



2001 JAN 23 PM 3:01

WASTE MANAGEMENT
SOLID WASTE MGMT.

Soil Liner Evaluation Report

Permit No. MSW-249C

For
Recompacted Soil Liner
Cell WD - 4

**Austin Community Recycling &
Disposal Facility**
Austin, Texas

January 2001

SECOR International, Inc.



000394

**SOIL LINER EVALUATION REPORT
WD-4**

PERMIT MSW NO. 249-C

Prepared for:

**AUSTIN COMMUNITY RECYCLING & DISPOSAL FACILITY
9900 GILES ROAD
AUSTIN, TEXAS 78754**

JANUARY 2001

Prepared by:

**SECOR INTERNATIONAL INCORPORATED
3845 FM 1960 WEST, SUITE 281
HOUSTON, TEXAS 77068**

000395

1.0 INTRODUCTION

This report documents the construction quality assurance (CQA) testing and observation performed for the construction of the soil liner for Cell WD-4 at Waste Management's Austin Community Recycling and Disposal Facility (ACRDF). This site is located in Travis County, east of Austin, Texas on Giles Road.

Cell WD-4 involves the construction of approximately 7.3 acres of cell. The construction involved excavation of the area to subgrade elevation. A minimum two foot thick soil clay liner was then placed over the subgrade, compacted and tested. Included in this report are the field observations and testing reports prepared in accordance with the site permit and the Soil and Liner Quality Control Plan (SLQCP). The construction procedures and quality assurance tasks are summarized in the following sections.

2.0 PERSONNEL

The quality assurance program documented herein was provided by SECOR under contract with ACRDF. Longhorn Excavators was the earthwork contractor. Martin Survey Associates (MSA) was utilized for CQA surveying services. The key personnel and companies involved with the construction of the project are:

Waste Management of Texas, Austin Community Recycling & Disposal Facility - Owner

Marcos Elizondo	General Manager
Rusty Fusilier, P.E.	Construction Manager

SECOR International Incorporated - Construction Quality Assurance

J. Roy Murray, P.E.	Certifying Engineer
Jeff Reed, P.E.	Certifying Engineer
Jean Wilson	Senior Site CQA Technician

Longhorn Excavators - Earth Work Contractor

John Parker	Project Manager
John Cavazos	Construction Superintendent

CQA Testing Laboratory, Inc. - Soils Laboratory

Mike Griggs	Soils Laboratory Manager
-------------	--------------------------

Martin Survey Associates, Inc. - CQA Surveyor

Kevin Olson	Registered Surveyor
-------------	---------------------

000400

3.0 REFERENCE DOCUMENTS

- A. "Soil and Liner Quality Control Plan" for Waste Management of Texas, Inc., Austin Community Recycling and Disposal Facility, Austin, Texas. Permit No. MSW-249-C, Revision 2b, approved by the State of Texas, November 1997.
- B. Construction drawings entitled "Cell WD-4 Construction Drawings, Austin Community Recycling and Disposal Facility ". Prepared by SECOR International Inc., September 2000.
- C. Technical Guide #3, Liner Construction and Testing Handbook, TNRCC, July 1, 1994.
- D. Texas Natural Resources Conservation Commission rules; Title 30 Texas Administrative Code, Chapter 330.

000401

4.0 SCOPE OF SERVICES

SECOR was contracted by ACRDF to provide CQA for the Cell WD-4 construction. The duties which were required to be performed are described in the following sections.

4.1 CQA MANAGEMENT AND CERTIFICATION

- A. Project initiation activities consisted of:
1. Review of project permit plans and specifications.
 2. Office preparation of the field files, forms and organization of field equipment.
- B. CQA management activities consisted of:
1. Coordination of SECOR field and office activities throughout the project.
 2. Scheduling of SECOR field personnel.
 3. Monitoring the budget for SECOR activities.
 4. Review of daily summary reports, logs, and test results.
- C. Certification activities consisted of:
1. Regular site visits by the Certifying Engineer to observe construction quality and progress.
 2. Review of field data and reports to assure proper CQA documentation and that the work is in compliance with the design, permit regulations, and general construction practices.
 3. Review all quality control submittals to assure completeness and accuracy.
 4. Interface with regulatory agency regarding the project report.
 5. Assist in compilation of the SLER documentation report.
 6. Provide a signed and sealed certification of the completed report.

