FIELD AND LABORATORY SOIL TESTING

STOUGHTON CITY LANDFILL CLOSURE

STOUGHTON, WISCONSIN

Prepared for:

Ryan Inc. Central
Janesville, Wisconsin

Prepared by:

3011 Perry Street
Madison, Wisconsin

Project Number C98024

CGC, Inc.

Construction · Geotechnical
Consulting Engineering/Testing

January 14, 1999
C98024

Mr. John Burt
Ryan Inc. Central
P.O. Box 206
Janesville, WI 53547

Re: Stoughton City Landfill Closure
Stoughton, Wisconsin

Dear John:

Enclosed are seven copies of our final test reports for the Stoughton Landfill closure. The reports are organized as follows:

Tab 1: Clay Test Pad
Tab 2: Grading Layer
Tab 3: Clay Barrier Layer
Tab 4: Protective Cover Layer
Tab 5: Topsoil Layer
Tab 6: Miscellaneous Test Reports
- Dewatering Pad Clay
- Gas Vent Gravel
- Aggregate Base Course - Access Road
- Clay Borrow Pit - In Situ Densities

Please call if you have any questions. We appreciate the opportunity to be of service to you on this project and have enjoyed working with you, Dick, Ron and the other Ryan staff.

Sincerely,

CGC, INC.

William W. Wuellner, P.E.
Senior Geotechnical Engineer

Encl: As stated

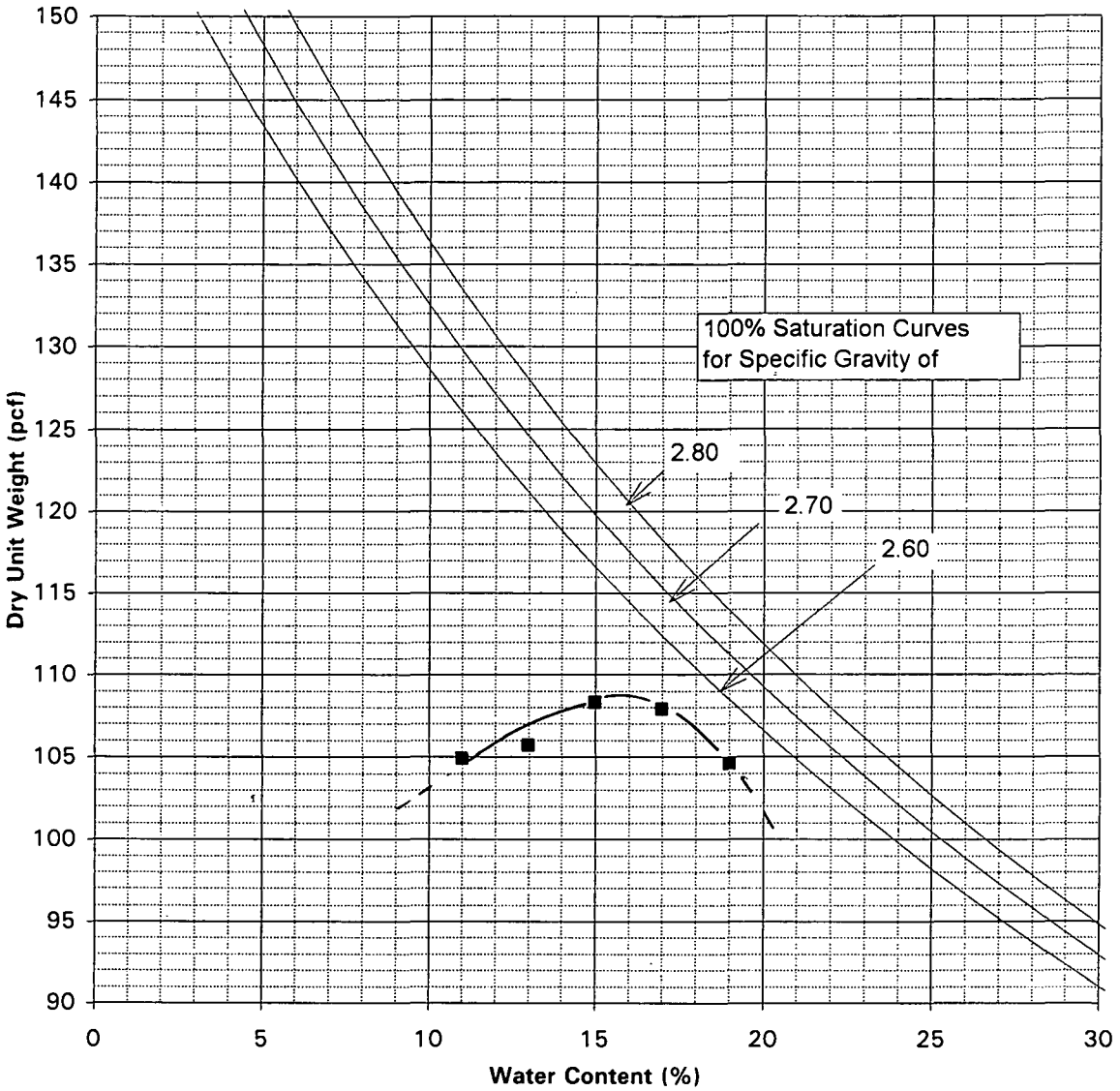
Jan99/98024.www

3011 Perry Street, Madison, WI 53713
Telephone: 608/288-4100
FAX: 608/288-7887

TAB 1: CLAY TEST PAD

- Laboratory Compaction Test (Proctor)
- Falling Head Permeability Tests
- Grain Size Distribution Test Reports (including Atterberg Limits)
- Field Density Test Report
- Boutwell Test Results

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
CTP	**109.0**	**16.0**

Specimen Description
Brown Lean Clay, Some Sand, Trace Gravel

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %
N/A	N/A

Test Method		Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A		33	19	14	2.7 (est.)
Preparation Method	**USCS**	**% Gravel**	**% Sand**	**% Fines**	**% Oversize**
Dry	CL	2.9	13.5	83.7	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc. | CHECKED BY: JSG | REVIEWED BY: WWW | DATE: 6-3-98

File:98024A.XLS

CGC, Inc.

Job No. 98024

Date: 6-23-98

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100

PROJECT: Stoughton Landfill

LOCATION: Stoughton, Wisconsin

SAMPLE: 3 in. diameter Shelby Tube No. CTP-1 (test pad)

DEPTH: 1.0 ft to 2.0 ft

SOIL DESCRIPTION: **Brown Lean CLAY, Some Sand, Trace Gravel (CL)**

	INITIAL	FINAL
SAMPLE DIAMETER (CM)	7.34	7.34
SAMPLE LENGTH, L (cm)	19.84	19.84
MOISTURE CONTENT, %	17.7	18.1
DRY DENSITY (lb/cu ft)	108.5	108.5

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	4.8×10^{-8}
2	5.3×10^{-8}
3	4.3×10^{-8}
4	3.2×10^{-8}
5	2.9×10^{-8}
6	2.2×10^{-8}
7	2.1×10^{-8}
8	2.0×10^{-8}
9	2.0×10^{-8}
10	2.2×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.1×10^{-8} cm/sec
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on a relatively undisturbed 3-in. diameter Shelby tube sample.

REMARKS:

CHECKED BY: DWA **DATE:** 6/23/98 **APPROVED BY:** WWW **DATE:** 6/23/98

CGC, Inc.

Job No. 98024
Date: 6-23-98

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100

PROJECT: Stoughton Landfill
LOCATION: Stoughton, Wisconsin
SAMPLE: 3 in. diameter Shelby Tube No. CTP-2 (test pad)
DEPTH: 1.0 ft to 2.0 ft
SOIL DESCRIPTION: **Brown Lean CLAY, Some Sand, Trace Gravel (CL)**

	INITIAL	FINAL
SAMPLE DIAMETER (CM)	7.34	7.34
SAMPLE LENGTH, L (cm)	19.61	19.61
MOISTURE CONTENT, %	17.7	18.2
DRY DENSITY (lb/cu ft)	109.2	109.2

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	9.3×10^{-8}
2	4.7×10^{-8}
3	3.4×10^{-8}
4	2.6×10^{-8}
5	2.5×10^{-8}
6	1.7×10^{-8}
7	2.0×10^{-8}
8	2.0×10^{-8}
9	2.0×10^{-8}
10	2.0×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.0×10^{-8} cm/sec
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

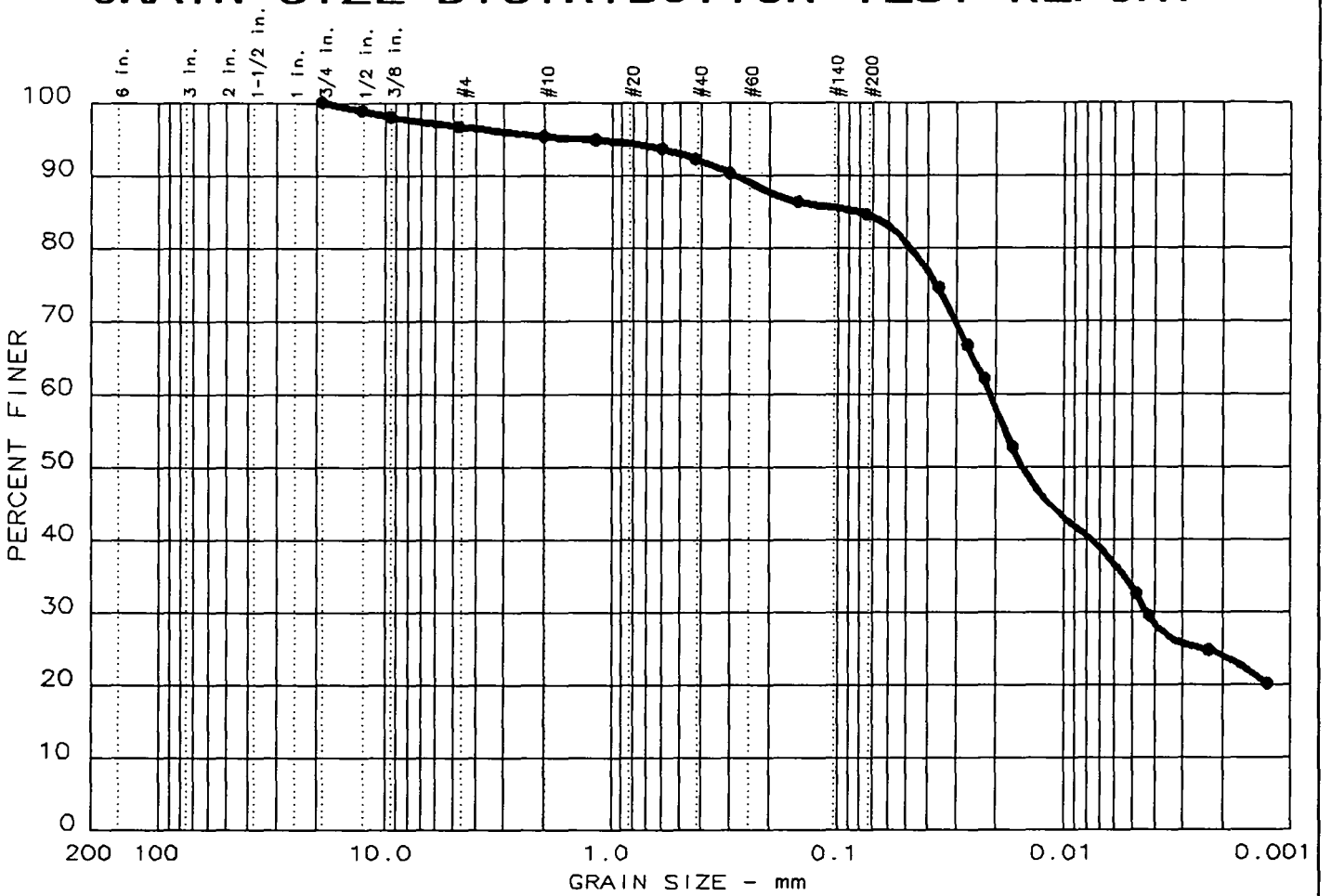
Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on a relatively undisturbed 3-in. diameter Shelby tube sample.

REMARKS:

CHECKED BY: DWA **DATE:** 6/23/98 **APPROVED BY:** WWW **DATE:** 6/23/98

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	6	0.0	3.3	12.1	51.1	33.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	33	15	0.082		0.015	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Some Sand, Trace Gravel	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Madison WI
● Location: 3-inch Shelby Tube # CTP-1

Date: June 23, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

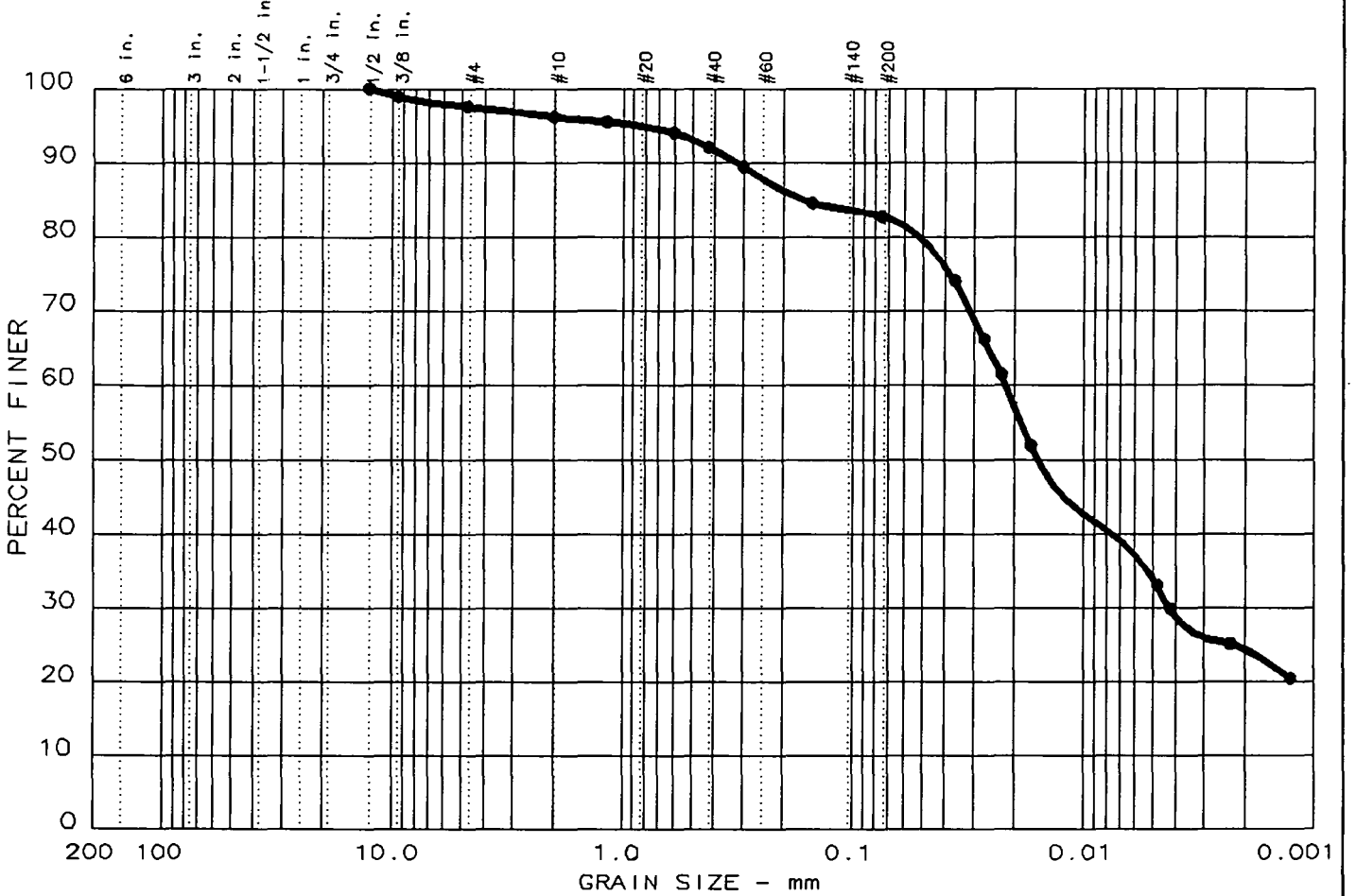
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	2.5	14.8	48.8	33.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	33	14	0.164		0.016	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Some Sand, Trace Gravel	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Madison WI
● Location: 3-inch Shelby Tube # CTP-2

Date: June 23, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

Job No.	C98024
Tested By:	JSG

CGC, Inc.

FIELD DENSITY TEST REPORT - NO. 1 - CLAY TEST PAD

CGC, Inc., 3011 Perry Street, Madison, WI 53713, 608/288-4100, FAX: 608/288-7887

PROJECT: Stoughton Landfill
Stoughton, Wisconsin

TO: Ryan Inc. Central
P.O. Box 206
Janesville, Wisconsin 53547

COPIES:

ATTN: Mr. Dick Vorpahl

TEST METHODS: Moisture-density relationship of soils based on STANDARD proctor (ASTM D698).
"METHOD" indicates: (N) Nuclear (ASTM D2922) or (S) Sand Cone (ASTM D1556)

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
6/4/98										
Clay Test Pad										
CTP-2	N	15'W of 1770	862.8	0.0	Brown Fat to Lean Clay, Trace Fine Sand	17.9	104.7	107	98%	95%
CTP-3	N	15'E of 1740	863.8	0.0	Brown Fat to Lean Clay, Trace Fine Sand	17.4	106.4	107	99%	95%
CTP-4	N	1: 15'S, 15'W of 1772	864.8	0.0	Brown Fat to Lean Clay, Trace Fine Sand	18.4	104.8	107	98%	95%
CTP-5	N	15'N, 15'E of 1742	864.7	0.0	Brown Fat to Lean Clay, Trace Fine Sand	19.1	104.2	107	97%	95%
6/5/98										
Clay Test Pad										
CTP-6	N	25'N, 15'E of 1742	865.0	0.0	Brown Fat to Lean Clay, Trace Fine Sand	18.7	104.2	107	97%	95%
CTP-7	N	15'N, 15'W of 1774	865.8	0.0	Brown Fat to Lean Clay, Trace Fine Sand	17.4	107.2	107	100%	95%
CTP-8	N	20'W of 1771	864.4	0.0	Brown Fat to Lean Clay, Trace Fine Sand	18.0	104.1	107	97%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
6/9/98										
Clay Test Pad										
CTP-9	N	20'S, 15'W of 1770	865.0	0.0	Brown Lean Clay, Some Sand, Tr Gr	18.2	109.0	109	100%	95%
CTP-10	N	25'S, 10'E of 1738	864.0	0.0	Brown Lean Clay, Some Sand, Tr Gr	17.6	109.9	109	101%	95%
CTP-11	N	10'S, 15'E of 1740	865.2	0.0	Brown Lean Clay, Some Sand, Tr Gr	18.2	110.8	109	102%	95%
CTP-12	N	20'S, 10'W of 1772	866.3	0.0	Brown Lean Clay, Some Sand, Tr Gr	18.6	107.0	109	98%	95%
CTP-13	N	10'N, 25'W of 1774	866.3	0.0	Brown Lean Clay, Some Sand, Tr Gr	18.1	109.4	109	100%	95%

Note: CTP-1 changed to GL-43, test performed outside of clay test pad.

*Indicates measured compaction is below specification.

Signed _____ Dated 1/13/99

William W. Wuellner, P.E.

CGC, Inc.

3011 Perry Street
Madison, WI 53713
Ph: (608) 288-4100
Fax: (608) 288-7887

Fax Transmittal Cover Sheet

Date: **6/24/98 16:00** ***Total pages including this sheet:***

To: **Ron Hill**
Ryan
Fax #: **877-8719**

CC: **John Burt**
Ryan
608-754-3290

Re: **Boutwell (Two-stage Borehole) Tests**
Stoughton Landfill

From: **Bill Wuellner**

Note:

Ron/John -
We have completed our calculations on the Stage 1 Boutwell test results. All three tests have been fairly stable over the last few days, with the following results:

Test No.	Test Date	Hydraulic Conductivity		
1	6/22/98 AM	5.9E-08	cm/sec	
	6/23/98 AM	5.7E-08	cm/sec	
	6/23/98 PM	5.3E-08	cm/sec	
	6/24/98 AM	6.8E-08	cm/sec	
	Arithmetic average	***5.9E-08***	**cm/sec**	Rounded to 6E-08 cm/sec
2	6/22/98 AM	3.8E-08	cm/sec	
	6/23/98 AM	2.6E-08	cm/sec	
	6/23/98 PM	3.1E-08	cm/sec	
	6/24/98 AM	2.8E-08	cm/sec	
	Arithmetic average	***3.1E-08***	**cm/sec**	Rounded to 3E-08 cm/sec
3	6/22/98 AM	1.3E-07	cm/sec	
	6/23/98 AM	9.8E-08	cm/sec	
	6/23/98 PM	1.5E-07	cm/sec	
	6/24/98 AM	9.8E-08	cm/sec	
	Arithmetic average	***1.2E-07***	**cm/sec**	Rounded to 1E-07 cm/sec

Based on these test results, it is our opinion that the stage 1 Boutwell tests show substantial compliance with the specifications. Please call after you review so that we can discuss whether we should proceed to Stage 2 or if that step can be eliminated.

THANK YOU! CGC, INC.

If you do not receive all of the pages, please call us as soon as possible.

CGC, Inc.

3011 Perry Street
Madison, WI 53713
Ph: (608) 288-4100
Fax: (608) 288-7887

Fax Transmittal Cover Sheet

Date: **7/2/98 15:44** ***Total pages including this sheet:*** **2**

To: **Ron Hill**
Ryan
Fax #: **877-8719**

CC: **John Burt**
Ryan
608-754-3290

Re: **Boutwell (Two-stage Borehole) Tests - Stage 2**
Stoughton Landfill

From: **Bill Wuellner**

Note:

Ron/John -
We have completed our calculations on the Stage 2 Boutwell test results through 7/1/98. All three tests have been fairly stable over the last few days, with the following results:

Test No.	Test Date	Hydraulic Conductivity, Stage 2		
1	6/29/98 AM	3.5E-08	cm/sec	
	6/29/98 PM	3.6E-08	cm/sec	
	6/30/98 AM	3.9E-08	cm/sec	
	6/30/98 PM	3.7E-08	cm/sec	
	7/1/98 AM	3.7E-08	cm/sec	
	Arithmetic average	***3.7E-08***	**cm/sec**	Rounded to 4E-08 cm/sec
2	6/29/98 AM	3.5E-08	cm/sec	
	6/29/98 PM	3.6E-08	cm/sec	
	6/30/98 AM	3.4E-08	cm/sec	
	6/30/98 PM	3.4E-08	cm/sec	
	7/1/98 AM	3.1E-08	cm/sec	
	Arithmetic average	***3.4E-08***	**cm/sec**	Rounded to 3E-08 cm/sec
3	6/29/98 AM	3.1E-08	cm/sec	
	6/29/98 PM	3.2E-08	cm/sec	
	6/30/98 AM	3.1E-08	cm/sec	
	6/30/98 PM	3.3E-08	cm/sec	
	7/1/98 AM	3.1E-08	cm/sec	
	Arithmetic average	***3.2E-08***	**cm/sec**	Rounded to 3E-08 cm/sec

THANK YOU! CGC, INC.

If you do not receive all of the pages, please call us as soon as possible.

Based on these test results, it is our opinion that the Stage 2 Boutwell tests indicate that the in-place hydraulic conductivity is less than the maximum allowed in the specifications (i.e., <1E-07 cm/sec). In view of the fact that both Stages 1 and 2 of the Boutwell tests and the Shelby tube laboratory tests comply with the specifications, it is our opinion that the Boutwell tests can be terminated. Please call if you have any questions or require additional information.

THANK YOU! CGC, INC.

If you do not receive all of the pages, please call us as soon as possible.

Stoughton Landfill Project C98024

Boutwell Test Calculations 7/2/98

Two-Stage Borehole Tests

Test No. 1	Stage 2

Inside diameter of standpipe	d	0.64008 cm
Inside diameter of casing	D	10.123 cm
Length of Stage 2 extension	L	15.24 cm
Base constant, permeable base	a	-1
Thickness of tested soil below casing	b2	35.56 cm
Correction factor	f	0.9468
Geometry constant	G2	0.003767

Date		6/26/98	6/27/98	6/27/98	6/28/98	6/28/98	6/29/98	6/29/98	6/30/98	6/30/98	7/1/98			
Temp. correction for water viscosity	RT	0.836	0.862	0.878	0.912	0.912	0.889	0.906	0.924	0.938	0.942			
Geometry constant	G2	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767
Initial head at t1	H1, cm	103.9	110.8	111.5	97.1	117.1	111.9	117.6	139.8	140	140.5			
Final head at t2	H2, cm	80.9	61.1	76.3		75.4	63.6	88.0	75.5	97.6	83.1			
TEG correction	c, cm	-1.3	2.8	-4.8		-2.6	5.1	-2.2	2.5	-2.7	3.8			
Corrected final head	H'2, cm	79.6	63.9	71.5	0.0	72.8	68.7	85.8	78.0	94.9	86.9	0	0	0
Time at start of increment	t1	2:23 PM	5:52 PM	8:12 AM		7:10 AM	7:58 PM	9:09 AM	5:32 PM	8:10 AM	6:38 PM			
Time at end of increment	t2	5:40 PM	7:57 AM	5:30 PM		7:50 PM	9:00 AM	5:24 PM	8:02 AM	6:30 PM	7:26 AM			
Elapsed time (t2-t1)	sec	11820	50700	33480		45600	46920	29700	52200	37200	46080			
Stage 2 permeability	K2, cm/sec	7.1E-08	3.5E-08	4.4E-08	no reading	3.6E-08	3.5E-08	3.6E-08	3.9E-08	3.7E-08	3.7E-08	#DIV/0!	#DIV/0!	#DIV/0!

Stoughton Landfill Project C98024

Boutwell Test Calculations 7/2/98

Two-Stage Borehole Tests

Test No. 2	Stage 2

Inside diameter of standpipe	d	0.64008 cm
Inside diameter of casing	D	10.123 cm
Length of Stage 2 extension	L	15.24 cm
Base constant, permeable base	a	-1
Thickness of tested soil below casing	b2	35.56 cm
Correction factor	f	0.9468
Geometry constant	G2	0.003767

Date		6/26/98	6/27/98	6/27/98	6/28/98	6/28/98	6/29/98	6/29/98	6/30/98	6/30/98	7/1/98			
Temp. correction for water viscosity	RT	0.836	0.862	0.878	0.912	0.912	0.889	0.906	0.924	0.938	0.942			
Geometry constant	G2	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767
Initial head at t1	H1, cm	106.0	111.1	111.6	107.6	116.1	110.6	117.7	140.6	140.4	139.6			
Final head at t2	H2, cm	90.8	62.1	77.2	67.2	68.5	63.1	87.9	82.3	100.6	90			
TEG correction	c, cm	-1.3	2.8	-4.8	0.7	-2.6	5.1	-2.2	2.5	-2.7	3.8			
Corrected final head	H'2, cm	89.5	64.9	72.4	67.9	65.9	68.2	85.7	84.8	97.9	93.8	0	0	0
Time at start of increment	t1	2:24 PM	5:53 PM	8:13 AM	5:40 PM	7:11 AM	7:59 PM	9:10 AM	5:33 PM	8:11 AM	6:39 PM			
Time at end of increment	t2	5:41 PM	7:58 AM	5:31 PM	7:00 AM	7:51 PM	9:01 AM	5:25 PM	8:03 AM	6:31 PM	7:27 AM			
Elapsed time (t2-t1)	sec	11820	50700	33480	48000	45600	46920	29700	52200	37200	46080			
Stage 2 permeability	K2, cm/sec	4.5E-08	3.4E-08	4.3E-08	3.3E-08	4.3E-08	3.5E-08	3.6E-08	3.4E-08	3.4E-08	3.1E-08	#DIV/0!	#DIV/0!	#DIV/0!

Stoughton Landfill Project C98024
Boutwell Test Calculations 7/2/98
Two-Stage Borehole Tests

Test No. 3	Stage 2

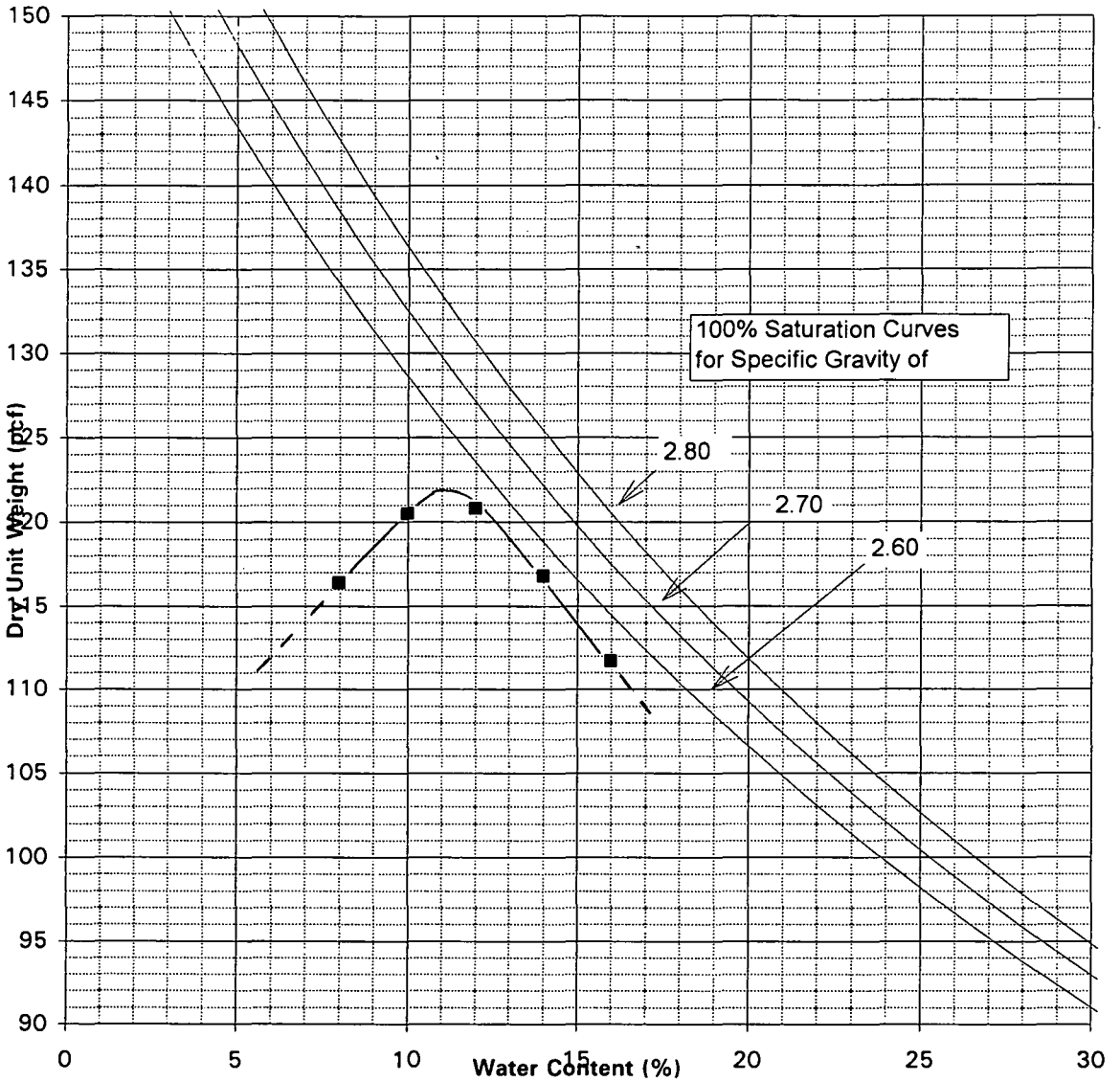
Inside diameter of standpipe	d	0.64008 cm
Inside diameter of casing	D	10.123 cm
Length of Stage 2 extension	L	15.24 cm
Base constant, permeable base	a	-1
Thickness of tested soil below casing	b2	35.56 cm
Correction factor	f	0.9468
Geometry constant	G2	0.003767

Date		6/26/98	6/27/98	6/27/98	6/28/98	6/28/98	6/29/98	6/29/98	6/30/98	6/30/98	7/1/98			
Temp. correction for water viscosity	RT	0.836	0.862	0.878	0.912	0.912	0.889	0.906	0.924	0.938	0.942			
Geometry constant	G2	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767	0.003767
Initial head at t1	H1, cm	105.9	111.6	110.7	102.1	104.3	112.1	118.0	140.4	140.5	141.6			
Final head at t2	H2, cm	96.3	69.1	84.1	68.7	68.9	67.2	91.2	86.0	102.3	91			
TEG correction	c, cm	-1.3	2.8	-4.8	0.7	-2.6	5.1	-2.2	2.5	-2.7	3.8			
Corrected final head	H'2, cm	95.0	71.9	79.3	69.4	66.3	72.3	89.0	88.5	99.6	94.8	0	0	0
Time at start of increment	t1	2:25 PM	5:54 PM	8:14 AM	5:40 PM	7:12 AM	8:00 PM	9:11 AM	5:34 PM	8:12 AM	6:40 PM			
Time at end of increment	t2	5:42 PM	7:59 AM	5:32 PM	7:00 AM	7:52 PM	9:02 AM	5:26 PM	8:04 AM	6:32 PM	7:28 AM			
Elapsed time (t2-t1)	sec	11820	50700	33480	48000	45600	46920	29700	52200	37200	46080			
Stage 2 permeability	K2, cm/sec	2.9E-08	2.8E-08	3.3E-08	2.8E-08	3.4E-08	3.1E-08	3.2E-08	3.1E-08	3.3E-08	3.1E-08	#DIV/0!	#DIV/0!	#DIV/0!

TAB 2: GRADING LAYER

- Laboratory Compaction Tests (Proctors)
- Grain Size Distribution Test Reports
- Field Density Test Report

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %	
GL-1	**122.0**	**11.0**	
Specimen Description			
Brown Fine-Medium Sand, Some Silt, Little Gravel			
Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %		
N/A	**N/A**		
Test Method	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A	0	0	0	2.7 (est.)
Preparation Method / USCS	% Gravel	% Sand	% Fines	% Oversize
Dry / SM	7.0	58.2	34.8	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc.

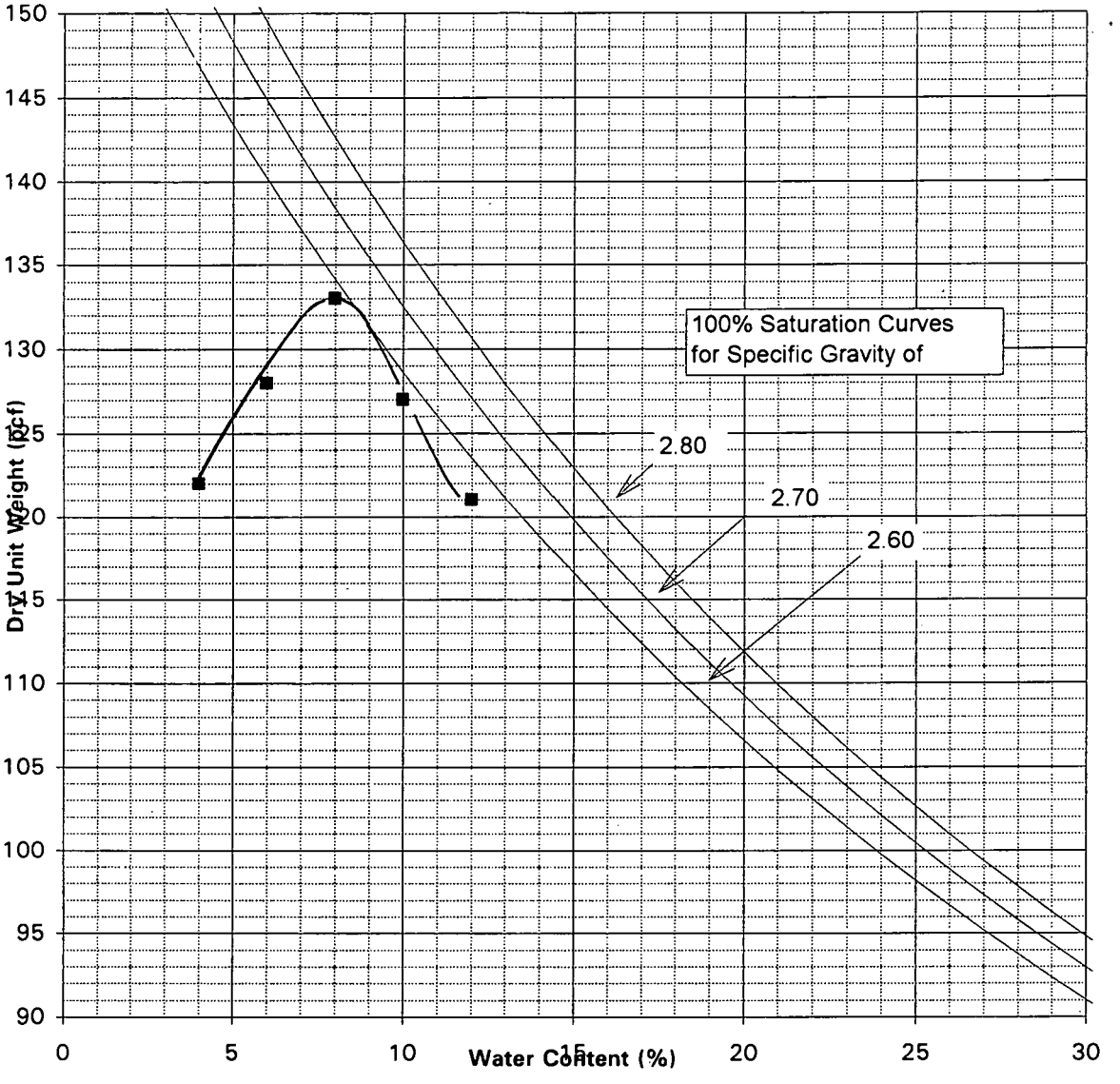
CHECKED BY: JSG

REVIEWED BY: WWW

DATE: 6-3-98

File:98024L.XLS

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
GL-2	133.0	8.0

Specimen Description
Brown Fine-Medium Sand, Some Silt & Gravel

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %
N/A	N/A

Test Method	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A	0	0	0	2.7 (est.)

Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	SM	18.5	59.3	22.4	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc.

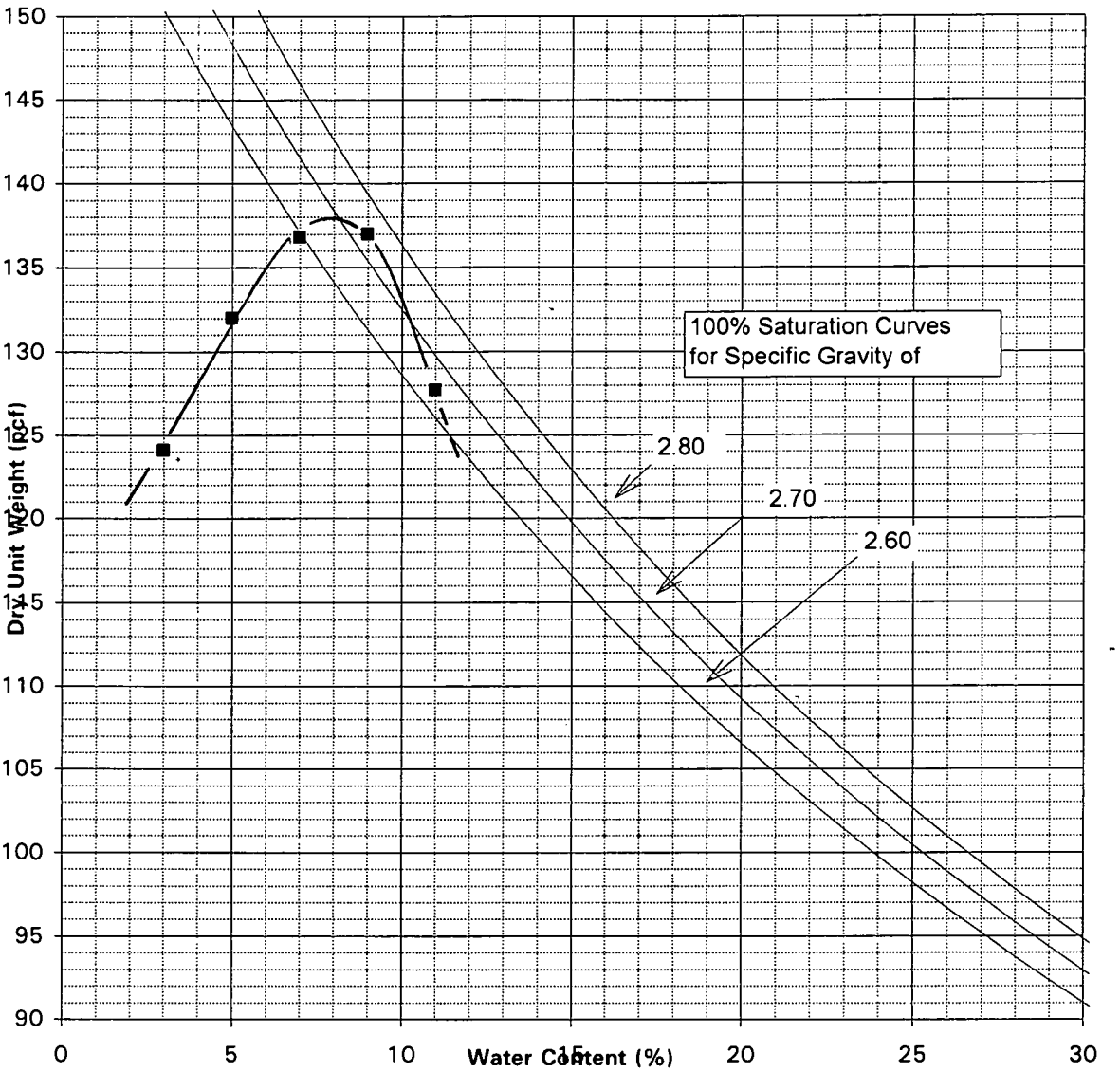
CHECKED BY: JSC

REVIEWED BY: WWW

DATE: 6-24-98

File:98024M.XLS

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
GL-3	**138.0**	**8.0**

Specimen Description
Brown Fine-Medium Sand, Some Silt, Some Gravel

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %	
N/A	**N/A**	

Test Method		Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A		0	0	0	2.7 (est.)
Preparation Method	**USCS**	**% Gravel**	**% Sand**	**% Fines**	**% Oversize**
Dry	SM	18.7	57.5	23.8	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc.

