99	4/22/99	Y
33	PATCH	46			10' WEST FROM R-32	4/22/99	4/22/99	Y
34	3 PATCH CLUSTER	46			40' WEST FROM R-31	4/22/99	4/22/99	Y
35	PATCH	46			20' EAST, 10' SOUTH FROM R-34	5/3/99	5/3/99	Y
36	PATCH	48			50' WEST FROM R-33	5/3/99	5/3/99	Y
37	PATCH	51			50' WEST, 50' SOUTH FROM R-36	5/3/99	5/3/99	Y
38	PATCH	51			50' SOUTH FROM R-37	5/3/99	5/3/99	Y
39	PATCH	51			40' SOUTH FROM R-38	5/3/99	5/3/99	Y
40	PATCH	223			20' SOUTH FROM GV-4	5/3/99	5/3/99	Y
41	PATCH	225			40' NORTH FROM GV-4	5/3/99	5/3/99	Y
42	PATCH	179			BASE OF GV-28	5/4/99	5/4/99	Y
43	PATCH	176			80' EAST, 40' NORTH FROM R-42	5/4/99	5/4/99	Y
44	EXTRUSION WELD BEAD	178			40' EAST, 60' NORTH FROM R-42	5/4/99	5/4/99	Y
45	EXTRUSION WELD BEAD	45			40' WEST, 10' SOUTH FROM R-14	5/4/99	5/4/99	Y
46	NEW GAS VENT (GV-V)	193			30' SOUTH FROM GV-8	5/5/99	5/5/99	Y
47	NEW GAS VENT (GV-W)	194			20' WEST, 10' NORTH FROM R-46	5/5/99	5/5/99	Y
48	EXTRUSION WELD BEAD	191			60' EAST FROM R-46	5/5/99	5/5/99	Y
49	NEW GAS VENT (GV-LL)				60' NORTHEAST FROM GV-G	5/11/99	5/11/99	Y
50	NEW GAS VENT (GV-MM)	23			25' NORTH FROM GV-39	5/11/99	5/11/99	Y
51	NEW GAS VENT (GV-NN)	188			40' NORTHEAST FROM GV-27	5/11/99	5/11/99	Y
52	NEW GAS VENT (GV-OO)	158			80' NORTHEAST FROM GV-46	5/11/99	5/11/99	Y
53	NEW GAS VENT (GV-AA)	160			40' EAST FROM GV-32	5/12/99	5/12/99	Y
54	NEW GAS VENT (GV-BB)	158			40' SOUTH FROM GV-32	5/12/99	5/12/99	Y



PROJECT NAME: MOREAU REPAIRS
PROJECT No: SU99035
QC Inspector: MASTRO
PAGE 3 to 8

REPAIR No	TYPE OF REPAIR	PANEL No	SEAM No	INTERSECTION	LOCATION OF REPAIR	DATE REPAIRED	DATE VERIFIED (TESTED)	ACCEPTED (Y/N)
55	NEW GAS VENT (GV-CC)	162			60' NORTHEAST FROM GV-32	5/12/99	5/12/99	Y
56	NEW GAS VENT (GV-DD)	157			70' SOUTHWEST FROM GV-32	5/12/99	5/12/99	Y
57	NEW GAS VENT (GV-EE)	91			30' NORTHEAST FROM GV-75	5/12/99	5/12/99	Y
58	NEW GAS VENT (GV-FF)	70			80' SOUTHEAST FROM GV-65	5/12/99	5/12/99	Y
59	NEW GAS VENT (GV-GG)	290			40' SOUTHEAST FROM GV-22	5/12/99	5/12/99	Y
60	NEW GAS VENT (GV-HH)	165			60' NORTH FROM GV-34	5/12/99	5/12/99	Y
61	NEW GAS VENT (GV-II)	164			80' NORTHWEST FROM GV-34	5/12/99	5/12/99	Y
62	NEW GAS VENT (GV-JJ)	162			30' NORTHWEST FROM GV-34	5/12/99	5/12/99	Y
63	NEW GAS VENT (GV-KK)	160			60' WEST FROM GV-34	5/12/99	5/12/99	Y
64	NEW GAS VENT (GV-PP)	192			70' NORTHWEST FROM GV-16	5/12/99	5/12/99	Y
65	REBUILD GAS VENT BOOT				GV-43	5/12/99	5/12/99	Y
66	REBUILD GAS VENT BOOT				GV-44	5/12/99	5/12/99	Y
67	REBUILD GAS VENT BOOT				GV-O	5/12/99	5/12/99	Y
68	REBUILD GAS VENT BOOT				GV-54	5/12/99	5/12/99	Y
69	REBUILD GAS VENT BOOT				GV-C	5/13/99	5/13/99	Y
70	REBUILD GAS VENT BOOT				GV-N	5/13/99	5/13/99	Y
71	REBUILD GAS VENT BOOT				GV-M	5/13/99	5/13/99	Y
72	REBUILD GAS VENT BOOT				GV-L	5/13/99	5/13/99	Y
73	REBUILD GAS VENT BOOT				GV-K	5/13/99	5/13/99	Y
74	REBUILD GAS VENT BOOT				GV-B	5/13/99	5/13/99	Y
75	REBUILD GAS VENT BOOT				GV-70	5/13/99	5/13/99	Y
76	REBUILD GAS VENT BOOT				GV-T	5/13/99	5/13/99	Y
77	REBUILD GAS VENT BOOT				GV-55	5/13/99	5/13/99	Y
78	REBUILD GAS VENT BOOT				GV-36	5/13/99	5/13/99	Y
79	REBUILD GAS VENT BOOT				GV-52	5/13/99	5/13/99	Y
80	REBUILD GAS VENT BOOT				GV-47	5/12/99	5/12/99	Y
81	REBUILD GAS VENT BOOT				GV-22	5/12/99	5/12/99	Y