4.2 FIELD CQA SERVICES

This task includes the field services associated with the approximate 7.3-acre Cell WD-4 construction of the landfill. Cell construction duties consisted of the following:

- A. Preconstruction activities consisted of collecting and sending representative samples of clay liner material and drainage aggregate for testing.
- B. Construction activities consisted of:
1. Observing and documenting the subgrade preparation.
 2. Observing and monitoring soil placement, processing and compaction procedures to verify adequate and consistent construction of the soil liner lifts, including:
 - Loose and finished lift thickness
 - Clod-size and particle-size reduction by discing and crushing

- Moisture distribution and hydration
 - Lift scarification and bonding
 - Compaction effort
 - Permeability and Atterberg Limits
 - Correction of any areas that are out of specification
3. Testing the density/moisture characteristics of the soil liner using a nuclear density gauge.
 4. Observing and monitoring the installation of the clay soil material in six-inch compacted lifts.
 5. Coordinating the survey documentation of elevations on a 50-foot grid for subgrade and top of soil liner.

000403

5.0 CONSTRUCTION ACTIVITIES

5.1 EXCAVATION

The majority of excavation had been previously accomplished during prior earth excavation projects at the site. Longhorn Excavators arrived on site to complete excavation to the final design subgrade. MSA completed the final subgrade certification survey on a fifty foot grid, see Record Drawing. All grades were within the minimum tolerances allowed. No groundwater was observed in the excavation at any time of the construction. See Pertinent Information section for ballast discussion.

SECOR used preconstruction sample, C-2, which was prequalified from a previous construction project at the site. Sample CS-1 was collected from the borrow area south of Cell WD-4 and prequalified by CQA Testing Laboratory. During construction of the soil liner, a preconstruction stone aggregate sample was sent to the laboratory for testing. Results of all prequalification testing are included in the attached sections.

The following tests were performed in accordance with the facility's approved SLQCP:

Clay soil liner

a.	Sieve/Hydrometer Analysis	ASTM D422 or D1140
b.	Permeability	ASTM D5084
c.	Standard Proctor	ASTM D698
d.	Atterberg Limits	ASTM D4318
e.	Moisture Content	ASTM D2216

Drainage Aggregate

a.	Sieve Analysis	ASTM C136
b.	Calcium Carbonate	ASTM D3042 (J&L Method)

5.2 COMPACTED SOIL LINER

Compacted soil liner construction began after the subgrade elevations were accepted. The soil liner material was brought into the cell from a borrow area located south of the cell and placed onto the subgrade with articulated dump trucks and spread with dozers. Soil was spread in approximately 8-inch loose lifts using the dozers and compacted to approximate 6-inch lifts. Lifts were visually monitored by CQA technicians. Clod-size reduction and moisture distribution were accomplished by thoroughly discing each lift following its placement. The material was moisture conditioned during the placement and compaction phase of work.

Compaction of the lifts was accomplished using two CAT 815B sheepsfoot compactors. The compactors rolled

the lifts for a minimum of six passes after the clay had achieved an acceptable moisture content. The soil liner material was placed in four 6-inch (compacted) lifts to accomplish the required thickness. Lift were compacted parallel to subgrade slopes.

After compaction of a lift, SECOR conducted field density and moisture tests at locations selected by the CQA technician, but at a minimum frequency of one test per 8,000 square feet on the floor and slopes. The dozer blade was used to smooth a surface for a selected test location. Once an acceptable compaction test was documented, Shelby tube samples were taken at a minimum frequency of one sample per 100,000 square feet per 6 inch lift on the floor and slopes. The Shelby tube samples were sent to the CQA soil laboratory for testing. Prior to the placement of the next lift, the area was scarified for proper lift bonding. If the surface started to crust, then water was added to moisten prior to mixing. All permeability test results met the maximum project permeability specification of 1×10^{-7} cm/sec and all Atterberg Limit test results were within the acceptable range.

Shelby tube samples were tested using the following ASTM methods as per the approved SLQCP.

- | | | |
|----|---------------------|------------|
| a. | P200 Sieve Analysis | ASTM D422 |
| b. | Permeability | ASTM D5084 |
| c. | Atterberg Limits | ASTM D4318 |

A total of 16 Shelby tube samples were collected throughout the construction phase of Cell WD-4. The results of laboratory testing are contained within the Appendices of this report.