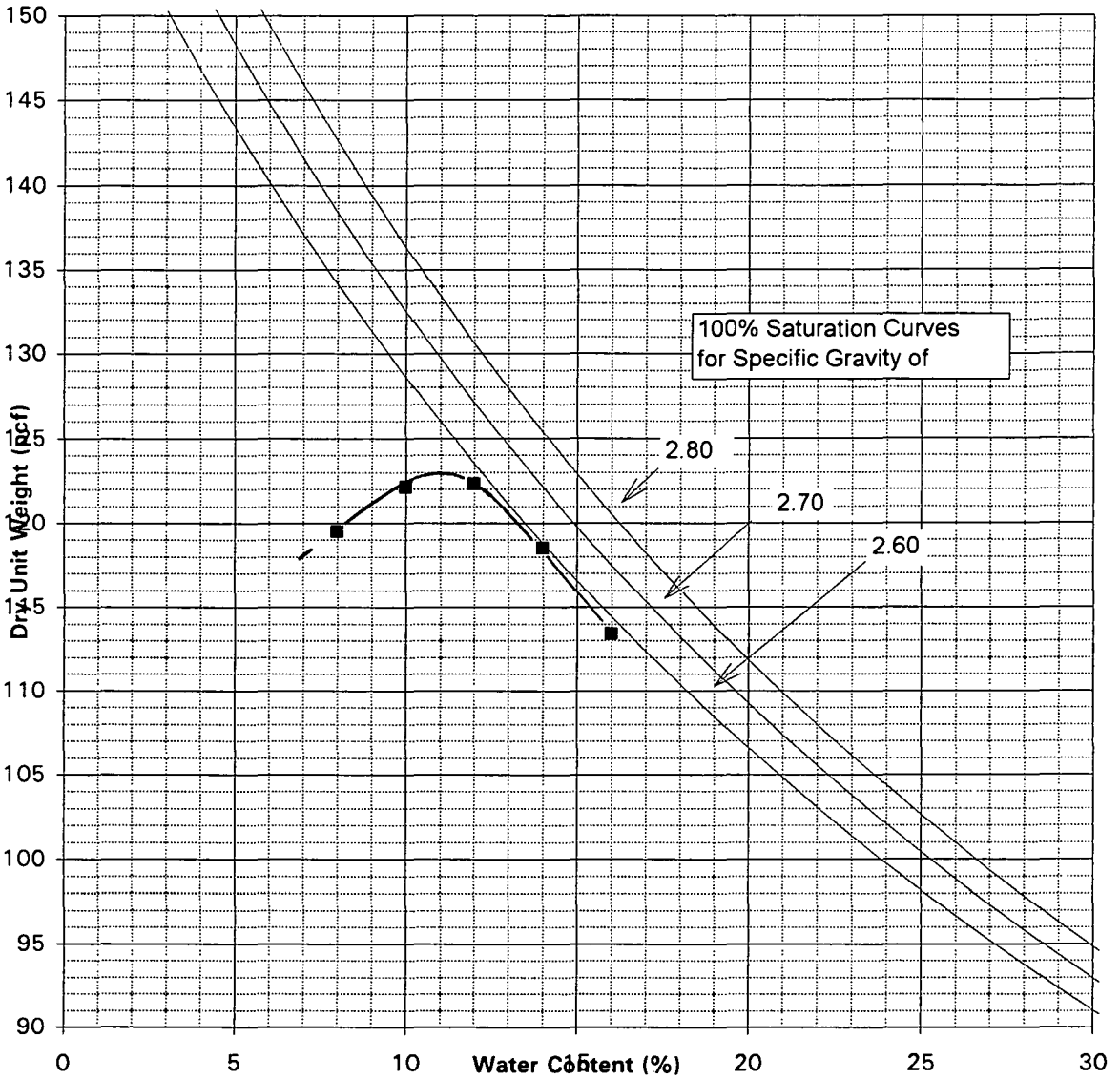
CHECKED BY: JSG

REVIEWED BY: WWW

DATE: 7-2-98

File:98024N.XLS

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
GL-4	**123.0**	**11.0**

Specimen Description
Clayey Silt, Some Sand, Little Gravel (ML) (CL-ML)

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %	
N/A	N/A	

Test Method	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A	0	0	0	2.7 (est.)

Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	ML	7.6	29.2	63.2	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc.

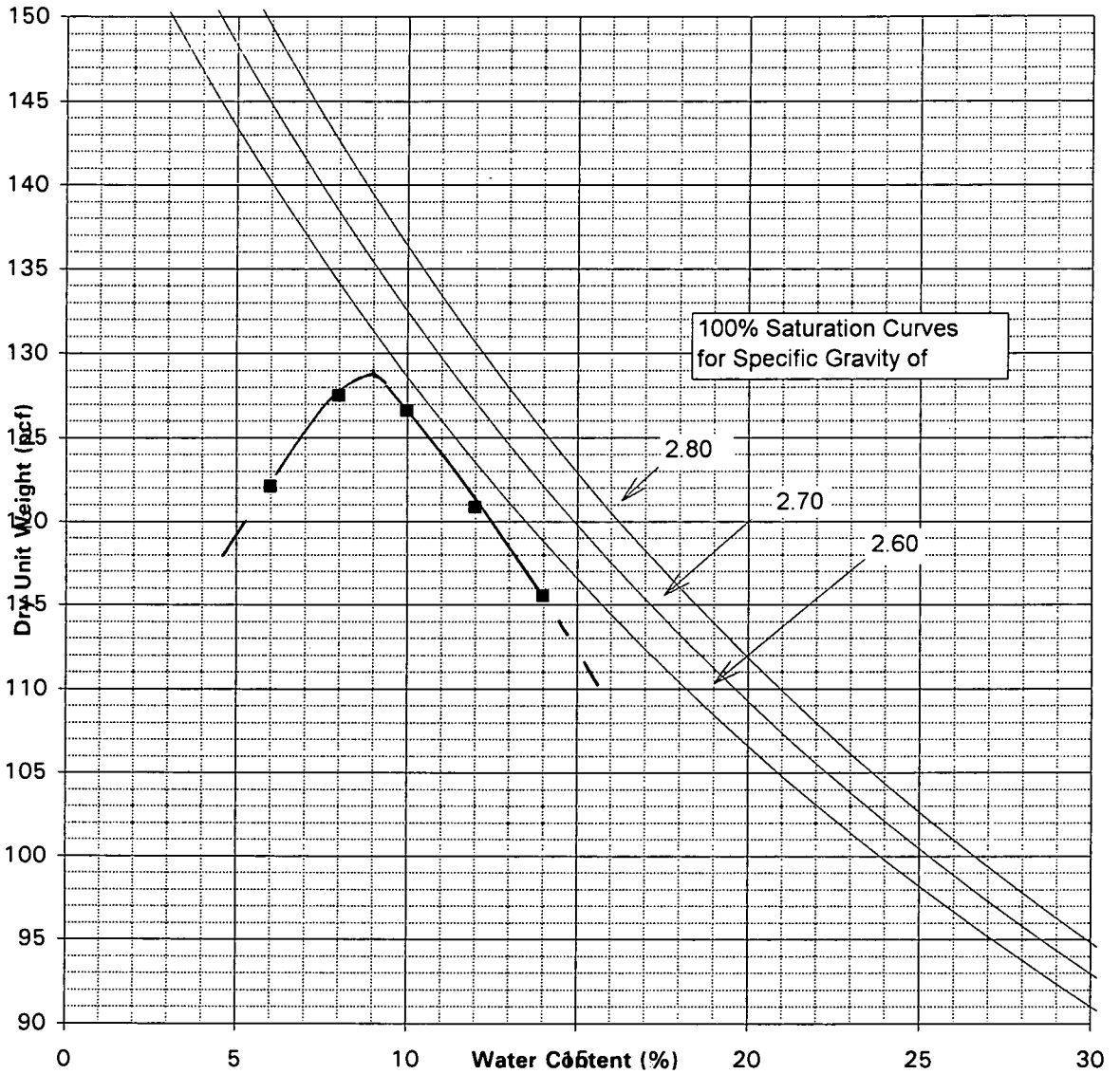
CHECKED BY: JSG

REVIEWED BY: WWW

DATE: 7-13-98

File:98024O.XLS

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
GL-5	**129.0**	**9.0**

Specimen Description
Brown Fine-Medium Sand, Some Silt & Gravel

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %	
N/A	**N/A**	

Test Method	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A	0	0	0	2.7 (est.)

Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	SM	14.7	53.3	32.0	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc.

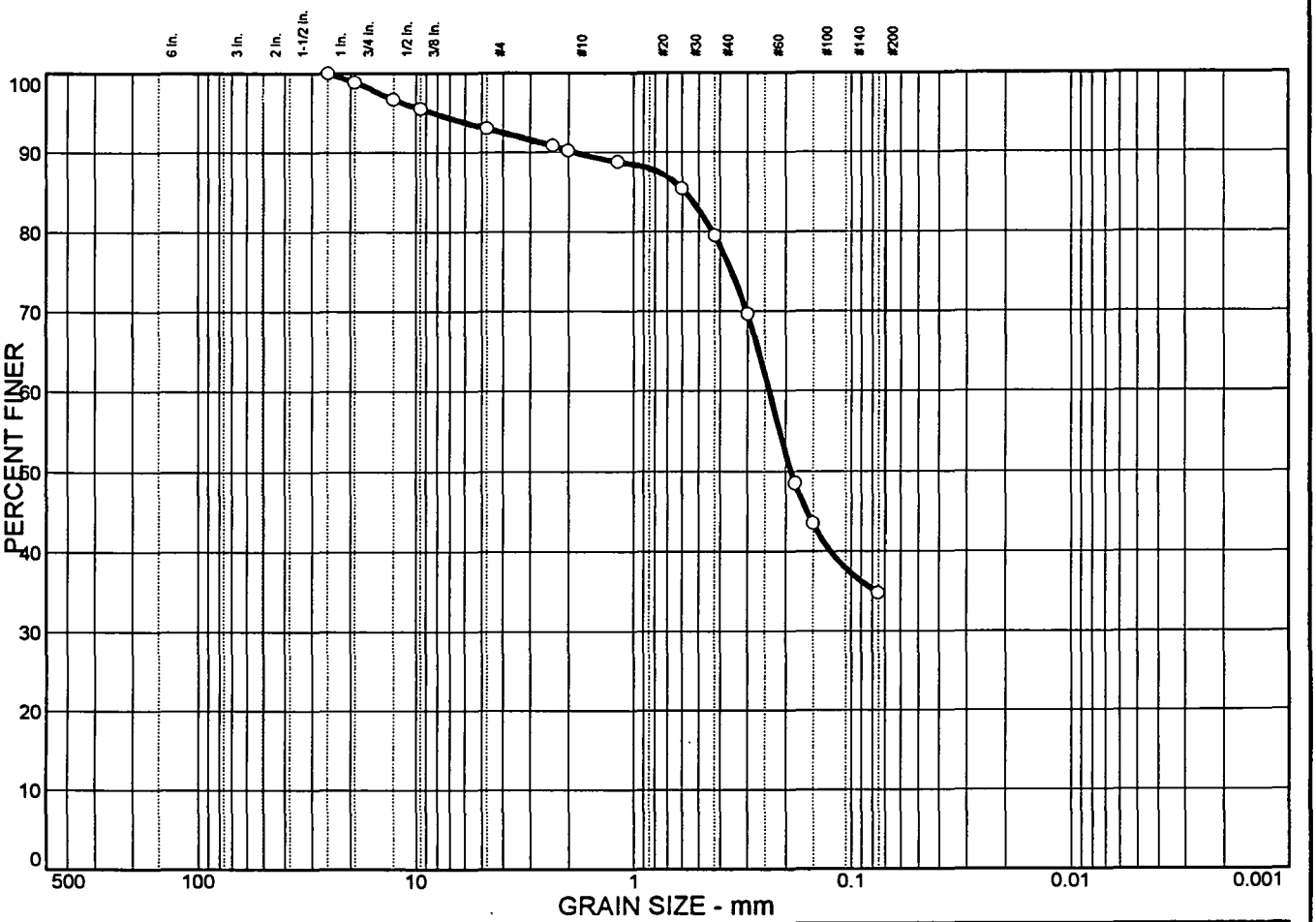
CHECKED BY: JSG

REVIEWED BY: WWW

DATE: 8-1-98

File:98024P.XLS

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	7.0	58.2	34.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
3/4 in.	98.9		
1/2 in.	96.7		
3/8 in.	95.5		
#4	93.0		
#8	90.8		
#10	90.2		
#16	88.8		
#30	85.4		
#40	79.5		
#50	69.7		
#80	48.6		
#100	43.6		
#200	34.8		

* (no specification provided)

Soil Description

Brown Fine-Medium Sand, Some Silt, Little Gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.581 D_{60}= 0.238 D_{50}= 0.187
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Tested by:
Reviewed by:

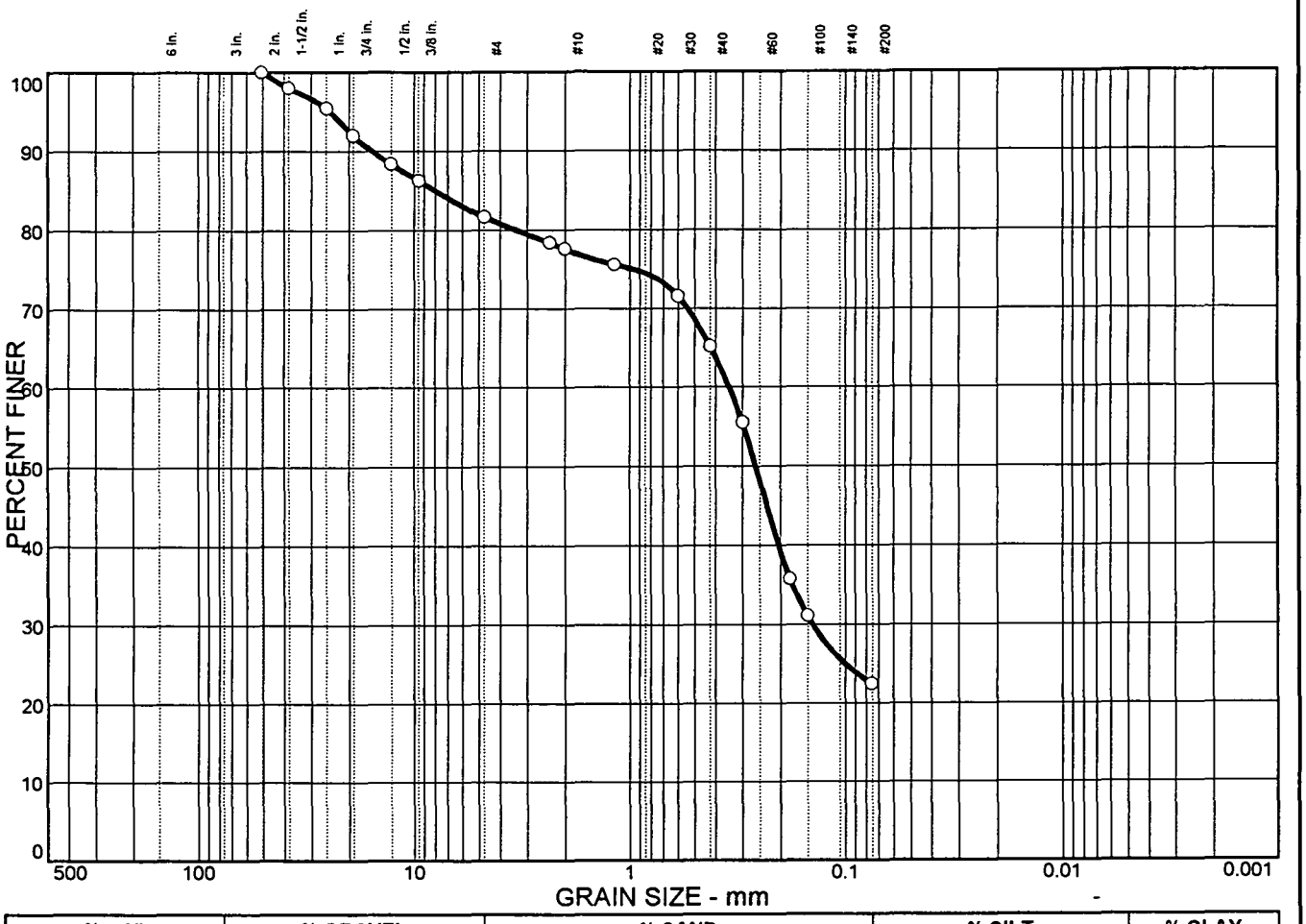
Sample No.: 1 (GL-1) **Source of Sample:** **Date:** 6-8-98
Location: Grading Layer **Elev./Depth:**

CGC, Inc.

Client: Ryan Inc.
Project: Stoughton Landfill

Project No: C98024

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	18.3	59.3	22.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2 in.	100.0		
1-1/2 in.	98.0		
1 in.	95.4		
3/4 in.	92.0		
1/2 in.	88.4		
3/8 in.	86.3		
#4	81.7		
#8	78.4		
#10	77.6		
#16	75.6		
#30	71.6		
#40	65.2		
#50	55.5		
#80	35.8		
#100	31.1		
#200	22.4		

* (no specification provided)

Soil Description

Brown Fine-Medium Sand, Some Silt & Gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 7.94 D_{60}= 0.346 D_{50}= 0.260
D_{30}= 0.142 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Tests By:
Approved By:

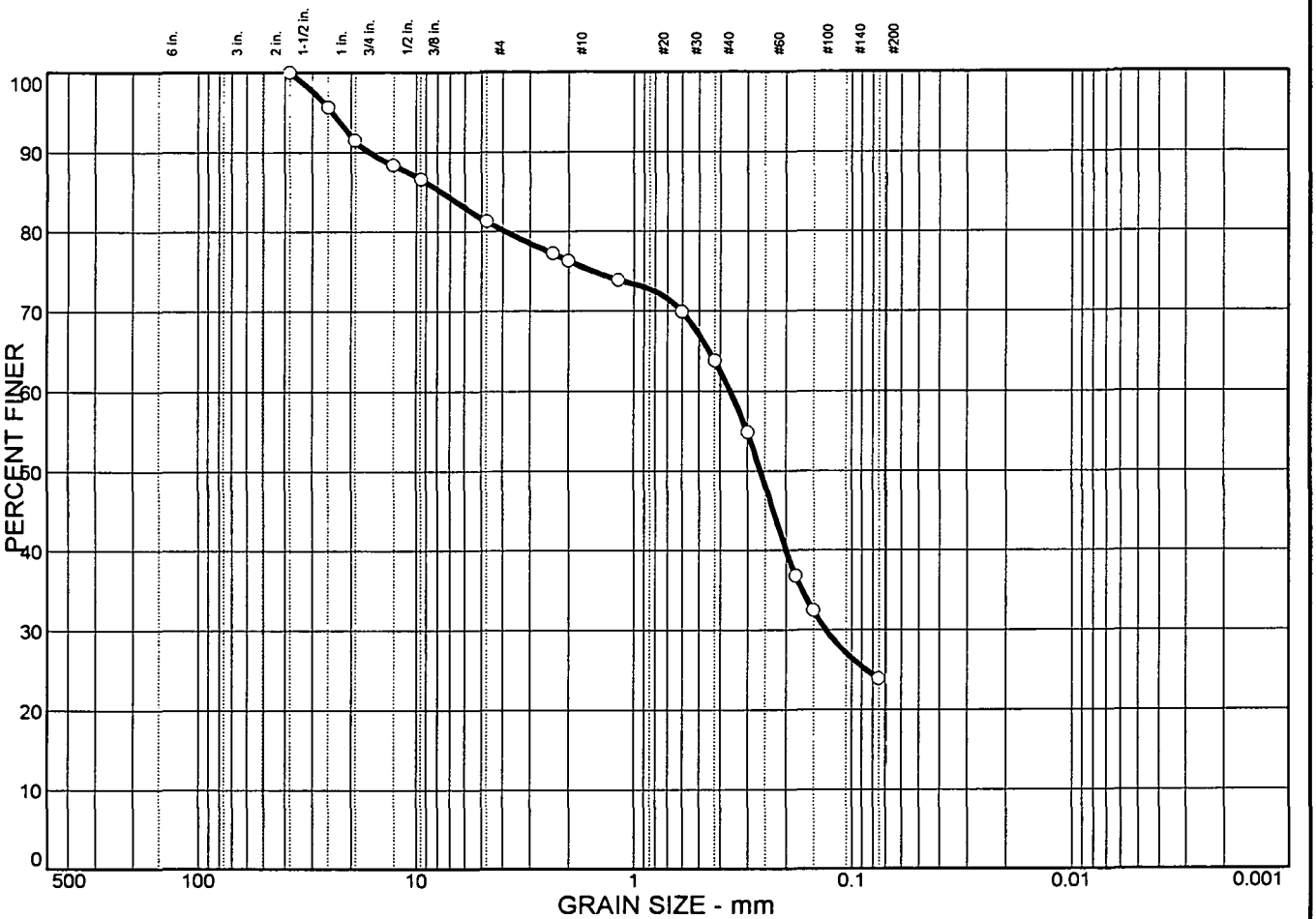
Sample No.: GL-2 **Source of Sample:** **Date:** 6/24/98
Location: NE Corner of Landfill **Elev./Depth:**

CGC, Inc.

Client: Ryan Inc.
Project: Stoughton Landfill

Project No: C98024

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	18.7	57.5	23.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1-1/2 in.	100.0		
1 in.	95.7		
3/4 in.	91.5		
1/2 in.	88.4		
3/8 in.	86.6		
#4	81.3		
#8	77.2		
#10	76.3		
#16	73.9		
#30	69.9		
#40	63.8		
#50	54.9		
#80	36.8		
#100	32.4		
#200	23.8		

* (no specification provided)

Soil Description

Brown Fine to Medium Sand, Some Silt and Gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 7.68 D_{60}= 0.360 D_{50}= 0.261
D_{30}= 0.131 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Tested by:
Reviewed by:

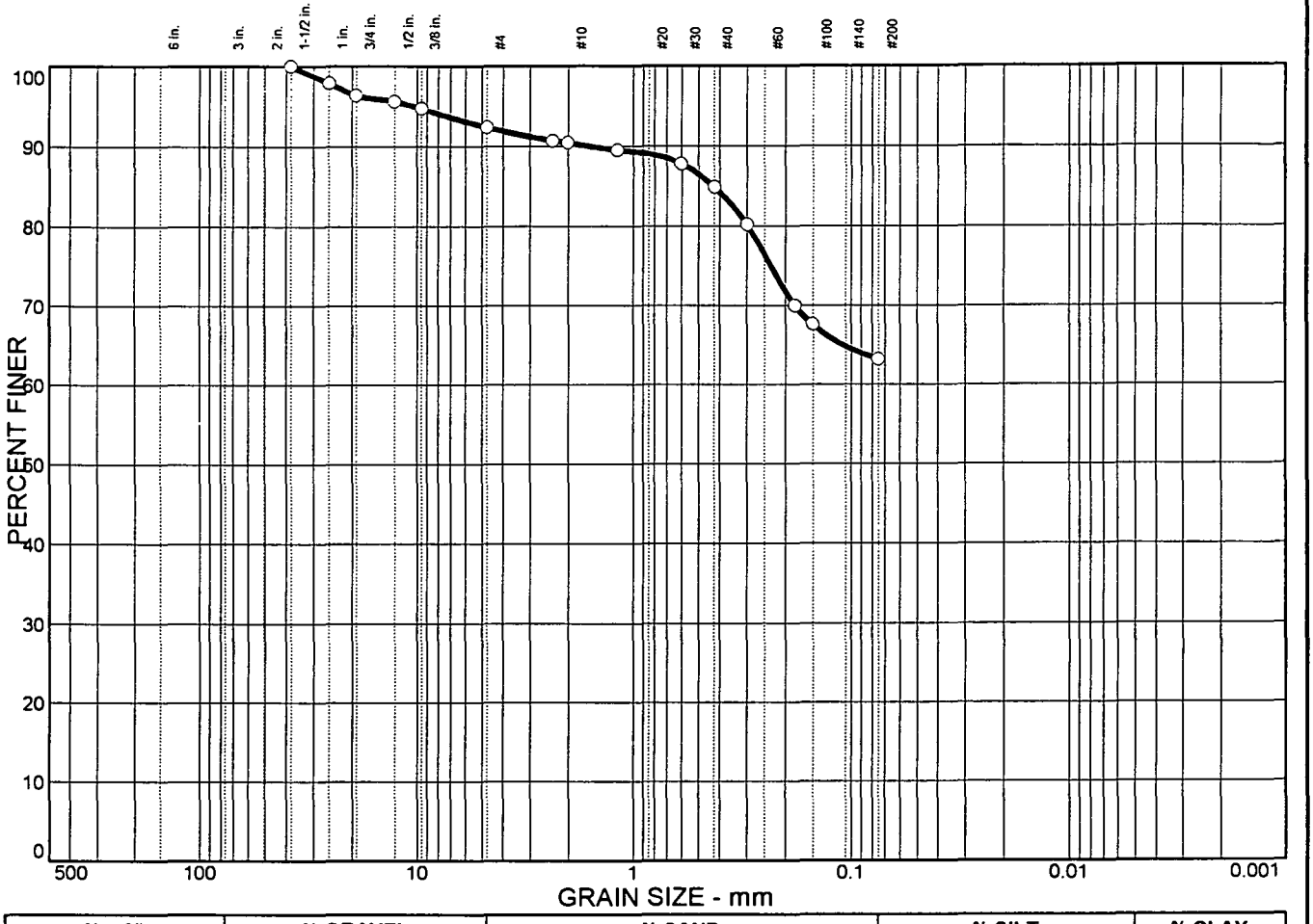
Sample No.: GL-3 **Source of Sample:** Grading Layer - SE Corner **Date:** 7/1/98
Location: **Elev./Depth:**

CGC,Inc.

Client: Ryan Inc.
Project: Stoughton Landfill

Project No: C98024

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	7.6	29.2	63.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1-1/2 in.	100.0		
1 in.	97.9		
3/4 in.	96.4		
1/2 in.	95.6		
3/8 in.	94.7		
#4	92.4		
#8	90.7		
#10	90.4		
#16	89.5		
#30	87.8		
#40	84.9		
#50	80.2		
#80	70.0		
#100	67.6		
#200	63.2		

* (no specification provided)

Soil Description

Clayey Silt, Some Sand, Little Gravel (ML-CL)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.429 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Tested by:
Reviewed by:

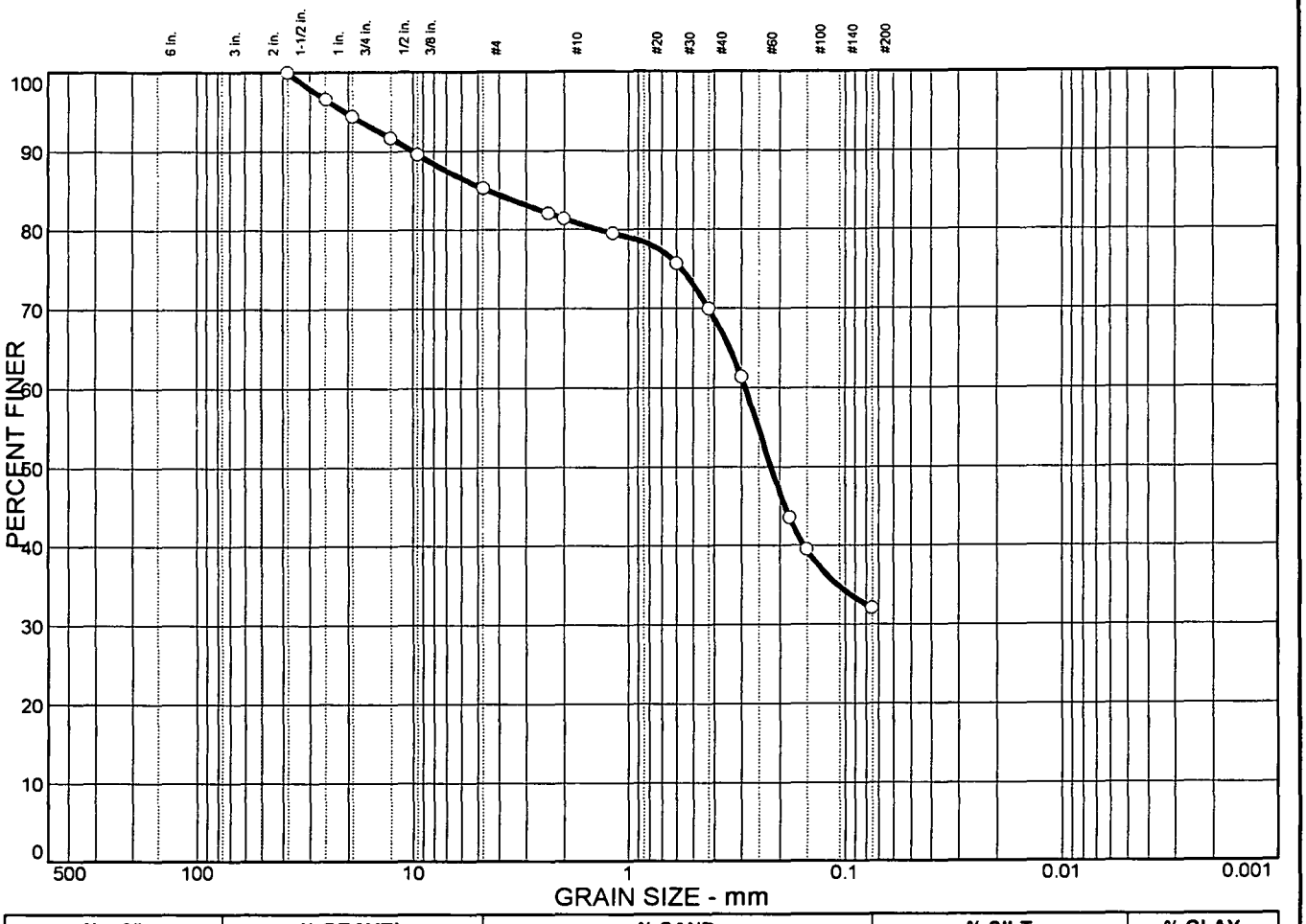
Sample No.: Grading Layer #4 **Source of Sample:** Grading Layer - SE Corner **Date:** 7-13-98
Location: (GL-4) **Elev./Depth:**

CGC, Inc.

Client: Ryan Inc.
Project: Stoughton Landfill

Project No: C98024

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	14.7	53.3	32.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1-1/2 in.	100.0		
1 in.	96.6		
3/4 in.	94.4		
1/2 in.	91.7		
3/8 in.	89.6		
#4	85.3		
#8	82.1		
#10	81.4		
#16	79.5		
#30	75.7		
#40	70.0		
#50	61.4		
#80	43.6		
#100	39.5		
#200	32.0		

* (no specification provided)

Soil Description

Brown Fine-Medium Sand, Some Silt and Gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 4.48 D_{60}= 0.287 D_{50}= 0.219
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Tested by:
Reviewed by:

Sample No.: GL-5 **Source of Sample:** **Date:** 8-1-98
Location: **Elev./Depth:**

CGC, Inc.

Client: Ryan Inc.
Project: Stoughton Landfill

Project No: C98024

Job No.	C98024
Tested By:	JSG

CGC, Inc.

FIELD DENSITY TEST REPORT - NO. 1 - GRADING LAYER

CGC, Inc., 3011 Perry Street, Madison, WI 53713, 608/288-4100, FAX: 608/288-7887

PROJECT: Stoughton Landfill
Stoughton, Wisconsin

TO: Ryan Inc. Central
P.O. Box 206
Janesville, Wisconsin 53547

COPIES:

ATTN: Mr. Dick Vorpahl

TEST METHODS: Moisture-density relationship of soils based on STANDARD proctor (ASTM D698).
"METHOD" indicates: (N) Nuclear (ASTM D2922) or (S) Sand Cone (ASTM D1556)