PROJECT NAME: MOREAU REPAIRS
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REPAIR No	TYPE OF REPAIR	PANEL No	SEAM No	INTERSECTION	LOCATION OF REPAIR	DATE REPAIRED	DATE VERIFIED (TESTED)	ACCEPTED (Y/N)
82	BEBUILD GAS VENT BOOT				GV-H	5/12/99	5/12/99	Y
83	BEBUILD GAS VENT BOOT				GV-35	5/13/99	5/13/99	Y
84	BEBUILD GAS VENT BOOT				GV-42	5/13/99	5/13/99	Y
85	BEBUILD GAS VENT BOOT				GV-G	5/13/99	5/13/99	Y
86	BEBUILD GAS VENT BOOT				GV-E	5/13/99	5/13/99	Y
87	BEBUILD GAS VENT BOOT				GV-D	5/13/99	5/13/99	Y
88	BEBUILD GAS VENT BOOT				GV-51	5/13/99	5/13/99	Y
89	BEBUILD GAS VENT BOOT				GV-30	5/13/99	5/13/99	Y
90	BEBUILD GAS VENT BOOT				GAS VENT 60' SOUTH FROM GV-A	5/13/99	5/13/99	Y
91	BEBUILD GAS VENT BOOT				GV-29	5/12/99	5/12/99	Y
92	BEBUILD GAS VENT BOOT				GV-28	5/12/99	5/12/99	Y
93	BEBUILD GAS VENT BOOT				GV-P	5/13/99	5/13/99	Y
94	BEBUILD GAS VENT BOOT				GV-5	5/13/99	5/13/99	Y
95	BEBUILD GAS VENT BOOT				GV-4	5/13/99	5/13/99	Y
96	BEBUILD GAS VENT BOOT				GV-3	5/13/99	5/13/99	Y
97	BEBUILD GAS VENT BOOT				GAS VENT 100' EAST FROM GV-P	5/13/99	5/13/99	Y
98	BEBUILD GAS VENT BOOT				GAS VENT 40' EAST FROM GV-P	5/13/99	5/13/99	Y
99	PATCH	37			50' EAST FROM GV-59	5/18/99	5/18/99	Y
100	PATCH	47			35' NORTHEAST FROM GV-58	5/18/99	5/18/99	Y
101	NEW GAS VENT (GV-QQ)	183			30' SOUTH FROM GV-10	5/20/99	5/20/99	Y
102	NEW GAS VENT (GV-RR)	189			75' SOUTH FROM GV-9	5/20/99	5/20/99	Y
103	NEW GAS VENT (GV-SS)	192			90' NORTHWEST FROM GV-27	5/20/99	5/20/99	Y
104	NEW GAS VENT (GV-TT)	196			70' NORTH FROM GV-26	5/20/99	5/20/99	Y
105	NEW GAS VENT (GV-UU)	222			70' NORTHWEST FROM GV-26	5/20/99	5/20/99	Y
106	NEW GAS VENT (GV-VV)				55' SOUTHEAST FROM GV-99M	5/20/99	5/20/99	Y
107	NEW GAS VENT (GV-WW)				100' SOUTHEAST FROM GV-99M	5/20/99	5/20/99	Y
108	NEW GAS VENT (GV-XX)	173			120' SOUTHEAST FROM GV-17	5/20/99	5/20/99	Y



PROJECT NAME: MOREAU REPAIRS
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REPAIR No	TYPE OF REPAIR	PANEL No	SEAM No	INTERSECTION	LOCATION OF REPAIR	DATE REPAIRED	DATE VERIFIED (TESTED)	ACCEPTED (Y/N)
109	NEW GAS VENT (GV-YY)	167			100' SOUTHWEST FROM GV-18	5/20/99	5/20/99	Y
110	PATCH	290			10' NORTHWEST FROM GV-GG	5/21/99	5/21/99	Y
111	PATCH	180			30' NORTH FROM GV-28	5/21/99	5/21/99	Y
112	NEW GAS VENT (GV-ZZ)				15' NORTH FROM GV-MM	5/21/99	5/21/99	Y
113	PATCH	253			75' EAST FROM GV-23	5/21/99	5/21/99	Y
114	PATCH	151			20' SOUTH FROM GV-44	5/21/99	5/21/99	Y
115	PATCH	178			BASE OF GV-XX	5/21/99	5/21/99	Y
116	PATCH		1 / 2		51' SOUTH FROM TIE-IN TO EXISTING	11/22/99	11/22/99	Y
117	NEW GAS VENT (GV-)	CR2			15' SOUTH FROM TIE-IN, 4' WEST FROM SEAM 1 / 2	11/22/99	11/22/99	Y
118	NEW GAS VENT (GV-)		CR2/CR 3		28' SOUTH FROM TIE-IN	11/22/99	11/22/99	Y
119	EXTRUSION WELD BEAD	CR5			5' EAST FROM SEAM 5/6, 115' SOUTH FROM TIE-IN	11/22/99	11/22/99	Y
120	PATCH	CR7			15' SOUTH FROM TIE-IN, 10' EAST FROM SEAM 7/8	11/22/99	11/22/99	Y
121	NEW GAS VENT (GV-)	CR9			35' SOUTH FROM TIE-IN, 2' east from seam 9/39	11/22/99	11/22/99	Y
122	PATCH	8			15' SOUTH FROM TIE-IN, 2' WEST FROM SEAM 7/8	11/22/99	11/22/99	Y
123	NEW GAS VENT (GV-)	CR10			15' SOUTH FROM TIE-IN, 2' WEST FROM SEAM 10/11	11/23/99	11/23/99	Y
124	NEW GAS VENT (GV-)	CR11			1' EAST FROM SEAM 10/11, 98' SOUTH FROM TIE-IN	11/23/99	11/23/99	Y
125	NEW GAS VENT (GV-)	CR15			15' NORTH FROM SEOS, 12' EAST FROM SEAM 14/15	11/23/99	11/23/99	Y
126	NEW GAS VENT (GV-)	CR17			0' EAST FROM SEAM 16/17, 40' SOUTH FROM TIE-IN	11/23/99	11/23/99	Y
127	PATCH			CR16/CR17/CR18		11/23/99	11/23/99	Y
128	PATCH			CR17/CR18/CR19		11/23/99	11/23/99	Y
129	PATCH		CR19/CR20		104' SOUTH FROM TIE-IN	11/23/99	11/23/99	Y
130	NEW GAS VENT (GV-)		CR20/CR21		124' SOUTH FROM TIE-IN	11/23/99	11/23/99	Y
131	PATCH		CR17/CR18		12' WEST FROM R-128	11/22/99	11/23/99	Y
132	NEW GAS VENT	CR23			5' EAST FROM SEAM 22/23, 15' SOUTH FROM TIE-IN	11/23/99	11/23/99	Y
133	PATCH			CR24/CR25/CR26		11/22/99	11/22/99	Y
134	PATCH		CR23/CR24		25' NORTH FROM SEOS	11/22/99	11/22/99	Y
135	PATCH			CR28/CR29/CR30		11/22/99	11/22/99	Y