In the section containing the nuclear density testing results, tests had been assigned a test number referencing the daily field report number and the test number performed that day. The final surface was graded and rolled using a smooth drum roller. After this rolling was completed, the final top of clay survey was taken on a fifty foot grid, see Record Drawing. All grades were within the minimum tolerances allowed. The soil liner surface was inspected immediately prior to geomembrane installation.

All test perforations of the soil liner were repaired by filling and compacting the hole with a sand-bentonite or soil-bentonite mixture of approximately 50% sand/soil to 50% bentonite powder.

5.3 TIE-IN AREAS

The tie-in to existing cell areas occurred along the west side of Cell WD-4. The southernmost 200 feet tied into an existing in-situ area. To create the tie-in area, the sidewall was cut on a 3:1 slope. When existing trash was encountered, a 15 foot wide bench was created on the in-situ material to provide an area to anchor the geosynthetic liner. The subgrade was surveyed prior to installing the two foot thick clay liner onto the 15 foot wide bench.

The area north of the in-situ area was tied into Cell WD-1, a GCL and geomembrane lined cell. The geomembrane was exposed in the previous cell's anchor trench. Geosynthetic materials were rolled back beyond the existing SLER/GLER limits. Two feet of compacted clay liner were installed beyond the existing SLER/GLER limits. A minimum of three feet of existing GCL material was overlapped onto the compacted clay liner. The tie-in to Cell WD-1 was approximately 140 feet in length.

The last tie-in area occurred at the northernmost 130 feet of the cell. In this area, the tie-in was to an existing compacted clay sidewall liner. The SLER limits were exposed and graded to the required elevations. Once the existing compacted clay was exposed, the surface was scarified and two feet of compacted clay liner was installed in lifts over the existing clay liner to create the tie-in.

The area between the Cell WD-1 tie-in and the northernmost sidewall liner tie-in will be tied in to an existing compacted clay sidewall liner at a later date.

The leachate collection trench and sump area were undercut to ensure a minimum two feet of compacted clay liner was maintained within these areas.



000407

**TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
MUNICIPAL SOLID WASTE LANDFILL SITE
SOILS AND LINER EVALUATION REPORT**

***** READ THESE INSTRUCTIONS BEFORE COMPLETING THIS FORM *****

THIS FORM IS TO BE COMPLETED BY A QUALIFIED INDEPENDENT THIRD-PARTY PROFESSIONAL ENGINEER EXPERIENCED IN GEOTECHNICAL ENGINEERING AND SOILS TESTING OR A GRADUATE GEOLOGIST WHOSE EDUCATION AND/OR EXPERIENCE IS IN ENGINEERING GEOLOGY AND GEOTECHNICAL SOILS TESTING. THE EVALUATOR MUST HAVE EXPERIENCE WITH THE PROPER METHODS OF CONSTRUCTING SOIL LINERS AND BE ABLE TO INTERPRET THESE GEOTECHNICAL TEST RESULTS TO ENSURE THEY MEET THE REQUIREMENTS OF THE COMMISSION'S RULES.

THE PURPOSE OF THE SOILS EVALUATION REQUIREMENT IS TO ASSURE THAT GROUND WATER, AS DEFINED IN THE COMMISSION'S RULES, IS PROTECTED FROM CONTAMINATION RESULTING FROM THE LAND DISPOSAL OR STORAGE OF MUNICIPAL SOLID WASTE. THIS SOILS EVALUATION IS REQUIRED TO PROVIDE AN OPPORTUNITY FOR A PROFESSIONAL GEOTECHNICALLY-QUALIFIED INDIVIDUAL TO INSPECT THE TRENCH OR AREA AND TO DOCUMENT THAT IN SITU SOILS AND/OR CONSTRUCTED SOIL LINERS MEET THE COMMISSION'S REGULATORY REQUIREMENTS PRIOR TO CONSTRUCTION OF A FLEXIBLE MEMBRANE LINER (GEOMEMBRANE), LEACHATE COLLECTION SYSTEM, OR FILLING OPERATIONS. THIS EVALUATION IS IN ADDITION TO SOILS DATA OBTAINED TO MEET THE PERMIT REQUIREMENTS. FOR THIS REASON, PRIOR GEOTECHNICAL DATA IN ITSELF SHALL NOT BE CONSIDERED A SUBSTITUTE FOR LABORATORY SOILS TESTING NECESSARY TO PROVIDE PROPER DOCUMENTATION AND SUBSEQUENT VERIFICATION OF THE SOIL CONDITIONS OF EACH TRENCH OR DISPOSAL AREA PRIOR TO SOLID WASTE DISPOSAL.