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
6/3/98										
Grading Layer										
GL1	N	5'N, 25'E of 1314	852.8	0.0	Brown Lean Clay, Some Sand, Trace Gravel	16.0	114.4	115	99%	95%
GL2	N	10'S, 20'E of 1313	854.0	0.0	Brown Lean Clay, Some Sand, Trace Gravel	14.4	113.6	115	99%	95%
GL3	N	20'N, 20'E of 1264	853.5	0.0	Brown Fine-Coarse Sand, Some Clay, Little Silt & Gravel	12.5	120.2	124	97%	95%
6/5/98										
Grading Layer										
GL4	N	30'N, 40'E of 1269	842.5	0.0	Brown Fine-Coarse Sand, Some Clay, Little Silt & Gravel	13.3	119.8	124	97%	95%
GL5	N	105'N, 25'W of 1318	842.0	0.0	Brown Lean Clay, Some Sand, Trace Gravel	15.4	114.3	115	99%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
GL6	N	15'E of 1338	854.0	0.0	Brown Fine-Coarse Sand, Some Clay, Little Silt & Gravel	11.3	117.6	124	95%	95%
6/8/98 Grading Layer										
GL7	N	25'N, 20'E of 1145	856.2	0	Brown Fine-Medium Sand, Some Silt, Little Gravel	9.4	124.7	122	102%	95%
GL8	N	15'S, 15'E of 1165	856.5	0	Brown Fine-Medium Sand, Some Silt, Little Gravel	10.6	116.6	122	96%	95%
GL9	N	5'S of 1212	855.8	0	Brown Fine-Medium Sand, Some Silt, Little Gravel	10.4	121.4	122	100%	95%
GL10	N	15'N, 10'E of 1264	854.8	0	Brown Fine-Medium Sand, Some Silt, Little Gravel	9.2	120.1	122	98%	95%
GL11	N	10'E of 1313	855.0	0	Brown Fine-Medium Sand, Some Silt, Little Gravel	7.1	124.0	122	102%	95%
GL12	N	5'W of 1363	852.8	0	Brown Fine-Medium Sand, Some Silt, Little Gravel	10.1	119.5	122	98%	95%
GL13	N	40'N of 1317	842.8	0	Brown Lean Clay, Some Sand, Trace Gravel	14.2	115.8	115	101%	95%
GL14	N	30'N, 15'E of 1342	842.5	0	Brown Lean Clay, Some Sand, Trace Gravel	14.7	114.5	115	100%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
6/4/98										
Grading Layer										
GL15	N	20'S, 20E of 1736	860.4	0	Brown Fat to Lean Clay, Trace Fine Sand	17.7	104.6	107	98%	95%
6-15-98										
Grading Layer North End of Landfill										
GL-16	N	10'S of 1219	851.0		Brown Fine-Medium Sand, Some Silt, Ltl Gr	12.0	117.3	122	96%	95%
GL-17	N	10'S of 1270	851.0		Brown Fine-Medium Sand, Some Silt, Ltl Gr	10.0	120.8	122	97%	95%
GL-18	N	10'W of 1318	851.7		Brown Fine-Medium Sand, Some Silt, Ltl Gr	12.4	116.3	122	95%	95%
GL-19	N	10'W of 1365	850.7		Brown Fine-Medium Sand, Some Silt, Ltl Gr	12.8	120.5	122	99%	95%
GL-20	N	5'S, 8'W of 1390	851.5		Brown Fine-Medium Sand, Some Silt, Ltl Gr	12.6	117.1	122	96%	95%
GL-21	N	10'E of 1344	854.3		Brown Fine-Medium Sand, Some Silt, Ltl Gr	12.9	108.1	122	89% *	95%
GL-22	N	10'W of 1296	855.0	8	Brown Fine-Medium Sand, Some Silt, Ltl Gr	8.6	116.9	122	96%	95%
GL-23	N	5'W of 1197	855.1	8	Brown Fine-Medium Sand, Some Silt, Ltl Gr	12.4	116.2	122	95%	95%
GL-24	N	10'Nof 1151	854.4	8	Brown Fine-Medium Sand, Some Silt, Ltl Gr	11.9	116	122	95%	95%
6-17-98										
Grading Layer North Side of Landfill										
GL-21R	N	10'E of 1344 (Retest of GL-21)	854.3	8	Brown Fine-Medium Sand, Some Silt, Ltl Gr	7.4	119.3	122	98%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
GL-25	N	15'E of 1296	855.0	8	Brown Fine-Medium Sand, Some Silt, Ltl Gr	11.3	118.4	122	97%	95%
GL-26	N	10'E of 1247	855.1	8	Brown Fine-Medium Sand, Some Silt, Ltl Gr	11.4	116.6	122	96%	95%
GL-27	N	15'E of 1704	856.4	8	Brown Fine-Medium Sand, Some Silt, Ltl Gr	9.7	119.3	122	98%	95%
GL-28	N	10'N of 1768	860.5	8	Brown Fine-Medium Sand, Some Silt, Ltl Gr	8.9	121.0	122	99%	95%
GL-29	N	20'E of 1223	859.7	8	Brown Fine-Medium Sand, Some Silt, Ltl Gr	11.0	118.3	122	97%	95%
GL-30	N	10'E of 1274	858	8	Brown Fine-Medium Sand, Some Silt, Ltl Gr	11.3	117.7	122	96%	95%
GL-31	N	10'S of 1322	858.5	8	Brown Fine-Medium Sand, Some Silt, Ltl Gr	8.8	122.3	122	100%	95%
6-18-98 Grading Layer East Side of Landfill										
GL-32A	N	15'E of 1839	844.2	8	Brown Fine-Medium Sand, Some Silt & Gr	7.1	122	129	95%	95%
GL-33A	N	15'E of 1837	844.2	8	Brown Fine-Medium Sand, Some Silt & Gr	6.5	127.5	129	99%	95%
GL-34A	N	15'E of 1835	844.2	8	Brown Fine-Medium Sand, Some Silt & Gr	6.4	126.6	129	98%	95%
GL-35A	N	5'E of 1841	844.2	8	Brown Fine-Medium Sand, Some Silt, Ltl Gr	5.6	121.2	122	99%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
6/23/98										
Grading Layer Northwest Corner of Landfill										
GL-32	N	30'N of 1245	848	0	Brown Fine-Medium Sand, Some Silt, Little Gr	9.3	116.1	122	95%	95%
GL-33	N	10'Nof 1195	849.5	0	Brown Fine-Medium Sand, Some Silt, Little Gr	12.8	116.3	122	95%	95%
GL-34	N	20'N, 20'W of 1172	851.8	0	Brown Fine-Medium Sand, Some Silt, Little Gr	13.3	119.7	122	98%	95%
GL-35	N	20'N of 1131	852.4	0	Brown Fine-Medium Sand, Some Silt, Little Gr	12.1	116.1	122	95%	95%
GL-36	N	15'W of 1152	854.8	0	Brown Fine-Medium Sand, Some Silt, Little Gr	11.3	116.9	122	96%	95%
GL-37	N	15'E of 1134	855.5	0	Brown Fine-Medium Sand, Some Silt, Little Gr	9.3	119.5	122	98%	95%
GL-38	N	10' W of 1178	860	0	Brown Fine-Medium Sand, Some Silt, Little Gr	10.0	117.9	122	97%	95%
GL-39	N	10'W of 1742	863	0	Brown Fine-Medium Sand, Some Silt, Little Gr	10.1	121.7	122	100%	95%
GL-40	N	5'E of 1136	856.7	0	Brown Fine-Medium Sand, Some Silt, Little Gr	10.0	116.2	122	95%	95%
GL-41	N	At 1746	865.3	0	Brown Fine-Medium Sand, Some Silt & Gr	7.6	123.5	129	96%	95%
GL-42	N	10'N of 1228	866.3	0	Brown Fine-Medium Sand, Some Silt & Gr	8.7	124.8	129	97%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
GL-43	N	5'S of 1226	864.6	0	Brown Lean Clay, Some Sand, Tr Gr	12.8	109.3	115	95%	95%
GL-44	N	15'S, 5'E of 1224	862.5	0	Brown Lean Clay, Some Sand, Tr Gr	10.9	112.9	115	98%	95%
GL-45	N	10'W of 1276	861.7	0	Brown Fine-Medium Sand, Some Silt, Ltl Gr	9.2	118.2	122	97%	95%
6-25-98										
Grading Layer @ 381+00N-382+50N										
GL-46	N	At 1277	862.8	0	Brown Fine-Medium Sand, Some Silt & Gr	6.5	127.9	133	96%	95%
GL-47	N	5'N of 1324	860.8	0	Brown Fine-Medium Sand, Some Silt & Gr	7.9	127.5	133	96%	95%
GL-48	N	10'N of 1371	862.2	0	Brown Fine-Medium Sand, Some Silt & Gr	7.6	132.6	133	100%	95%
Grading Layer South End of Landfill										
GL-49	N	5'N of 1165	856.5	0	Brown Fine-Medium Sand, Some Silt & Gr	6.3	130.5	133	98%	95%
GL-50	N	10'N of 1212	857	0	Brown Fine-Medium Sand, Some Silt & Gr	6.7	128.3	133	96%	95%
GL-51	N	20'S, 20'W of 1263	856.1	0	Brown Fine-Medium Sand, Some Silt & Gr	6.3	132.2	133	99%	95%
GL-52	N	5'W of 1289	855.7	0	Brown Fine-Medium Sand, Some Silt & Gr	7.2	132.4	133	100%	95%
GL-53	N	5'N of 1338	854.5	0	Brown Fine-Medium Sand, Some Silt & Gr	6.5	133	133	100%	95%
GL-54	N	20'E of 1362	853.3	0	Brown Fine-Medium Sand, Some Silt & Gr	7.5	127.3	133	96%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
6-26-98										
Grading Layer South Edge of Landfill										
GL-55	N	15'S of 1362	854	0	Brown Fine-Medium Sand, Some Silt & Gr	6.7	133.5	133	100%	95%
GL-56	N	15'S of 1313	856	0	Brown Lean Clay, Some Sand, Tr Gr	14.2	116.2	115	101%	95%
GL-57	N	15'S of 1263	857.4	0	Brown Lean Clay, Some Sand, Tr Gr	15.2	110.9	115	96%	95%
7-2-98										
Grading Layer South Edge of Landfill										
GL-58	N	15'N, 25'E of 1214	856	0	Brown Lean Clay, Some Sand, Tr Gr	12.5	113.7	115	99%	95%
Grading Layer East Side of Landfill										
GL-59	N	25'W of 1513	844.5	0	Brown Fine-Medium Sand, Some Silt & Gr	6.4	132.6	138	96%	95%
GL-60	N	25'N, 35'W of 1511	844.5	0	Brown Fine-Medium Sand, Some Silt & Gr	12.1	123.8	129	96%	95%
GL-61	N	35'W of 1514	844.5	0	Brown Fine-Medium Sand, Some Silt & Gr	7.5	135.1	138	98%	95%
GL-62	N	45'W of 1515	844.5	0	Brown Fine-Medium Sand, Some Silt & Gr	7.7	134.1	138	97%	95%
GL-63	N	25'W of 1516	844.5	0	Brown Fine-Medium Sand, Some Silt & Gr	6.9	132.3	138	96%	95%
7-2-98										
Grading Layer South Edge of Landfill										
GL-64	N	10'W of 1386	852.4	0	Brown Fine-Medium Sand, Some Silt & Gr	10	127.3	133	96%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
GL-65	N	15'N of 1340	852.4	0	Brown Fine-Medium Sand, Some Silt & Gr	8.6	127.6	133	96%	95%
GL-66	N	5'E of 1314	855	0	Brown Fine-Medium Sand, Some Silt & Gr	9.4	126.6	133	95%	95%
7-10-98 Grading Layer South Edge of Landfill										
GL-67	N	10'W of 1362	854.7	0	Brown Fine-Medium Sand, Some Silt & Gr	7.0	130.7	133	98%	95%
GL-68	N	20'S of 1291	853	0	Brown Fine-Medium Sand, Some Silt & Gr	9.2	128.5	133	97%	95%
GL-69	N	10'S of 1289	856.3	0	Brown Fine-Medium Sand, Some Silt & Gr	8.7	127.4	133	96%	95%
7-13-98 Grading Layer South Edge of Landfill										
GL-70	N	25'S of 1819	846.5	0	Brown Fine-Medium Sand, Some Silt & Gr	6.2	132.2	138	96%	95%
GL-71	N	20'S of 1316	846.5	0	Brown Fine-Medium Sand, Some Silt & Gr	6.9	131.2	138	95%	95%
GL-72	N	15'N of 1267	852	0	Brown Fine-Medium Sand, Some Silt, Ltl Gr	9.8	118.7	122	97%	95%
GL-73	N	20'S of 1216	852.5	0	Brown Fine-Medium Sand, Some Silt & Gr	8.4	126.7	133	95%	95%
GL-74	N	10'S of 1169	852.5	0	Brown Fine-Medium Sand, Some Silt & Gr	6.8	130.3	133	98%	95%
GL-75	N	10'W of 1167	854.3	0	Brown Fine-Medium Sand, Some Silt & Gr	7.2	132.9	133	100%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
GL-76	N	10'W of 1165	855.5	0	Brown Fine-Medium Sand, Some Silt & Gr	8.1	127.7	133	96%	95%
GL-77	N	5'S of 1188	856.3	0	Brown Fine-Medium Sand, Some Silt & Gr	7.4	128.5	133	97%	95%
7-16-98										
"Green" Area at Entrance Area at SE Side of Landfill (Outside of Landfill Limits)										
GL-78	N	20'E of Garage	FG	0	Brown Fine-Medium Sand, Some Silt, Ltl Gr	15.1	115.2	122	94% *	95%
GL-79	N	40'W of Garage	FG	0	Brown Fine-Medium Sand, Some Silt & Gr	11.4	122	133	92% *	95%
GL-80	N	100'N 20'E of Garage	FG	0	Brown Fine-Medium Sand, Some Silt, Ltl Gr	12.5	113.8	122	93% *	95%
GL-81	N	50'S of 1453	FG	0	Brown Fine-Medium Sand, Some Silt, Ltl Gr	16.1	112.5	122	92% *	95%
GL-82	N	Entance Road 100'N, 30'W of Garage	FG	0	Brown Fine-Medium Sand, Some Silt, Ltl Gr	13.1	123.3	122	101%	95%
GL-83	N	Entrance Road 20'N, 30'W of Garage	FG	0	Brown Lean Clay, Some Sand, Trace Gr	15.8	116.7	115	101%	95%
7-31-98										
Grading Layer										
GL-84	N	15'W of 1810	859.3	0	Brown Fine-Medium Sand, Some Silt & Gr	7.6	122.6	129	95%	95%
GL-85	N	5'S of 1814	861	0	Brown Fine to Medium Sand, Some Silt & Gr	6.2	132.8	138	96%	95%
GL-86	N	5'S of 2204	858.2	0	Brown Fine-Medium Sand, Some Silt, Ltl Gr	8.3	121.1	122	99%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
GL-87	N	5'S of 2016	862.3	0	Brown Fine-Medium Sand, Some Silt & Gr	9.3	123.3	129	96%	95%
GL-88	N	5'S of 1750	862.3	0	Brown Fine-Medium Sand, Some Silt, Ltl Gr	9.8	119.2	122	98%	95%
GL-89	N	5'N of 2020	866.2	0	Brown Fine-Medium Sand, Some Silt & Gr	7.7	122.3	129	95%	95%
GL-90	N	5'S of 2047	867.4	0	Brown Fine-Medium Sand, Some Silt & Gr	7.7	126.9	133	95%	95%
GL-91	N	5'N of 1369	861.1	0	Brown Fine-Medium Sand, Some Silt, Ltl Gr	11.7	119.4	122	98%	95%
GL-92	N	15'E of 1388	847.9	0	Brown Fine-Medium Sand, Some Silt, Ltl Gr	8.2	119.8	122	98%	95%
GL-93	N	5'E of 1415	854.3	0	Brown Fine-Medium Sand, Some Silt, Ltl Gr	12.2	121.1	122	99%	95%
GL-94	N	10'N of 1417	857.2	0	Brown Fine-Medium Sand, Some Silt & Gr	6.1	127	133	95%	95%
GL-95	N	15'S of 1326	863.8	0	Brown Fine-Medium Sand, Some Silt & Gr	7.6	123.7	129	96%	95%
GL-96	N	10'N of 2074	861	0	Brown Fine-Medium Sand, Some Silt & Gr	9.0	124.2	129	96%	95%
GL-97	N	5'S of 1419	855.2	0	Brown Fine-Medium Sand, Some Silt & Gr	10.6	131.6	133	99%	95%
GL-98	N	5'S of 1642	850.3	0	Brown Fine-Medium Sand, Some Silt, Ltl Gr	8.2	120.2	122	99%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
8-3-98										
Green Area at SE Corner of Landfill										
GL-78R	N	20'E of Garage (Retest of GL-78)	FG	0	Brown Clayey Silt, Some Sand, Ltl Gr	9.7	122	123	99%	95%
GL-79R	N	40'W of Garage (Retest of GL-79)	FG	0	Brown Fine-Medium Sand, Some Silt & Gr	10.3	128.6	133	97%	95%
GL-80R	N	100'N, 20'E of Garage (Retest of GL-80)	FG	0	Brown Fine-Medium Sand, Some Silt & Gr	6.6	128.5	133	97%	95%
GL-81R	N	50'S of 1453 (Retest of GL-81)	FG	0	Brown Clayey Silt, Some Sand, Ltl Gr	13.1	118.4	123	96%	95%
Grading Area										
GL-99	N	25'S of 2203	856.3	0	Brown Clayey Silt, Some Sand, Ltl Gr	10.3	117.6	123	96%	95%
GL-100	N	25'S of 2015	860	0	Brown Clayey Silt, Some Sand, Ltl Gr	8.7	121	123	98%	95%
Gl-101	N	10'N of 2023	863.9	0	Brown Fine-Medium Sand, Some Silt & Gr	7.6	132.3	133	99%	95%
GL-102	N	15'N of 2021	862	0	Brown Fine-Medium Sand, Some Silt & Gr	6.7	128.2	133	96%	95%
GL-103	N	10'N of 2038	863	0	Brown Fine-Medium Sand, Some Silt & Gr	8.8	126.2	133	95%	95%
GL-104	N	5'N of 2041	865.1	0	Brown Clayey Silt, Some Sand, Ltl Gr	9.6	121.9	123	99%	95%
GL-105	N	10'N of 2043	866	0	Brown Clayey Silt, Some Sand, Ltl Gr	10.9	119.1	123	97%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
8-3-98										
Grading Layer										
GL-106	N	5'E of 2061	864	0	Brown Fine-Medium Sand, Some Silt & Gr	10.1	123.4	129	96%	95%
GL-107	N	5'W of 2059	863	0	Brown Fine-Medium Sand, Some Silt & Gr	8.1	134.2	138	97%	95%
GL-108	N	5'N of 2057	861.7	0	Brown Fine-Medium Sand, Some Silt & Gr	11.0	124.7	129	97%	95%
GL-109	N	5'W of 2071	859.8	0	Brown Fine-Medium Sand, Some Silt & Gr	10.3	125.7	129	97%	95%
GL-110	N	5'W of 2073	861.8	0	Brown Fine-Medium Sand, Some Silt & Gr	7.8	123	129	95%	95%
GL-111	N	5'S of 1420	855.2	0	Brown Fine-Medium Sand, Some Silt & Gr	9.3	124.8	129	97%	95%
GL-112	N	5'S of 1422	853.9	0	Brown Fine-Medium Sand, Some Silt & Gr	9.6	126.4	129	98%	95%
GL-113	N	5'W of 1424	853.6	0	Brown Fine-Medium Sand, Some Silt & Gr	6.9	125	129	97%	95%
GL-114	N	5'N of 1426	853.2	0	Brown Lean Clay, Some Sand, Tr Gr	13.2	109	115	95%	95%
GL-115	N	10'W of 1428	853.3	0	Brown Lean Clay, Some Sand, Tr Gr	14.9	109.3	115	95%	95%
8-10-98										
Grading Layer										
GL-116	N	5'E of 2236	847.8	0	Brown Clayey Silt, Some Sand, Ltl Gr	11.9	118.2	123	96%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
GL-117	N	10'N of 2055	862.0	0	Brown Fine-Medium Sand, Some Silt & Gr	10.0	125.1	129	97%	95%
GL-118	N	15'N of 1856	860.7	0	Brown Fine-Medium Sand, Some Silt & Gr	8.5	128.6	133	97%	95%
GL-119	N	5'N of 1358	858.7	0	Brown Fine-Medium Sand, Some Silt & Gr	7.5	129.1	133	97%	95%
GL-120	N	5'N of 2068	860.8	0	Brown Fine-Medium Sand, Some Silt & Gr	9	126.3	133	95%	95%
GL-121	N	10'W of 2070	859.0	0	Brown Fine-Medium Sand, Some Silt & Grl	11.1	122.9	129	95%	95%
GL-122	N	10'W of 1444	857.8	0	Brown Fine-Medium Sand, Some Silt & Gr	6.3	138.3	138	100%	95%
GL-123	N	5'W of 1446	851.5	0	Brown Fine-Medium Sand, Some Silt & Gr	9.1	128.4	133	97%	95%
GL-124	N	5'W of 1448	851.5	0	Brown Fine-Medium Sand, Some Silt & Gr	10.0	128.5	133	97%	95%
GL-125	N	10'W of 1450	851.7	0	Brown Fine-Medium Sand, Some Silt & Gr	8.9	130.2	133	98%	95%
8-11-98 Grading Layer										
GL-126	N	10'S of 1402	855.0	0	Brown Lean Clay, Some Sand, Tr Gr	18.8	109.8	115	95%	95%
GL-127	N	5'E of 1381	856.6	0	Brown Lean Clay, Some Sand, Tr Gr	18.3	108.8	115	95%	95%
GL-128	N	25'W of 2070	860.0	0	Brown Clayey Silt, Some Sand, Ltl Gr	13.2	122.9	123	100%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
GL-129	N	25'S, 20'W of 2073	862.3	0	Brown Fine-Medium Sand, Some Silt & Gr	11.7	125.8	129	98%	95%
GL-130	N	25'S of 1212	857.5	0	Brown Fine-Medium Sand, Some Silt & Gr	5.7	133.8	138	97%	95%
GL-131	N	25'S of 1214	855.7	0	Brown Fine-Medium Sand, Some Silt & Gr	7.9	131.8	138	96%	95%
GL-132	N	5'N of 1265	855.4	0	Brown Clayey Silt, Some Sand, Ltl Gr	13.0	122.9	123	100%	95%
GL-133	N	10'S of 1263	858.3	0	Brown Fine-Medium Sand, Some Silt & Gr	7.9	132.7	138	96%	95%
8-12-98 Grading Layer										
GL-134	N	5'N of 2037	863.9	0	Brown Fine-Medium Sand, Some Silt & Gr	7.2	129.3	133	97%	95%
GL-135	N	10'S of 2035	866.0	0	Brown Fine-Medium Sand, Some Silt & Gr	9.8	127.8	133	96%	95%
GL-136	N	10'S of 2052	864.3	0	Brown Fine-Medium Sand, Some Silt & Gr	9.6	124.8	129	97%	95%
GL-137	N	10'S of 2054	863.3	0	Brown Clayey Silt, Some Sand, Ltl Gr	13.1	118.9	123	97%	95%
GL-138	N	10'N of 1857	861.0	0	Brown Clayey Silt, Some Sand, Ltl Gr	13.5	117.3	123	95%	95%
GL-139	N	5'W of 1751	861.6	0	Brown Clayey Silt, Some Sand, Ltl Gr	12.7	118.2	123	96%	95%
GL-140	N	15'S of 1360	856.7	0	Brown Clayey Silt, Some Sand, Ltl Gr	11.6	121.5	123	99%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
GL-141	N	5'N of 1406	855.0	0	Brown Fine-Medium Sand, Some Silt & Gr	11.0	124	129	96%	95%
GL-142	N	10'W of 1452	850.7	0	Brown Fine-Medium Sand, Some Silt & Gr	10.8	123.9	129	96%	95%
GL-143	N	5'S of 1408	852.4	0	Brown Fine-Medium Sand, Some Silt & Gr	7.1	125.9	129	98%	95%
Gl-144	N	10'N of 1410	850.4	0	Brown Fine-Medium Sand, Some Silt & Gr	7.4	130.2	133	98%	95%
8-13-98 Grading Layer										
GL-145	N	5'E of 2062	863.3	0	Brown Fine-Medium Sand, Some Silt & Gr	11.2	126.1	133	95%	95%
GL-146	N	10'N of 2064	863.2	0	Brown Fine-Medium Sand, Some Silt & Gr	7.2	127.6	133	96%	95%
GL-147	N	5'E of 2060	864.6	0	Brown Clayey Silt, Some Sand, Ltl Gr	13.6	118.8	123	97%	95%
GL-148	N	10'S of 2049	866.0	0	Brown Fine-Medium Sand, Some Silt & Gr	9.4	122.5	129	95%	95%
GL-149	N	5'E of 2050	865.2	0	Brown Fine-Medium Sand, Some Silt & Gr	7.8	126.5	133	95%	95%
GL-150	N	5'W of 2075	859.9	0	Brown Fine-Medium Sand, Some Silt & Gr	9.9	124	129	96%	95%
GL-151	N	5'W of 2066	861.7	0	Brown Fine-Medium Sand, Some Silt & Gr	6.9	127.7	133	96%	95%
GL-152	N	15'S of 2067	860.8	0	Brown Fine-Medium Sand, Some Silt & Gr	7.3	130.7	133	98%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
GL-153	N	5'NW of 2069	860.3	0	Brown Fine-Medium Sand, Some Silt & Gr	6.9	127.4	133	96%	95%
GL-154	N	5'NE of 1359	858.5	0	Brown Fine-Medium Sand, Some Silt & Gr	5.9	129.6	133	97%	95%
GL-155	N	10'W of 1858	860.6	0	Brown Fine-Medium Sand, Some Silt & Gr	9.4	124.9	129	97%	95%
GL-156	N	5'E of 1236	860.1	0	Brown Clayey Silt, Some Sand, Ltl Gr	12.3	117.3	123	95%	95%
GL-157	N	10'E of 2013	860.3	0	Brown Clayey Silt, Some Sand, Ltl Gr	10.8	117.8	123	96%	95%
GL-158	N	10'S of 2029	868.1	0	Brown Fine-Medium Sand, Some Silt & Gr	10.3	126.6	133	95%	95%
GL-159	N	15'S of 2031	868.0	0	Brown Fine-Medium Sand, Some Silt & Gr	6.7	127.6	133	96%	95%
GL-160	N	10'S of 1780	864.0	0	Brown Fine-Medium Sand, Some Silt & Gr	11	129.7	133	98%	95%
GL-161	N	10'N of 2017	864.0	0	Brown Fine-Medium Sand, Some Silt & Gr	6.4	126.7	133	95%	95%
GL-162	N	10'Nof 2020	861.6	0	Brown Clayey Silt, Some Sand, Ltl Gr	9.7	118.4	123	96%	95%
GL-163	N	30'E of 2011	859.5	0	Brown Fine-Medium Sand, Some Silt & Gr	7.9	124.3	129	96%	95%
GL-164	N	20'W of 1860	858.6	0	Brown Fine-Medium Sand, Some Silt & Gr	7.4	133.7	138	97%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
8-15-98										
Grading Layer										
GL-165	N	10'E of 1859	860.4	0	Brown Fine-Medium Sand, Some Silt & Gr	10.9	127.7	133	96%	95%
GL-166	N	15'S of 1312	858.1	0	Brown Fine-Medium Sand, Some Silt & Gr	10.5	126.6	133	95%	95%
GL-167	N	10'SE of 1579	850.6	0	Brown Clayey Silt, Some Sand, Ltl Gr	10.4	117.2	123	95%	95%

*Indicates measured compaction is below specification.

Signed _____ Dated 1/13/99

William W. Wuellner, P.E.

TAB 3: CLAY BARRIER LAYER

- Shelby Tube Samples
  - Summary Table CBL-1
  - Falling Head Permeability Tests
  - Grain Size Distribution Test Reports (including Atterberg Limits and Clay Content)
- Grab Samples (Every 5000 cu yd)
  - Laboratory Compaction Tests (Proctors)
  - Grain Size Distribution Test Reports (including Atterberg Limits and Clay Content)
- Field Density Test Report

Table CBL-1

Summary of Laboratory Tests on Clay Barrier Layer Shelby Tube Samples

Stoughton City Landfill Cap

Shelby Tube / Sample No.	Location	Lift No.	Natural Moisture Content, %	Liquid Limit (LL), %	Plasticity Index (PI), %	P200 Content, %	5 Micron Clay Content, %	USCS Symbol	Hydraulic Conductivity, cm/sec (1)
	Project Requirements		- -	>25	>10	>50	- -	CL/CH	<1E-07
1	382+50N 124+00E	1	21.9	37	19	92.8	30.8	CL	2.1E-08
2	384+00N 124+00E	1	19.4	35	16	84.8	26.2	CL	
3	385+50N 125+00E	1	23.0	36	18	91.6	29.5	CL	1.8E-08
4	382+00N 126+00E	1	22.5	37	18	95.0	35.8	CL	
5	381+50N 122+50E	1	22.2	37	18	91.7	31.4	CL	2.4E-08
6	382+50N 128+00E	1	18.3	38	18	94.0	31.6	CL	2.7E-08
7	384+00N 127+00E	1	20.4	34	16	89.5	29.6	CL	
8	382+00N 124+00E	2	21.2	34	16	96.5	37.0	CL	
9	384+00N 123+50E	2	20.5	37	17	94.4	36.7	CL	2.1E-08
10	385+50N 125+50E	2	20.0	38	18	94.5	31.5	CL	
11	382+00N 128+00E	2	22.1	39	18	95.3	39.0	CL	
12	384+50N 127+00E	2	20.6	37	17	94.6	34.5	CL	2.3E-08
13	382+50N 126+00E	2	23.1	40	20	95.6	36.2	CL	2.1E-08
14	380+00N 124+00E	1	22.8	35	18	91.7	29.5	CL	
15	378+50N 124+00E	1	19.8	35	16	95.3	33.8	CL	2.8E-08
16	380+50N 126+00E	1	22.4	42	23	96.4	37.9	CL	3.0E-08
17	378+00N 126+00E	1	21.7	32	14	77.3	31.6	CL	
18	380+00N 128+00E	1	25.0	36	18	94.5	20.0	CL	
19	377+50N 128+00E	1	21.1	39	20	94.5	33.3	CL	1.9E-08
20	377+00N 123+00E	1	19.3	33	15	95.7	33.4	CL	3.0E-08

Table CBL-1

Summary of Laboratory Tests on Clay Barrier Layer Shelby Tube Samples

Stoughton City Landfill Cap

Shelby Tube / Sample No.	Location	Lift No.	Natural Moisture Content, %	Liquid Limit (LL), %	Plasticity Index (PI), %	P200 Content, %	5 Micron Clay Content, %	USCS Symbol	Hydraulic Conductivity, cm/sec (1)
	Project Requirements		- -	>25	>10	>50	- -	CL/CH	<1E-07
21	375+50N 123+50E	1	21.2	42	21	91.6	39.5	CL	
22	376+00N 125+50E	1	19.1	34	15	93.4	38.2	CL	2.7E-08
23	375+50N 127+50E	1	16.4	38	18	92.0	31.5	CL	
24	378+00N 128+00E	2	17.3	38	19	93.5	37.0	CL	
25	380+50N 128+00E	2	19.7	35	16	95.2	34.4	CL	2.8E-08
26	380+00N 126+00E	2	22.1	43	22	96.7	38.5	CL	
27	378+50N 126+00E	2	18.7	37	19	96.9	37.6	CL	2.4E-08
28	377+50N 122+50E	2	26.6	41	21	95.8	38.2	CL	
29	378+00N 124+00E	2	20.2	37	18	92.8	35.8	CL	
30	380+50N 124+00E	2	17.5	33	15	93.7	30.8	CL	2.6E-08
31	381+00N 122+50N	2	18.3	36	18	93.8	41.2	CL	
32	375+00N 125+00E	1	15.2	39	20	94.4	40.0	CL	
33	376+00N 123+50E	2	17.7	35	17	95.9	34.9	CL	2.3E-08
34	375+00N 125+50E	2	16.8	36	17	92.3	38.6	CL	
35	376+00N 126+00E	2	16.8	43	23	96.5	40.6	CL	
36	375+50N 128+00E	2	19.9	36	17	97.2	35.5	CL	2.8E-08
Minimum			*15.2*	*32.0*	*14.0*	*77.3*	*20.0*	*CL*	*1.8E-08*
Maximum			*26.6*	*43.0*	*23.0*	*97.2*	*41.2*	*CL*	*3.0E-08*
Average			*20.3*	*37.1*	*18.0*	*93.5*	*34.5*	*CL*	*2.4E-08*
Std Dev			*2.47*	*2.79*	*2.18*	*3.67*	*4.45*		

Note: (1) "Hydraulic conductivity" is used interchangeably with "permeability".
(2) Average value for permeability is the geometric mean, rather than the arithmetic mean.

CGC, Inc.

Job No. C98024
Date: January 6, 1998

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100; Fax: (608) 288-7887

PROJECT: Stoughton Landfill
LOCATION: Stoughton, Wisconsin
SAMPLE: 3-in. Shelby Tube #1
LAYER Layer # 1 , Sta. 382+50N/124+00E
SOIL DESCRIPTION Brown Lean CLAY, Trace Sand (CL)

	INITIAL	FINAL
SAMPLE DIAMETER (CM)	7.34	7.34
SAMPLE LENGTH, L (cm)	9.50	9.50
MOISTURE CONTENT, %	21.3	21.9
DRY DENSITY (lb/cu ft)	104.7	104.7
PERCENT COMPACTION	95	95

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	9.3×10^{-8}
2	6.8×10^{-8}
3	4.5×10^{-8}
4	2.9×10^{-8}
5	3.2×10^{-8}
6	2.7×10^{-8}
7	2.4×10^{-8}
8	2.0×10^{-8}
9	2.1×10^{-8}
10	2.1×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.1×10^{-8} **cm/sec**
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on relatively undisturbed 3-in. dia. Shelby Tube sample.

CHECKED BY: DWR **DATE:** 10/13/98 **APPROVED BY:** WWW **DATE:** 1/13/99

CGC, Inc.

Job No. C98024

Date: January 6, 1998

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100; Fax: (608) 288-7887

PROJECT: Stoughton Landfill

LOCATION: Stoughton, Wisconsin

SAMPLE: 3-in. Shelby Tube #3

LAYER Layer # 1 , Sta. 385+50N/125+00E

SOIL DESCRIPTION Brown Lean CLAY, Trace Sand (CL)

	INITIAL	FINAL
SAMPLE DIAMETER (CM)	7.34	7.34
SAMPLE LENGTH, L (cm)	7.85	7.85
MOISTURE CONTENT, %	22.5	23.0
DRY DENSITY (lb/cu ft)	103.3	103.3
PERCENT COMPACTION	97	97

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	8.2×10^{-8}
2	5.0×10^{-8}
3	3.3×10^{-8}
4	3.7×10^{-8}
5	2.5×10^{-8}
6	2.5×10^{-8}
7	1.8×10^{-8}
8	1.8×10^{-8}
9	1.8×10^{-8}
10	1.8×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 1.8×10^{-8} **cm/sec**
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on relatively undisturbed 3-in. dia. Shelby Tube sample.

CHECKED BY: WWW **DATE:** 10/13/98 **APPROVED BY:** WWW **DATE:** 1/13/99

CGC, Inc.

Job No. C98024

Date: January 6, 1998

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100; Fax: (608) 288-7887

PROJECT: Stoughton Landfill

LOCATION: Stoughton, Wisconsin

SAMPLE: 3-in. Shelby Tube #5

LAYER Layer # 1 , Sta. 381+50N/122+50E

SOIL DESCRIPTION Brown Lean CLAY, Trace Sand (CL)

	INITIAL	FINAL
SAMPLE DIAMETER (CM)	7.34	7.34
SAMPLE LENGTH, L (cm)	7.60	7.60
MOISTURE CONTENT, %	20.6	22.2
DRY DENSITY (lb/cu ft)	106.3	106.3
PERCENT COMPACTION	99	99

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	6.8×10^{-8}
2	4.8×10^{-8}
3	3.3×10^{-8}
4	2.5×10^{-8}
5	2.5×10^{-8}
6	2.6×10^{-8}
7	2.4×10^{-8}
8	2.4×10^{-8}
9	2.3×10^{-8}
10	2.5×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.4×10^{-8} **cm/sec**
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on relatively undisturbed 3-in. dia. Shelby Tube sample.

CHECKED BY: PWA **DATE:** 10/13/98 **APPROVED BY:** WWW **DATE:** 1/13/99

CGC, Inc.

Job No. C98024

Date: January 6, 1998

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100; Fax: (608) 288-7887

PROJECT: Stoughton Landfill

LOCATION: Stoughton, Wisconsin

SAMPLE: 3-in. Shelby Tube #6

LAYER Layer # 1 , Sta. 382+50N/128+00E

SOIL DESCRIPTION Brown Lean CLAY, Trace Sand (CL)

	INITIAL	FINAL
SAMPLE DIAMETER (CM)	7.34	7.34
SAMPLE LENGTH, L (cm)	7.12	7.12
MOISTURE CONTENT, %	16.9	18.3
DRY DENSITY (lb/cu ft)	103.5	103.5
PERCENT COMPACTION	97	97

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	7.2×10^{-8}
2	5.1×10^{-8}
3	5.4×10^{-8}
4	4.5×10^{-8}
5	3.0×10^{-8}
6	3.1×10^{-8}
7	2.6×10^{-8}
8	2.8×10^{-8}
9	2.7×10^{-8}
10	2.7×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.7×10^{-8} **cm/sec**
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on relatively undisturbed 3-in. dia. Shelby Tube sample.

CHECKED BY: DWB **DATE:** 1/19/98 **APPROVED BY:** WWW **DATE:** 1/19/98

CGC, Inc.

Job No. 98024
Date: October 13, 1998

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100

PROJECT: Stoughton Landfill
LOCATION: Stoughton, WI
SAMPLE: 3-in. Shelby tube, CBL, Sta. 384+00N/123+50E (ST-9)
LIFT: 2
SOIL DESCRIPTION: **Brown Lean Clay, Little Fine Sand (CL)**

	INITIAL	FINAL
SAMPLE DIAMETER (cm)	7.34	7.34
SAMPLE LENGTH, L (cm)	19.10	19.10
MOISTURE CONTENT, %	20.5	20.7
DRY DENSITY (lb/cu ft)	101.5	101.5
PERCENT COMPACTION	95	95

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	1.0×10^{-7}
2	9.7×10^{-8}
3	5.2×10^{-8}
4	3.9×10^{-8}
5	2.7×10^{-8}
6	2.4×10^{-8}
7	1.9×10^{-8}
8	2.4×10^{-8}
9	2.0×10^{-8}
10	1.9×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.1×10^{-8} (cm/sec)
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t=time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on a relatively undisturbed 3-in. diameter Shelby tube sample.

REMARKS:

CHECKED BY: WWW **DATE:** 10/13/98 **APPROVED BY:** DWA **DATE:** 10/13/98

CGC, Inc.

Job No. 98024

Date: October 13, 1998

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100

PROJECT: Stoughton Landfill

LOCATION: Stoughton, WI

SAMPLE: 3-in. Shelby tube, CBL, Sta. 384+50N/127+00E (ST-12)

LIFT: 2

SOIL DESCRIPTION: **Brown Lean Clay, Little Fine Sand (CL)**

	INITIAL	FINAL
SAMPLE DIAMETER (cm)	7.34	7.34
SAMPLE LENGTH, L (cm)	18.42	18.42
MOISTURE CONTENT, %	20.6	21.5
DRY DENSITY (lb/cu ft)	101.1	101.1
PERCENT COMPACTION	95	95

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	9.4×10^{-8}
2	5.0×10^{-8}
3	4.6×10^{-8}
4	3.0×10^{-8}
5	3.0×10^{-8}
6	2.5×10^{-8}
7	2.6×10^{-8}
8	2.3×10^{-8}
9	2.3×10^{-8}
10	2.4×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.3×10^{-8} (cm/sec)
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t=time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on a relatively undisturbed 3-in. diameter Shelby tube sample.

REMARKS:

CHECKED BY: WWW **DATE:** 10/13/98 **APPROVED BY:** DWA **DATE:** 10/13/98

CGC, Inc.

Job No. 98024

Date: October 13, 1998

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100

PROJECT: Stoughton Landfill

LOCATION: Stoughton, WI

SAMPLE: 3-in. Shelby tube, CBL, Sta. 382+50N/126+00E (ST-13)

LIFT: 2

SOIL DESCRIPTION: **Brown Lean Clay, Little Fine Sand (CL)**

	INITIAL	FINAL
SAMPLE DIAMETER (cm)	7.34	7.34
SAMPLE LENGTH, L (cm)	20.88	20.88
MOISTURE CONTENT, %	23.1	23.3
DRY DENSITY (lb/cu ft)	101.3	101.3
PERCENT COMPACTION	95	95

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	1.4×10^{-7}
2	5.6×10^{-8}
3	4.3×10^{-8}
4	2.6×10^{-8}
5	3.2×10^{-8}
6	2.6×10^{-8}
7	2.2×10^{-8}
8	2.1×10^{-8}
9	2.2×10^{-8}
10	2.1×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.1×10^{-8} (cm/sec)
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t=time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on a relatively undisturbed 3-in. diameter Shelby tube sample.

REMARKS:

CHECKED BY: WWW **DATE:** 10/13/98 **APPROVED BY:** DWA **DATE:** 10/13/98

CGC, Inc.

Job No. 98024

Date: October 13, 1998

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100

PROJECT: Stoughton Landfill

LOCATION: Stoughton, WI

SAMPLE: 3-in. Shelby tube, CBL, Sta. 378+50N/124+00E (ST-15)

LIFT: 1

SOIL DESCRIPTION: **Brown Lean Clay, Little Fine Sand (CL)**

	INITIAL	FINAL
SAMPLE DIAMETER (cm)	7.34	7.34
SAMPLE LENGTH, L (cm)	20.19	20.19
MOISTURE CONTENT, %	19.8	19.9
DRY DENSITY (lb/cu ft)	105.8	105.8
PERCENT COMPACTION	99	99

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	7.7×10^{-8}
2	7.8×10^{-8}
3	5.7×10^{-8}
4	4.2×10^{-8}
5	4.2×10^{-8}
6	6.2×10^{-8}
7	2.7×10^{-8}
8	2.7×10^{-8}
9	2.9×10^{-8}
10	2.8×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.8×10^{-8} (cm/sec)
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t=time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on a relatively undisturbed 3-in. diameter Shelby tube sample.

REMARKS:

CHECKED BY: WWW **DATE:** 10/13/98 **APPROVED BY:** DWA **DATE:** 10/13/98

CGC, Inc.

Job No. 98024

Date: October 13, 1998

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100

PROJECT: Stoughton Landfill

LOCATION: Stoughton, WI

SAMPLE: 3-in. Shelby tube, CBL, Sta. 380+50N/126+00E (ST-16)

LIFT: 1

SOIL DESCRIPTION: **Brown Lean Clay, Little Fine Sand (CL)**

	INITIAL	FINAL
SAMPLE DIAMETER (cm)	7.34	7.34
SAMPLE LENGTH, L (cm)	17.91	17.91
MOISTURE CONTENT, %	22.4	23.1
DRY DENSITY (lb/cu ft)	102.4	102.4
PERCENT COMPACTION	96	96

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	4.5×10^{-8}
2	5.1×10^{-8}
3	3.8×10^{-8}
4	3.8×10^{-8}
5	3.8×10^{-8}
6	3.8×10^{-8}
7	3.0×10^{-8}
8	3.2×10^{-8}
9	3.0×10^{-8}
10	3.0×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 3.0×10^{-8} (cm/sec)
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t=time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on a relatively undisturbed 3-in. diameter Shelby tube sample.

REMARKS:

CHECKED BY: WWW **DATE:** 10/13/98 **APPROVED BY:** DWA **DATE:** 10/13/98

CGC, Inc.

Job No. C98024

Date: January 6, 1998

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100; Fax: (608) 288-7887

PROJECT: Stoughton Landfill

LOCATION: Stoughton, Wisconsin

SAMPLE: 3-in. Shelby Tube # 19

LAYER Layer # 1 , Sta. 377+50N/128+00E

SOIL DESCRIPTION Brown Lean CLAY, Trace Sand (CL)

	INITIAL	FINAL
SAMPLE DIAMETER (CM)	7.35	7.35
SAMPLE LENGTH, L (cm)	6.40	6.40
MOISTURE CONTENT, %	21.1	22.2
DRY DENSITY (lb/cu ft)	104.5	104.5
PERCENT COMPACTION	98	98

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	6.5×10^{-8}
2	4.0×10^{-8}
3	2.7×10^{-8}
4	2.7×10^{-8}
5	2.2×10^{-8}
6	2.2×10^{-8}
7	2.2×10^{-8}
8	2.0×10^{-8}
9	1.7×10^{-8}
10	2.1×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 1.9×10^{-8} **cm/sec**
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on relatively undistrubed 3-in. dia. Shelby Tube sample.

CHECKED BY: PWB **DATE:** 10/19/96 **APPROVED BY:** WWW **DATE:** 1/13/99

CGC, Inc.

Job No. C98024
Date: 12/11/98

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100; Fax: (608) 288-7887

PROJECT: Stoughton Landfill
LOCATION: Stoughton, Wisconsin
SAMPLE: 3-inch Diameter Shelby Tube: #20
LAYER #1 377+00N/123+00E
SOIL DESCRIPTION Brown Lean CLAY, Trace Sand (CL)

	INITIAL	FINAL
SAMPLE DIAMETER (CM)	7.34	7.34
SAMPLE LENGTH, L (cm)	16.38	16.38
MOISTURE CONTENT, %	19.3	20.6
DRY DENSITY (lb/cu ft)	103.5	103.5
PERCENT COMPACTION	95	95

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	8.0×10^{-8}
2	5.8×10^{-8}
3	3.9×10^{-8}
4	3.5×10^{-8}
5	3.4×10^{-8}
6	3.2×10^{-8}
7	3.2×10^{-8}
8	3.1×10^{-8}
9	3.0×10^{-8}
10	3.0×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 3.0×10^{-8} cm/sec
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on relatively undisturbed 3-inch diameter Shelby Tube sample

REMARKS:

CHECKED BY: DWD **DATE:** 12/12/98 **APPROVED BY:** WWW **DATE:** 1/13/99

CGC, Inc.

Job No. C98024

Date: 12/11/98

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100; Fax: (608) 288-7887

PROJECT: Stoughton Landfill

LOCATION: Stoughton, Wisconsin

SAMPLE: 3-inch Diameter Shelby Tube: #22

LAYER #1 376+00N/125+50E

SOIL DESCRIPTION Brown Lean CLAY, Little Sand (CL)

	INITIAL	FINAL
SAMPLE DIAMETER (CM)	7.34	7.34
SAMPLE LENGTH, L (cm)	16.26	16.26
MOISTURE CONTENT, %	19.1	20.4
DRY DENSITY (lb/cu ft)	104.5	104.5
PERCENT COMPACTION	97	97

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	3.7×10^{-8}
2	3.3×10^{-8}
3	2.7×10^{-8}
4	2.8×10^{-8}
5	2.8×10^{-8}
6	2.8×10^{-8}
7	2.7×10^{-8}
8	2.7×10^{-8}
9	2.8×10^{-8}
10	2.6×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.7×10^{-8} cm/sec
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on relatively undisturbed 3-inch diameter Shelby Tube sample

REMARKS:

CHECKED BY: WWW **DATE:** 12/15/98 **APPROVED BY:** WWW **DATE:** 12/13/99

CGC, Inc.

Job No. C98024

Date: 12/11/98

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100; Fax: (608) 288-7887

PROJECT: Stoughton Landfill

LOCATION: Stoughton, Wisconsin

SAMPLE: 3-inch Diameter Shelby Tube: #25

LAYER #2 380+50N/128+00E

SOIL DESCRIPTION Brown Lean CLAY, Trace Sand (CL)

	INITIAL	FINAL
SAMPLE DIAMETER (CM)	7.34	7.34
SAMPLE LENGTH, L (cm)	16.64	16.64
MOISTURE CONTENT, %	19.7	20.2
DRY DENSITY (lb/cu ft)	104.8	104.8
PERCENT COMPACTION	97	97

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	5.4×10^{-8}
2	3.9×10^{-8}
3	3.3×10^{-8}
4	3.1×10^{-8}
5	3.0×10^{-8}
6	2.9×10^{-8}
7	2.9×10^{-8}
8	2.8×10^{-8}
9	2.7×10^{-8}
10	2.9×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.8×10^{-8} cm/sec
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on relatively undisturbed 3-inch diameter Shelby Tube sample

REMARKS:

CHECKED BY: RWA **DATE:** 12/13/98 **APPROVED BY:** WWW **DATE:** 1/13/99

CGC, Inc.

Job No. C98024

Date: 12/11/98

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100; Fax: (608) 288-7887

PROJECT: Stoughton Landfill

LOCATION: Stoughton, Wisconsin

SAMPLE: 3-inch Diameter Shelby Tube: #27

LAYER #2 378+50N/126+00E

SOIL DESCRIPTION Brown Lean CLAY, Trace Sand (CL)

	INITIAL	FINAL
SAMPLE DIAMETER (CM)	7.34	7.34
SAMPLE LENGTH, L (cm)	15.75	15.75
MOISTURE CONTENT, %	18.7	19.3
DRY DENSITY (lb/cu ft)	107.6	107.6
PERCENT COMPACTION	99	99

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	7.7×10^{-8}
2	6.2×10^{-8}
3	4.6×10^{-8}
4	3.2×10^{-8}
5	2.8×10^{-8}
6	2.3×10^{-8}
7	2.4×10^{-8}
8	2.4×10^{-8}
9	2.4×10^{-8}
10	2.3×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.4×10^{-8} cm/sec
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on relatively undisturbed 3-inch diameter Shelby Tube sample

REMARKS:

CHECKED BY: DWR **DATE:** 12/13/98 **APPROVED BY:** WWW **DATE:** 1/15/99

CGC, Inc.

Job No. C98024

Date: 12/11/98

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100; Fax: (608) 288-7887

PROJECT: Stoughton Landfill

LOCATION: Stoughton, Wisconsin

SAMPLE: 3-inch Diameter Shelby Tube: #30

LAYER #2 380+50N/124+00E

SOIL DESCRIPTION Brown Lean CLAY, Little Sand (CL)

	INITIAL	FINAL
SAMPLE DIAMETER (CM)	7.34	7.34
SAMPLE LENGTH, L (cm)	16.56	16.56
MOISTURE CONTENT, %	17.5	18.1
DRY DENSITY (lb/cu ft)	106.8	106.8
PERCENT COMPACTION	99	99

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	7.4×10^{-8}
2	5.9×10^{-8}
3	4.7×10^{-8}
4	4.1×10^{-8}
5	3.3×10^{-8}
6	2.7×10^{-8}
7	2.8×10^{-8}
8	2.7×10^{-8}
9	2.6×10^{-8}
10	2.6×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.6×10^{-8} cm/sec
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on relatively undisturbed 3-inch diameter Shelby Tube sample

REMARKS:

CHECKED BY: RWB **DATE:** 12/11/98 **APPROVED BY:** WAW **DATE:** 1/19/99

CGC, Inc.

Job No. C98024

Date: 12/11/98

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100; Fax: (608) 288-7887

PROJECT: Stoughton Landfill

LOCATION: Stoughton, Wisconsin

SAMPLE: 3-inch Diameter Shelby Tube: #33

LAYER #2 376+00N/123+50E

SOIL DESCRIPTION Brown Lean CLAY, Trace Sand (CL)

	INITIAL	FINAL
SAMPLE DIAMETER (CM)	7.34	7.34
SAMPLE LENGTH, L (cm)	18.16	18.16
MOISTURE CONTENT, %	17.7	18.6
DRY DENSITY (lb/cu ft)	104.6	104.6
PERCENT COMPACTION	97	97

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	4.5×10^{-8}
2	3.9×10^{-8}
3	3.9×10^{-8}
4	3.4×10^{-8}
5	3.0×10^{-8}
6	2.4×10^{-8}
7	2.4×10^{-8}
8	2.3×10^{-8}
9	2.3×10^{-8}
10	2.4×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.3×10^{-8} cm/sec
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on relatively undisturbed 3-inch diameter Shelby Tube sample

REMARKS:

CHECKED BY: DWA **DATE:** 12/14/98 **APPROVED BY:** WWW **DATE:** 1/13/99

CGC, Inc.