PROJECT NAME: MOREAU REPAIRS
 PROJECT No: SU99035
 QC Inspector: COLLINS
 PAGE 6 to 8

REPAIR No	TYPE OF REPAIR	PANEL No	SEAM No	INTERSECTION	LOCATION OF REPAIR	DATE REPAIRED	DATE VERIFIED (TESTED)	ACCEPTED (Y/N)
136	PATCH		CR29/CR30		7' EAST FROM R-135	11/22/99	11/22/99	Y
137	PATCH			CR29/CR30/CR31		11/22/99	11/22/99	Y
138	PATCH			CR25/CR36/CR27		11/22/99	11/22/99	Y
139	PATCH		CR29/CR30		8' EST FROM R-136	11/22/99	11/22/99	Y
140	NEW GAS VENT (GV-)		CR31/CR32		12' SOUTH FROM TIE-IN	11/22/99	11/22/99	Y
141	PATCH			CR34/CR35/CR36		11/22/99	11/22/99	Y
142	PATCH			CR35/CR36/CR37		11/22/99	11/22/99	Y
143	PATCH			CR38/CR39/CR40		11/22/99	11/22/99	Y
144	PATCH			CR39/CR40/CR9		11/22/99	11/22/99	Y
145	NEW GAS VENT (GV-)	CR37			5' W FROM SEAM 37/38, 16' S FROM TIE-IN	11/22/99	11/22/99	Y
146	PATCH		CR40/CR9		40' NORTH FROM SEOS	11/22/99	11/22/99	Y
147	PATCH		CR40/CR9		20' NORTH FROM SEOS	11/22/99	11/22/99	Y
148	PATCH		CR39/CR9		10' NORTH FROM R-144	11/22/99	11/22/99	Y
149	4 PATCH CLUSTER				55' SOUTH FROM GV-A-18	11/22/99	11/22/99	Y
150	REPAIR GAS VENT BOOT				GV-55	11/29/99	11/29/99	Y
151	REPAIR GAS VENT BOOT				GV-J	11/29/99	11/29/99	Y
152	REPAIR GAS VENT BOOT				GV-7, 25' NORTH FROM GV-A-10	11/29/99	11/29/99	Y
153	PATCH - GAS BUBBLE				25' SE FROM GV-A-12	11/29/99	11/29/99	Y
154	PATCH GAS BUBBLE				75' WEST FROM GV-A-12	11/29/99	11/29/99	Y
155	REPAIR GAS VENT BOOT				GV-64	11/29/99	11/29/99	Y
156	REPAIR GAS VENT BOOT				GV-K	11/29/99	11/29/99	Y
157	REPAIR GAS VENT BOOT				GV-A-13	11/29/99	11/29/99	Y
158	PATCH	95			65' NE FROM GV-74	11/29/99	11/29/99	Y
159	PATCH				50' SOUTH FROM GV-A-8	11/30/99	11/30/99	Y
160	REPAIR GAS VENT BOOT				50' SOUTH FROM GV-A-8	11/30/99	11/30/99	Y
161	REPAIR GAS VENT BOOT				GV-M	11/30/99	11/30/99	Y
162	PATCH				AT BASE OF GV-55	11/30/99	11/30/99	Y



PROJECT NAME: MOREAU REPAIRS
PROJECT No: SU99035
QC Inspector: COLLINS
PAGE 7 to 8

REPAIR No	TYPE OF REPAIR	PANEL No	SEAM No	INTERSECTION	LOCATION OF REPAIR	DATE REPAIRED	DATE VERIFIED (TESTED)	ACCEPTED (Y/N)
163	REPAIR GAS VENT BOOT				GV-O	12/1/99	12/1/99	Y
164	NEW 2" GAS VENT (GV-)				37' NORTH FROM GV-A-4	12/1/99	12/1/99	Y
165	NEW 2" GAS VENT (GV-)				36' SOUTH FROM GV-A-3	12/1/99	12/1/99	Y
166	NEW 2" GAS VENT (GV-)				33' NE FROM GV-A-3	12/1/99	12/1/99	Y
167	REPAIR GAS VENT BOOT				GV-YY	12/2/99	12/2/99	Y
168	NEW 2" GAS VENT (GV-)				35' SOUTH FROM GV-YY	12/2/99	12/2/99	Y
169	REPAIR GAS VENT BOOT				GV-XX	12/2/99	12/2/99	Y
170	PATCH HOLE	197			30' SOUTH FROM GV-UU	12/2/99	12/2/99	Y
171	NEW 2" GAS VENT (GV-)				10' SE FROM GV-A-2	12/2/99	12/2/99	Y
172	NEW 2" GAS VENT (GV-)				100' SE FROM GV-A-2	12/3/99	12/3/99	Y
173	REPLACE GAS VENT BOOT				GV-U	12/3/99	12/3/99	Y
174	REPAIR GAS VENT BOOT				GV-A-21	12/3/99	12/3/99	Y
175	NEW 2" GAS VENT (GV-)				22' SE FROM GV-A-21	12/3/99	12/3/99	Y
176	NEW 2" GAS VENT (GV-)	53			30' SOUTH FROM GV-36	12/3/99	12/3/99	Y
177	REPAIR GAS VENT BOOT				GV-F	12/3/99	12/3/99	Y
178	REPAIR GAS VENT BOOT				GV-E	12/3/99	12/3/99	Y
179	NEW 2" GAS VENT	46			25' WEST FROM GV-E	12/6/99	12/6/99	Y
180	NEW 2" GAS VENT (GV-)	51			70' SE FROM GV-D	12/6/99	12/6/99	Y
181	REPAIR GAS VENT BOOT				GV-A-23	12/6/99	12/6/99	Y
182	NEW 2" GAS VENT (GV-)				55' SOUTH FROM GV-A-18	12/7/99	12/7/99	Y
183	NEW 2" GAS VENT (GV-)				ADJACENT TO R182	12/7/99	12/7/99	Y
184	NEW 2" GAS VENT				20' NE FROM GV-A-18	12/7/99	12/7/99	Y
185	NEW 2" GAS VENT	151			55' SOUTH FROM GV-45	12/7/99	12/7/99	Y
186	NEW 2" GAS VENT	153			35' EAST FROM GV-44	12/7/99	12/7/99	Y
187	NEW 2" GAS VENT	153			30' SE FROM GV-45	12/7/99	12/7/99	Y
188	NEW 2" GAS VENT	149			70' NW FROM GV-56	12/8/99	12/8/99	Y
189	REPAIR GAS VENT BOOT				GV-50	12/8/99	12/9/99	Y



PROJECT NAME: MOREAU REPAIRS
PROJECT No: SU99035
QC Inspector:

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REPAIR No	TYPE OF REPAIR	PANEL No	SEAM No	INTERSECTION	LOCATION OF REPAIR	DATE REPAIRED	DATE VERIFIED (TESTED)	ACCEPTED (Y/N)
190	PATCH	257			30' WEST FROM GV-12	12/8/99	12/8/99	Y
191	REPAIR GAS VENT BOOT				GV-15	12/8/99	12/8/99	Y
192	NEW 2" GAS VENT (GV-)	195			20' WEST FROM GV-15	12/9/99	12/9/99	Y
193	REPAIR GAS VENT BOOT				GV-SS	12/9/99	12/9/99	Y
194	NEW 2" GAS VENT	191			70' WEST FROM GV-16	12/9/99	12/9/99	Y
195	NEW 2" GAS VENT	190			20' WEST FROM GV-16	12/9/99	12/9/99	Y
196	REPAIR GAS VENT BOOT				GV-MM	12/9/99	12/9/99	Y
197	REPAIR GAS VENT BOOT				GV-NN	12/9/99	12/9/99	Y
198	NEW 2" GAS VENT	281			50' SW FROM GV-GG	12/10/99	12/10/99	Y
199	NEW 2" GAS VENT	181			35' NW FROM GV-28	12/10/99	12/10/99	Y
200	PATCH	290			10' NORTH FROM GV-GG	12/10/99	12/10/99	Y