DATA AND INFORMATION REQUIRED IN THIS QUESTIONNAIRE ARE TO PROVIDE THE BASIS OF THE EVALUATION MADE BY THE PROFESSIONAL OF RECORD (POR). THIS REPORT IS TO BE SUPPLEMENTED WITH THOSE QUALITY CONTROL TESTS DETAILED IN THE PERMIT'S SOILS AND LINER QUALITY CONTROL PLAN AND SHALL BE THE BASIS OF DOCUMENTATION OF THE QUALITY CONTROL AND ACCEPTANCE OF AN IN SITU OR CONSTRUCTED LINER.

ATTACH ADDITIONAL SHEETS AS NEEDED, AND ON EACH SHEET IDENTIFY THE APPROPRIATE PART AND PARAGRAPH NUMBER FOR EACH REFERENCE.

PART A. SITE IDENTIFICATION

Permittee Austin Community Recycling & Disposal Facility
 Permit No. MSW 249-C Operational Classification Type _____
 County Travis

SOLID WASTE MGMT.
 2001 JAN 23 PM 3:02

(SUBMIT THIS SLER TO THE COMMISSION IN TRIPLICATE)

PART B. GENERAL INFORMATION

1. What type of liner is required by the Permit and is detailed in the Site Development Plan? Composite liner consisting of 2 feet of recompacted soil liner, geosynthetics and 2 feet of protective cover.
2. Is this the first liner element of a Composite Liner System? Yes.
3. Does the Site Development Plan require a Leachate Collection System for this liner system? Yes.
4. What is the date of the most recent SLER submittal prior to this submittal? August 1998.
5. Date of the current Soils and Liner Quality Control Plan used to develop this SLER. Revision 2b, November 1997.
6. When do you estimate the Soils and Liner Evaluation Report for the next trench or area will be submitted? March 2001.

PART C. LOCATIONS AND/OR DESCRIPTION OF AREAS CURRENTLY BEING EVALUATED

1. Attach to this report a copy of the latest approved sectorized fill layout plan showing the areas or sectors of the landfill site currently under evaluation and showing areas previously filled. If a copy of the original site plan is not available or is determined to be inaccurate, then prepare and attach an updated site layout that identifies the areas already filled, those currently receiving waste material, and the area or areas now being evaluated. The required grid system must be shown on this drawing.
2. On a sketch or drawing of the area or areas under evaluation, indicate the following:
 - a. Location and pertinent identifying information relating to all soil borings, core samples, observation trenches, and in situ soil tests that were collected or conducted to accomplish this evaluation;
 - b. Boundary lines distinguishing the bottom and sidewall areas of the trenches or fill areas being evaluated; and
 - c. Location and proper designation of constructed or in situ liners.
3. Present evaluation location and area of coverage:

- a. Trench, sector, or area identification or number (give station, grid coordinates, boundary limits of this evaluation) N96830.98/E151221.02
N95643.20/E151431.92 N95584.40/E151401.44
N95864.72/E150857.73 N96826.60/E151196.41
- b. Excavation depth 57 ft., length at top of excavation 1275 ft., width at top of excavation 680 ft., and ratio of side slopes 3 : 1.
- c. Total number of square feet of liner evaluated for the floor, 70,950 ft.², and for each individual side slope: (1) W104,364 ft.²; (2) E141,015 ft.²; (3) _____ ft.²; (4) _____ ft.² (if evaluated area has more than four sides, list all others below). _____

PART D. SOIL EVALUATIONS CONDUCTED DURING THE CURRENT STUDY

1. Were all the soils tests and the rate of testing performed in accordance with the current Soils and Liner Quality Control Plan? Yes
If not, please explain. NA
2. Dates liner was under construction. 11/29&30; 12/1-9, 11-22, 2000 Fine grade and finishing work 12/27-1/4/01
3. Dates the Professional of Record (POR) actually visited the site. JRoy Murray 10/10; 11/21, 2000 1/5/2001 Jeff Reed 11/29; 12/6; 12/20, 2000
4. Name & dates the POR's technician was on site. Jean Wilson 11/15-18, 20-22, 27-30; 12/1-9, 11-22, 28-31; 1/1-1/5, 2001
5. Summarize on the next page the test results of in situ soils only, if tested, provided they are allowed as an alternate liner by the permit.