Job No. C98024

Date: 12/11/98

FALLING HEAD PERMEABILITY TEST

CGC, Inc., 3011 Perry Street, Madison, WI (608) 288-4100; Fax: (608) 288-7887

PROJECT: Stoughton Landfill

LOCATION: Stoughton, Wisconsin

SAMPLE: 3-inch Diameter Shelby Tube: #36

LAYER #2 375+50N/128+00E

SOIL DESCRIPTION Brown Lean CLAY, Trace Sand (CL)

	INITIAL	FINAL
SAMPLE DIAMETER (CM)	7.34	7.34
SAMPLE LENGTH, L (cm)	17.30	17.30
MOISTURE CONTENT, %	19.9	21.2
DRY DENSITY (lb/cu ft)	106.7	106.7
PERCENT COMPACTION	99	99

RUN	COEFFICIENT OF PERMEABILITY, k (cm/sec)
1	5.7×10^{-8}
2	5.9×10^{-8}
3	5.1×10^{-8}
4	3.2×10^{-8}
5	2.9×10^{-8}
6	3.0×10^{-8}
7	2.9×10^{-8}
8	2.9×10^{-8}
9	2.8×10^{-8}
10	2.8×10^{-8}

AVERAGE COEFFICIENT OF PERMEABILITY = 2.8×10^{-8} cm/sec
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{ho}{h1}$,

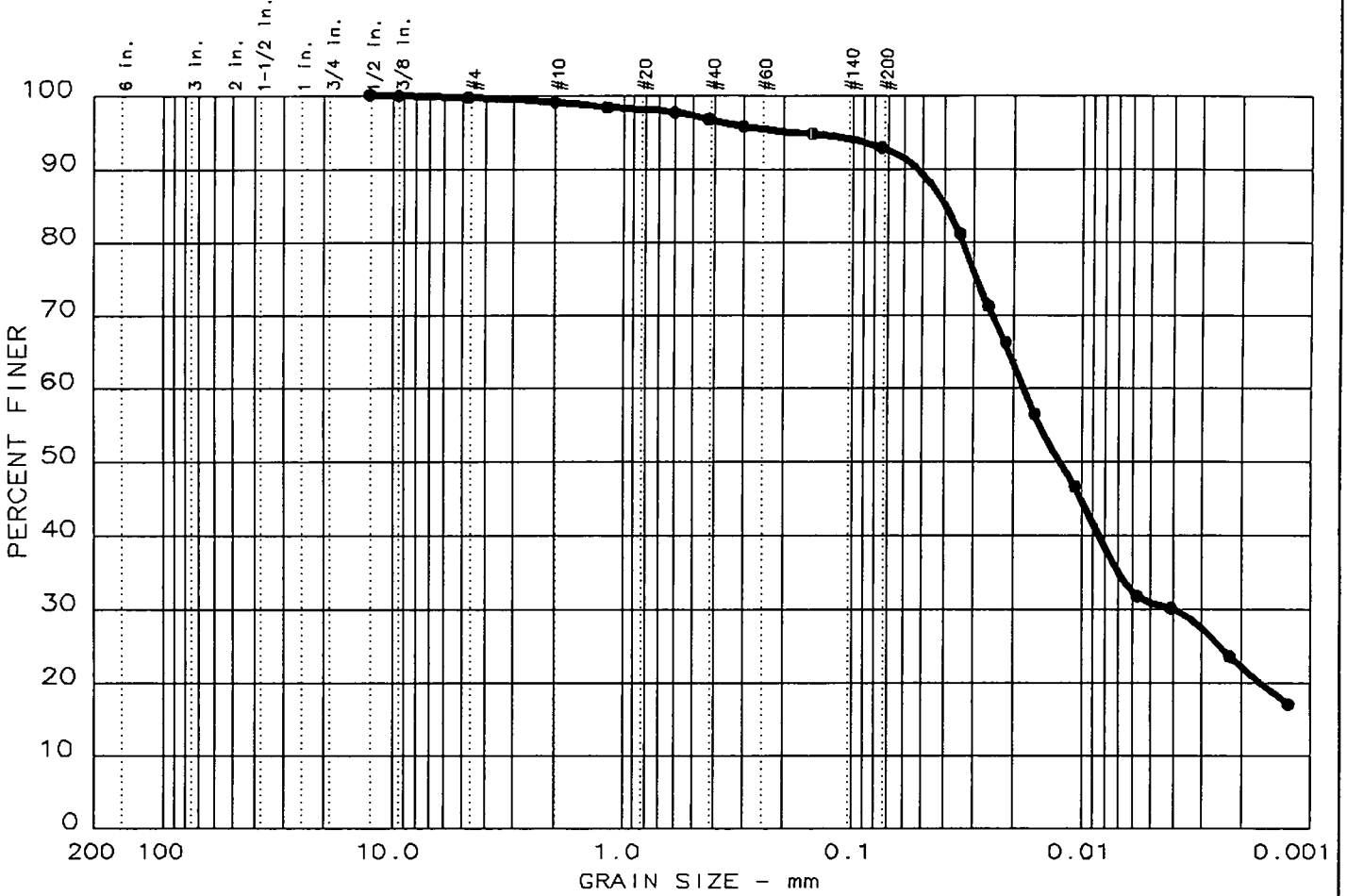
Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, ho, to final height, h1
(All other terms are defined above)

FOOTNOTES: This permeability test was performed on relatively undisturbed 3-inch diameter Shelby Tube sample

REMARKS:

CHECKED BY: DWB **DATE:** 12/11/98 **APPROVED BY:** WWW **DATE:** 1/13/99

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	5	0.0	0.4	6.8	62.0	30.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	37	19			0.013	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean Clay, Little Sand, Trace Gravel	CL	A-6

Project No.: 98024.00
Project: Stoughton Landfill, Stoughton Wisconsin
● Location: 3-inch S.T. #1 @ 382+50N/124+00E

Date: September 22, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

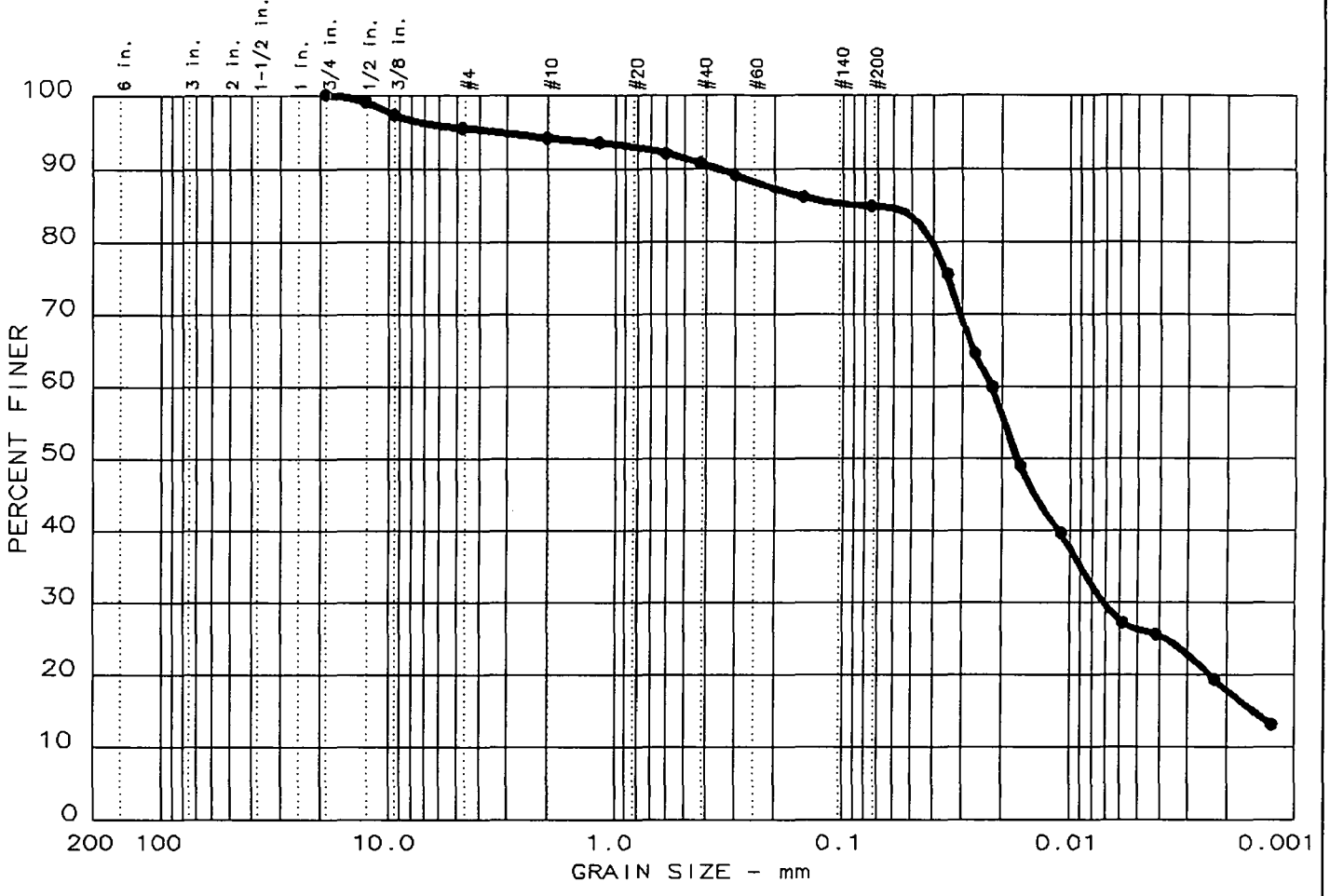
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	4.5	10.7	58.6	26.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	35	16	0.084		0.017	0.007	0.0015			

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean Clay, Little Sand, Trace Gravel	CL	A-6

Project No.: 98024.00

Project: Stoughton Landfill, Stoughton Wisconsin

● **Location: 3-inch S.T. #2 @ 384+00N/124+00E**

Date: September 22, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

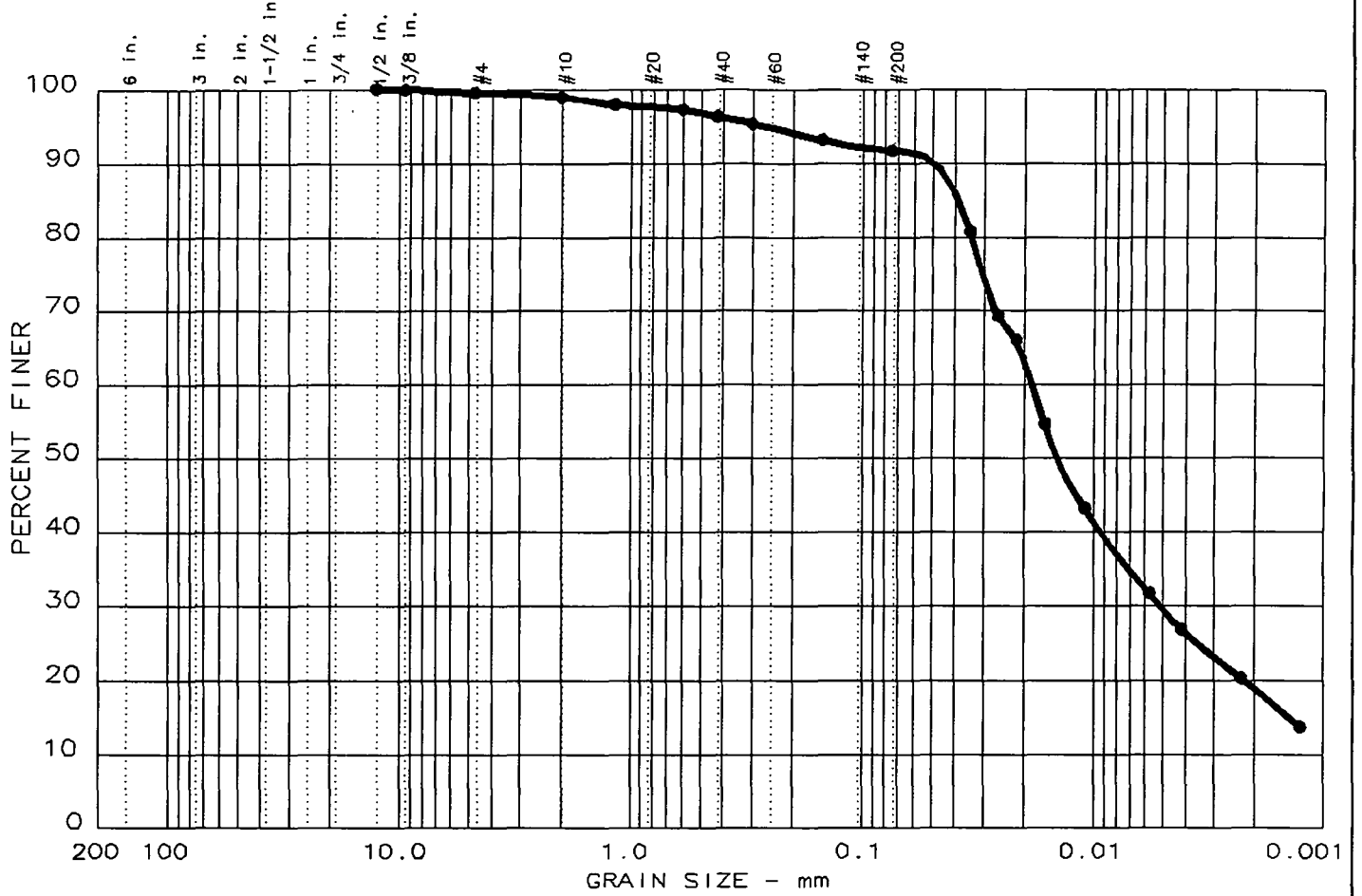
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	8	0.0	0.5	7.9	62.1	29.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	36	18			0.014	0.005	0.0014			

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean Clay, Little Sand, Trace Gravel	CL	A-6

Project No.: 98024.00
Project: Stoughton Landfill, Stoughton Wisconsin
● Location: 3-inch S.T. #3 @ 385+50N/125+00E

Date: September 22, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

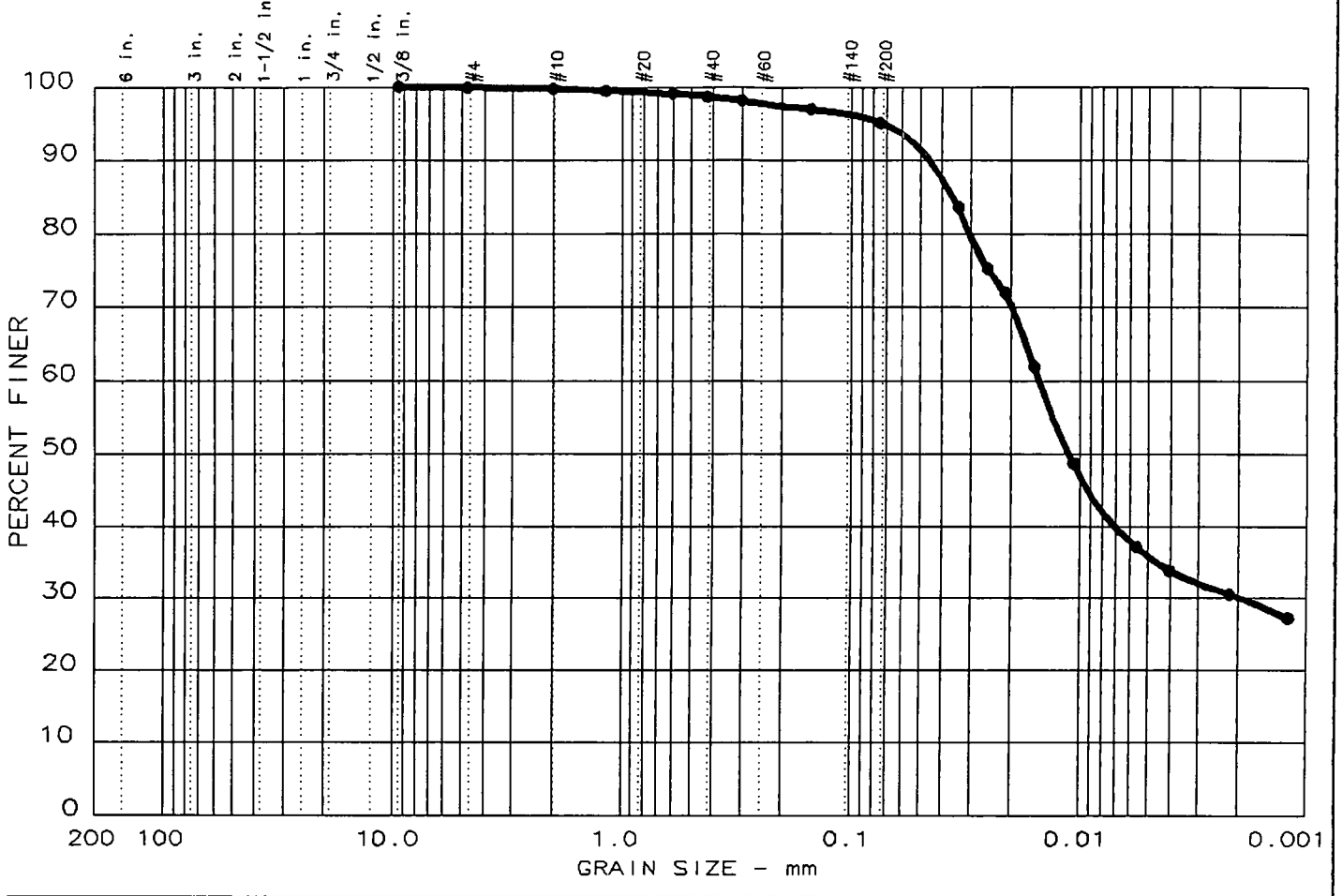
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	18	0.0	0.1	4.9	59.2	35.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	37	18			0.011	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Fine Sand	CL	A-6

Project No.: 98024.11
Project: Stoughton Landfill, Stoughton Wisc
● **Location: 3-in. ST #4@382+00N/126+00E Lift #1**

Date: October 19, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

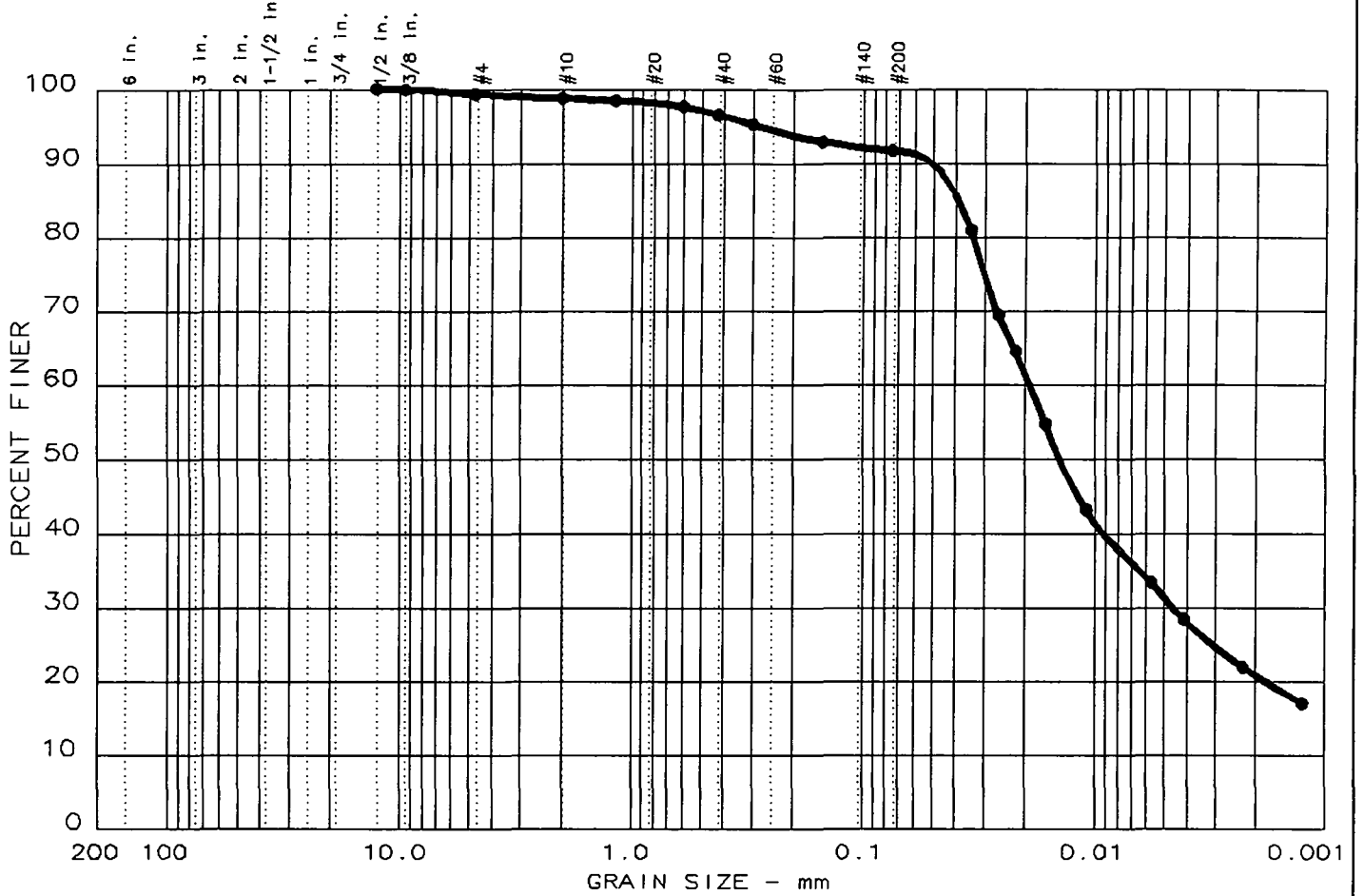
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	0.7	7.6	60.3	31.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	37	18			0.014	0.005				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Sand, Trace Gravel	CL	A-6

Project No.: 98024.00
Project: Stoughton Landfill, Stoughton Wisconsin
●Location: 3-inch S.T. #5 @ 381+50N/122+50E

Date: September 22, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

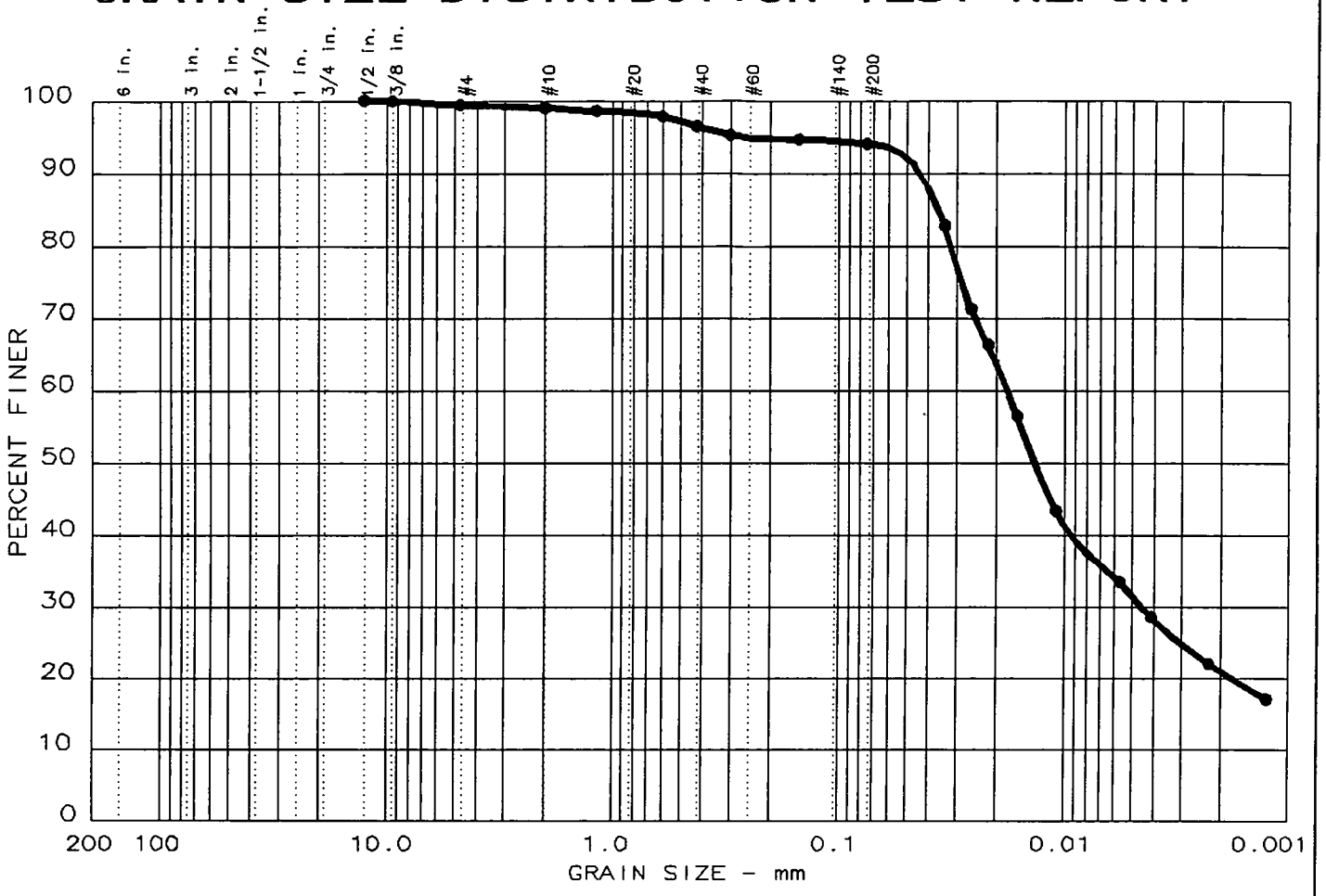
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	11	0.0	0.6	5.4	62.4	31.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	38	18			0.013	0.005				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Sand, Trace Gravel	CL	A-6

Project No.: 98024.00

Project: Stoughton Landfill, Stoughton Wisconsin

● **Location: 3-inch S.T. #6 @ 382+50N/128+00E**

Date: September 22, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

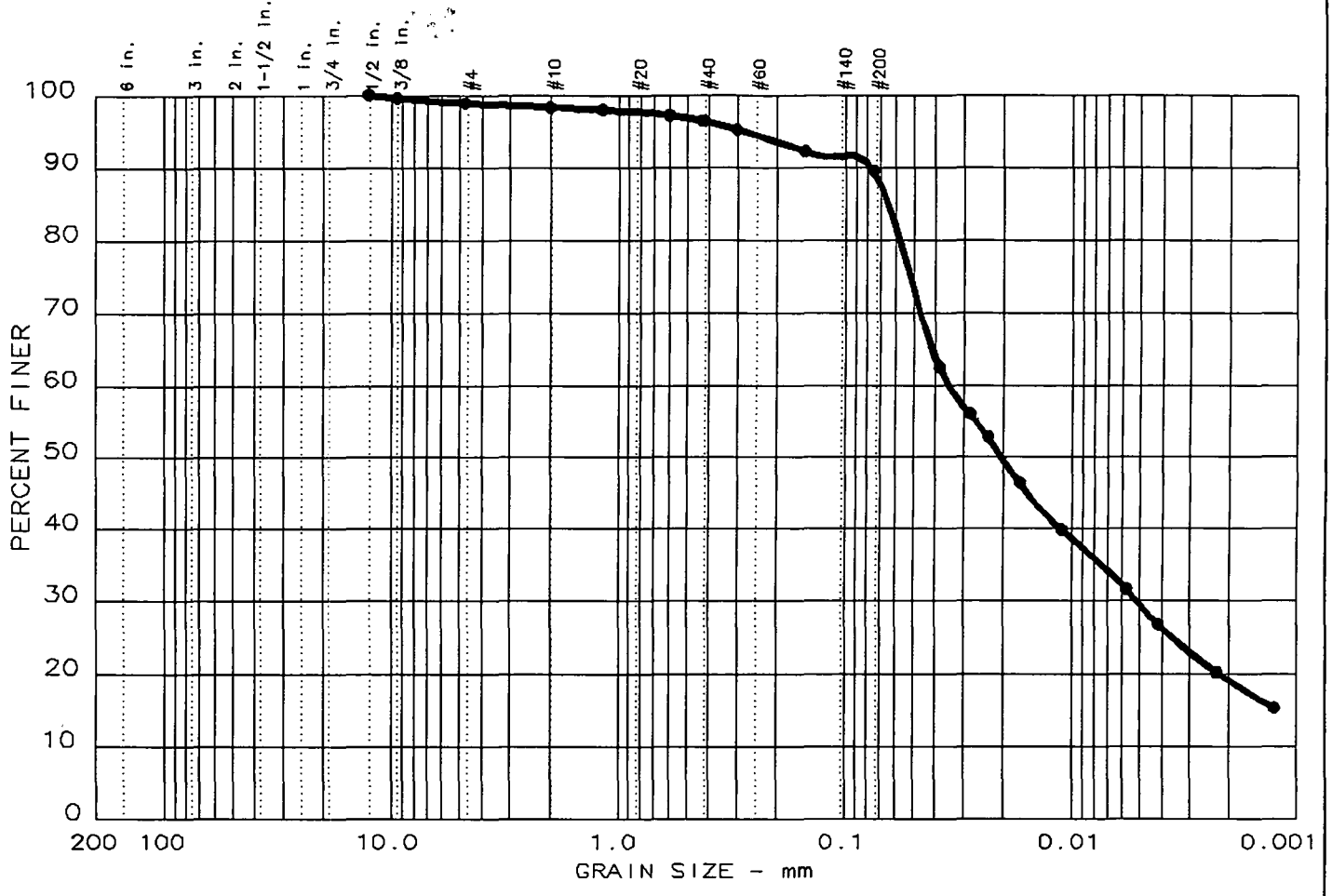
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	12	0.0	1.1	9.4	59.9	29.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	34	16			0.020	0.005				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Sand, Trace Gravel	CL	A-6

Project No.: 98024.00
Project: Stoughton Landfill, Stoughton Wisconsin
● Location: 3-inch S.T. #7 @ 384+00N/127+00E

Date: September 22, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

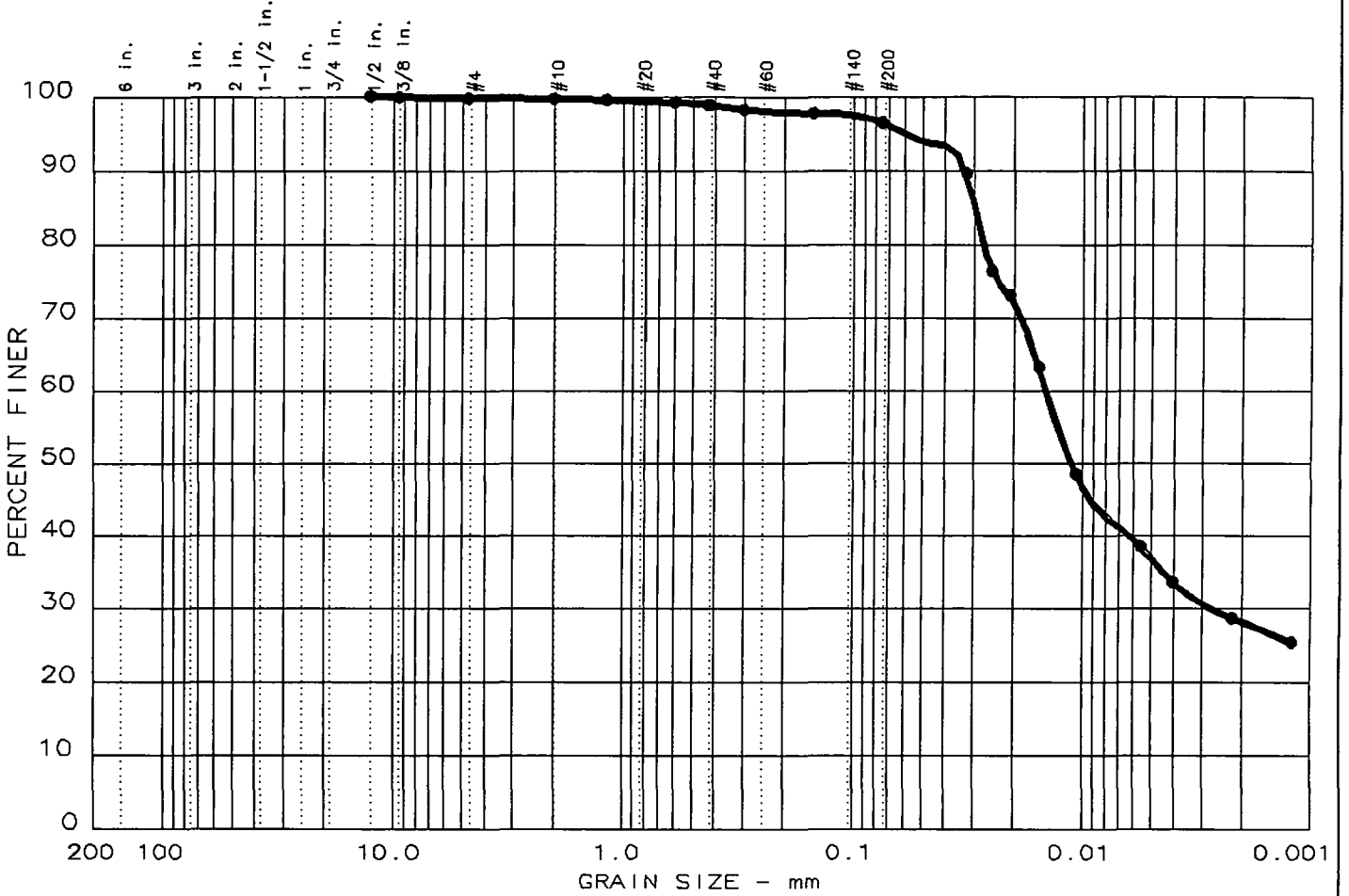
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	0.2	3.3	59.5	37.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	34	16			0.011	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Fine Sand	CL	A-6

Project No.: 98024.11
Project: Stoughton Landfill, Stoughton Wisc
● **Location: 3-in ST #8** @382+00N/124+00E Lift #1

Date: October 19, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

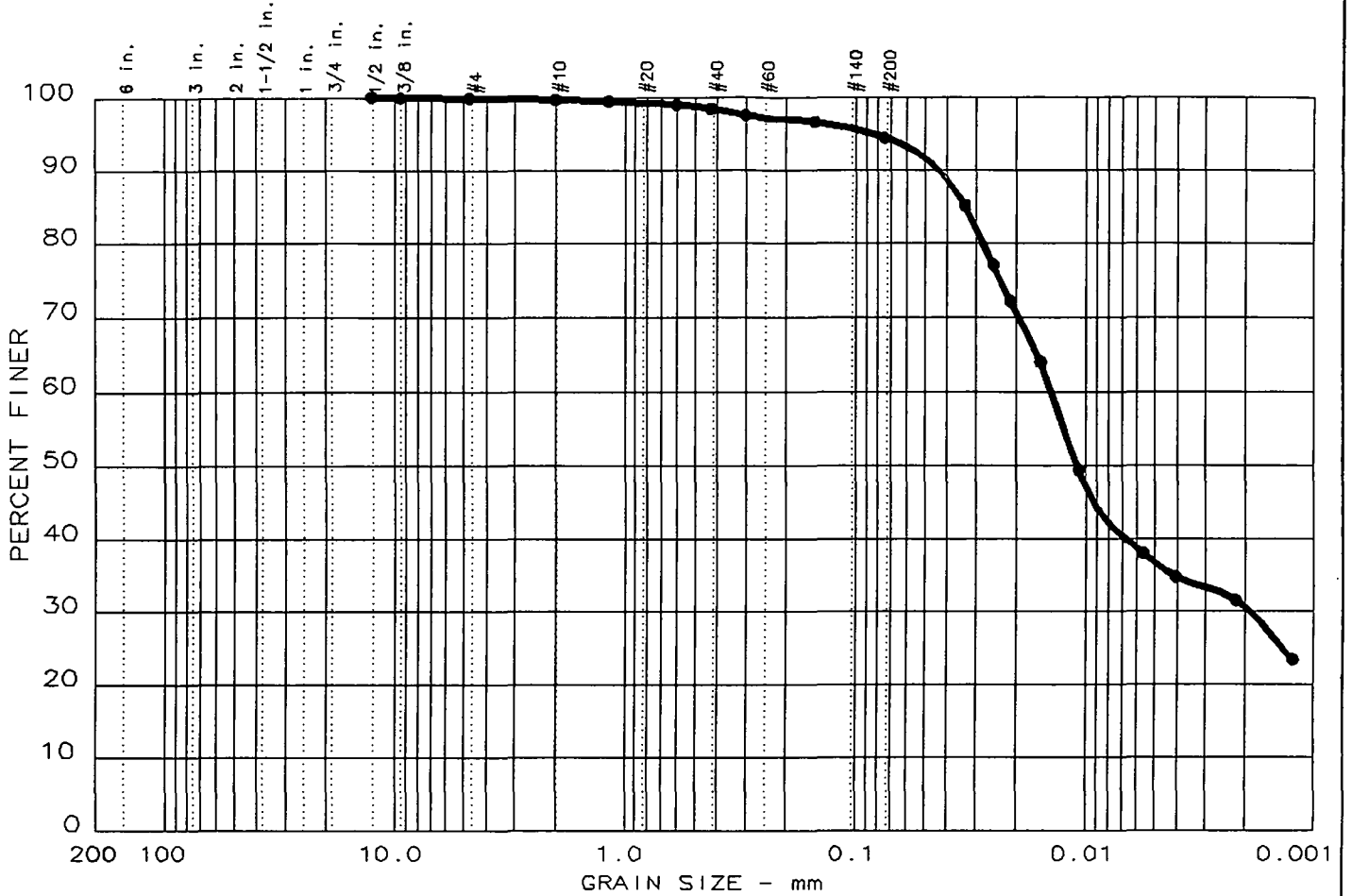
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	0.1	5.5	57.7	36.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	37	17			0.011	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Fine Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill, Stoughton Wisconsin
● **Loc: 3-in ST #9** @384+00N / 123+50E, Lift # 2

Date: October 12, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

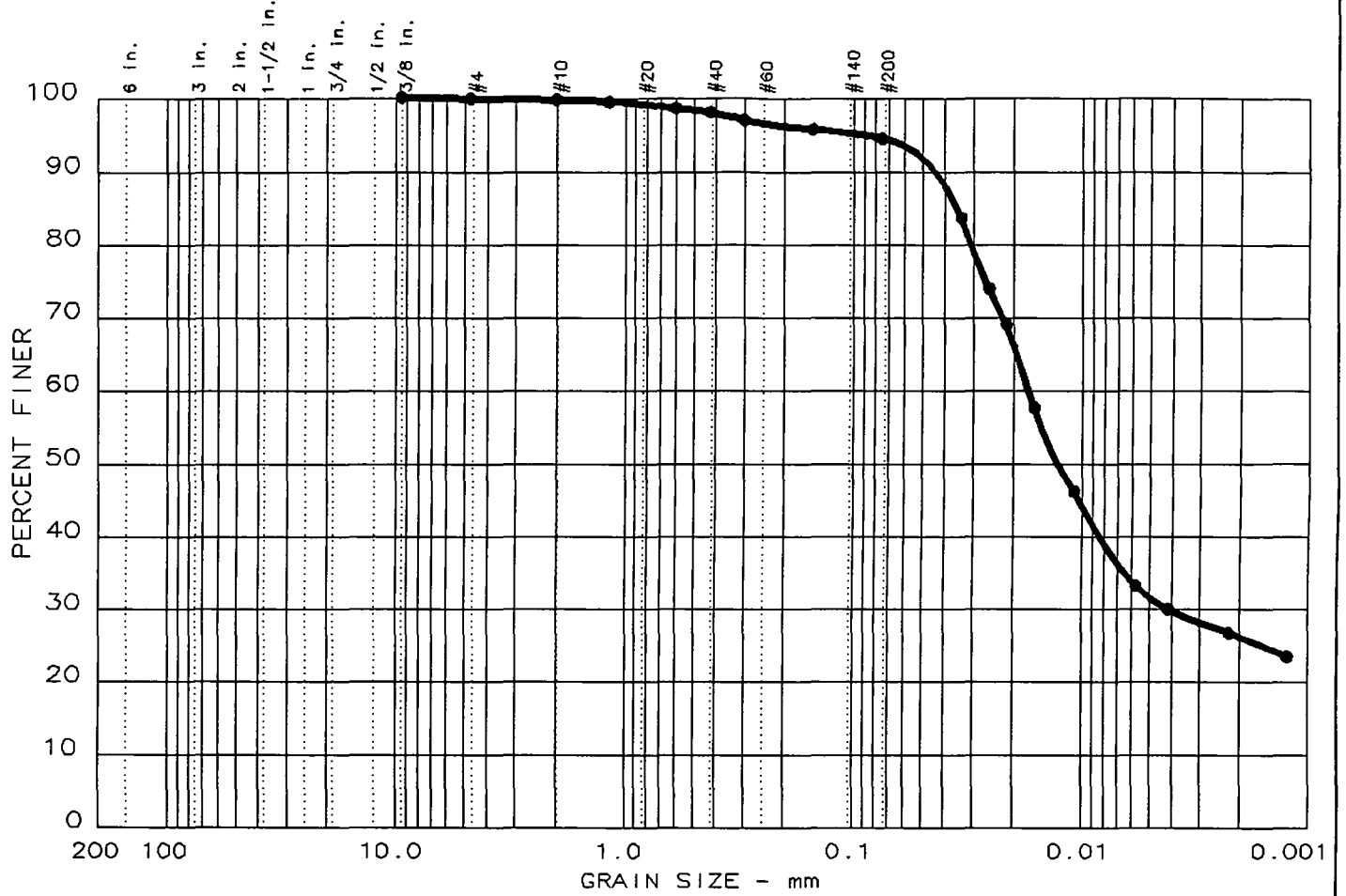
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	2	0.0	0.1	5.4	63.0	31.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	38	18			0.013	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Fine Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill, Stoughton Wisconsin
● Loc: 3-in ST #10@385+50N / 125+50E, Lift # 2

Date: October 12, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

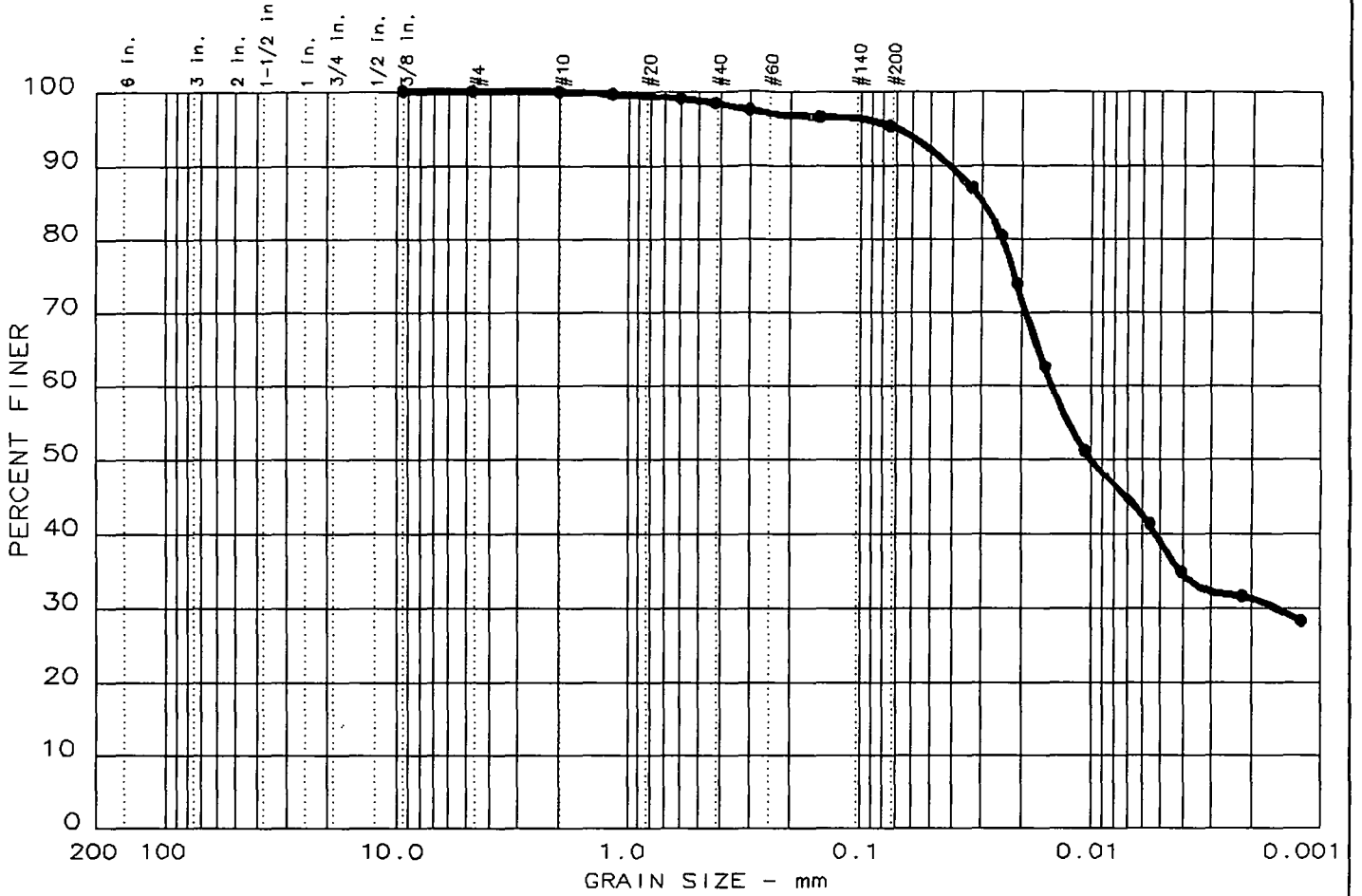
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	3	0.0	0.0	4.7	56.3	39.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	39	18			0.010	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Fine Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill, Stoughton Wisconsin
● **Loc: 3-in ST #11@382+00N / 128+00E, Lift # 2**

Date: October 12, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

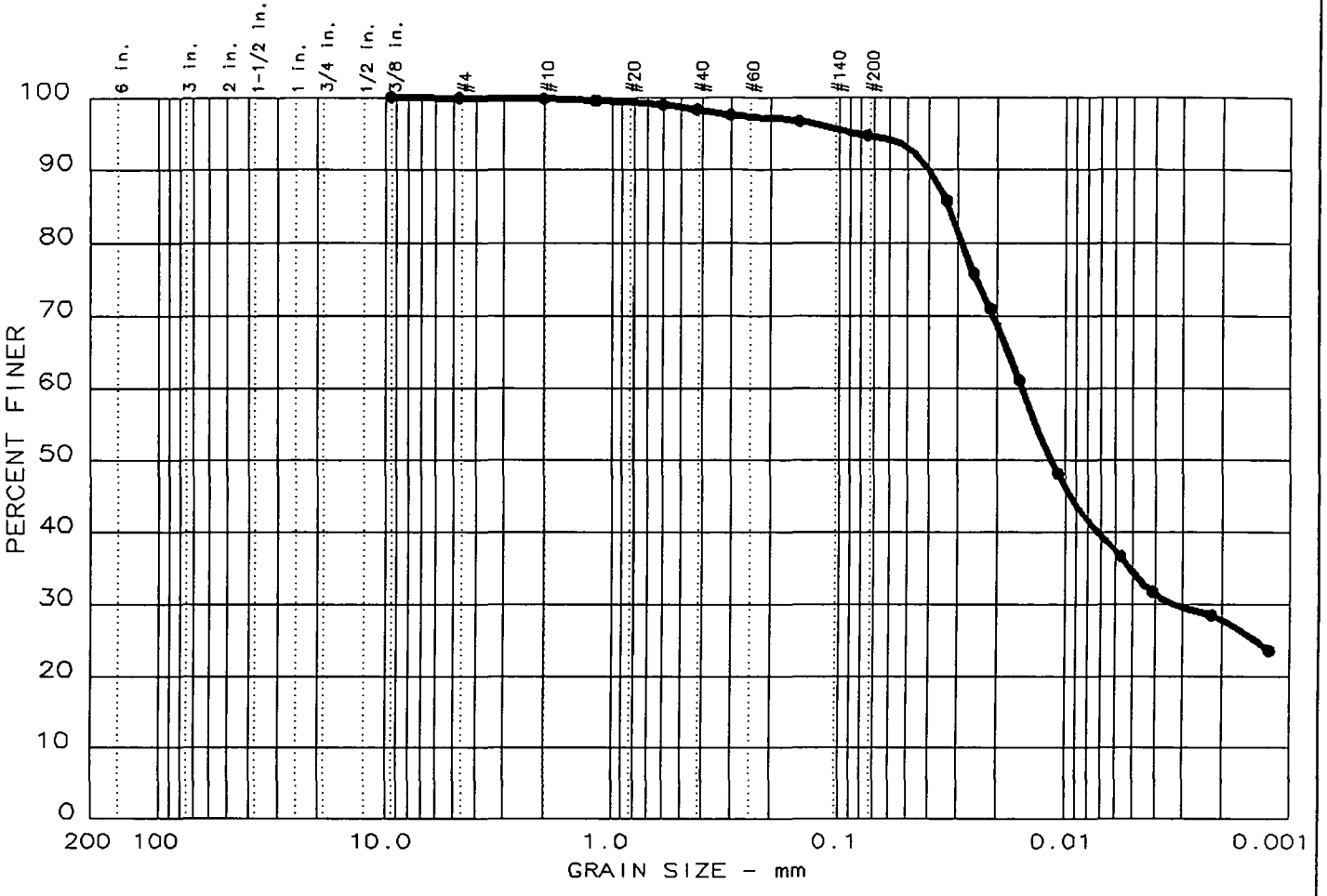
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	0.1	5.3	60.1	34.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	37	17			0.012	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Fine Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill, Stoughton Wisconsin
● **Loc: 3-in ST #12@384+50N / 127+00E, Lift # 2**