PROJECT NAME: Moreau Repairs
 PROJECT No: SU99035
 QC Inspector: Mancini
 TENSIONMETER No: 9602
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TRIAL No	SEAM No	SAMPLE LOCATION	DATE	TIME	PEEL FAIL	PEEL RESISTANCE	SHEAR FAIL	SHEAR RESISTANCE	DATE REPAIRED	DATE VERIFE	LAB (P/F)	
1	CR3/CR4	120' South of Tie-in	11/5	AM	NO	109 SE	111 SE	113 SE	NO	122 SE	11/5	P
2	CR5/CR6	78' South of Tie-in	11/5	AM	NO	110 SE	102 SE	108 SE	NO	126 SE	11/5	P
3	CR7/CR8	88' South of Tie-in	11/5	AM	NO	117 SE	121 SE	100 SE	NO	127 SE	11/5	P
4	CR11/CR12	South End of Seam	11/19	PM	NO	109 SE	110 SE	108 SE	NO	118 SE	11/22	P
5	CR13/CR14	South End of Seam	11/19	PM	NO	120 SE	117 SE	111 SE	NO	109 SE	11/22	P
6	CR15/CR16	South End of Seam	11/19	PM	NO	108 SE	105 SE	101 SE	NO	109 SE	11/22	P
7	CR18/CR19	South End of Seam	11/19	PM	NO	112 SE	106 SE	106 SE	NO	110 SE	11/22	P
8	CR20/CR21	South End of Seam	11/19	PM	NO	116 SE	112 SE	103 SE	NO	115 SE	11/22	P
9	2CR2/CR23	South End of Seam	11/19	PM	NO	106 SE	105 SE	100 SE	NO	121 SE	11/22	P
10	CR23/CR24	20' North of SEOS	11/19	PM	NO	103 SE	101 SE	100 SE	NO	115 SE	11/22	P
11	CR24/CR26	130' North of SEOS	11/22	PM	NO	94 SE	90 SE	93 SE	NO	100 SE	11/22	P
12	2CR6/CR27	41' South of Tie-in	11/22	PM	NO	96 SE	93 SE	87 SE	NO	114 SE	11/22	P
13	CR27/CR28	115' South of Tie-in	11/22	PM	NO	100 SE	92 SE	90 SE	NO	98 SE	11/22	P
14	CR28/CR29	72' South of Tie-in	11/22	PM	NO	96 SE	91 SE	93 SE	NO	101 SE	11/22	P
15	CR30/CR31	70' North of SEOS	11/22	AM	NO	96 SE	94 SE	91 SE	NO	104 SE	11/22	P
16	CR31/CR32	38' North of SEOS	11/22	AM	NO	101 SE	100 SE	94 SE	NO	88 SE	11/22	P
17	CR32/CR33	25' South of Tie-in	11/22	AM	NO	91 SE	92 SE	90 SE	NO	92 SE	11/22	P



PROJECT NAME: Moreau Repairs
PROJECT No: SU99035
QC Inspector: Mancini
TENSIONMETER No: 9602
PAGE: 2 to 2

TRIAL No	SEAM No	SAMPLE LOCATION	DATE	TIME	PEEL FAIL	PEEL RESISTANCE	SHEAR FAIL	SHEAR RESISTANCE	DATE REPAIRED	DATE VERIFIED	LAB (P/F)
18	CR34/CR36	30' South of Tie-in	11/22	AM	NO	86 SE 103 SE 107 SE	NO	91 SE 96 SE	11/22	11/22	P
19	CR35/CR37	15' South of Tie-in	11/22	AM	NO	96 SE 103 SE	NO	90 SE 85 SE	11/22	11/22	P
20	CR37/CR38	87' South of Tie-in	11/22	AM	NO	99 SE 98 SE	NO	84 SE 84 SE	11/22	11/22	P
21	CR38/CR40	8' South of Tie-in	11/22	AM	NO	101 SE 103 SE	NO	83 SE 81 SE	11/22	11/22	P

APPENDIX III

INDEPENDENT LABORATORY TEST RESULTS



TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

November 9, 1999

Mr. Jim Caird
Solmax Geosynthetics
281 Ball Circle
Syracuse, NY 13210

fax: 315-473-1251

Dear Mr. Caird:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

TRI Job Reference Number:	E2130-19-04
Date Received:	11-09-99
Material(s) Tested:	3 LLDPE heat fusion weld seams
Test(s) Requested:	Peel and Shear (ASTM D 4437)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Sam R. Allen
Vice President and Division Manager, Geosynthetics Technologies



TRI/ENVIRONMENTAL, INC.

A Texas Research International Company

NOV 09 '99 10:26 FR

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P.02/03

**QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS**

CLIENT: SOLMAX GEOSYNTHETICS
PROJECT: TOWN OF MOREAU
CONTACT: MR. JIM CAIRD
DATE REC'D: 09-Nov-98

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2130-19-04
DATE TESTED: 09-Nov-98

ASTM D 4437/413/3083 NSF Modified
ANALYST: GKL
REVIEW: SDA
REPORT DATE: 09-Nov-98

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION			SHEAR EVALUATION		
		MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	PROJECT SPEC. (lb/in)
DT-01	1A	89	< 10	SE	FTB	NA	NA
	2A	98	< 10	SE	FTB		
	3A	97	< 10	SE	FTB		
	4A	93	< 10	SE	FTB		
	5A	96	< 10	SE	FTB		
	MEAN:	95					
	1B	89	< 10	SE	FTB		
	2B	99	< 10	SE	FTB		
	3B	94	< 10	SE	FTB		
	4B	97	< 10	SE	FTB		
DT-02	5B	95	< 10	SE	FTB		
	MEAN:	95				MEAN:	
	1A	96	< 10	SE	FTB	NA	NA
	2A	97	< 10	SE	FTB		
	3A	97	< 10	SE	FTB		
	4A	100	< 10	SE	FTB		
	5A	96	< 10	SE	FTB		
	MEAN:	97					
	1B	93	< 10	SE	FTB		
	2B	94	< 10	SE	FTB		
	3B	90	< 10	SE	FTB		
	4B	96	< 10	SE	FTB		
	5B	95	< 10	SE	FTB		
	MEAN:	94				MEAN:	

NA Not Available

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TRI/ENVIRONMENTAL, INC.