Note: *The following soils tests on the sidewalls and bottom shall comply with the test procedures detailed in the Commission's Rules.*

IN SITU SIDEWALL AREAS

Test locations must be noted on the sketch required by Part C, Paragraph 2 and are identified as follows: NA

Number Done	Tests Conducted on Sidewalls	Range of Values (where appropriate)
_____	Soil Classification (USC)	_____
_____	Fraction Passing No. 200 Sieve (%)	_____
_____	Moisture Content (%)	_____
_____	Liquid Limit (Minus No. 40 Sieve)	_____
_____	Plasticity Index (Minus No. 40 Sieve)	_____
_____	Dry Density	_____
_____	Coefficient of Permeability (cm/sec.)	_____
_____	Number of Samples Tested Oriented in the Horizontal Direction?	_____
_____	Method Used to Determine Permeability	_____

IN SITU BOTTOM AREAS

Test locations must be noted on the sketch required by Part C, Paragraph 2 and are identified as follows: NA

Number Done	Tests Conducted on Bottom	Range of Values (where appropriate)
_____	Soil Classification (USC)	_____
_____	Fraction Passing No. 200 Sieve (%)	_____
_____	Moisture Content (%)	_____
_____	Liquid Limit (Minus No. 40 Sieve)	_____
_____	Plasticity Index (Minus No. 40 Sieve)	_____
_____	Dry Density	_____
_____	Coefficient of Permeability (cm/sec.)	_____
_____	Method Used to Determine Permeability	_____

Part E. EVALUATION RESULTS

1. STATUS OF IN SITU SOILS

- a. Do the test results of samples taken from the bottom and sidewalls of the disposal area evaluated, or does the presence of joints, fractures or bedding planes, indicate the need for a constructed liner to meet the requirements of the Commission's Rules? (Note: The use of in situ soils as an alternate liner system must be so indicated within the permit to be considered acceptable regardless of the results of the tests.)

NA

- b. If the answer to a. above is no, give a detailed explanation based on test data and depth documentation that will support this conclusion.

(Please use additional paper if necessary for full explanation)

2. STATUS OF INSTALLED LINERS

A professional engineer or geologist with geotechnical experience or a member of his or her staff qualified by training and experience shall monitor liner construction, but the final evaluation must be made by the aforementioned engineer or geologist.

- a. Does the site have a Soils and Liner Quality Control Plan that follows current recommended liner construction practices? Yes. (Suggestions on soil liner construction and testing are available from the Ground-Water Protection Section, Municipal Solid Waste Division.)
- b. Was this plan followed? Yes.
- c. If not followed, why? NA
- d. Was the liner construction completed prior to your final field visit? Yes.
- e. How much overlap length is incorporated in the "tie-in" of this liner with the previously constructed liner? 20*1 ft. Was the tie-in done in "stair-step" fashion with maximum step heights of 12 inches? No. If not, describe tie-in. *1 Existing sidewall liner was exposed, scarified, recompacted and subsequent lifts were placed over and recompacted, WD-1 area- Existing GCL was overlain compacted clay a minimum of 3 feet, In-situ area- minimum of two feet recompacted clay was placed over in-situ material.
- f. How were sample holes and nuclear-density gauge pin/probe holes backfilled? Sand/Bentonite mixture with no more than 60% sand by weight
- g. Does this liner require any ballast to overcome hydrostatic pressure? No If so, how much was placed? N/A. (If ballast is placed, submit ground-water elevation data to substantiate the adequacy of its thickness. Note:

Ballast thickness must be based on highest seasonal water table elevation).

- h. Has the protective cover been constructed, if required? No, pending geosynthetic completion.
- i. Attach all field test and laboratory test data concerning soil liner construction. These data must include copies of all laboratory permeability test work sheets, including a sample calculation of the permeability values obtained in accordance with the utilized method(s) (please show all calculations), and documentation of the thickness of the liner, protective cover where required, leachate collection system, and ballast.

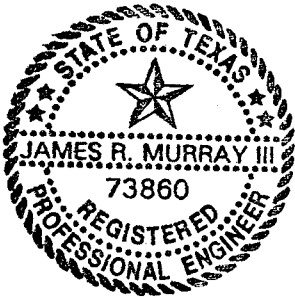
3. EVALUATION OF LINER BOUNDARY MARKERS

Are boundary markers in place at the time of this SLER submittal? Yes.