Date: October 12, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

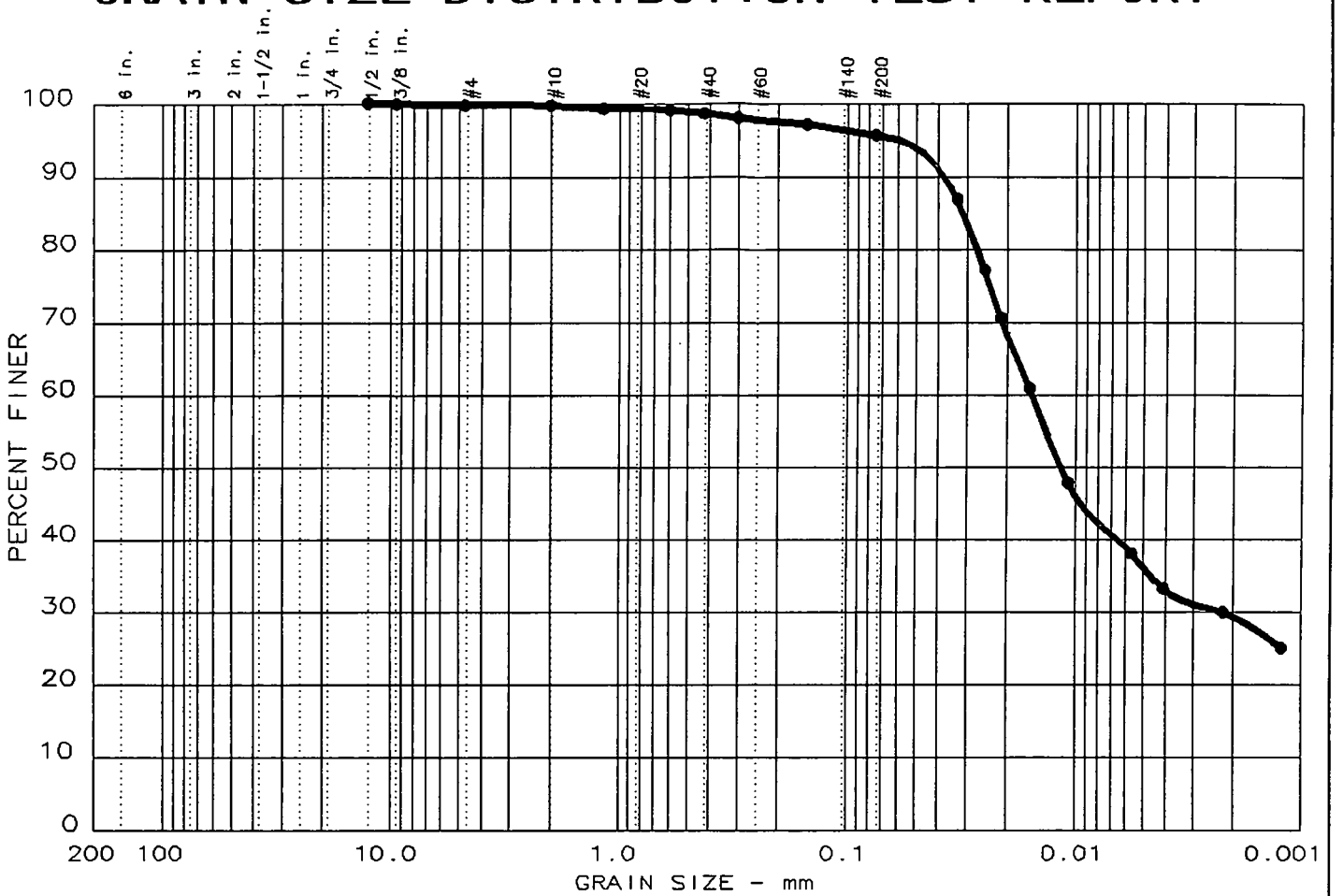
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	5	0.0	0.2	4.2	59.4	36.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	40	20			0.012	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Fine Sand	CL	A-6

Project No.: 98024

Project: Stoughton Landfill, Stoughton Wisconsin

● Loc: 3-in ST #13@382+50N / 126+00E, Lift # 2

Date: October 12, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

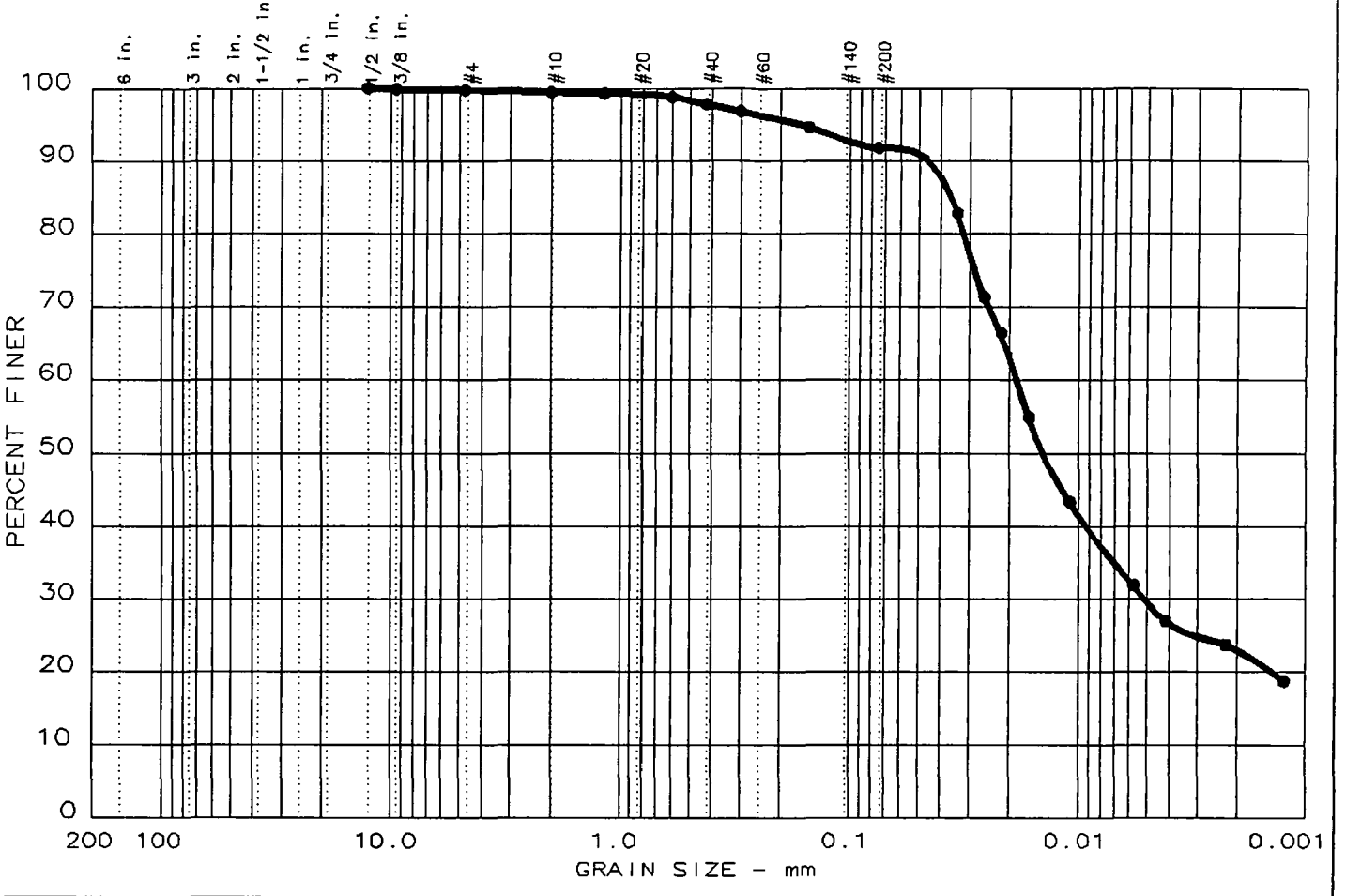
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	2	0.0	0.3	8.0	62.2	29.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	35	18			0.014	0.005				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Fine Sand	CL	A-6

Project No.: 98024.11
Project: Stoughton Landfill, Stoughton Wisc
● **Location: 3-in ST #14@** 380+00N/124+00E Lift #1

Date: October 19, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

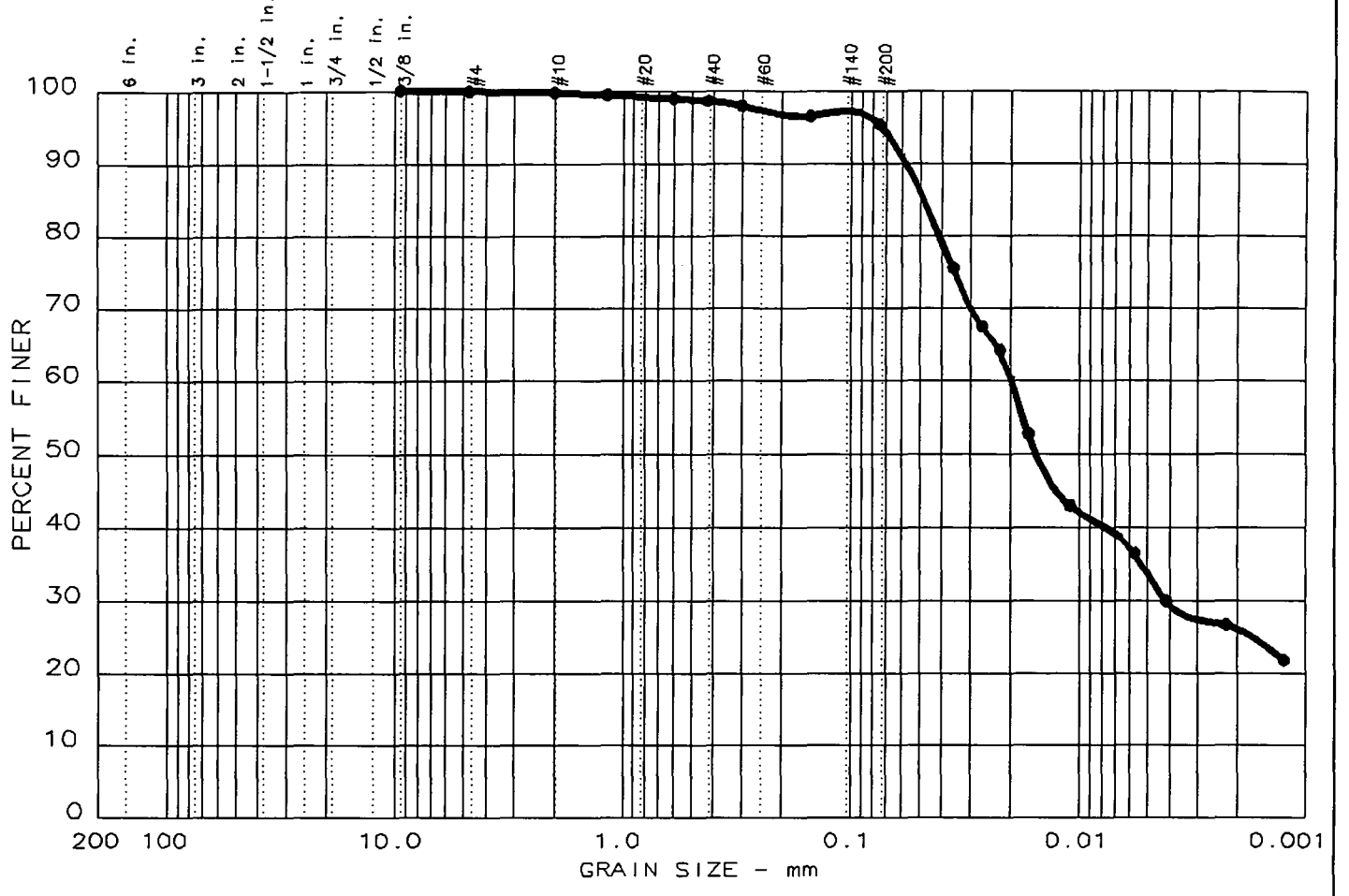
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	6	0.0	0.1	4.6	61.5	33.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	35	16			0.015	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Fine Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill, Stoughton Wisconsin
● Loc: 3-in ST #15@ 378+50N / 124+00E, Lift # 1

Date: October 12, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

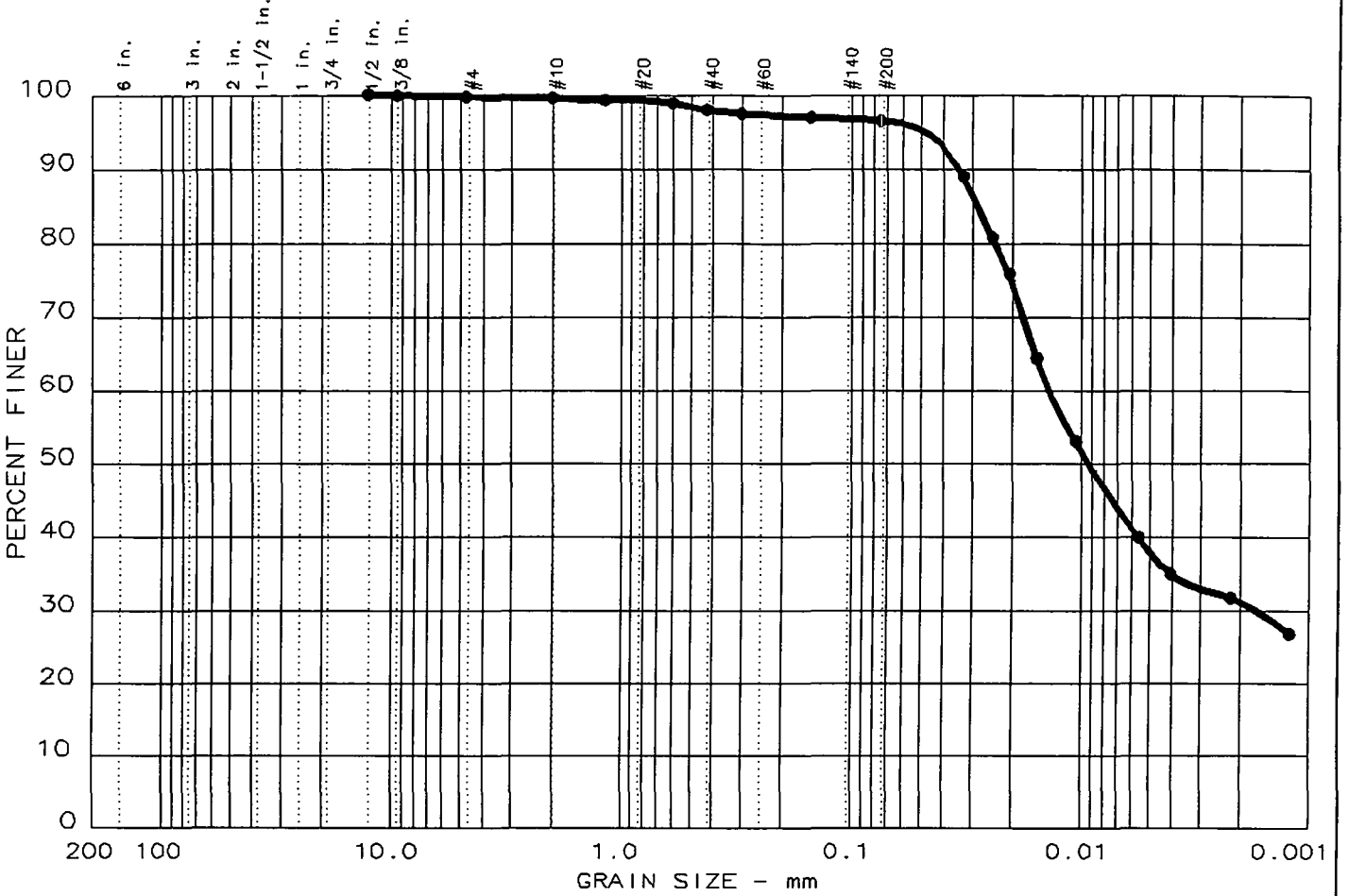
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	0.3	3.3	58.5	37.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	42	23			0.009	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Fine Sand	CL	A-7-6

Project No.: 98024
Project: Stoughton Landfill, Stoughton Wisconsin
● Loc: 3-in ST #16@380+50N / 126+00E, Lift # 1

Date: October 12, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

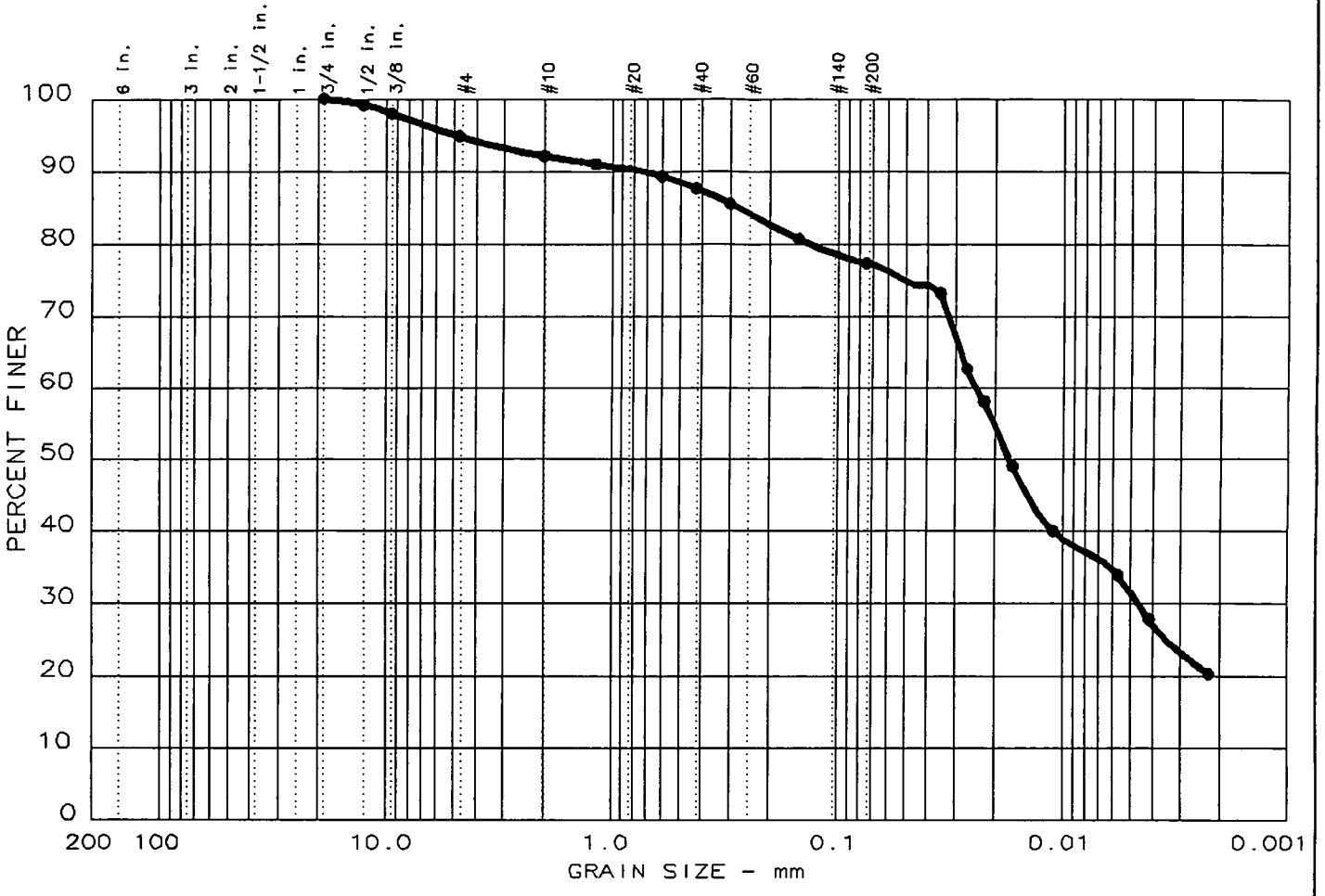
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	16	0.0	5.2	17.5	45.7	31.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	32	14	0.275		0.017	0.005				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Some Sand, Little Gravel	CL	A-6

Project No.: 98024.00
Project: Stoughton Landfill, Stoughton Wisconsin
● Loc: 3-in ST #17@ 378+00N / 126+00E, Lift # 1

Date: September 28, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

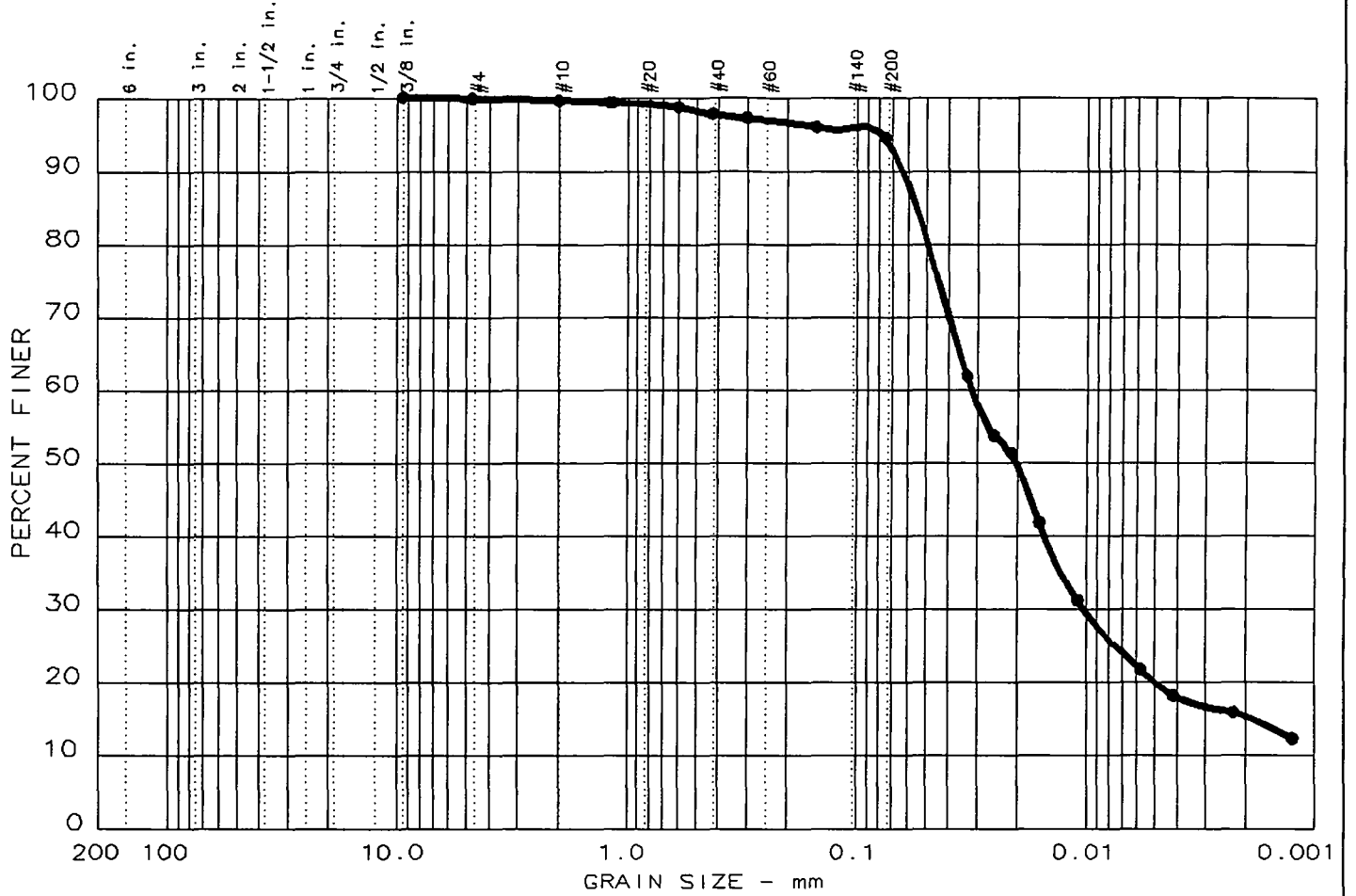
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	19	0.0	0.1	5.4	74.5	20.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	36	18			0.020	0.010	0.0019			

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Fine Sand	CL	A-6

Project No.: 98024.11
Project: Stoughton Landfill, Stoughton Wisc
● **Location: 3-in ST #18@380+00N/128+00E Lift #1**

Date: October 19, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

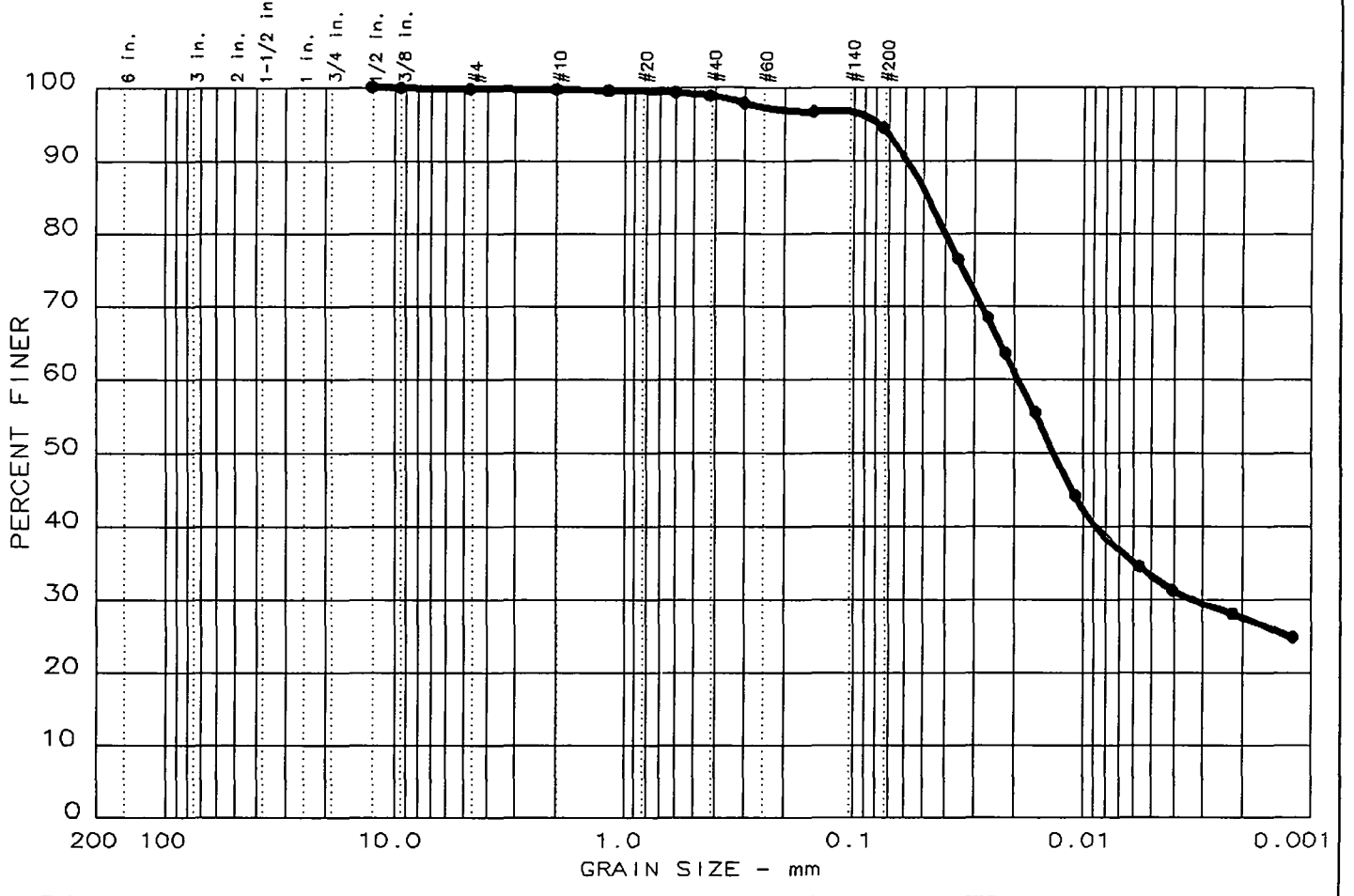
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	20	0.0	0.2	5.3	61.2	33.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	39	20			0.013	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Fine Sand	CL	A-6

Project No.: 98024.11
Project: Stoughton Landfill, Stoughton Wisc
● **Location: 3-in ST #19 @ 377+50N/128+00E Lift #1**

Date: October 19, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

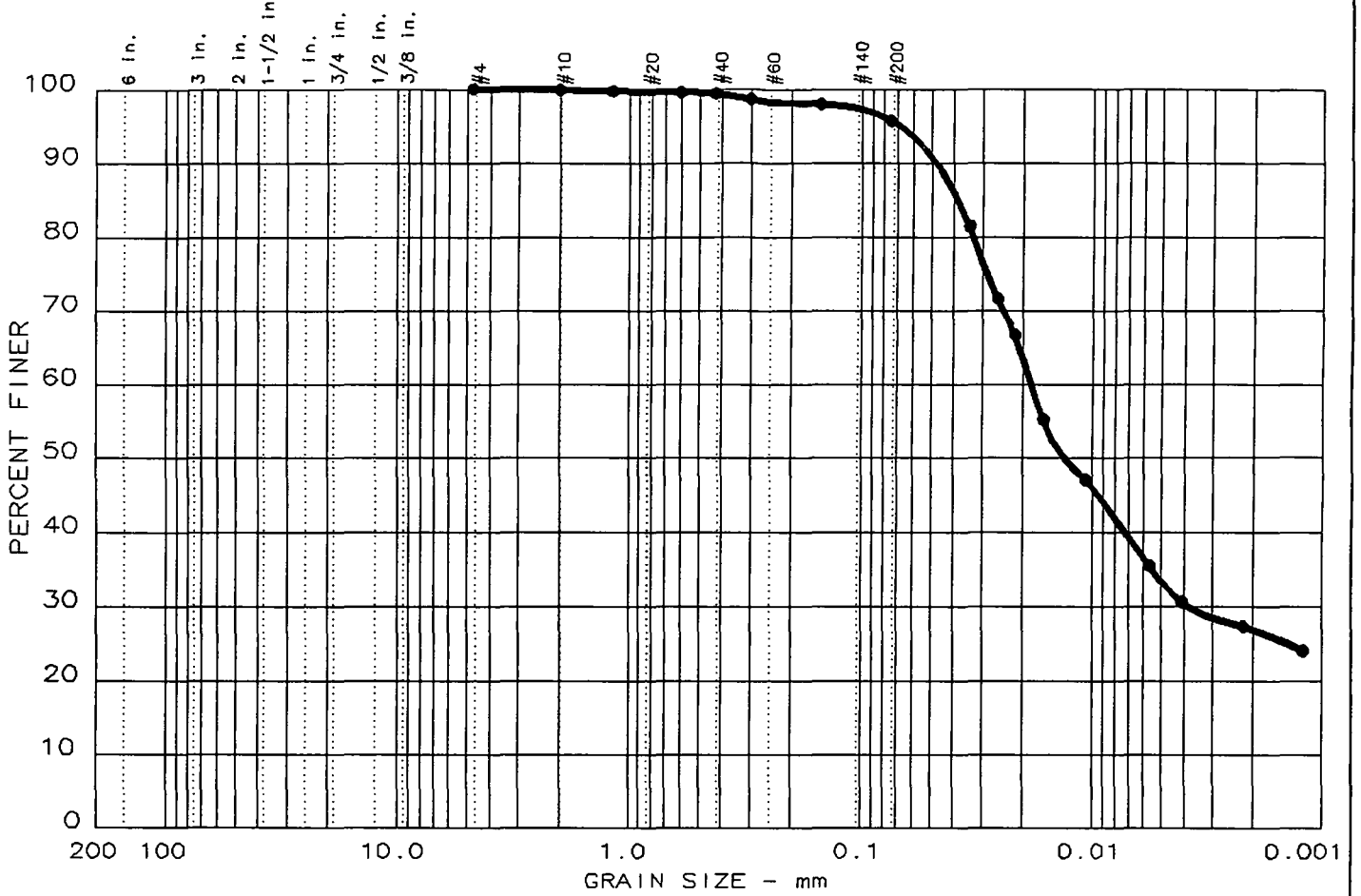
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	0.0	4.3	62.3	33.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	33	15			0.013	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Fine Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#20 @ 377+00N/123+00E

Date: December 6, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

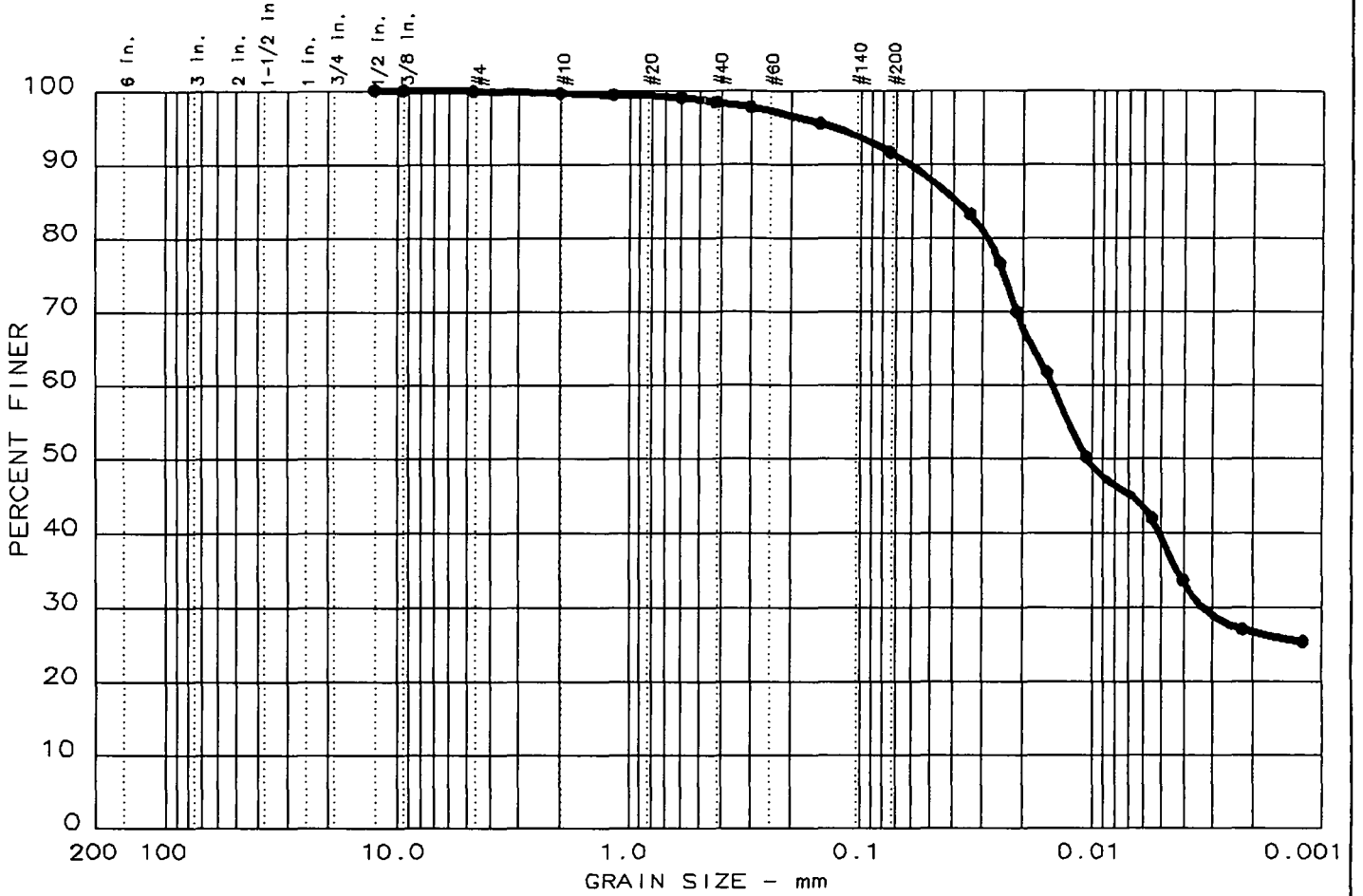
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	8	0.0	0.1	8.3	52.1	39.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	42	21			0.011	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Sand	CL	A-7-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#21 @ 375+50N/123+50E

Date: December 11, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

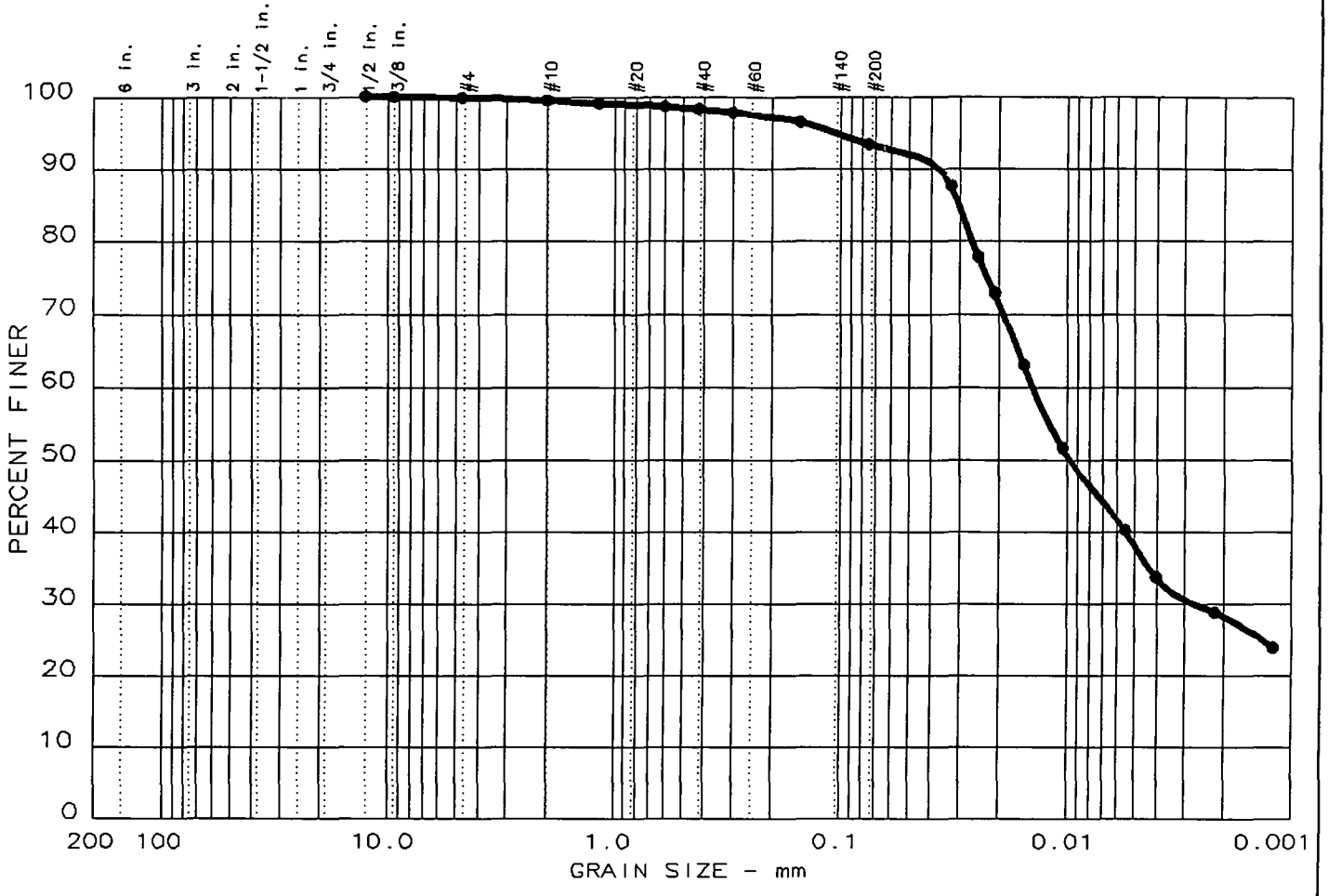
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	2	0.0	0.1	6.5	55.2	38.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	34	15			0.010	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Fine Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#22 @ 376+00N/125+50E