A Texas Research International Company

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P.03/03

QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: SOLMAX GEOSYNTHETICS
PROJECT: TOWN OF MOREAU
CONTACT: MR. JIM CAIRD
DATE REC'D: 09-Nov-98

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2130-19-04
DATE TESTED: 09-Nov-99

ASTM D 4437/413/3083 NSF Modified
ANALYST: GKL
REVIEW: SP4
REPORT DATE: 09-Nov-99

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION			SHEAR EVALUATION			PROJECT SPEC. (lb/in)
		MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	
DT-03	1A	98	< 10	SE	FTB	NA	104	FTB
	2A	106	< 10	SE	FTB	NA	99	FTB
	3A	95	< 10	SE	FTB	NA	103	FTB
	4A	103	< 10	SE	FTB	NA	99	FTB
	5A	98	< 10	SE	FTB	NA	100	FTB
	MEAN:	100					101	
	1B	103	< 10	SE	FTB	NA	99	FTB
	2B	102	< 10	SE	FTB	NA	100	FTB
	3B	107	< 10	SE	FTB	NA	99	FTB
	4B	99	< 10	SE	FTB	NA	100	FTB
	5B	96	< 10	SE	FTB	NA	101	FTB
	MEAN:	101					101	

NA Not Available

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November 22, 1999

Mr. Jim Caird
Solmax Geosynthetics
281 Ball Circle
Syracuse, NY 13210

fax: 315-473-1251

Dear Mr. Caird:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

TRI Job Reference Number:	E2130-30-01
Date Received:	11-22-99
Material(s) Tested:	7 LLDPE heat fusion weld seams
Test(s) Requested:	Peel and Shear (ASTM D 4437)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jarrett A. Nelson
Asst. Laboratory Director: Geosynthetics Technologies



QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: SOLMAX GEOSYNTHETICS
PROJECT: TOWN OF MOREAU
CONTACT: MR. JIM CAIRD
DATE REC'D: 22-Nov-99

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2130-30-01
DATE TESTED: 22-Nov-99

ASTM D 4437/413/3083 NSF Modified
ANALYST: GKL
REVIEW: JAN
REPORT DATE: 22-Nov-99

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION				SHEAR EVALUATION				
		MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DT-04	1A	93	< 10	SE	FTB	NA	107	> 50	FTB	NA
	2A	95	< 10	SE	FTB					
	3A	99	< 10	SE	FTB		101	> 50	FTB	
	4A	99	< 10	SE	FTB					
	5A	98	< 10	SE	FTB		107	> 50	FTB	
	MEAN:	97								
	1B	101	< 10	SE	FTB					
	2B	95	< 10	SE	FTB		98	> 50	FTB	
	3B	102	< 10	SE	FTB					
	4B	92	< 10	SE	FTB		100	> 50	FTB	
	5B	96	< 10	SE	FTB					
	MEAN:	97				MEAN:	103			
DT-05	1A	88	< 10	SE	FTB	NA	96	> 50	FTB	NA
	2A	87	< 10	SE	FTB					
	3A	92	< 10	SE	FTB		95	> 50	FTB	
	4A	92	< 10	SE	FTB					
	5A	81	< 10	SE	FTB		95	> 50	FTB	
	MEAN:	88								
	1B	92	< 10	SE	FTB					
	2B	87	< 10	SE	FTB		93	> 50	FTB	
	3B	91	< 10	SE	FTB					
	4B	90	< 10	SE	FTB		95	> 50	FTB	
	5B	89	< 10	SE	FTB					
	MEAN:	90				MEAN:	95			

NA Not Available

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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: SOLMAX GEOSYNTHETICS
PROJECT: TOWN OF MOREAU
CONTACT: MR. JIM CAIRD
DATE REC'D: 22-Nov-99

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2130-30-01
DATE TESTED: 22-Nov-99

ASTM D 4437/413/3083 NSF Modified
ANALYST: GKL
REVIEW: JAN
REPORT DATE: 22-Nov-99

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION			SHEAR EVALUATION		
		MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	PROJECT SPEC. (lb/in)
DT-06	1A	84	< 10	SE	FTB	NA	NA
	2A	87	< 10	SE	FTB	FTB	FTB
	3A	82	< 10	SE	FTB	FTB	FTB
	4A	89	< 10	SE	FTB	FTB	FTB
	5A	89	< 10	SE	FTB	FTB	FTB
	MEAN:	86					
	1B	85	< 10	SE	FTB	FTB	FTB
	2B	90	< 10	SE	FTB	FTB	FTB
	3B	85	< 10	SE	FTB	FTB	FTB
	4B	91	< 10	SE	FTB	FTB	FTB
DT-07	5B	88	< 10	SE	FTB	FTB	FTB
	MEAN:	88				MEAN: NA	NA
	1A	92	< 10	SE	FTB	FTB	FTB
	2A	90	< 10	SE	FTB	FTB	FTB
	3A	90	< 10	SE	FTB	FTB	FTB
	4A	93	< 10	SE	FTB	FTB	FTB
	5A	82	< 10	SE	FTB	FTB	FTB
	MEAN:	89					
	1B	90	< 10	SE	FTB	FTB	FTB
	2B	87	< 10	SE	FTB	FTB	FTB
	3B	84	< 10	SE	FTB	FTB	FTB
	4B	83	< 10	SE	FTB	FTB	FTB
	5B	86	< 10	SE	FTB	FTB	FTB
	MEAN:	86				MEAN: 95	

NA Not Available

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**QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS**

CLIENT: SOLMAX GEOSYNTHETICS
PROJECT: TOWN OF MOREAU
CONTACT: MR. JIM CAIRD
DATE REC'D: 22-Nov-99

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2130-30-01
DATE TESTED: 22-Nov-99

ASTM D 4437/413/3083 NSF Modified
ANALYST: GKL
REVIEW: JAN
REPORT DATE: 22-Nov-99

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION				SHEAR EVALUATION				
		MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)
DT-08	1A	90	< 10	SE	FTB	NA	100	> 50	FTB	NA
	2A	89	< 10	SE	FTB					
	3A	84	< 10	SE	FTB		97	> 50	FTB	
	4A	91	< 10	SE	FTB					
	5A	96	< 10	SE	FTB		93	> 50	FTB	
	MEAN:	90								
	1B	97	< 10	SE	FTB					
	2B	96	< 10	SE	FTB					
	3B	93	< 10	SE	FTB		96	> 50	FTB	
	4B	92	< 10	SE	FTB		93	> 50	FTB	
DT-09	5B	88	< 10	SE	FTB					
	MEAN:	93				MEAN:	96			
	1A	104	< 10	SE	FTB	NA	105	> 50	FTB	NA
	2A	103	< 10	SE	FTB					
	3A	105	< 10	SE	FTB		103	> 50	FTB	
	4A	98	< 10	SE	FTB					
	5A	103	< 10	SE	FTB		100	> 50	FTB	
	MEAN:	103								
	1B	98	< 10	SE	FTB					
	2B	98	< 10	SE	FTB		105	> 50	FTB	
	3B	99	< 10	SE	FTB					
	4B	93	< 10	SE	FTB		101	> 50	FTB	
	5B	99	< 10	SE	FTB					
	MEAN:	97				MEAN:	103			

NA Not Available

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**QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS**

CLIENT: SOLMAX GEOSYNTHETICS
PROJECT: TOWN OF MOREAU
CONTACT: MR. JIM CAIRD
DATE REC'D: 22-Nov-99

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2130-30-01
DATE TESTED: 22-Nov-99

ASTM D 4437/413/3083 NSF Modified
ANALYST: GKL
REVIEW: **JAN**
REPORT DATE: 22-Nov-99

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION			SHEAR EVALUATION		
		MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	PROJECT SPEC. (lb/in)
DT-10	1A	101	< 10	SE	FTB	NA	NA
	2A	102	< 10	SE	FTB	FTB	FTB
	3A	94	< 10	SE	FTB	FTB	FTB
	4A	99	< 10	SE	FTB	FTB	FTB
	5A	95	< 10	SE	FTB	FTB	FTB
	MEAN:	98					
	1B	95	< 10	SE	FTB	FTB	FTB
	2B	99	< 10	SE	FTB	FTB	FTB
	3B	86	< 10	SE	FTB	FTB	FTB
	4B	101	< 10	SE	FTB	FTB	FTB
	5B	97	< 10	SE	FTB	FTB	FTB
	MEAN:	96				MEAN:	103