(See Chapter 330.55(b) (10) (A) (v) & (B) (v) Municipal Solid Waste Division Rules)

PART F. SIGNATURE OF THE PROFESSIONAL OF RECORD

AFFIX SEAL BELOW IF A PROFESSIONAL ENGINEER



J. R. Murray
(SIGNATURE)

J. Roy Murray
(TYPED OR PRINTED NAME)

Professional of Record
(TITLE)

SECOR International, Inc.
(COMPANY OR BUSINESS NAME)

3845 FM 1960 West Suite 281

Houston, TX 77068
(ADDRESS, CITY, ZIP CODE)

01/19/01
(DATE SIGNED)

PHONE NUMBER 281-397-6747

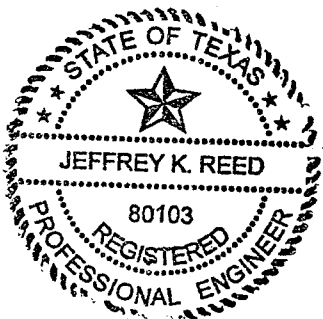
FAX NUMBER 281-397-7208

Note: A professional engineer must be registered in Texas.

IMPORTANT: THREE SIGNED, SEALED, AND DATED COPIES OF THIS FORM, WHICH INCLUDES ONE ORIGINAL COPY, PLUS ALL ATTACHMENTS (DRAWINGS, COMMENTS, ETC.) FOR EACH COPY MUST BE PROVIDED TO THE COMMISSION.

PART F. SIGNATURE OF THE PROFESSIONAL OF RECORD

AFFIX SEAL BELOW IF A PROFESSIONAL ENGINEER



Jeffrey K. Reed
(SIGNATURE)

Jeffrey K. Reed
(TYPED OR PRINTED NAME)

Professional of Record
(TITLE)

SECOR International, Inc.
(COMPANY OR BUSINESS NAME)

3845 FM 1960 West Suite 281

Houston, TX 77068
(ADDRESS, CITY, ZIP CODE)

12/31/00
(DATE SIGNED)

PHONE NUMBER 281-397-6747

FAX NUMBER 281-397-7208

Note: A professional engineer must be registered in Texas.

IMPORTANT: THREE SIGNED, SEALED, AND DATED COPIES OF THIS FORM, WHICH INCLUDES ONE ORIGINAL COPY, PLUS ALL ATTACHMENTS (DRAWINGS, COMMENTS, ETC.) FOR EACH COPY MUST BE PROVIDED TO THE COMMISSION.

Part G. SIGNATURE OF PERMITTEE

By signing this document you are agreeing to the following regulatory requirements and policies.

1. I have read and fully understand the findings of this SLER submittal;
2. Any trench or area not covered by this SLER document or any previously accepted SLER document will not be used for the receipt of solid waste; and
3. The trench or area covered by this SLER document will not be used for the receipt of solid waste until written acceptance of this SLER document is received or 14 days have elapsed **from the date of receipt of this SLER by the Commission** and you or your designated representative have notified us by telephone of your intent of usage. In this manner you will be able to determine the date of arrival of the SLER in question.
4. If the trench or area covered by this SLER document is the constructed soils portion of a composite liner, then acceptance of this SLER document does not grant its usage for the receipt of solid waste without acceptance of the Flexible Membrane Liner portion of the composite liner system and, where required, the acceptance of the leachate collection system "as-built" documentation.

If the landfill operator places waste after 14 days without formal authorization or has not notified the Commission of this intent and the SLER is found to be unacceptable for any reason, the operator will then be required to remove such waste and place it in an approved area until the liner is found to be acceptable by the Commission.

Note: If you include your fax number along with your telephone number we will notify you or your designated representative as soon as SLER acceptance has been determined. Verbal and/or faxed notification will be followed by written acceptance.