Date: December 6, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

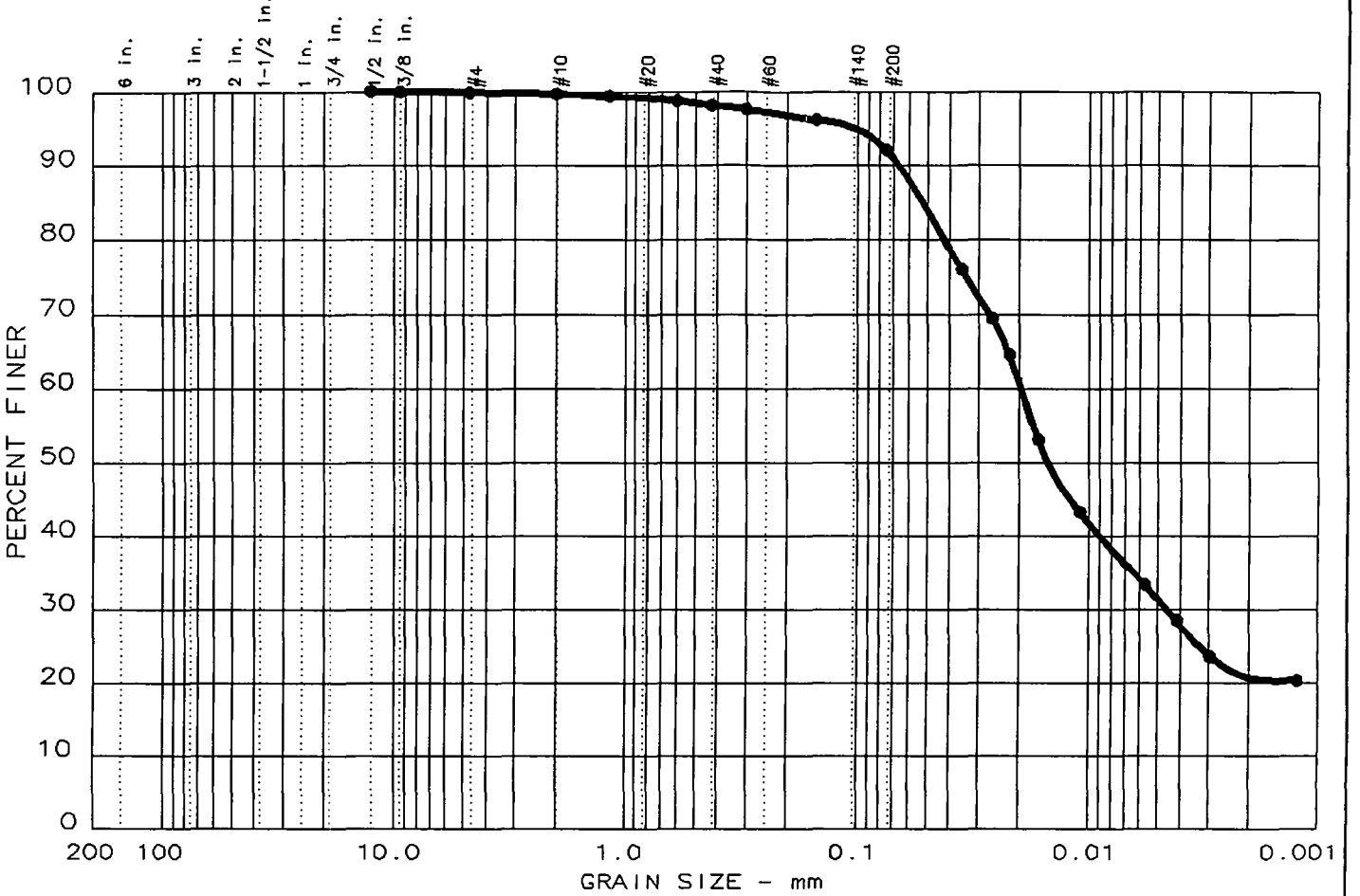
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	9	0.0	0.1	7.9	60.5	31.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	38	18			0.015	0.005				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#23 @ 375+50N/127+50E

Date: December 11, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

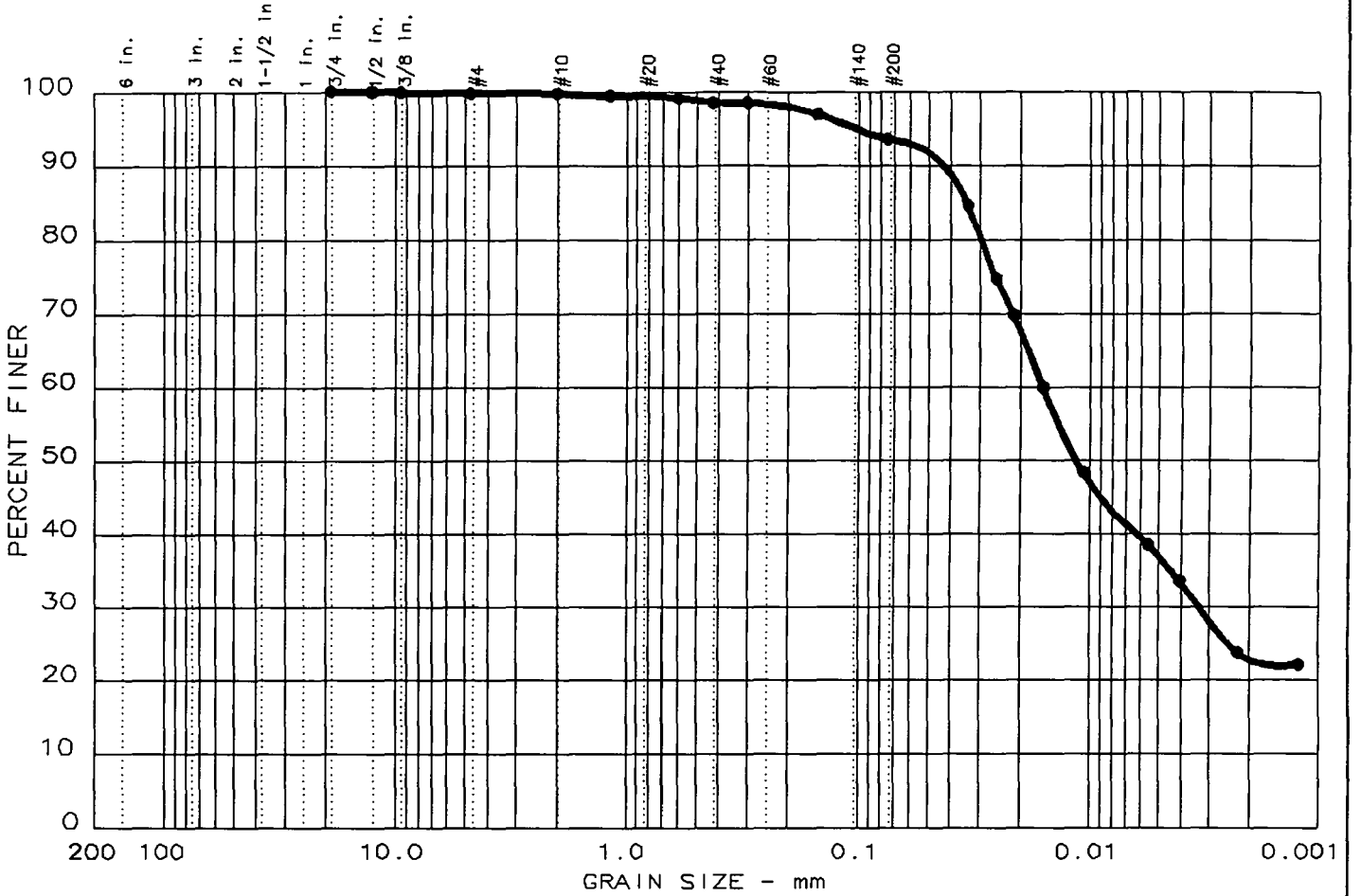
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	0.2	6.3	56.5	37.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	38	19			0.011	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#24 @ 380+00N/128+00E

Date: December 11, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

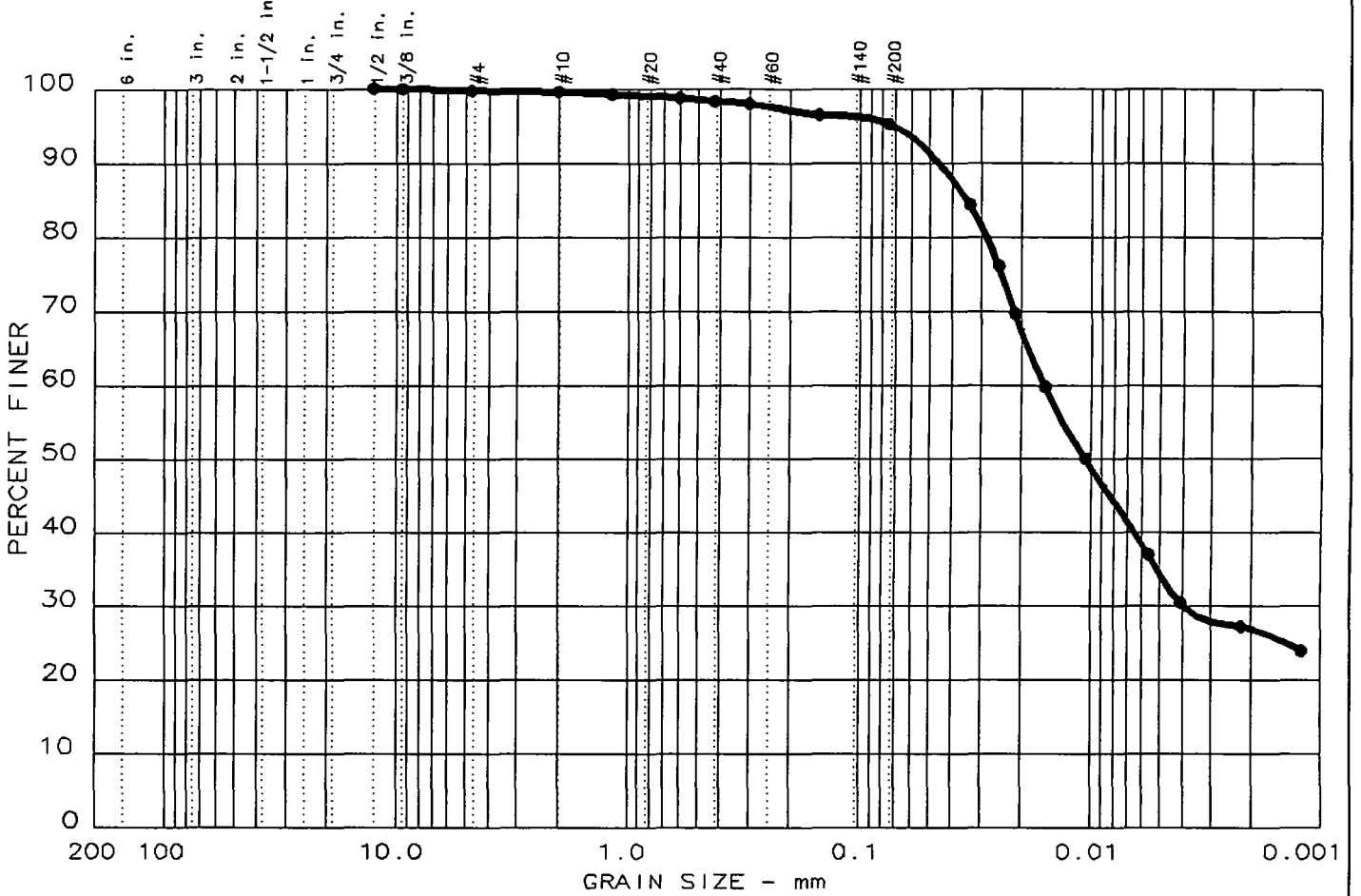
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	3	0.0	0.2	4.6	60.8	34.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	35	16			0.011	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Fine Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#25 @ 380+50N/128+00E

Date: December 6, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

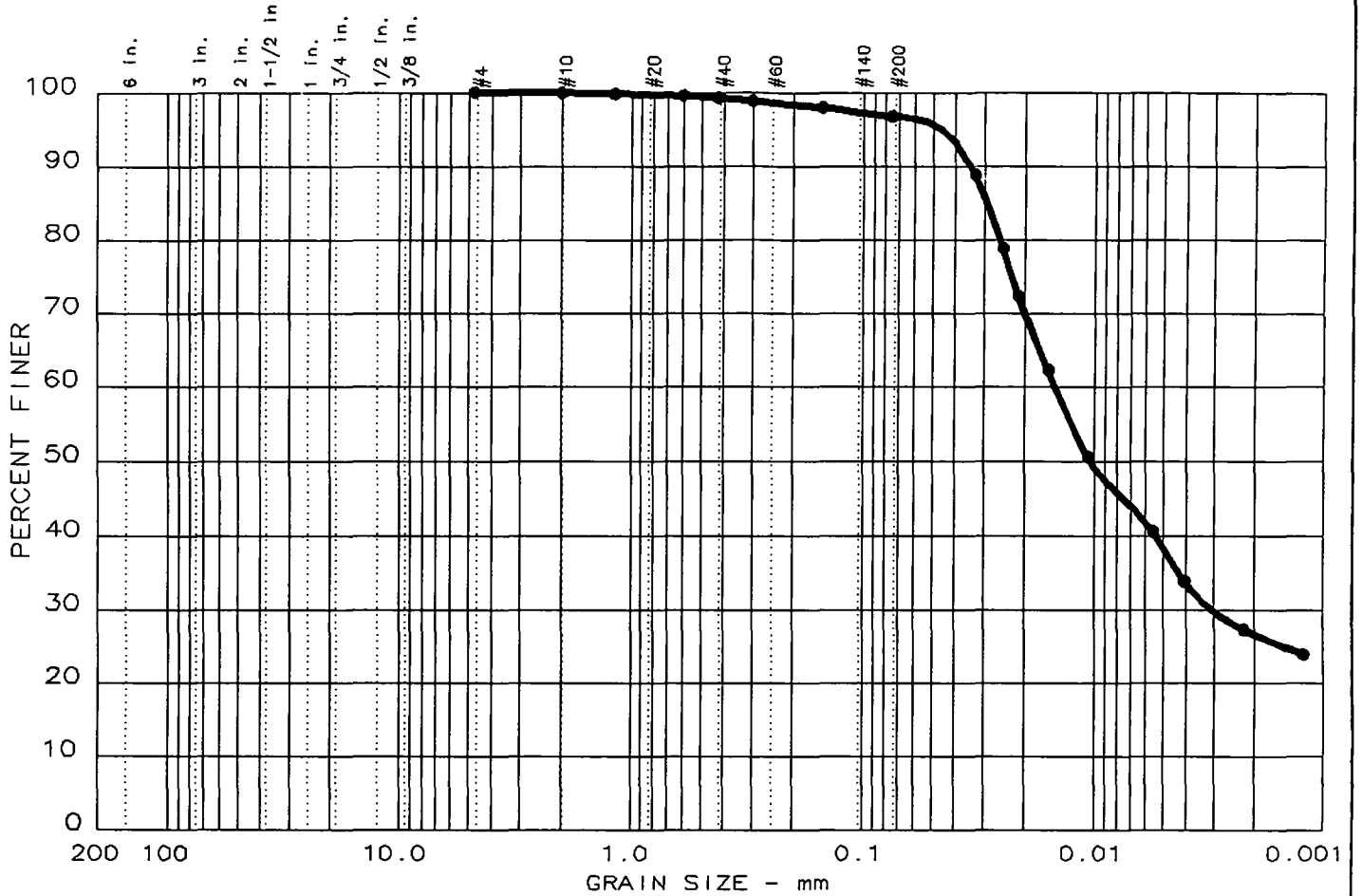
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	11	0.0	0.0	3.3	58.2	38.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	43	22			0.010	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Sand	CL	A-7-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#26 @ 380+00N/126+00E

Date: December 11, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

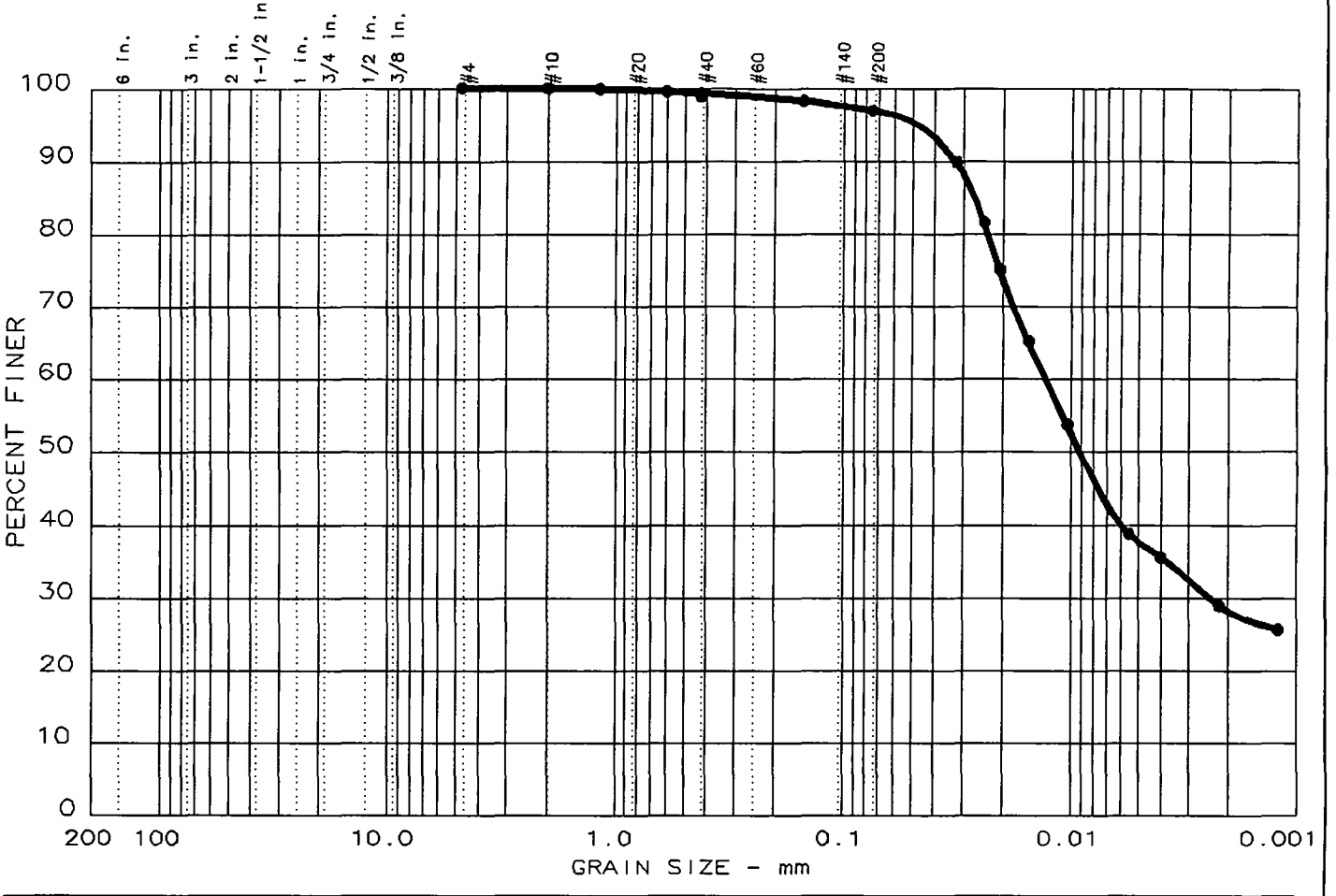
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	0.0	3.1	59.3	37.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	37	19			0.009	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Fine Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#27 @ 378+50N/126+00E

Date: December 6, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

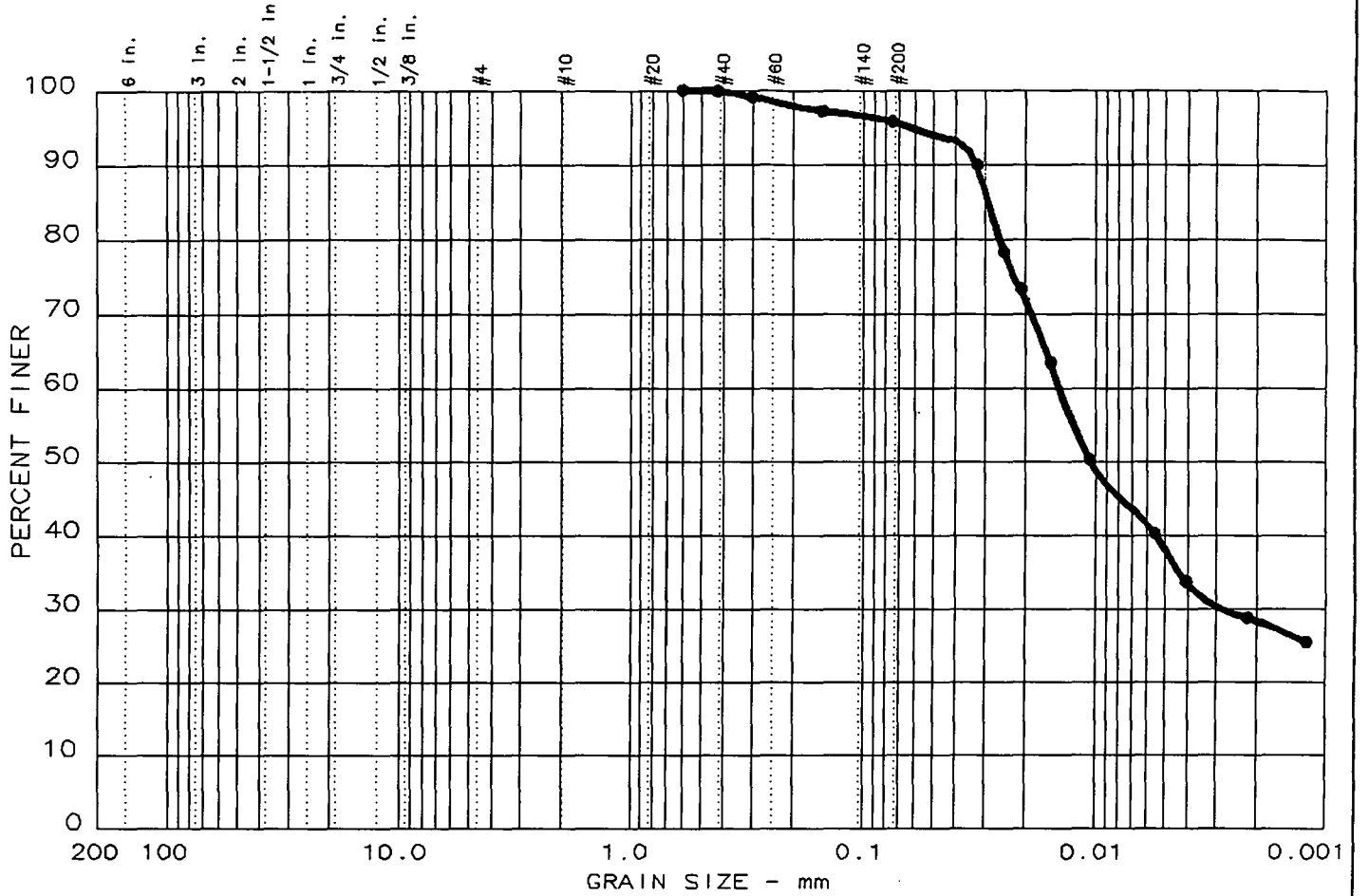
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	12	0.0	0.0	4.2	57.6	38.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	41	21			0.010	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Sand	CL	A-7-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#28 @ 377+50N/122+50E

Date: December 11, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

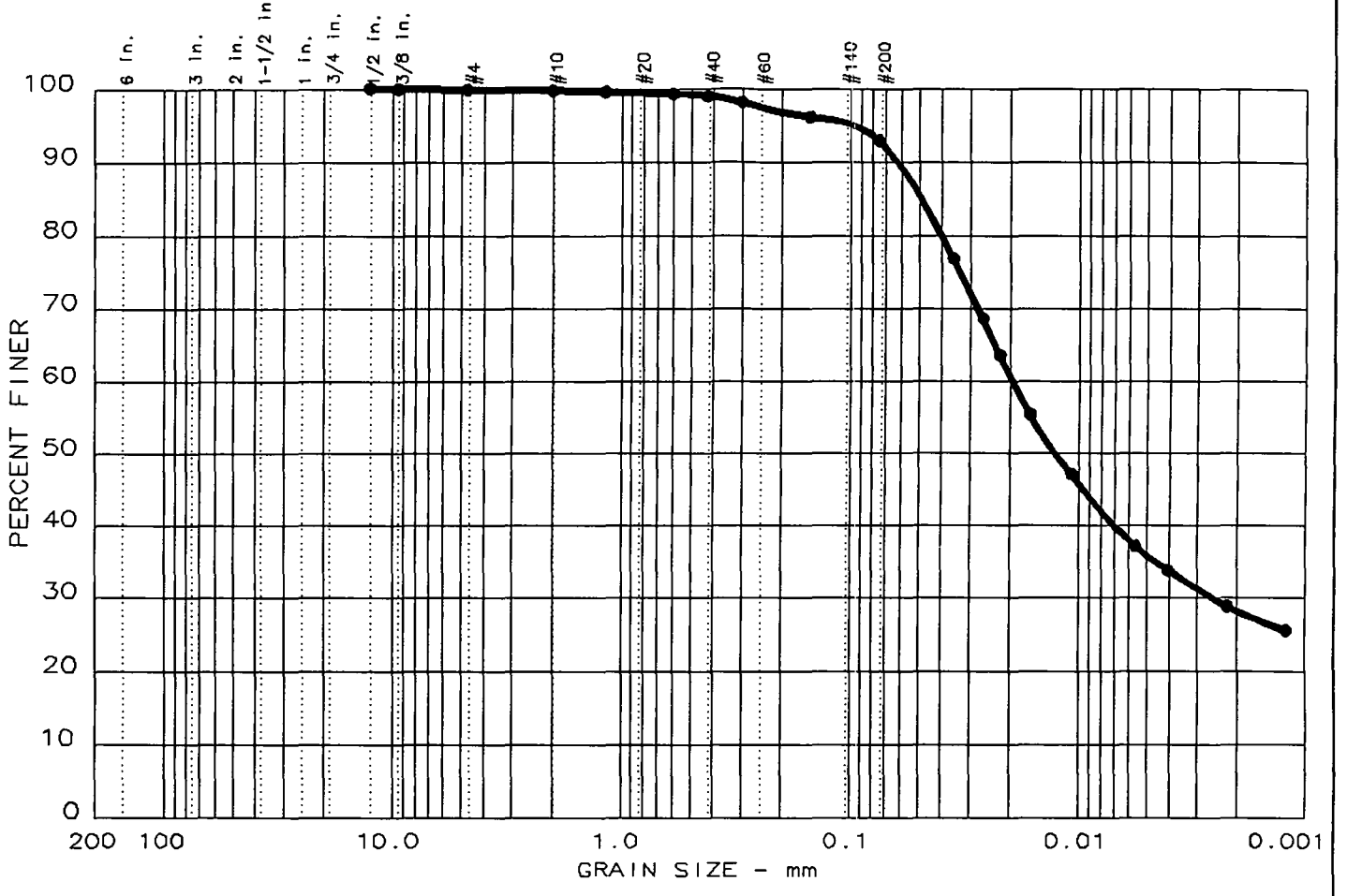
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	13	0.0	0.2	7.0	57.0	35.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	37	18			0.013	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#29 @ 378+00N/124+00E

Date: December 11, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

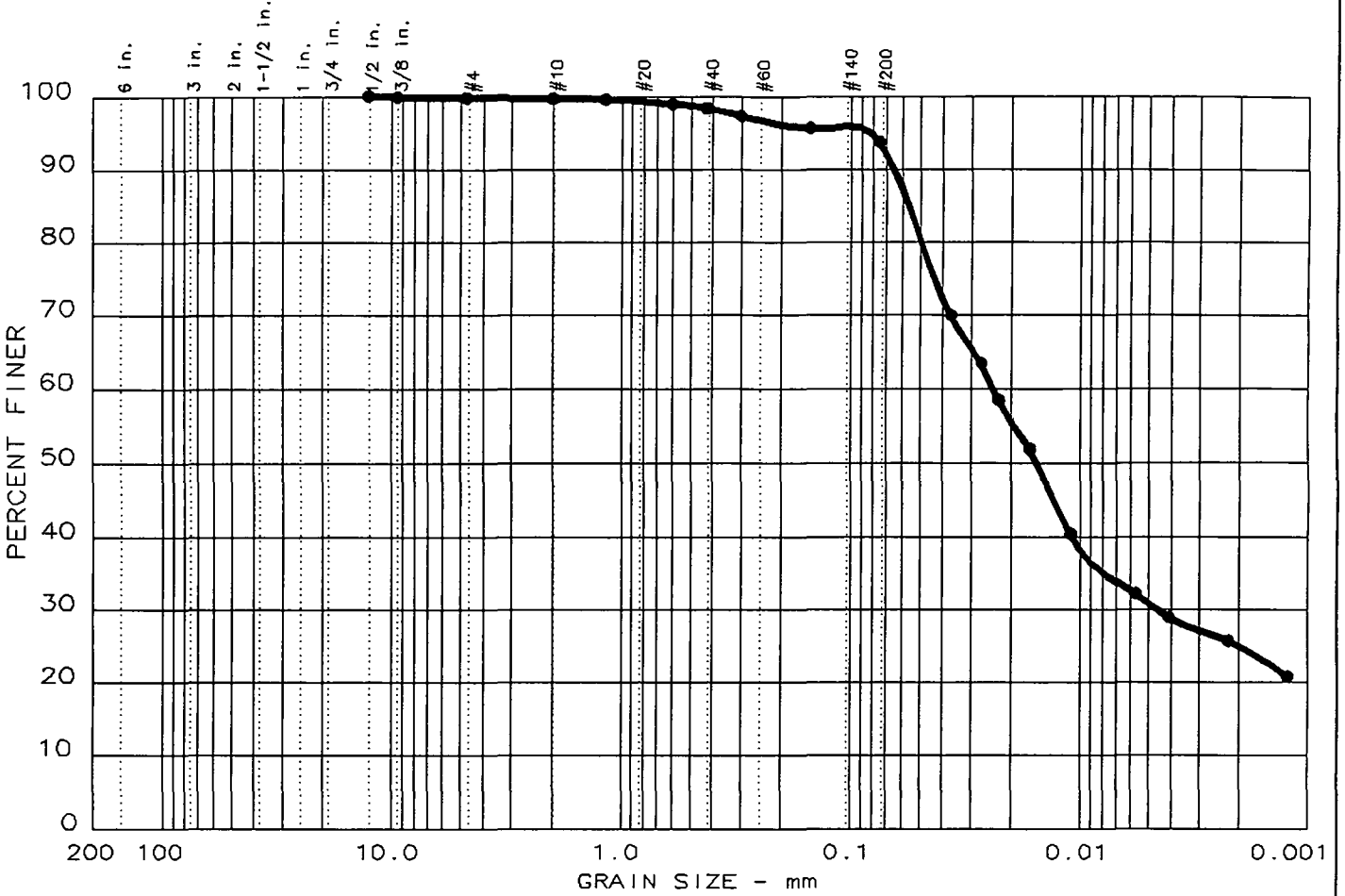
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	0.2	6.1	62.9	30.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	33	15			0.015	0.005				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Fine Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#30 @ 380+50N/124+00E

Date: December 6, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

.ested By: DWA

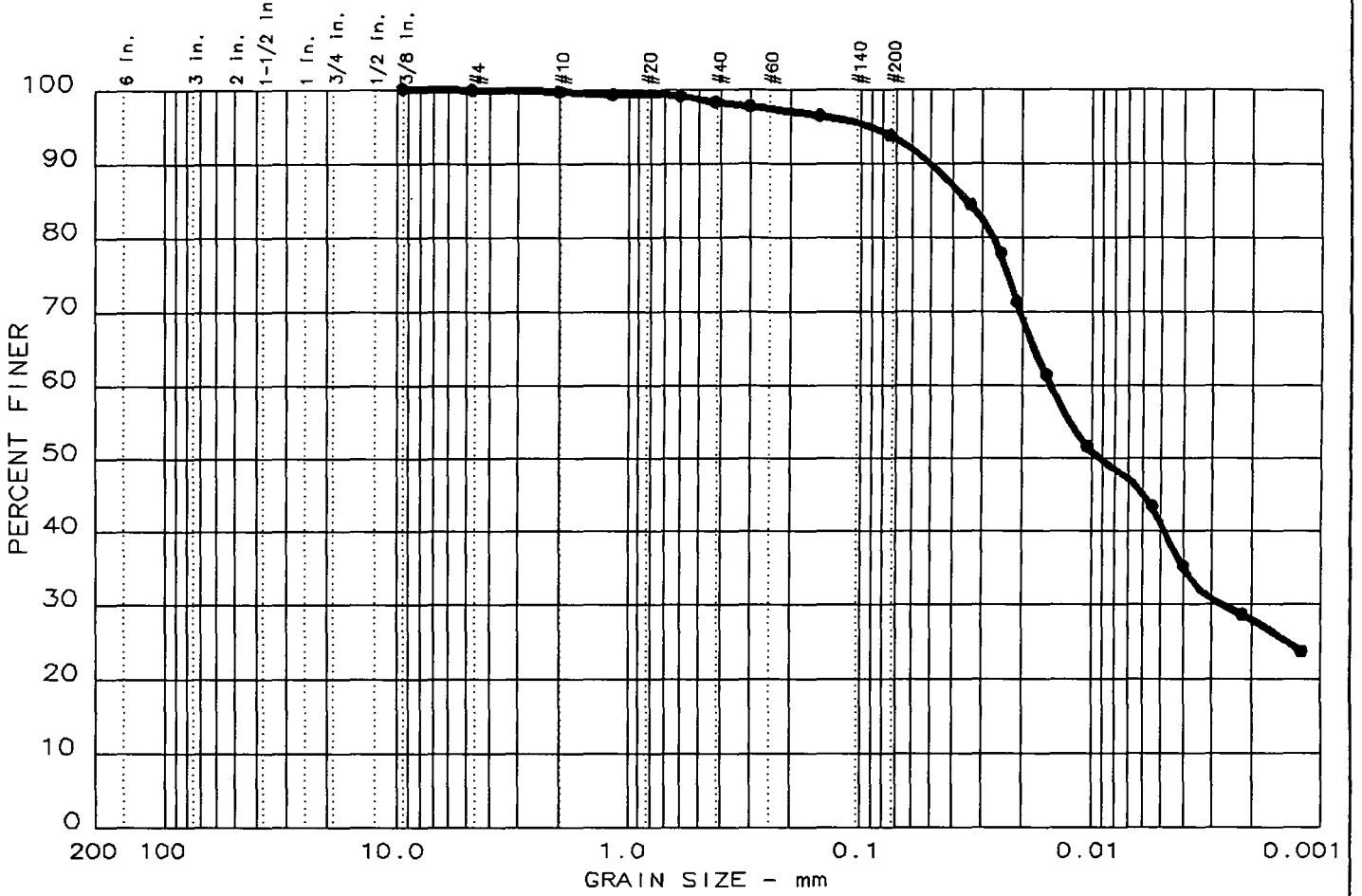
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	14	0.0	0.1	6.1	52.6	41.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	36	18			0.009	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#31 @ 381+00N/122+50E

Date: December 11, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

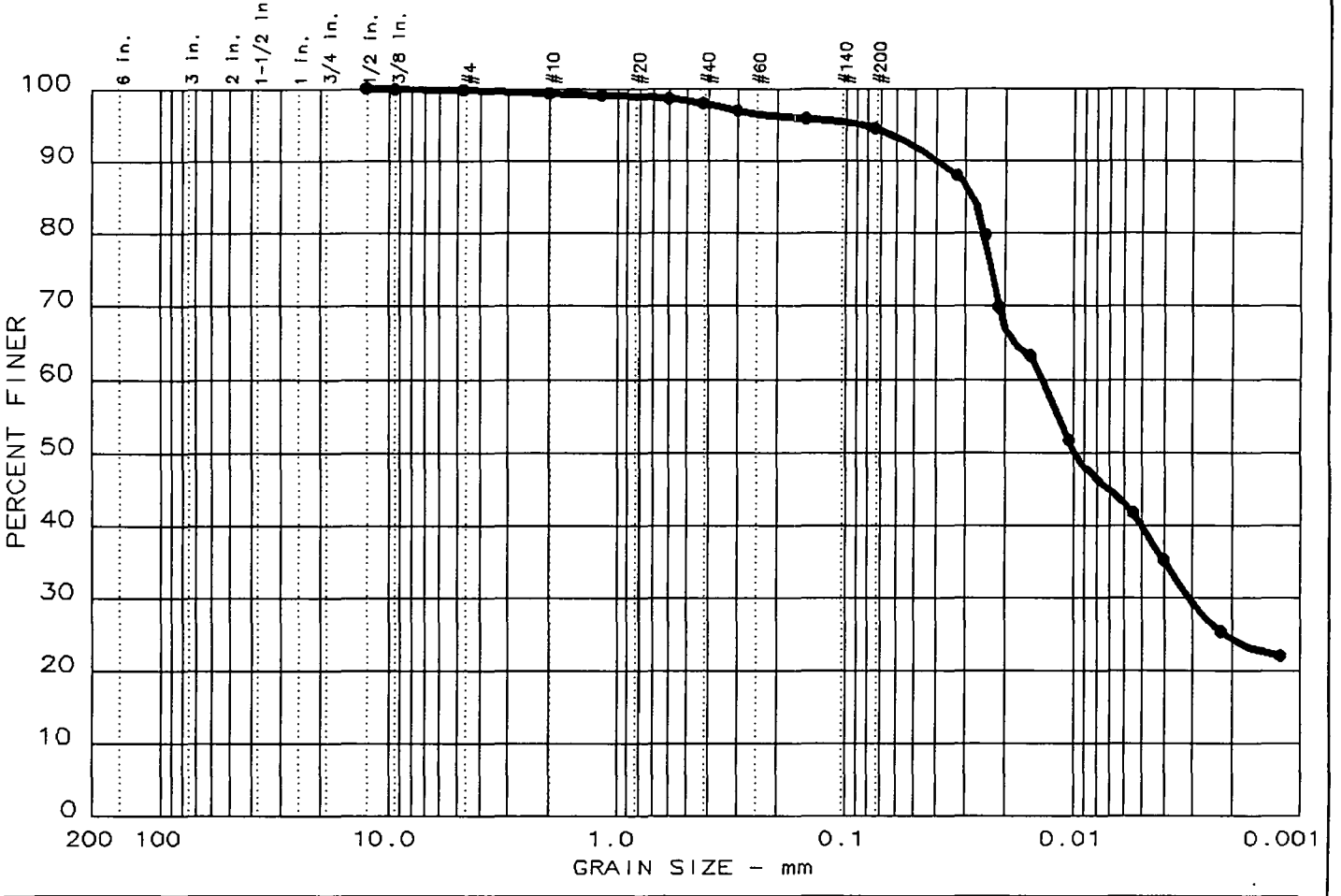
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	15	0.0	0.2	5.4	54.4	40.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	39	20			0.010	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#32 @ 375+00N/125+00E

Date: December 11, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

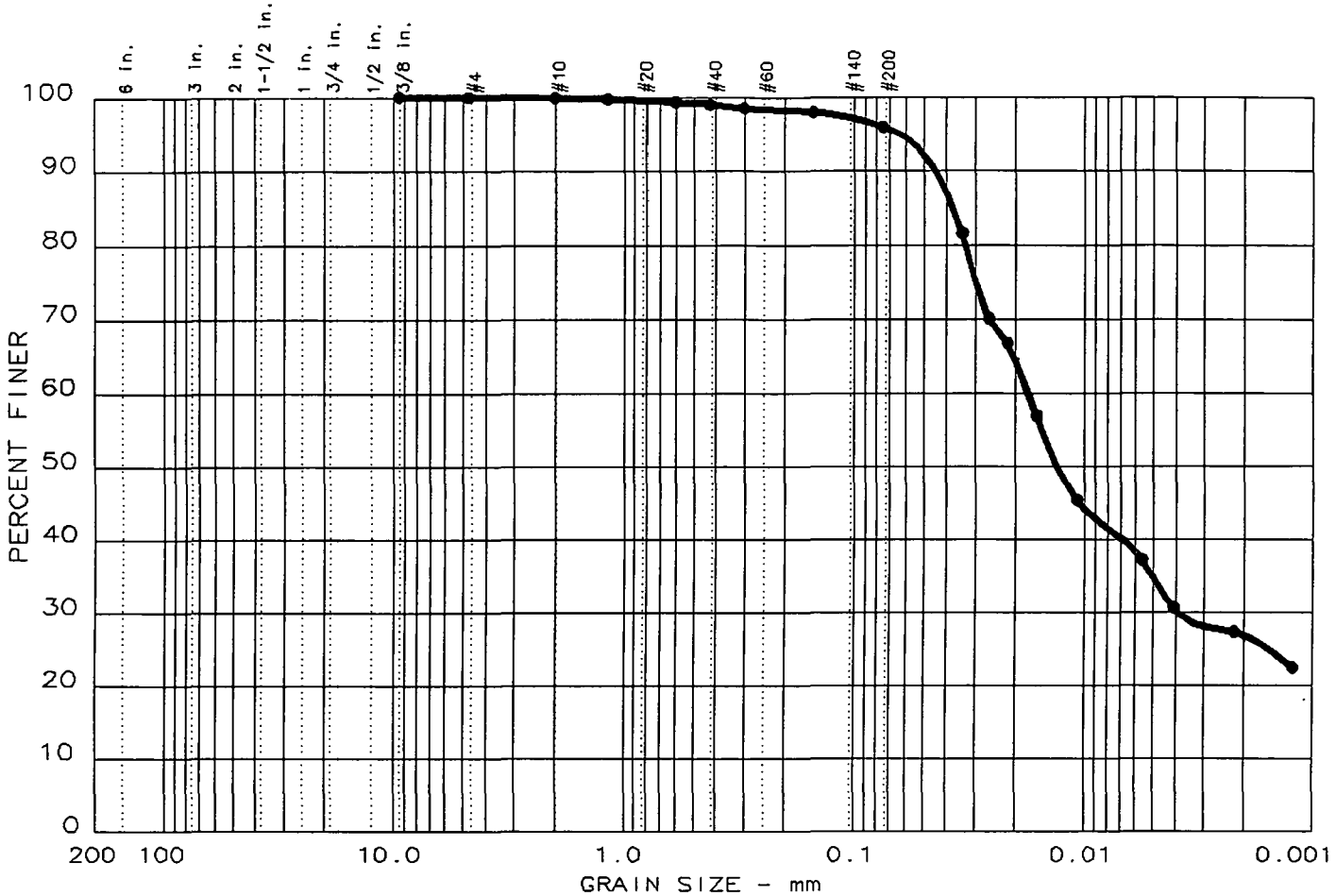
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	5	0.0	0.0	4.1	61.0	34.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	35	17			0.013	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Fine Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#33 @ 376+00N/123+50E

Date: December 6, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

.ested By: DWA

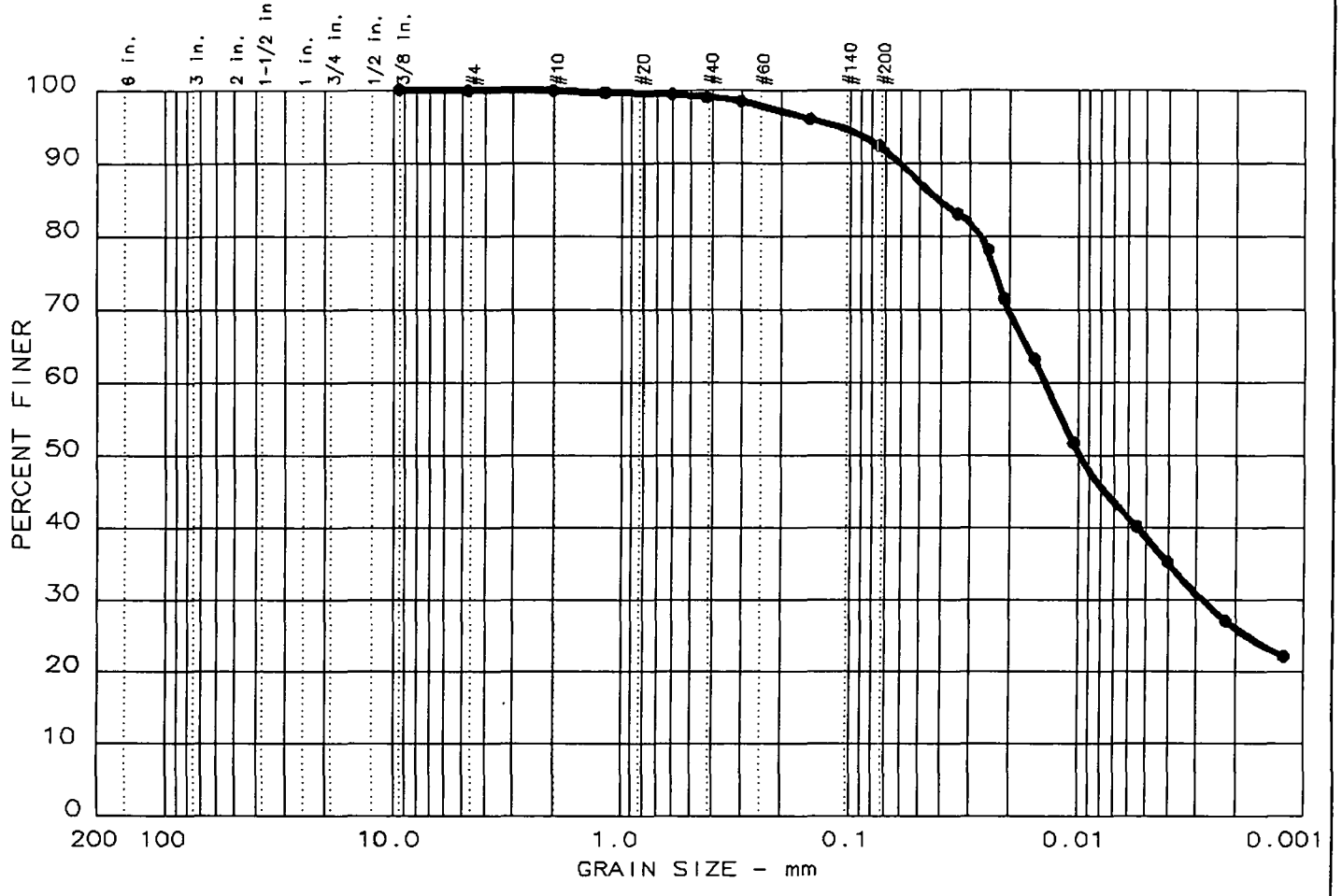
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	16	0.0	0.1	7.6	53.7	38.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	36	17			0.010	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-Inch S.T.:#34 @ 375+00N/125+50E