NA Not Available

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TRI/ENVIRONMENTAL, INC.
A Texas Research International Company

November 23, 1999

Mr. Jim Caird
Solmax Geosynthetics
281 Ball Circle
Syracuse, NY 13210

fax: 315-473-1251

Dear Mr. Caird:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

TRI Job Reference Number:	E2130-30-09
Date Received:	11-23-99
Material(s) Tested:	11 LLDPE heat fusion weld seams
Test(s) Requested:	Peel and Shear (ASTM D 4437)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jarrett A. Nelson
Asst. Laboratory Director: Geosynthetics Technologies

**QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS**

CLIENT: SOLMAX GEOSYNTHETICS
PROJECT: TOWN OF MOREAU
CONTACT: MR. JIM CAIRD
DATE REC'D: 23-Nov-99

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2130-30-09
DATE TESTED: 23-Nov-99

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: *JAN*
REPORT DATE: 23-Nov-99

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION			SHEAR EVALUATION			PROJECT SPEC. (lb/in)
		MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	MAXIMUM TENSION (lb/in)	
DT-11	1A	90	< 10	SE	FTB	NA	101	NA
	2A	97	< 10	SE	FTB	NA		
	3A	93	< 10	SE	FTB	NA	94	FTB
	4A	98	< 10	SE	FTB	NA		
	5A	87	< 10	SE	FTB	NA	99	FTB
	MEAN:	93						
	1B	97	< 10	SE	FTB	NA	97	FTB
	2B	90	< 10	SE	FTB	NA		
	3B	94	< 10	SE	FTB	NA		
	4B	99	< 10	SE	FTB	NA	98	FTB
	5B	91	< 10	SE	FTB	NA		
	MEAN:	94				MEAN:	98	
DT-12	1A	93	< 10	SE	FTB	NA	99	FTB
	2A	97	< 10	SE	FTB	NA		
	3A	93	< 10	SE	FTB	NA	97	FTB
	4A	91	< 10	SE	FTB	NA		
	5A	95	< 10	SE	FTB	NA	98	FTB
	MEAN:	94						
	1B	91	< 10	SE	FTB	NA	98	FTB
	2B	89	< 10	SE	FTB	NA		
	3B	96	< 10	SE	FTB	NA	99	FTB
	4B	102	< 10	SE	FTB	NA		
	5B	92	< 10	SE	FTB	NA		
	MEAN:	94				MEAN:	98	

NA Not Available

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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: SOLMAX GEOSYNTHETICS
PROJECT: TOWN OF MOREAU
CONTACT: MR. JIM CAIRD
DATE REC'D: 23-Nov-99

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2130-30-09
DATE TESTED: 23-Nov-99

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: JAN
REPORT DATE: 23-Nov-99

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION			SHEAR EVALUATION		
		MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	PROJECT SPEC. (lb/in)
DT-13	1A	93	< 10	SE	FTB	NA	NA
	2A	93	< 10	SE	FTB	FTB	FTB
	3A	93	< 10	SE	FTB	FTB	FTB
	4A	93	< 10	SE	FTB	FTB	FTB
	5A	94	< 10	SE	FTB	FTB	FTB
	MEAN:	93					
	1B	97	< 10	SE	FTB	FTB	FTB
	2B	98	< 10	SE	FTB	FTB	FTB
	3B	101	< 10	SE	FTB	FTB	FTB
	4B	97	< 10	SE	FTB	FTB	FTB
DT-14	5B	100	< 10	SE	FTB	FTB	FTB
	MEAN:	99				MEAN:	
	1A	90	< 10	SE	FTB	NA	NA
	2A	92	< 10	SE	FTB	FTB	FTB
	3A	93	< 10	SE	FTB	FTB	FTB
	4A	88	< 10	SE	FTB	FTB	FTB
	5A	89	< 10	SE	FTB	FTB	FTB
	MEAN:	90					
	1B	90	< 10	SE	FTB	FTB	FTB
	2B	83	< 10	SE	FTB	FTB	FTB
	3B	93	< 10	SE	FTB	FTB	FTB
	4B	88	< 10	SE	FTB	FTB	FTB
	5B	93	< 10	SE	FTB	FTB	FTB
	MEAN:	89				MEAN:	
		92				92	

NA Not Available

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**QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS**

CLIENT: SOLMAX GEOSYNTHETICS
PROJECT: TOWN OF MOREAU
CONTACT: MR. JIM CAIRD
DATE REC'D: 23-Nov-99

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2130-30-09
DATE TESTED: 23-Nov-99

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: *JAN*
REPORT DATE: 23-Nov-99

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION			SHEAR EVALUATION		
		MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	PROJECT SPEC. (lb/in)
DT-15	1A	86	< 10	SE	FTB	NA	NA
	2A	89	< 10	SE	FTB	FTB	FTB
	3A	89	< 10	SE	FTB	FTB	FTB
	4A	87	< 10	SE	FTB	FTB	FTB
	5A	88	< 10	SE	FTB	FTB	FTB
	MEAN:	88					
	1B	87	< 10	SE	FTB	FTB	FTB
	2B	90	< 10	SE	FTB	FTB	FTB
	3B	86	< 10	SE	FTB	FTB	FTB
	4B	86	< 10	SE	FTB	FTB	FTB
DT-16	5B	87	< 10	SE	FTB	FTB	FTB
	MEAN:	87				MEAN: NA	NA
	1A	84	< 10	SE	FTB	FTB	FTB
	2A	92	< 10	SE	FTB	FTB	FTB
	3A	87	< 10	SE	FTB	FTB	FTB
	4A	90	< 10	SE	FTB	FTB	FTB
	5A	90	< 10	SE	FTB	FTB	FTB
	MEAN:	89				MEAN: 89	89
	1B	85	< 10	SE	FTB	FTB	FTB
	2B	90	< 10	SE	FTB	FTB	FTB
	3B	86	< 10	SE	FTB	FTB	FTB
	4B	89	< 10	SE	FTB	FTB	FTB
	5B	88	< 10	SE	FTB	FTB	FTB
	MEAN:	88				MEAN: 88	88

NA Not Available

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QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS

CLIENT: SOLMAX GEOSYNTHETICS
PROJECT: TOWN OF MOREAU
CONTACT: MR. JIM CAIRD
DATE REC'D: 23-Nov-99

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2130-30-09
DATE TESTED: 23-Nov-99

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: JAN
REPORT DATE: 23-Nov-99