Rusty Fusilier
(SIGNATURE)

WMTX Austin Community RDF
(BUSINESS NAME)

Rusty Fusilier
(TYPED OR PRINTED NAME)

9900 Giles Road

District Engineer
(TITLE)

Austin, Texas 78754
(ADDRESS, CITY, ZIP CODE)

1/23/01
(DATE SIGNED)

PHONE NUMBER 512 272-6221

FAX NUMBER 512 272-9370

(PHONE NUMBER AND FAX NUMBER IF YOU WISH PRELIMINARY NOTIFICATION IN THIS FASHION)

IMPORTANT: THREE SIGNED AND DATED COPIES OF THIS FORM, WHICH INCLUDES ONE ORIGINAL COPY, PLUS ALL ATTACHMENTS (DRAWINGS, COMMENTS, ETC.) FOR EACH COPY MUST BE PROVIDED TO THE COMMISSION.

Security Information

000417

SECOR staff evaluated the geologic and groundwater conditions at the site in accordance with the SLQCP and determined that a dewatering system was not required.

In accordance with Section 6.6.2 of the SLQCP, SECOR staff monitored the excavation area of WD-4 for over 5 months prior to the construction of the soil liner for indications of ground water. These observations were made to determine the uplift potential and the need for ballast or a dewatering system. No ground water or seepage was observed coming from the formation or draining into the excavation. No softening of the excavation surface was noted. And, no softness or sheen were noticed within the secondary features of either the weathered or unweathered zones. Therefore, it was concluded that a dewatering system was not required.

Regarding the potential for uplift to affect the excavation, soil liner, flexible membrane liner, and/or the leachate collection system. The natural stratigraphy of the Austin Community Recycling and Disposal Facility was composed of an upper layer of weathered claystone overlying an unweathered claystone. The cell bottom is constructed within the unweathered unit which has been found to be too poorly permeable to develop hydrostatic uplift and is not considered a hydrogeologic unit of concern (see page 38 of the SLQCP). The groundwater has been identified as perched within the weathered clay stratum on its fairly sharp contact with the unweathered claystone. Historic groundwater data is provided in Table 1. As stated in the SLQCP, the ground water volumes in the weathered clay units are very limited and extremely localized and that as a result of landfill development, local ground water recharge areas are significantly limited and reduced in cell construction areas.

As the excavation progresses to the south, the unweathered layer soils are removed and any stored groundwater encountered in upgradient areas is discharged as surface water, evaporated, or is removed during excavation of soils used for site operations. Pressure on the liner would be limited to the upgradient liner sections above the weathered/unweathered interface, if water exists. Lateral flow or flow away from the liner will not exert an uplift force on the liner. Also, since this water zone sits atop the weathered/unweathered interface, no upward force would be exerted on the liner beneath this interface. Considerable excavation has occurred directly south of the cell. This site excavation effectively drained any potential water that could impact the cell from the upgradient areas to the south. The cell is bounded to the west by landfill and the water, when it exists, drains away from the cell on the north and east perimeters. Therefore, no water pressure is exerted from this perched zone on any of the liner components.

Therefore, in regards to the potential for uplift to affect the excavation, soil liner, flexible membrane liner, and/or the leachate collection system, SECOR concludes that based on site observations, hydrogeology, geology, site excavation activities and in accordance with the site's SLQCP, no ballast is required for this cell.