Date: December 11, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

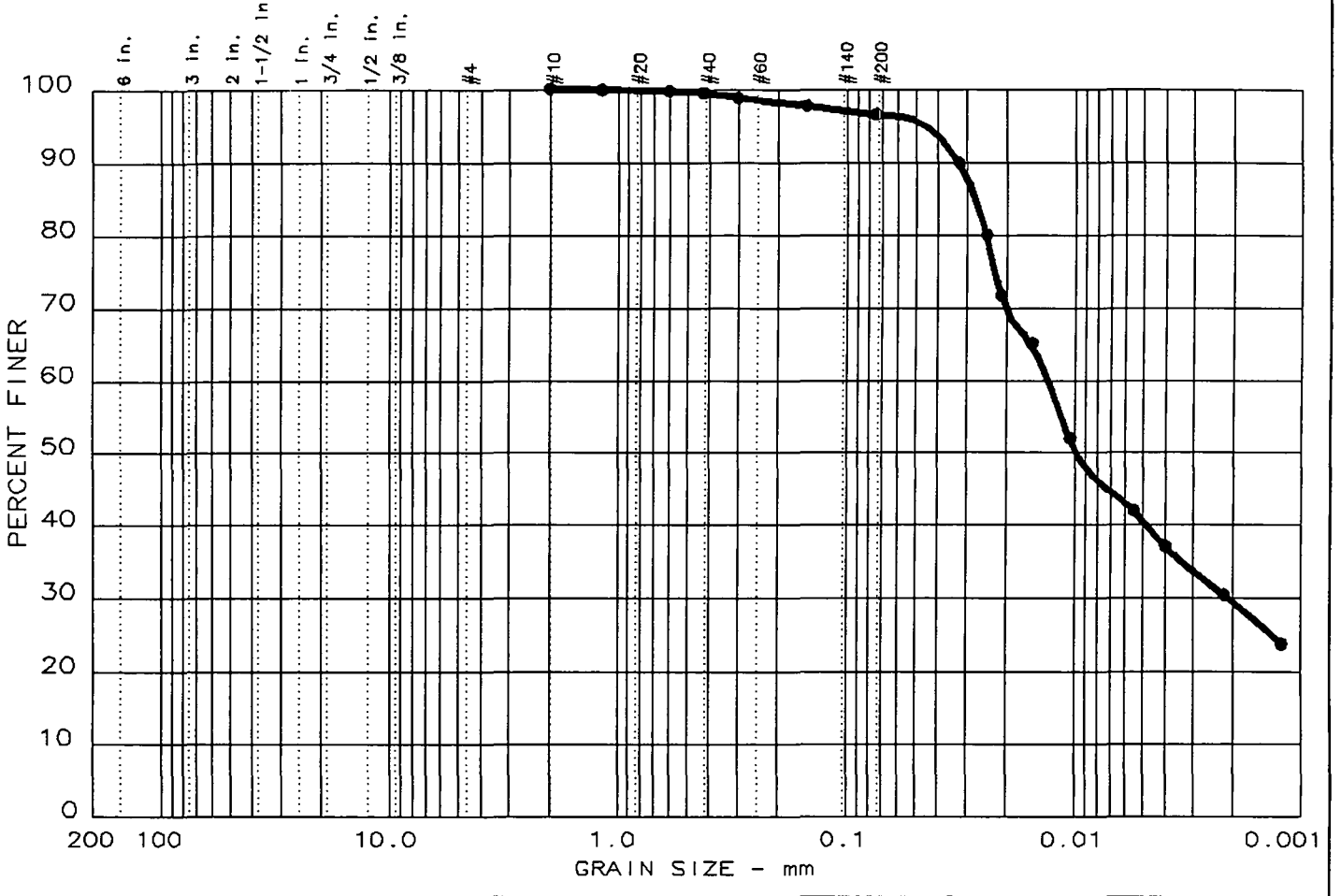
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	17	0.0	0.0	3.5	55.9	40.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	43	23			0.010	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Sand	CL	A-7-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-Inch S.T.:#35 @ 376+00N/126+00E

Date: December 11, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

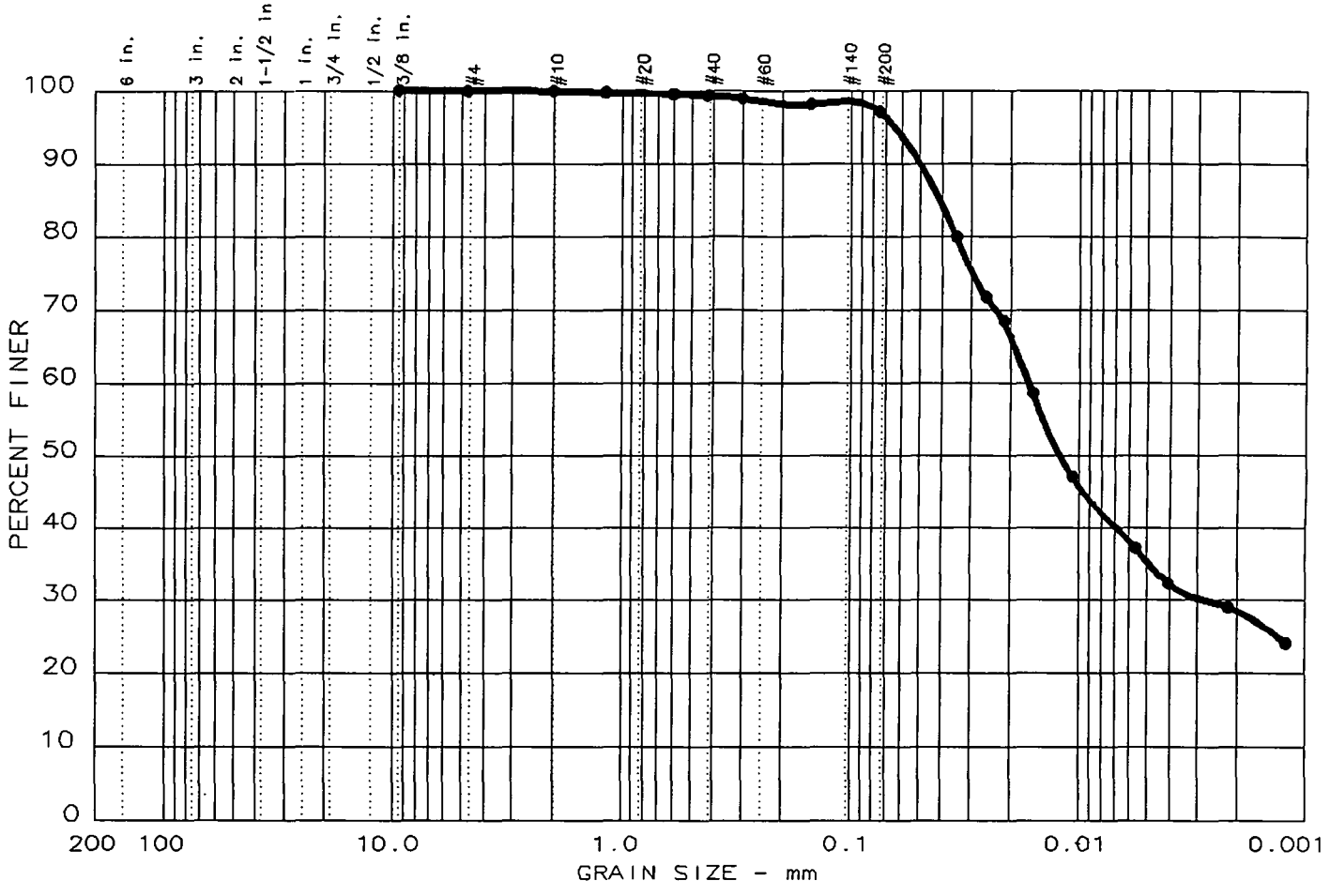
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	6	0.0	0.0	2.8	61.7	35.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	36	17			0.012	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Fine Sand	CL	A-6

Project No.: 98024
Project: Stoughton Landfill Clay Barrier Layer
● Location: 3-inch S.T.:#36 @ 375+50N/128+00E

Date: December 6, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

.ested By: DWA

Input By : DWA

Checked By : WWW

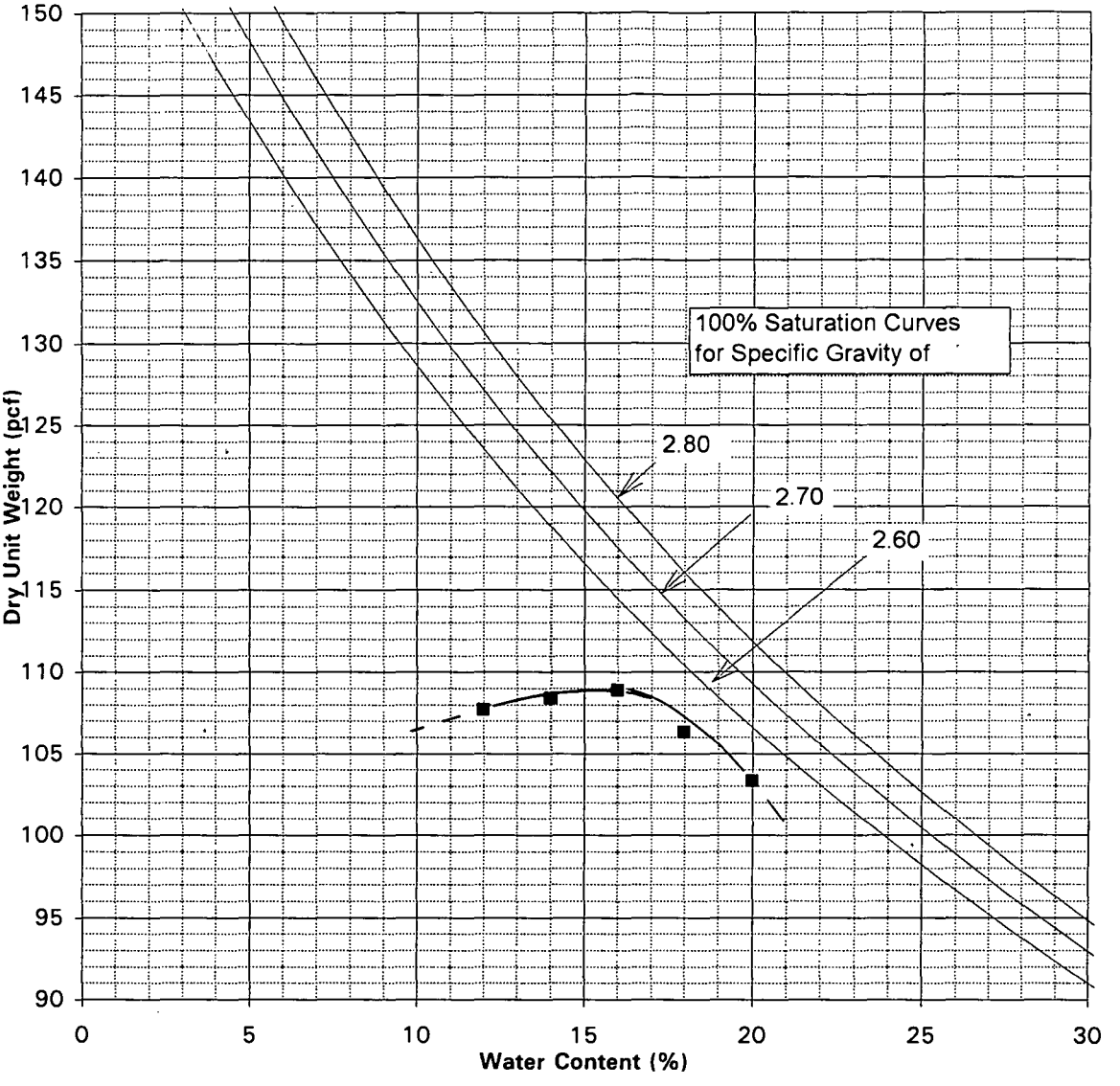
Approved By : WWW

Figure No. _____

TAB 3 - CLAY BARRIER LAYER (continued)

- Grab Samples (every 5000 cu yd)
  - Laboratory Compaction Tests (Proctors)
  - Grain Size Distribution Test Reports (including Atterberg Limits and Clay Content)

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
CBL-1	**109.0**	**16.0**

Specimen Description
Brown Lean Clay, Some Sand

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %	
N/A	**N/A**	

Test Method	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A	36	18	18	2.7 (est.)

Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	CL	0.1	16.0	83.9	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc.

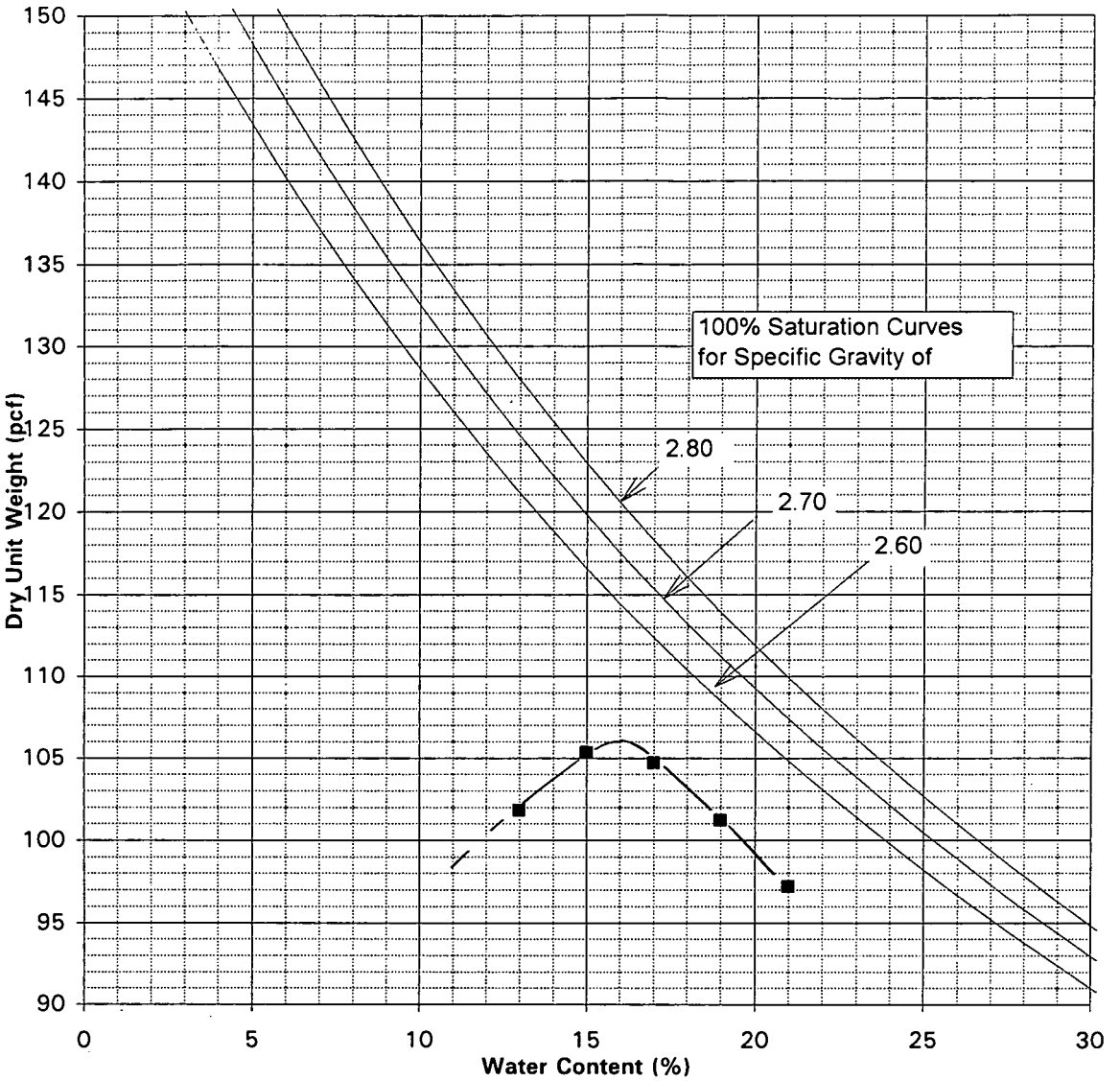
CHECKED BY: JSG

REVIEWED BY: WWW

DATE: 8-15-98

File:98024AA.XLS

TEST REPORT



Specimen No:	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
CBL-2	**106.0**	**16.0**

Specimen Description
Brown Lean Clay, Trace Fine Sand

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %	
N/A	**N/A**	

Test Method	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A	43	20	23	2.7 (est.)

Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	CL	0.0	2.5	97.5	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc.

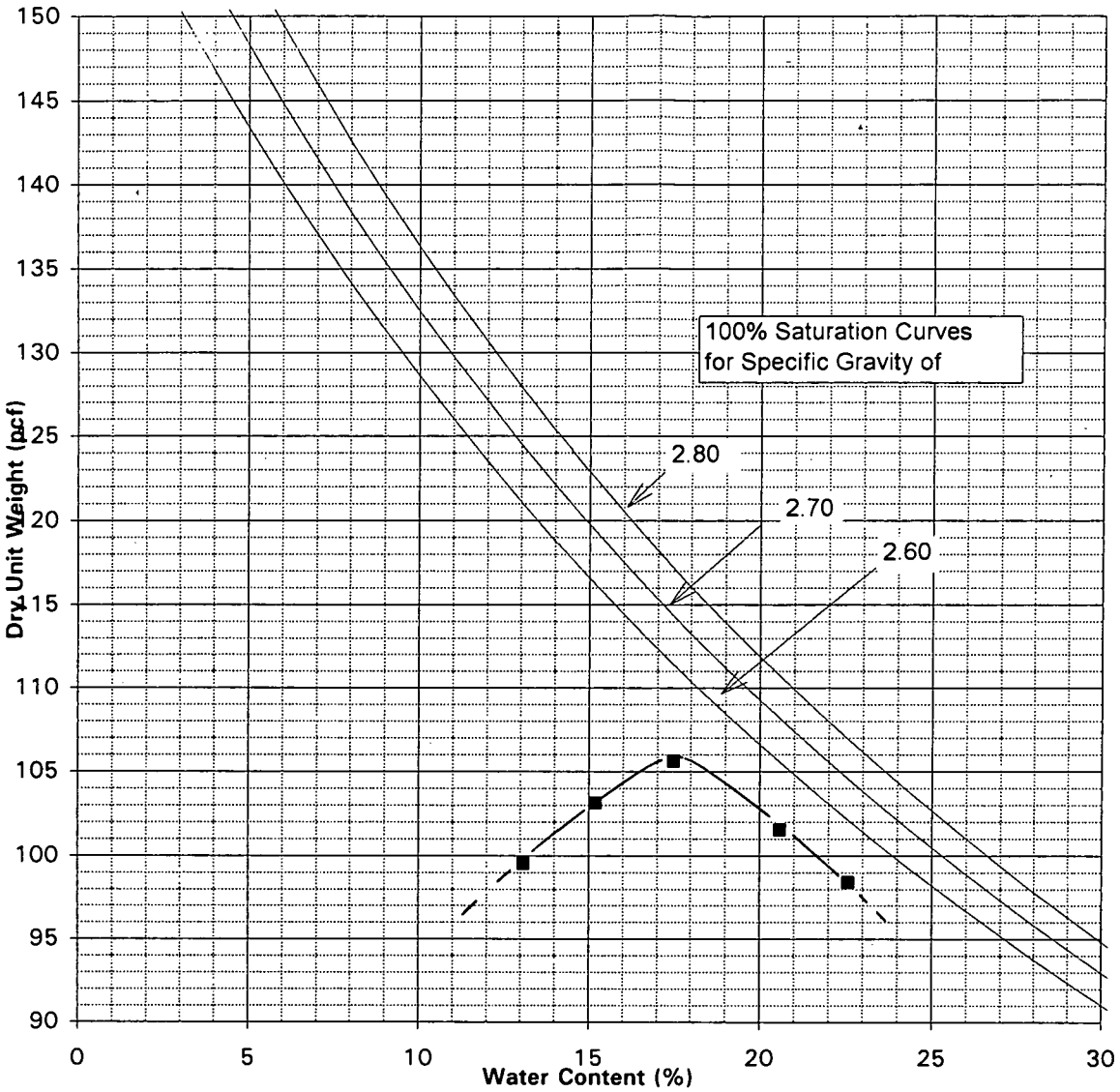
CHECKED BY: JSG

REVIEWED BY: WWW

DATE: 8-21-98

File:98024B.XLS

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
CBL-3	**106.0**	**17.5**

Specimen Description
Brown Lean Clay, Little Sand

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %	
N/A	**N/A**	

Test Method		Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A		39	20	19	2.7 (est.)
Preparation Method	**USCS**	**% Gravel**	**% Sand**	**% Fines**	**% Oversize**
Dry	CL	0.0	10.4	89.6	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc.

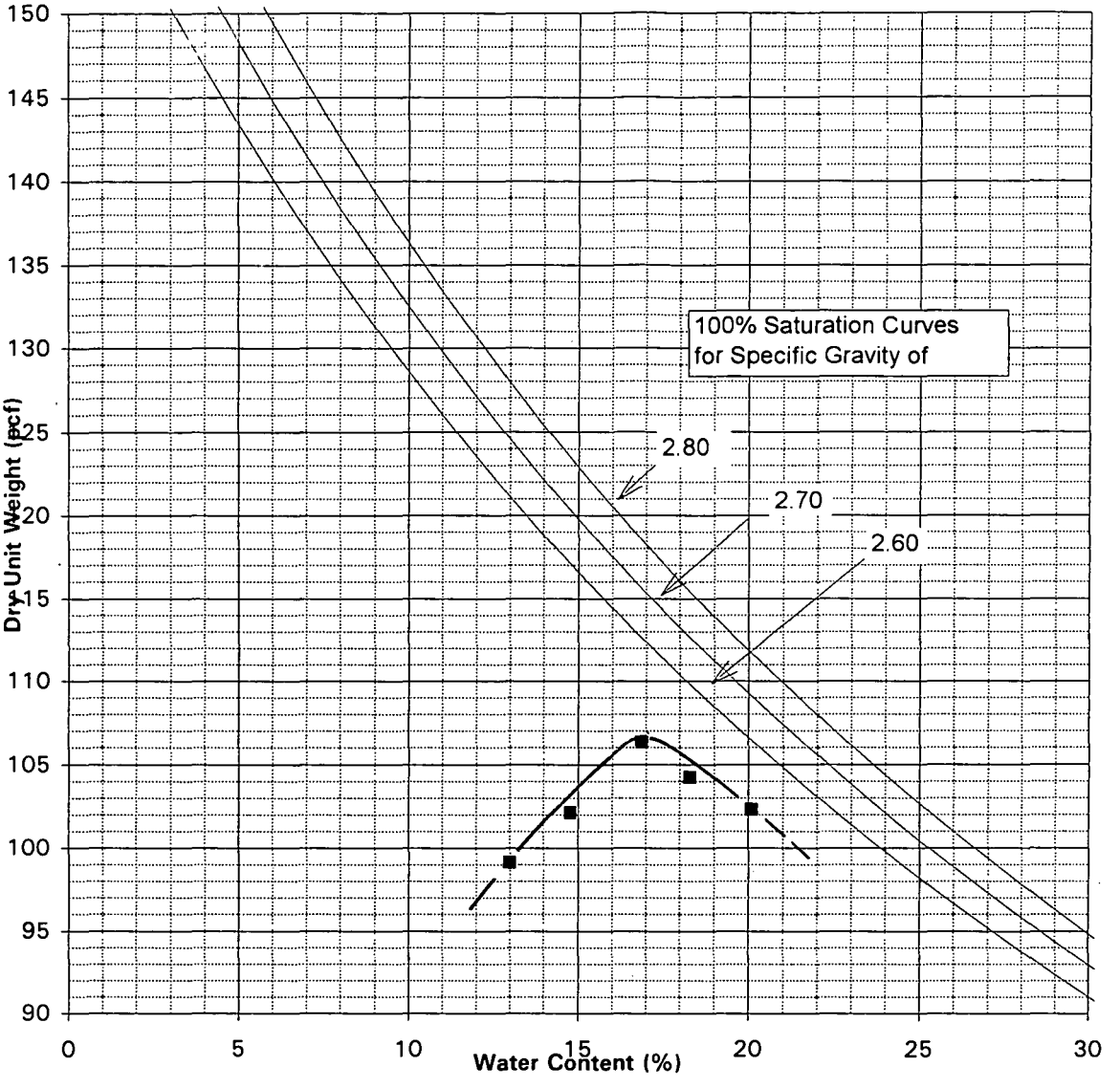
CHECKED BY: JSG

REVIEWED BY: WWW

DATE: 9-1-98

File:98024C.XLS

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
CBL-4	**107.0**	**17.0**

Specimen Description
Brown Lean Clay, Trace Sand

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %	
N/A	N/A	

Test Method	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A	37	19	18	2.7 (est.)

Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	CL	0.0	2.7	97.3	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc.

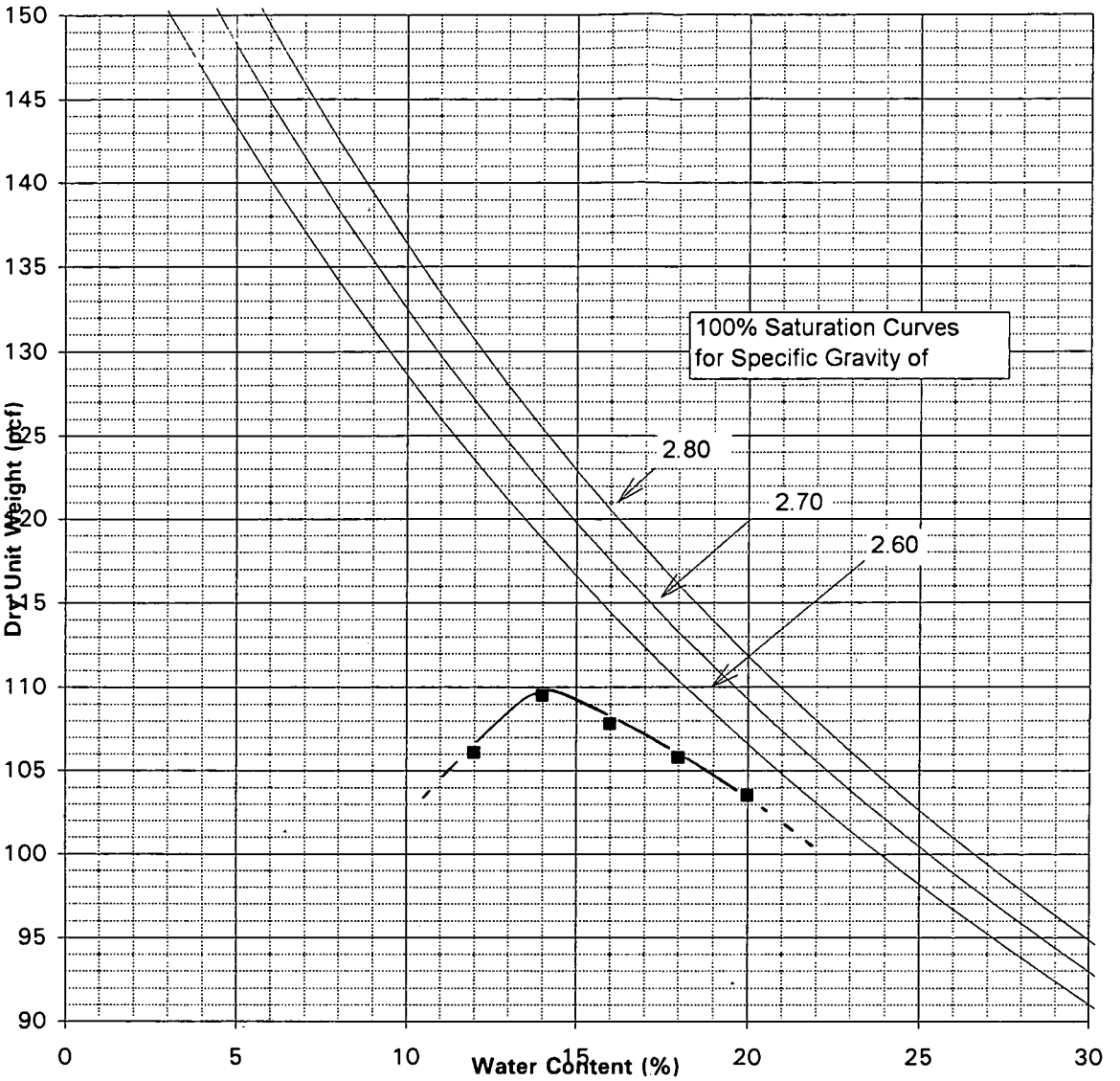
CHECKED BY: JSG

REVIEWED BY: WWW

DATE: 9-4-98

File:98024D.XLS

TEST REPORT



Specimen No:	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
CBL-5	**110.0**	**14.0**

Specimen Description
Brown Lean Clay, Little Sand

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %	
N/A	**N/A**	

Test Method	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A	34	18	16	2.7 (est.)

Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	CL	0.0	10.9	89.1	-

PROJECT: Stoughton Landfill

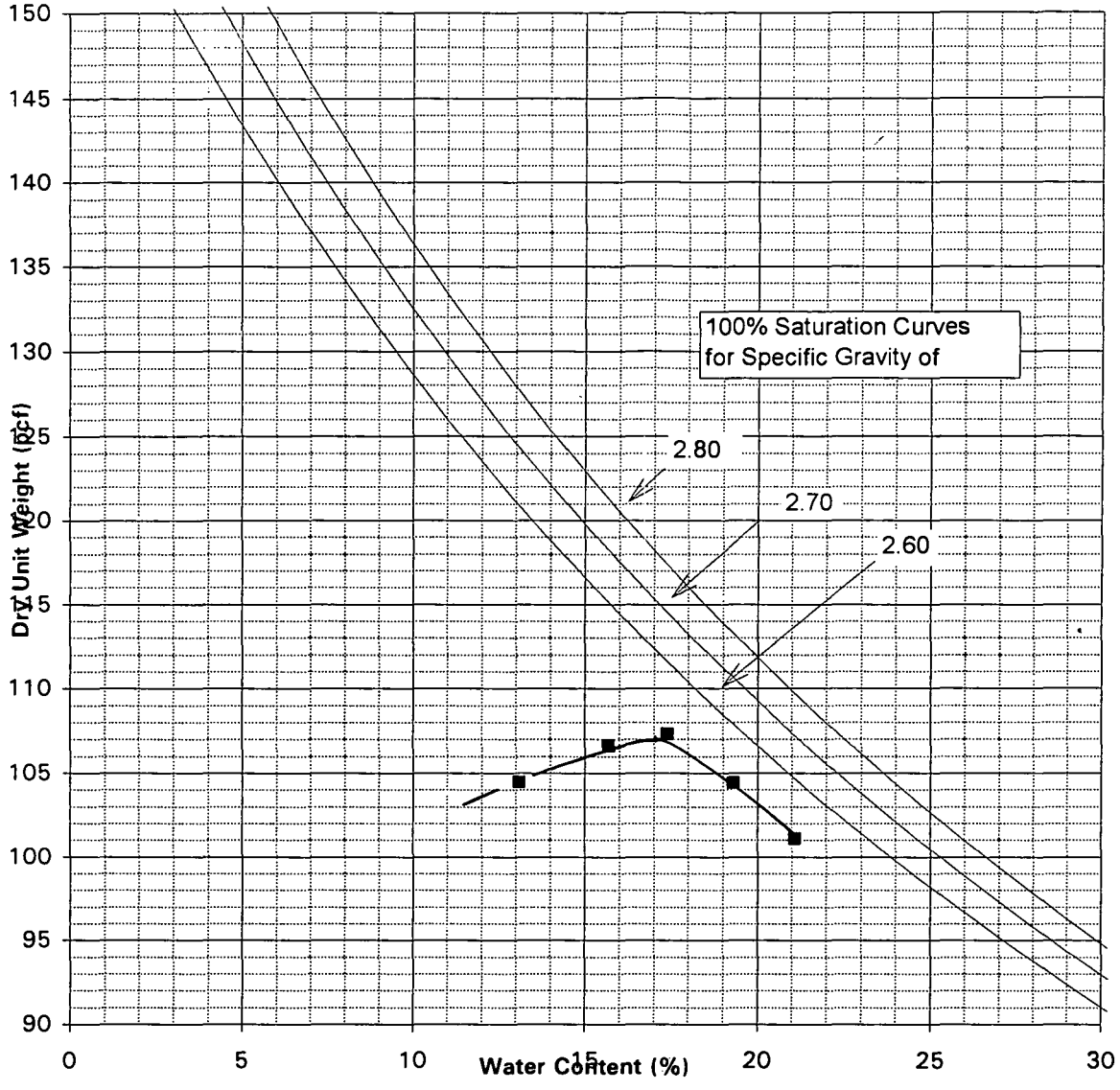
PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc. | CHECKED BY: JSG | REVIEWED BY: WWW | DATE: 9-9-98

File:98024E.XLS

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %	
CBL-6	**107.0**	**17.0**	
Specimen Description			
Brown Lean Clay, Trace Sand			
Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %		
N/A	**N/A**		
Test Method	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A	33	19	14	2.7 (est.)
Preparation Method / USCS	% Gravel	% Sand	% Fines	% Oversize
Dry / CL	0.0	0.7	99.3	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc.

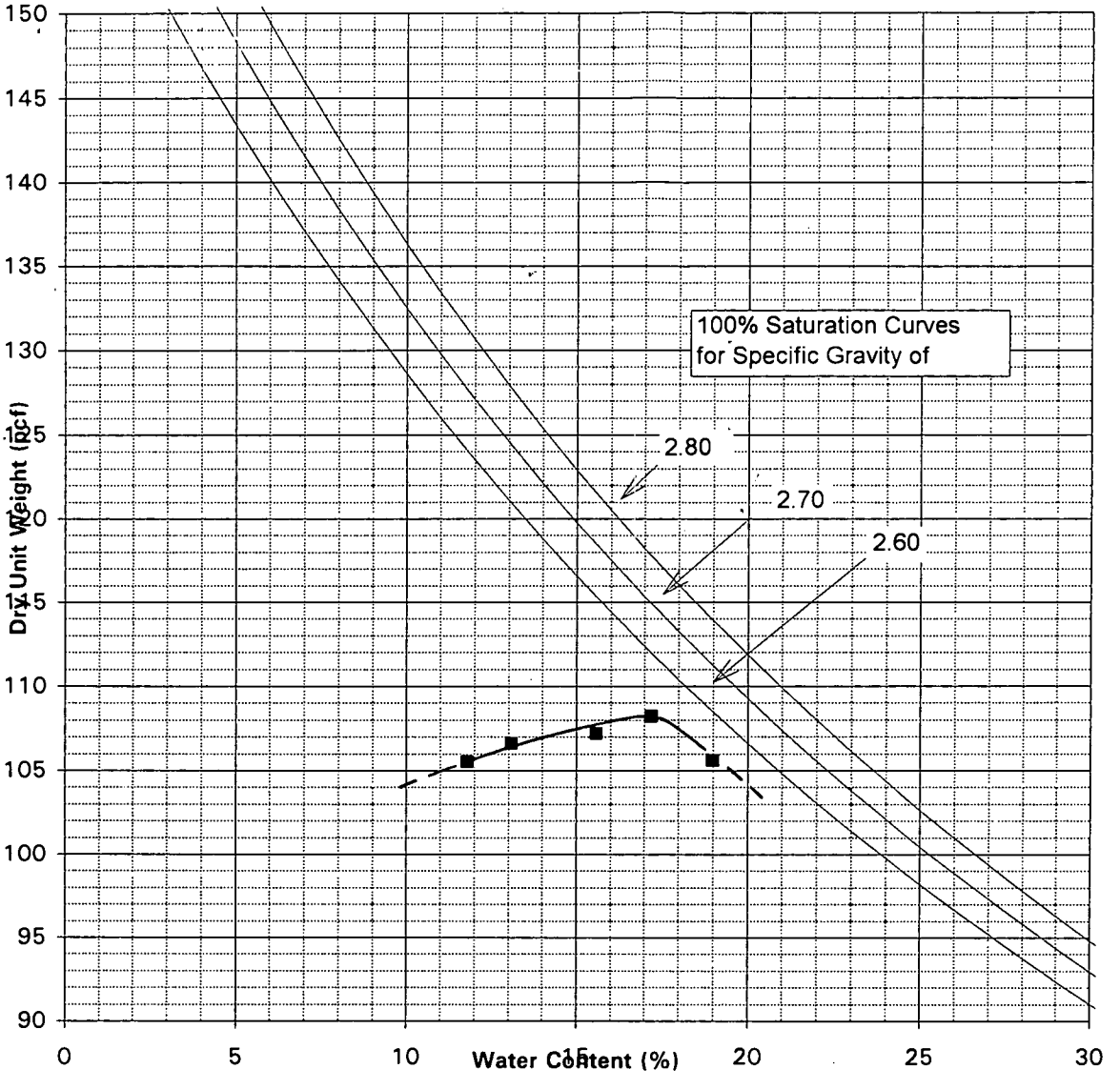
CHECKED BY: JSC

REVIEWED BY: WWW

DATE: 9-10-98

File:98024F.XLS

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
CBL-7	**108.0**	**17.0**

Specimen Description
Brown Lean Clay, Little Sand

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %	
N/A	**N/A**	

Test Method	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A	35	19	16	2.7 (est.)

Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	CL	0.2	9.0	90.8	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc.

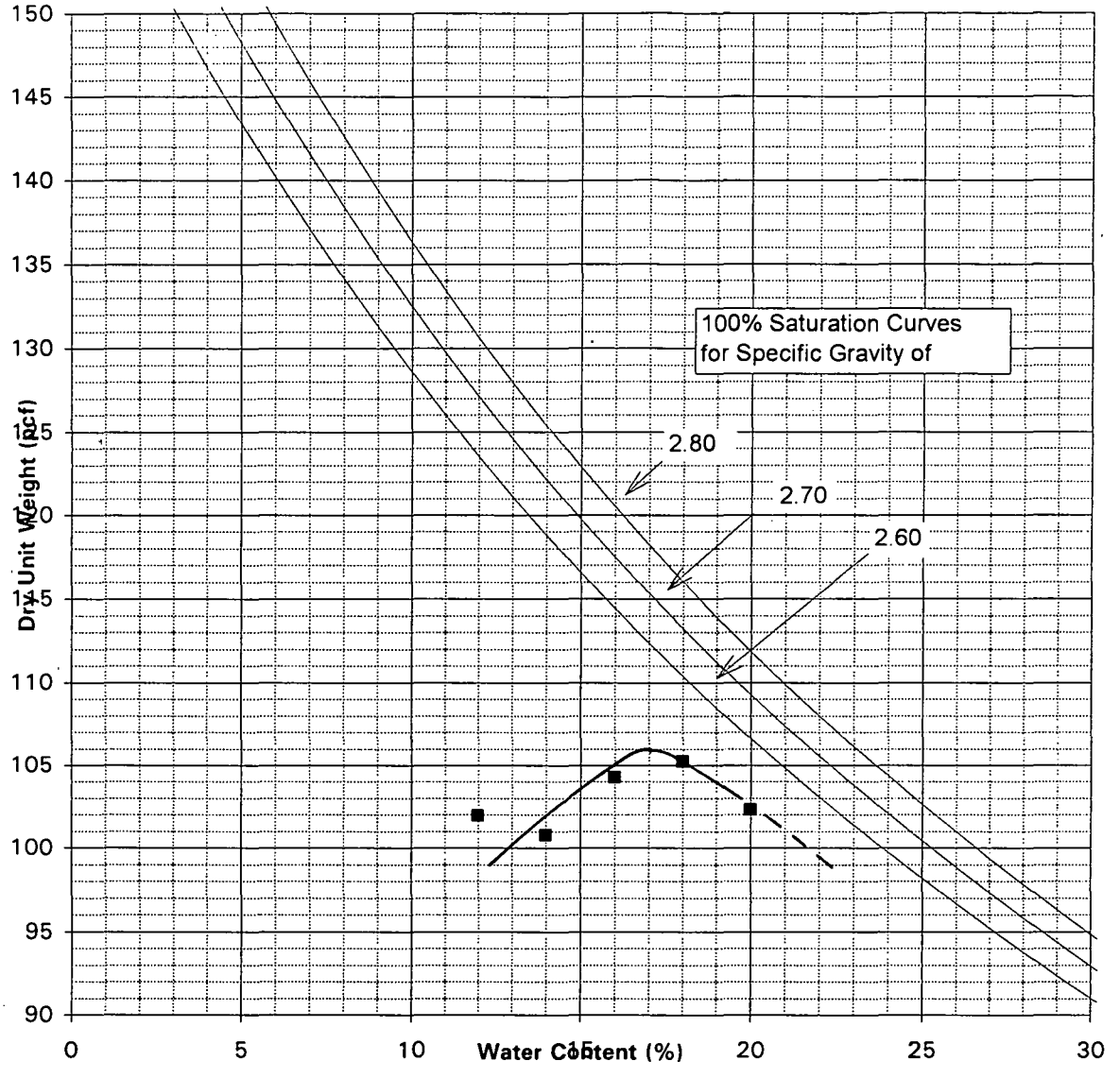
CHECKED BY: JSC

REVIEWED BY: WWW

DATE:

File:98024G.XLS

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
CBL-8	**106.0**	**17.0**

Specimen Description
Brown Lean Clay, Trace Sand

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %	
N/A	N/A	

Test Method	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A	40	19	21	2.7 (est.)

Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	CL	0.0	3.7	96.3	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc.