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION			SHEAR EVALUATION		
		MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	PROJECT SPEC. (lb/in)
DT-17	1A	87	< 10	SE	FTB	94	NA
	2A	90	< 10	SE	FTB	91	FTB
	3A	91	< 10	SE	FTB	92	FTB
	4A	90	< 10	SE	FTB	95	FTB
	5A	91	< 10	SE	FTB	89	FTB
	MEAN:	90					
	1B	86	< 10	SE	FTB	92	FTB
	2B	93	< 10	SE	FTB	95	FTB
	3B	88	< 10	SE	FTB	89	FTB
	4B	89	< 10	SE	FTB		
DT-18	5B	93	< 10	SE	FTB	92	NA
	MEAN:	90				92	
	1A	92	< 10	SE	FTB	93	FTB
	2A	92	< 10	SE	FTB	96	FTB
	3A	93	< 10	SE	FTB	96	FTB
	4A	94	< 10	SE	FTB	96	FTB
	5A	89	< 10	SE	FTB	93	FTB
	MEAN:	92				93	
	1B	92	< 10	SE	FTB	93	FTB
	2B	91	< 10	SE	FTB	93	FTB
	3B	84	< 10	SE	FTB		
	4B	93	< 10	SE	FTB		
	5B	91	< 10	SE	FTB	94	FTB
	MEAN:	90				94	

NA Not Available

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**QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS**

CLIENT: SOLMAX GEOSYNTHETICS
PROJECT: TOWN OF MOREAU
CONTACT: MR. JIM CAIRD
DATE REC'D: 23-Nov-99

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2130-30-09
DATE TESTED: 23-Nov-99

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: JAW
REPORT DATE: 23-Nov-99

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION			SHEAR EVALUATION		
		MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	PROJECT SPEC. (lb/in)
DT-19	1A	87	< 10	SE	FTB	NA	NA
	2A	89	< 10	SE	FTB	FTB	FTB
	3A	85	< 10	SE	FTB	FTB	FTB
	4A	90	< 10	SE	FTB	FTB	FTB
	5A	86	< 10	SE	FTB	FTB	FTB
	MEAN:	87					
	1B	88	< 10	SE	FTB	FTB	FTB
	2B	91	< 10	SE	FTB	FTB	FTB
	3B	92	< 10	SE	FTB	FTB	FTB
	4B	90	< 10	SE	FTB	FTB	FTB
DT-20	5B	92	< 10	SE	FTB	FTB	FTB
	MEAN:	91				MEAN:	
	1A	92	< 10	SE	FTB	NA	NA
	2A	90	< 10	SE	FTB	FTB	FTB
	3A	93	< 10	SE	FTB	FTB	FTB
	4A	88	< 10	SE	FTB	FTB	FTB
	5A	87	< 10	SE	FTB	FTB	FTB
	MEAN:	90					
	1B	93	< 10	SE	FTB	FTB	FTB
	2B	91	< 10	SE	FTB	FTB	FTB
	3B	90	< 10	SE	FTB	FTB	FTB
	4B	90	< 10	SE	FTB	FTB	FTB
	5B	90	< 10	SE	FTB	FTB	FTB
	MEAN:	91				MEAN:	
		92				92	

NA Not Available

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

**QUALITY ASSURANCE TESTING
GEOMEMBRANE SEAM PEEL AND SHEAR TEST RESULTS**

CLIENT: SOLMAX GEOSYNTHETICS
PROJECT: TOWN OF MOREAU
CONTACT: MR. JIM CAIRD
DATE REC'D: 23-Nov-99

MATERIAL: LLDPE
SEAM TYPE: HEAT FUSION WELD
TRI LOG #: E2130-30-09
DATE TESTED: 23-Nov-99

ASTM D 4437/413/3083 NSF Modified
ANALYST: EMB
REVIEW: *JW*
REPORT DATE: 23-Nov-99

SAMPLE NUMBER	SPECIMEN NUMBER	PEEL EVALUATION			SHEAR EVALUATION		
		MAXIMUM TENSION (lb/in)	PEEL INCURSION (%)	LOCUS OF FAILURE	NSF 54 FAILURE MODE	PROJECT SPEC. (lb/in)	PROJECT SPEC. (lb/in)
DT-21	1A	92	< 10	SE	FTB	NA	NA
	2A	98	< 10	SE	FTB		
	3A	95	< 10	SE	FTB		
	4A	93	< 10	SE	FTB		
	5A	97	< 10	SE	FTB		
	MEAN:	95					
	1B	92	< 10	SE	FTB		
	2B	97	< 10	SE	FTB		
	3B	94	< 10	SE	FTB		
	4B	93	< 10	SE	FTB		
	5B	94	< 10	SE	FTB		
	MEAN:	94					
					MAXIMUM TENSION (lb/in)	ELONGATION @ BREAK (%)	FAILURE MODE
					93	> 50	FTB
					92	> 50	FTB
					93	> 50	FTB
					98	> 50	FTB
					91	> 50	FTB
					MEAN:		
					93		