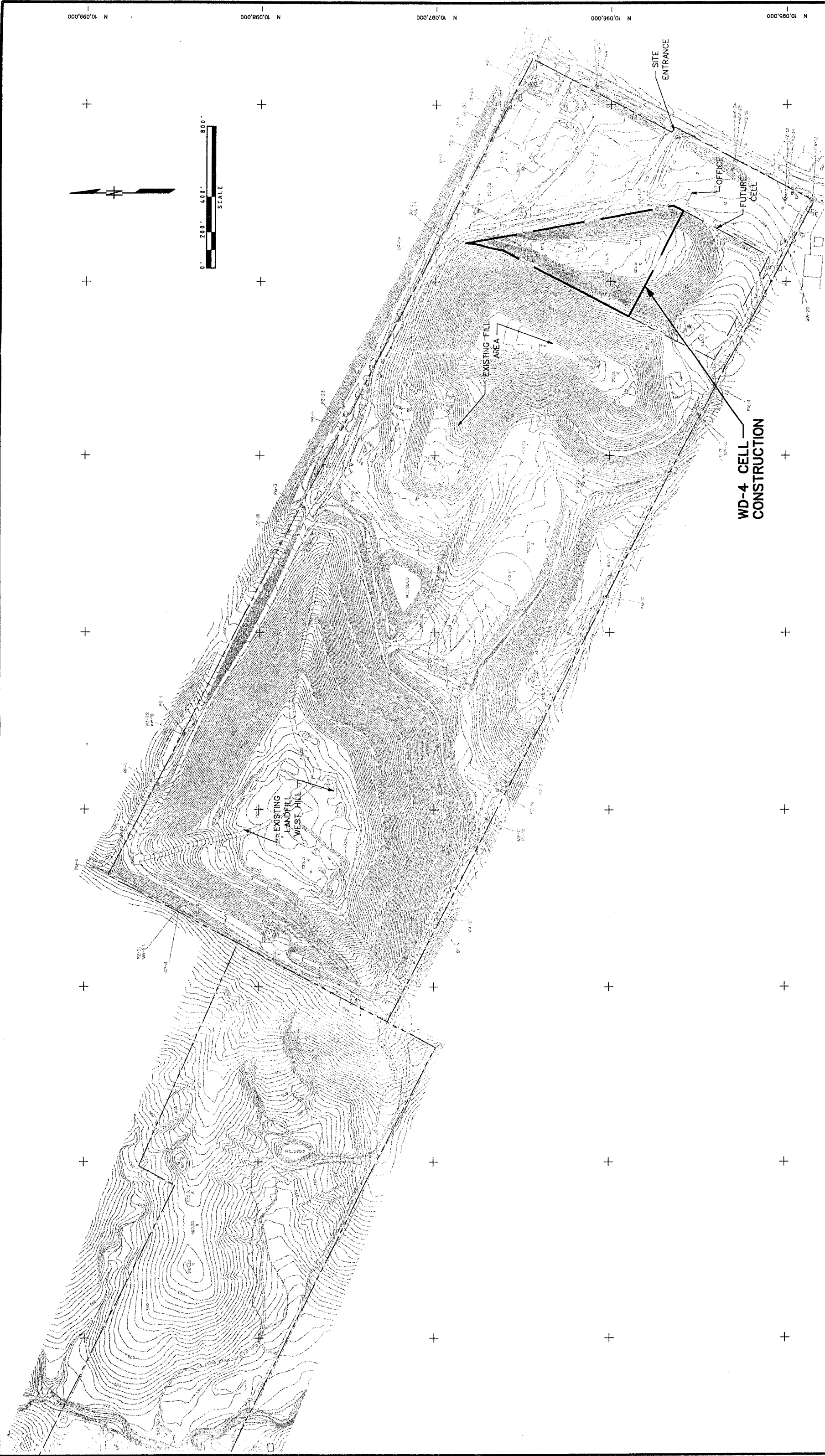
TABLE 1

AUSTIN COMMUNITY RDF
UPDATED SEASONAL HIGH GROUND-WATER ELEVATIONS

Piezometer or Monitoring Well	TOC ELEVATION	SEASONAL HIGH GROUNDWATER TABLE		
		ELEVATION	DATE	COMMENTS
MW-2B	637.97	620.20	2/03/95	*SHGT
MW-12	647.79	640.92	3/11/98	
MW-13	626.53	606.32	3/16/99	
MW-20	640.19	624.84	3/16/99	
PZ-8		604.86	2/03/95	*SHGT
PZ-9		608.36	2/03/95	*SHGT
PZ-10		608.62	2/03/95	*SHGT
PZ-11		DRY	FROM 5/12/94 TO 6/21/96	*SHGT (decommission date) 6/21/96
PZ-12		629.24	2/03/95	*SHGT
PZ-23		DRY	FROM 5/12/94 TO 6/21/96	*SHGT (decommission date) 6/21/96
PZ-25	618.80	613.11	3/11/98	
MW-1B	626.61	611.13	12/18/97	
MW-1A	626.33	611.85	12/18/97	
MW-2A	630.50	614.15	12/18/97	
UNDERDRAIN-WD2	616.04	576.71	9/13/97	

*SHGT - No change from *Austin Community Recycling Disposal Facility & Soil Liner Quality Control Plan* Table 6.1 Seasonal High Ground-Water Elevations, September 1997

000419



SECOR
International
Incorporated

CELL WD-4 CQA PROJECT
AUSTIN COMMUNITY RECYCLING & DISPOSAL FACILITY
AUSTIN, TRAVIS COUNTY, TEXAS

SITE MAP

000510

FIGURE 1

E 3,145,000 E 3,147,000 E 3,149,000