NA Not Available

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

APPENDIX IV

FIELD MEMOS AND COMMUNICATIONS

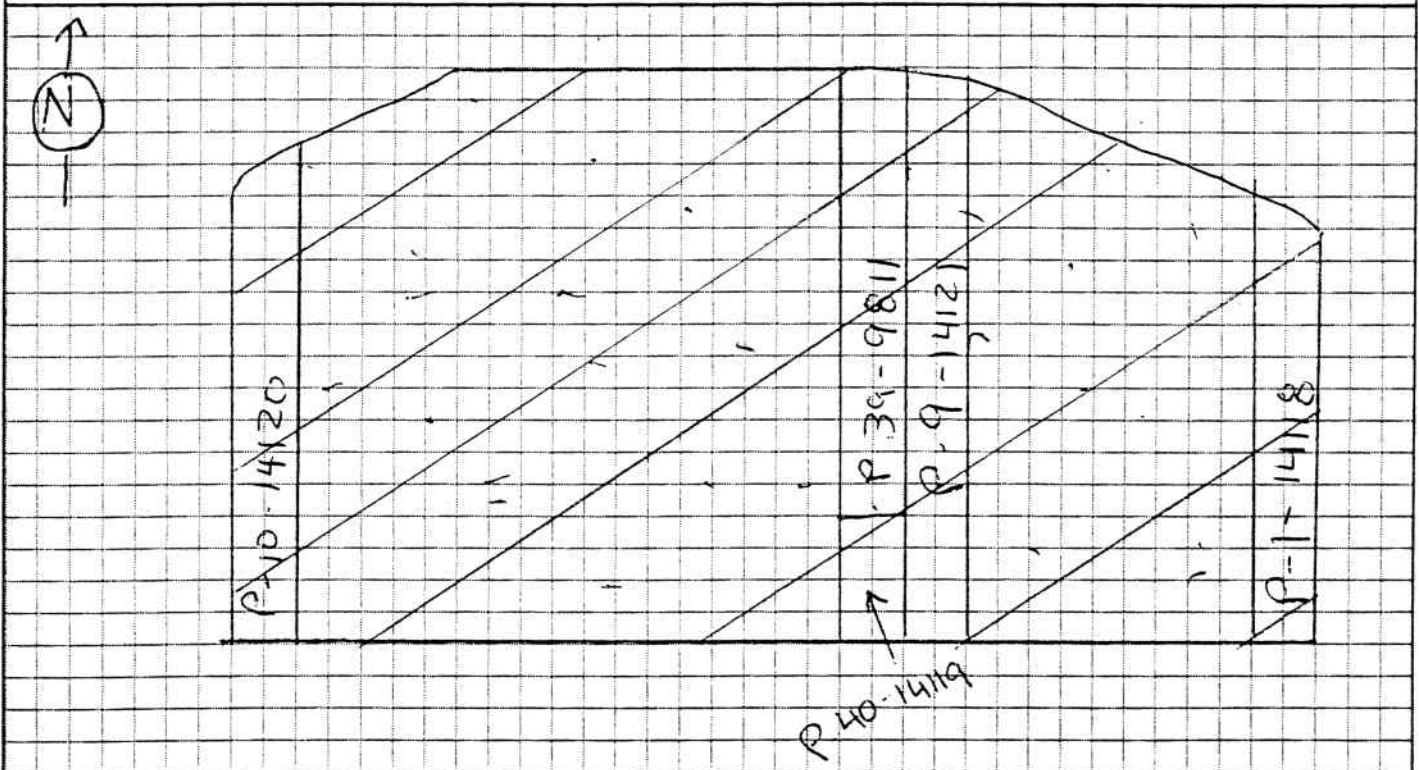


CERTIFICATE
OF PROVISIONAL
ACCEPTANCE

PROJECT NAME: Moreau Repair
PROJECT #: 5499035
LOCATION: Moreau, NY
% OF COMPLETION: 95%

MATERIAL	MEASURES	AREA	DESCRIPTION
Geotextile	54,000	Repair on South Slope	Amount of Geotextile installed to cover subgrade on slope
40 mil B-40-T	~~188,338~~ 189,592 ft ²	Repair on South Slope	Amount of liner needed to cover subgrade on slope.

SKETCH



I, the undersigned, duly authorized representative of: Kubricky Const.
do hereby take over and accept the work described above from the date hereof and confirm that to the best of my knowledge the work has been completed in accordance with specifications and the terms and conditions of the contract. There is no apparent damage to the plastic lining nor any unacceptable interference within or without the surrounding works. Scrap and offcuts have been removed and the works left in a clean and tidy condition to the contractors satisfaction. SOLMAX undertakes to rectify any damage resulting from defective materials or workmanship within compliance of contract guarantees.

Name <u>WILLIAM STARK</u>	Signature <u>William Stark</u>	Title <u>SUPERVISOR</u>	Date <u>11-24-99</u>
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Certificate accepted by Solmax Representative

Name <u>William Collins</u>	Signature <u>[Signature]</u>	Title <u>P.L. Inspector</u>	Date <u>11/23/99</u>
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SOLMAX REPRESENTATIVE

(WHITE)

OWNER / ENGINEER

(YELLOW)

CONTRACTOR

(PINK)

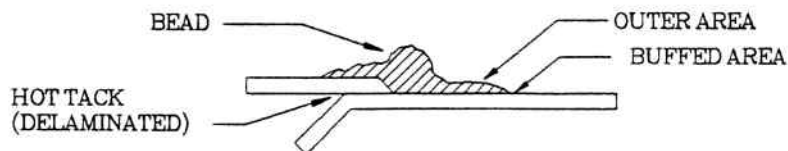
SOLMAX PROJECT MANAGER

(GOLD)

APPENDIX V

US-EPA CLASSIFICATION FOR TYPES OF BREAK

FILLET-EXTRUDED GEOMEMBRANE WELD

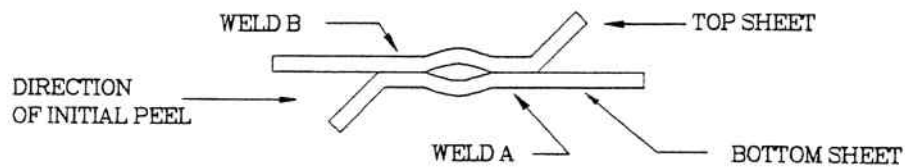


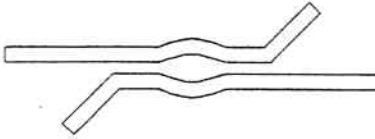
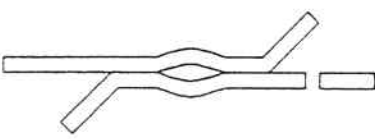
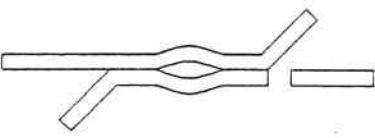
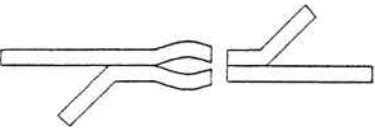
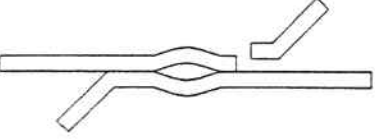
<u>TYPES OF BREAKS</u>	<u>CODE</u>	<u>BREAK DESCRIPTION</u>	<u>CLASSIFICATION</u> ^a
	AD1	FAILURE IN ADHESION. SPECIMENS MAY ALSO DELAMINATE UNDER THE BEAD AND BREAK THROUGH THE THIN EXTRUDED MATERIAL IN THE OUTER AREA.	NON-FTB
	AD2	FAILURE IN ADHESION.	NON-FTB
	AD-WLD	BREAK THROUGH THE FILLET. BREAKS THROUGH THE FILLET RANGE FROM BREAKS STARTING AT THE EDGE OF THE TOP SHEET TO BREAKS THROUGH THE FILLET AFTER SOME ADHESION FAILURE BETWEEN THE FILLET AND THE BOTTOM SHEET.	NON-FTB ^b
	SE	BREAK AT SEAM EDGE. INDICATE LOCATION BY 1, 2 OR 3	FTB
	BRK	BREAK IN THE SHEET. USE 1 TO INDICATE BOTTOM SHEET AND 2 TO INDICATE TOP SHEET. IF BREAK IS IN BUFFED AREA, INDICATE WITH "(B)".	FTB
	AD-BRK	BREAK IN THE BOTTOM SHEETING AFTER SOME 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

^aFTB="FILM-TEAR BOND."

^bACCEPTANCE OF AD-WLD BREAKS MAY DEPEND ON WHETHER TEST VALUES MEET A MINIMUM SPECIFICATION VALUE AND NOT ON CLASSIFICATION AS A FTB OR NON-FTB BREAK.

DOUBLE-TRACK GEOMEMBRANE WELD



<u>TYPES OF BREAK</u>	<u>CODE</u>	<u>BREAK DESCRIPTION</u>	<u>CLASSIFICATION ^a</u>
	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 SOME ADHESION FAILURE. BREAK CAN BE IN EITHER THE TOP OR BOTTOM SHEET.	FTB

^a FTB="FILM-TEAR BOND."

APPENDIX VI

RECORD DRAWING