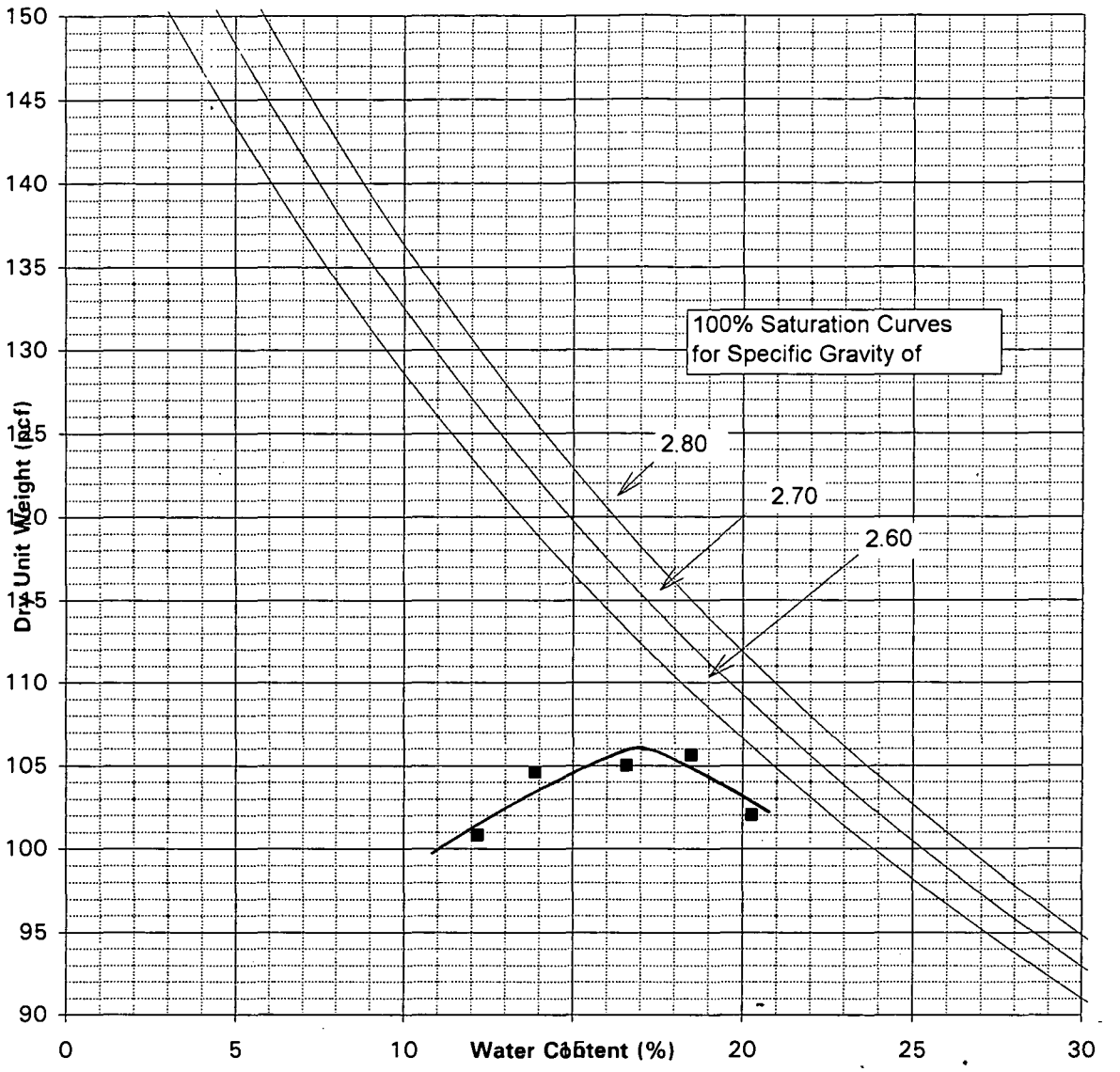
CHECKED BY: JSG

REVIEWED BY: WWW

DATE: 9-22-98

File:98024H.XLS

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %	
CBL-9	**106.0**	**17.0**	
Specimen Description			
Brown Lean Clay, Little Sand			
Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %		
N/A	N/A		
Test Method	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A	35	19	16	2.7 (est.)
Preparation Method / USCS	% Gravel	% Sand	% Fines	% Oversize
Dry / CL	0.0	6.6	93.4	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc.

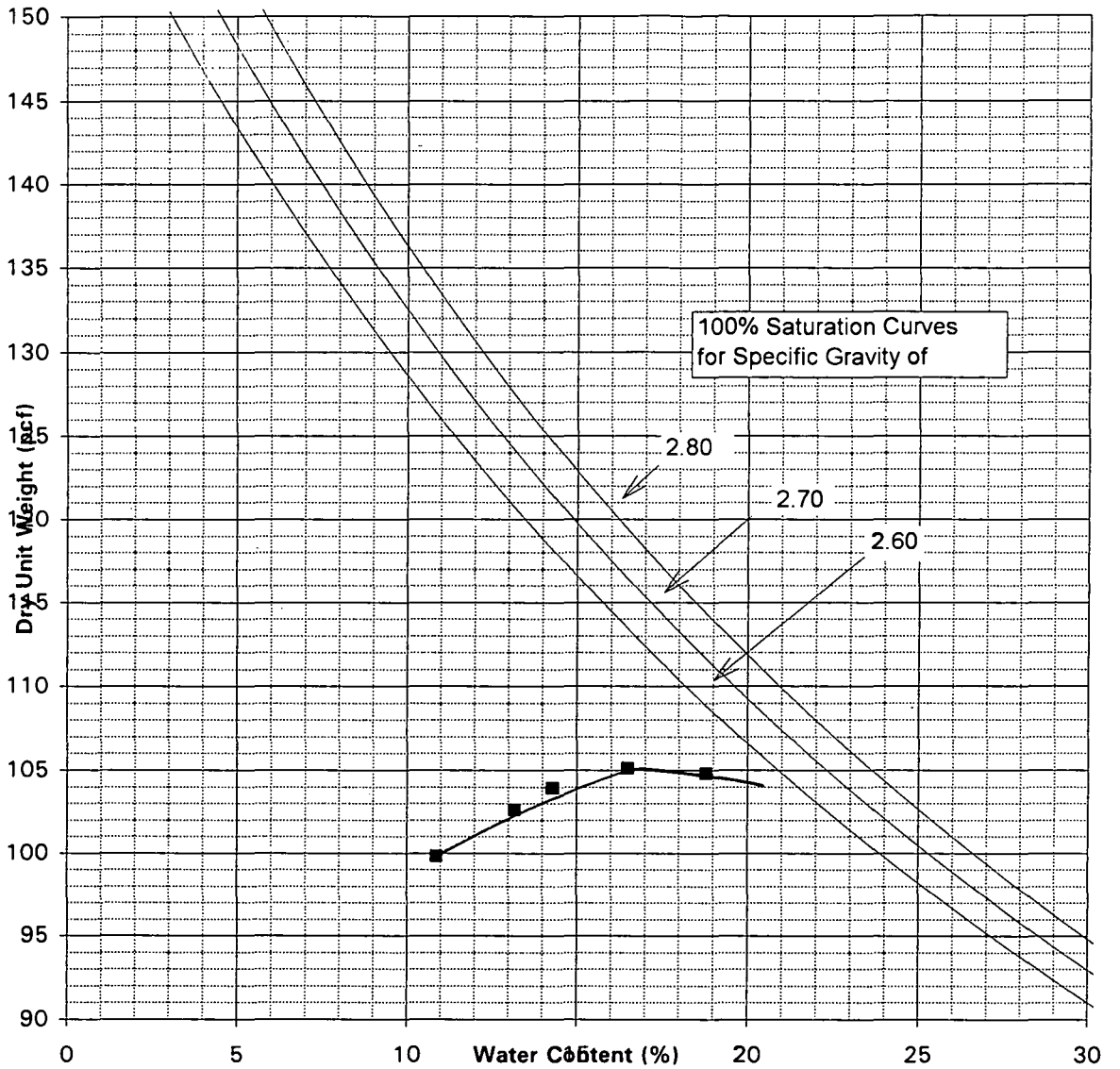
CHECKED BY: JSG

REVIEWED BY: WWW

DATE: 9-23-98

File:98024I.XLS

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
CBL-10	**105.0**	**17.0**

Specimen Description
Brown Lean Clay, Little Sand

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %	
N/A	**N/A**	

Test Method	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A	36	19	17	2.7 (est.)

Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	CL	0.0	8.2	91.8	-

PROJECT: Stoughton Landfill

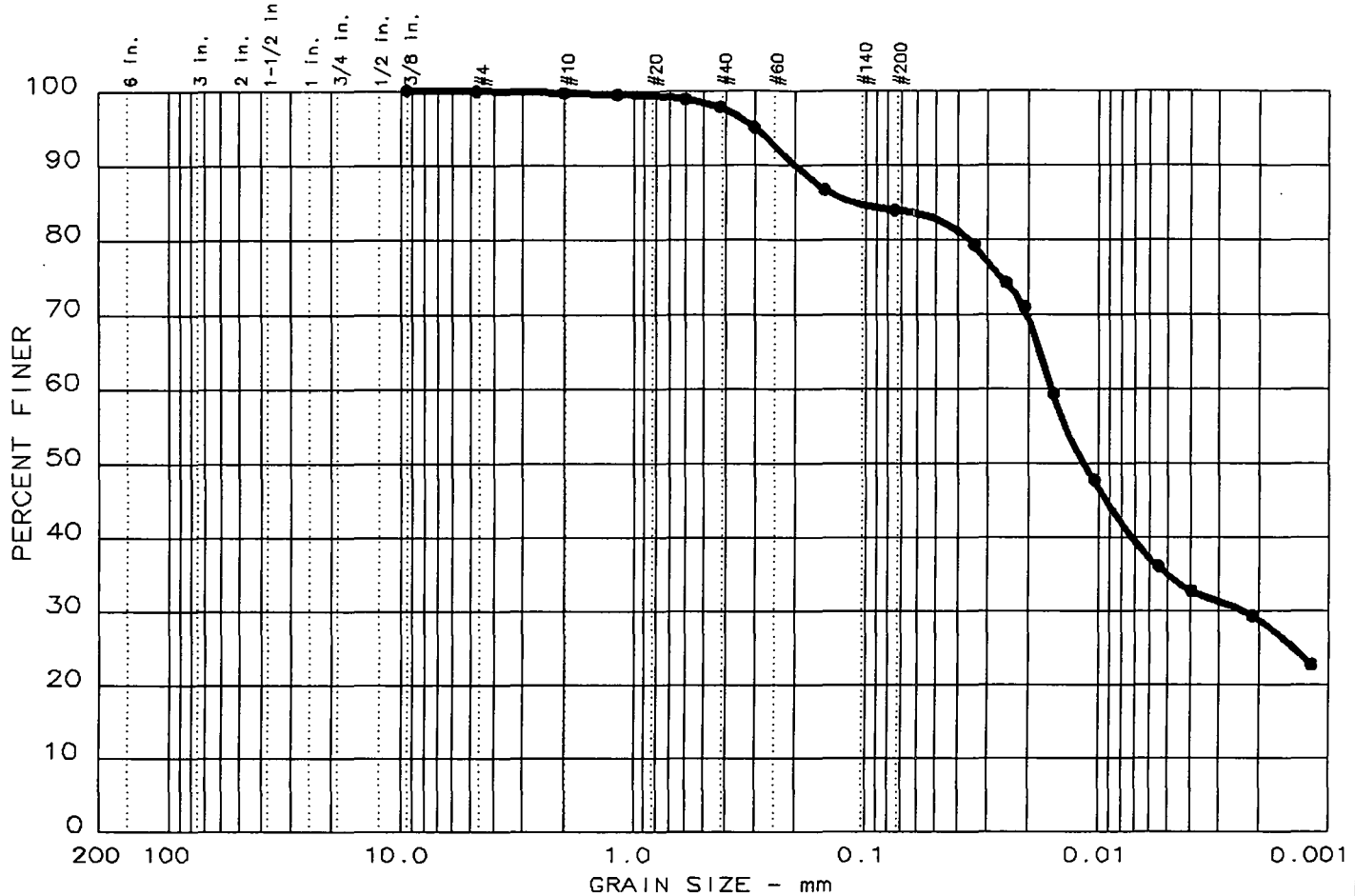
PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc. | CHECKED BY: JSG | REVIEWED BY: WWW | DATE: 9-23-98

File:98024J.XLS

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	0.1	16.0	49.1	34.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	36	18	0.115		0.012	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean Clay, Some Sand	CL	A-6

Project No.: 98024.00
Project: Stoughton Landfill
● Location: Bag: CBL-1 Lift # 1, 385+00N/124+50E

Date: August 20, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

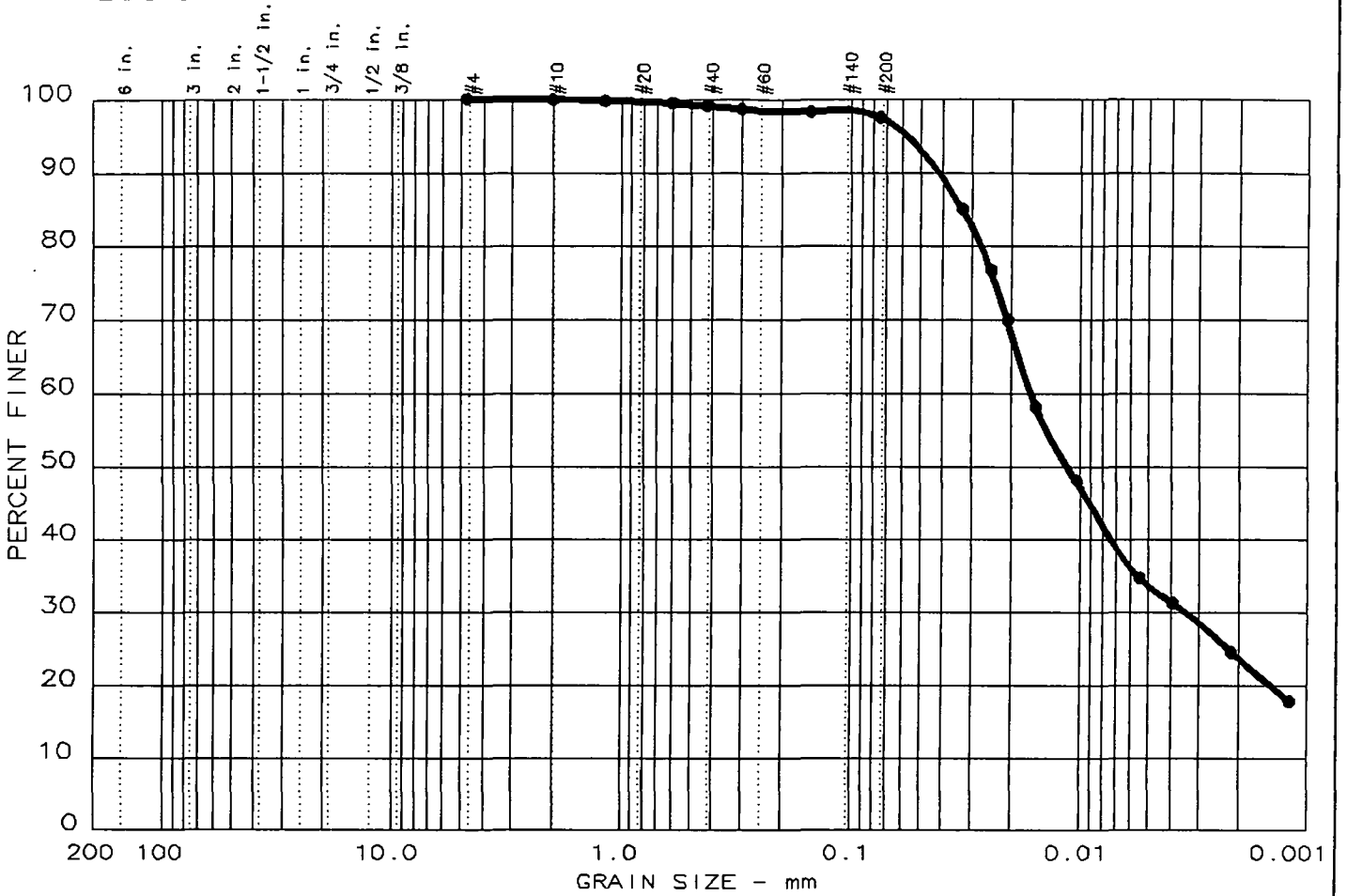
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	20	0.0	0.0	2.5	64.0	33.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	43	23			0.011	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Fine Sand	CL	A-7-6

Project No.: 98024
Project: Stoughton Landfill, Stoughton Wisconsin
● Location: CBL-2, 381+50N / 125+50E, Lift # 2

Date: August 27, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

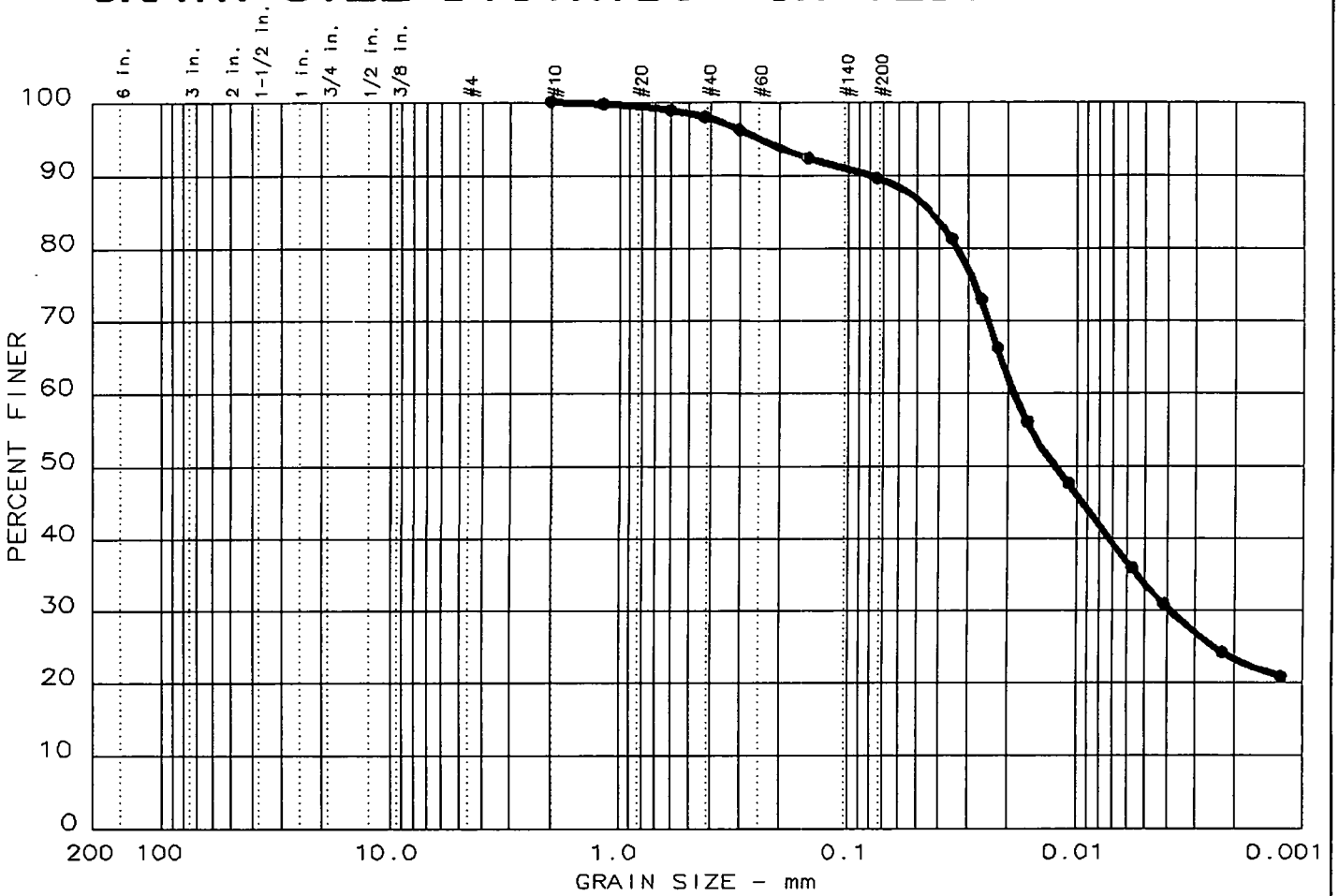
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	2	0.0	0.0	10.4	55.9	33.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	39	19			0.012	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean Clay, Little Sand	CL	A-6

Project No.: 98024.00
Project: Stoughton Landfill, Stoughton Wisconsin
● Location: Bag: CBL-3 Lift # 2, 383+50N/127+50E

Date: Sept 10, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

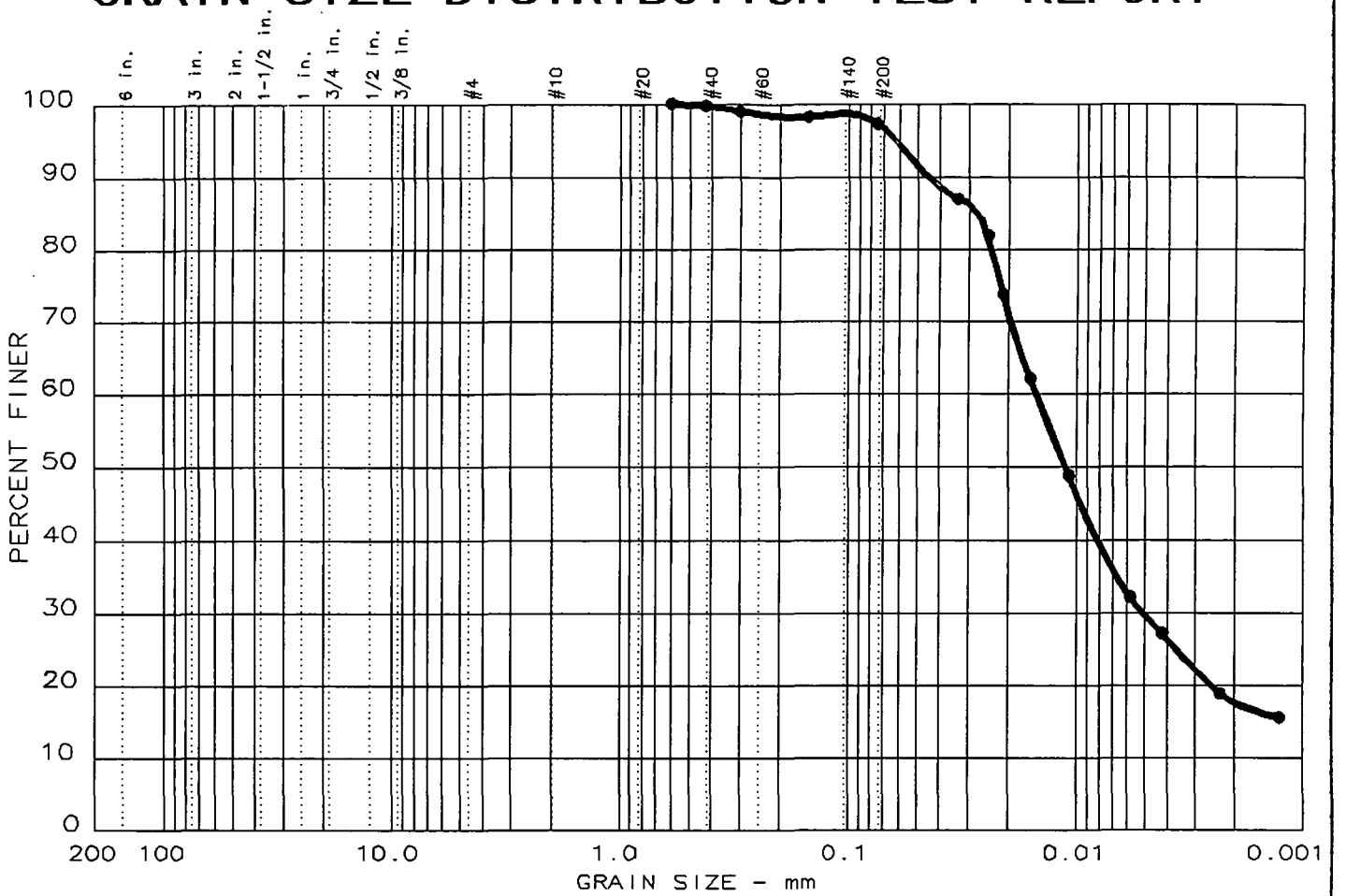
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	3	0.0	0.0	2.7	67.6	29.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	37	18			0.011	0.005				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean Clay, Trace Sand	CL	A-6

Project No.: 98024.00
Project: Stoughton Landfill, Stoughton Wisconsin
● Location: Bag: CBL-4 Lift # 3, 383+50N/127+00E

Date: Sept 10, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

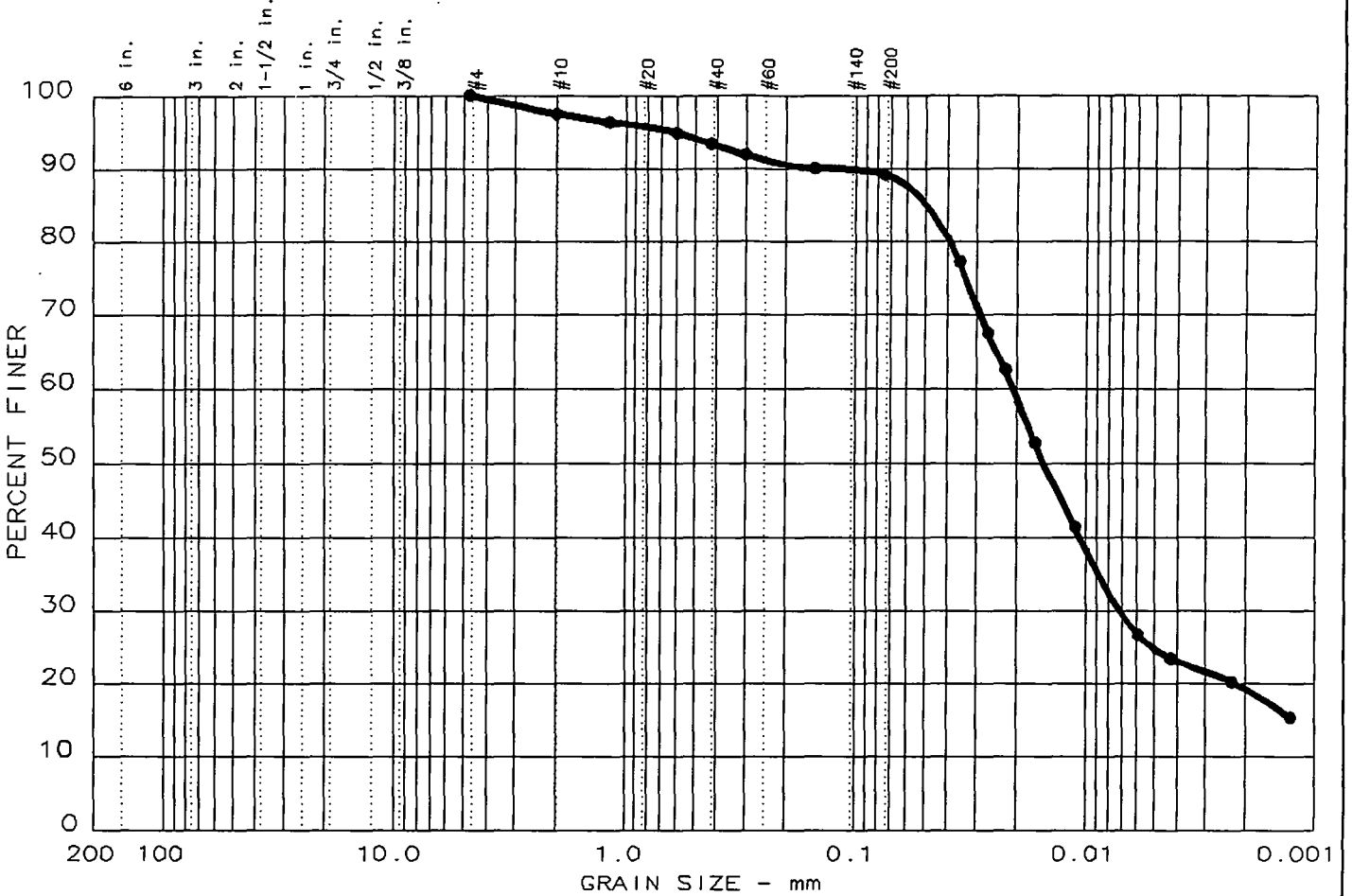
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	0.0	10.9	64.4	24.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	34	16			0.015	0.007				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean Clay, Little Sand	CL	A-6

Project No.: 98024.00
Project: Stoughton Landfill, Stoughton Wisconsin
● Location: Bag: CBL-5 Lift # 1, 376+50N/127+50E

Date: Sept 9, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

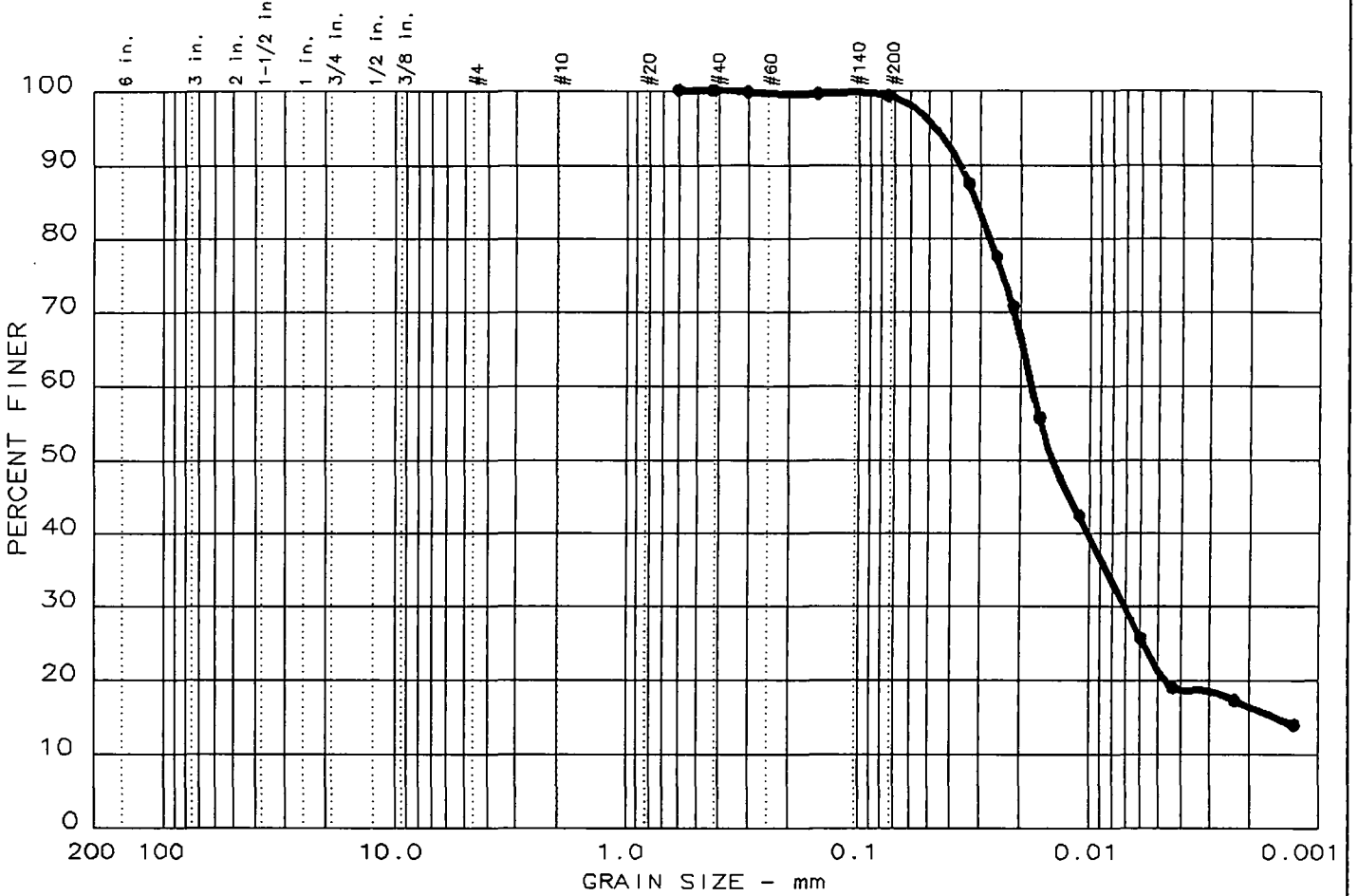
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	5	0.0	0.0	0.7	77.9	21.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	33	14			0.014	0.007	0.0015			

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean Clay, Trace Sand	CL	A-6

Project No.: 98024.00
Project: Stoughton Landfill, Stoughton Wisconsin
● Location: Bag: CBL-6 Lift # 2, 380+00N/125+50E

Date: September 17, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

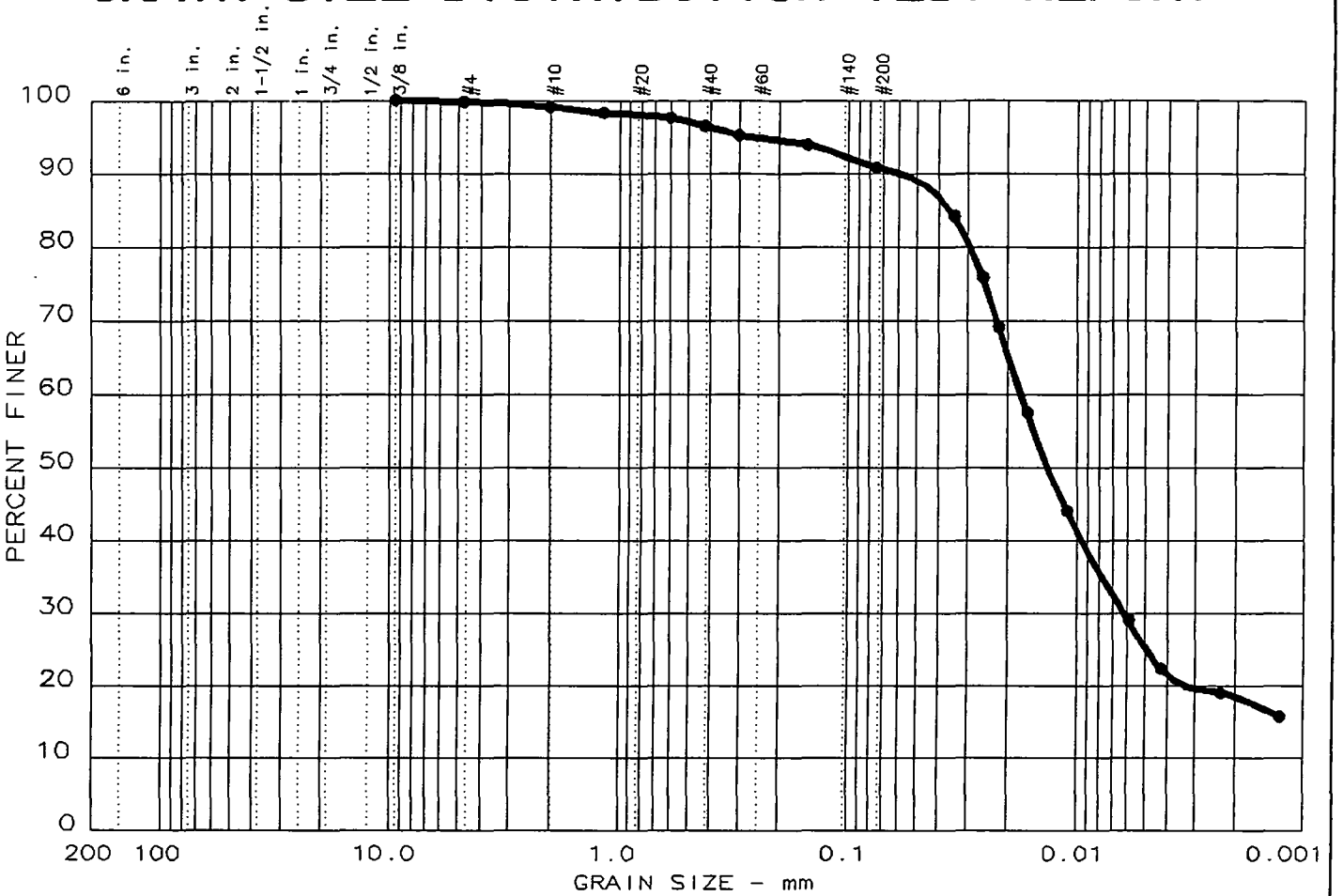
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	6	0.0	0.2	9.0	65.4	25.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	35	16			0.013	0.006				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean Clay, Little Sand	CL	A-6

Project No.: 98024.00
Project: Stoughton Landfill, Stoughton Wisconsin
● Location: Bag: CBL-7 Lift # 2, 379+00N/128+00E

Date: September 17, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

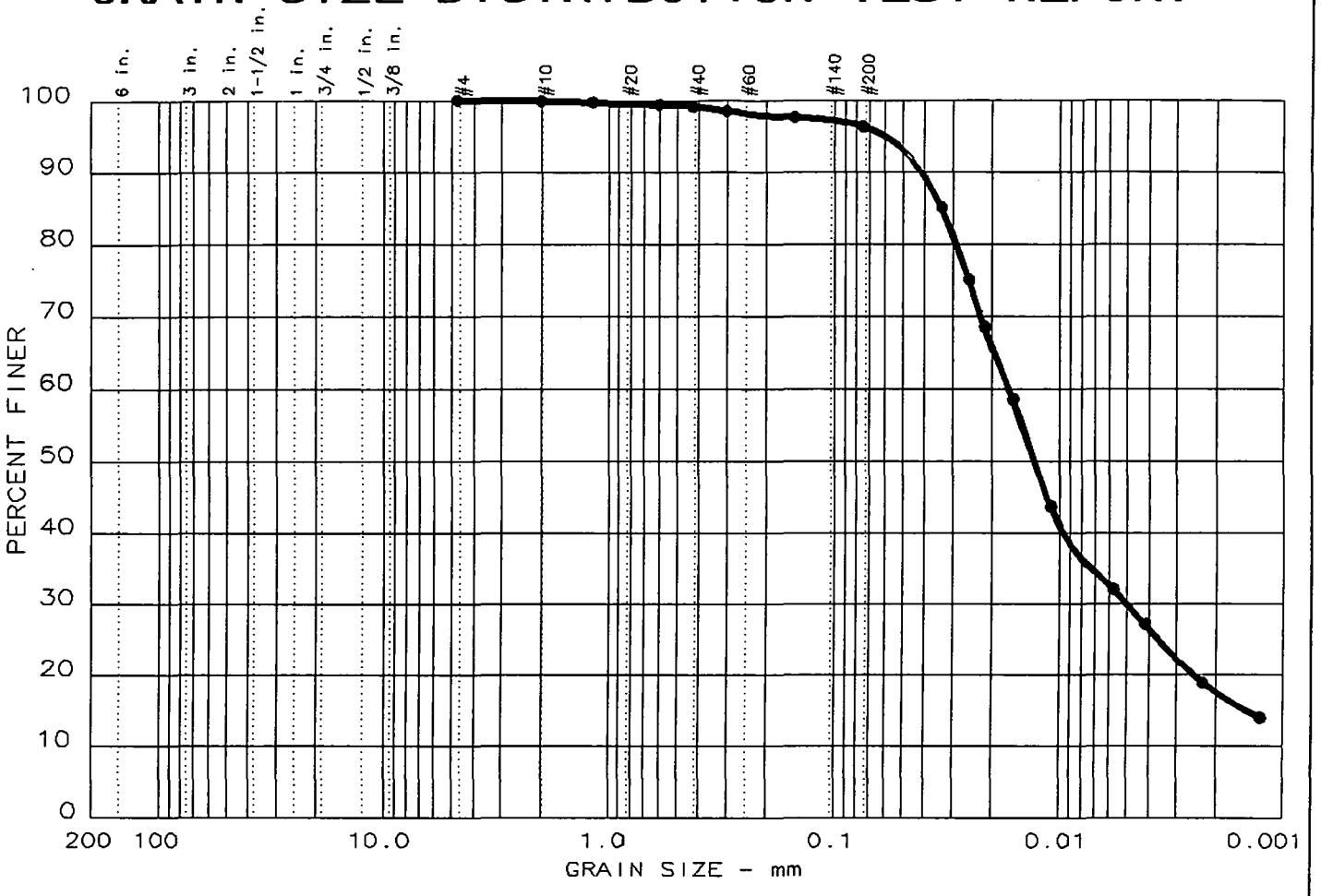
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	13	0.0	0.0	3.7	66.2	30.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	40	21			0.013	0.005	0.0014			

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Sand	CL	A-6

Project No.: 98024.00
Project: Stoughton Landfill, Stoughton Wisconsin
● Location: Bag:CBL-8 Lift # 1, 375+00N/124+00E

Date: September 25, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

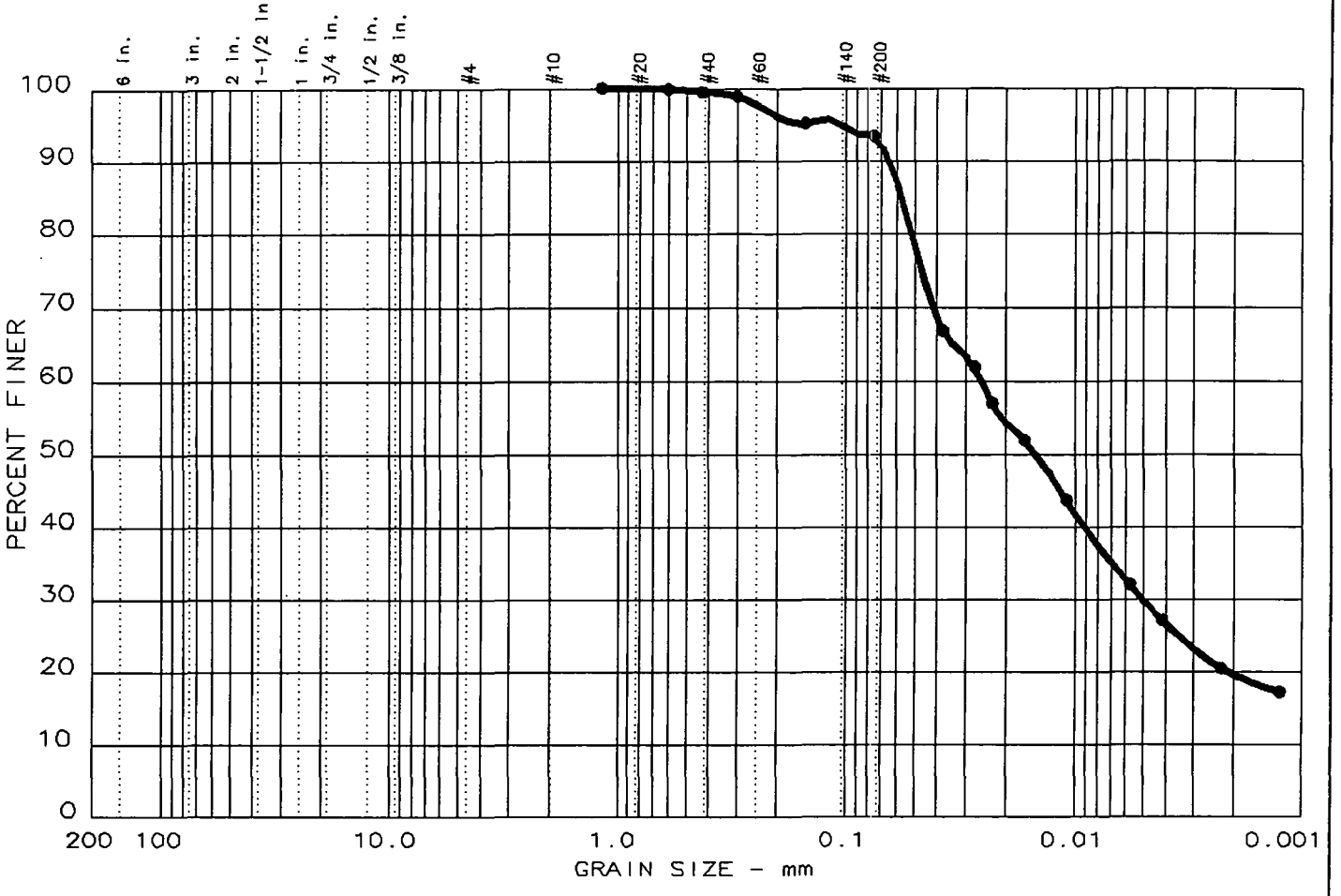
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	14	0.0	0.0	6.6	63.4	30.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	35	16			0.015	0.005				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Sand	CL	A-6

Project No.: 98024.00
Project: Stoughton Landfill, Stoughton Wisconsin
● Location: Bag:CBL-9 Lift # 3, 376+50N/125+50E

Date: September 28, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

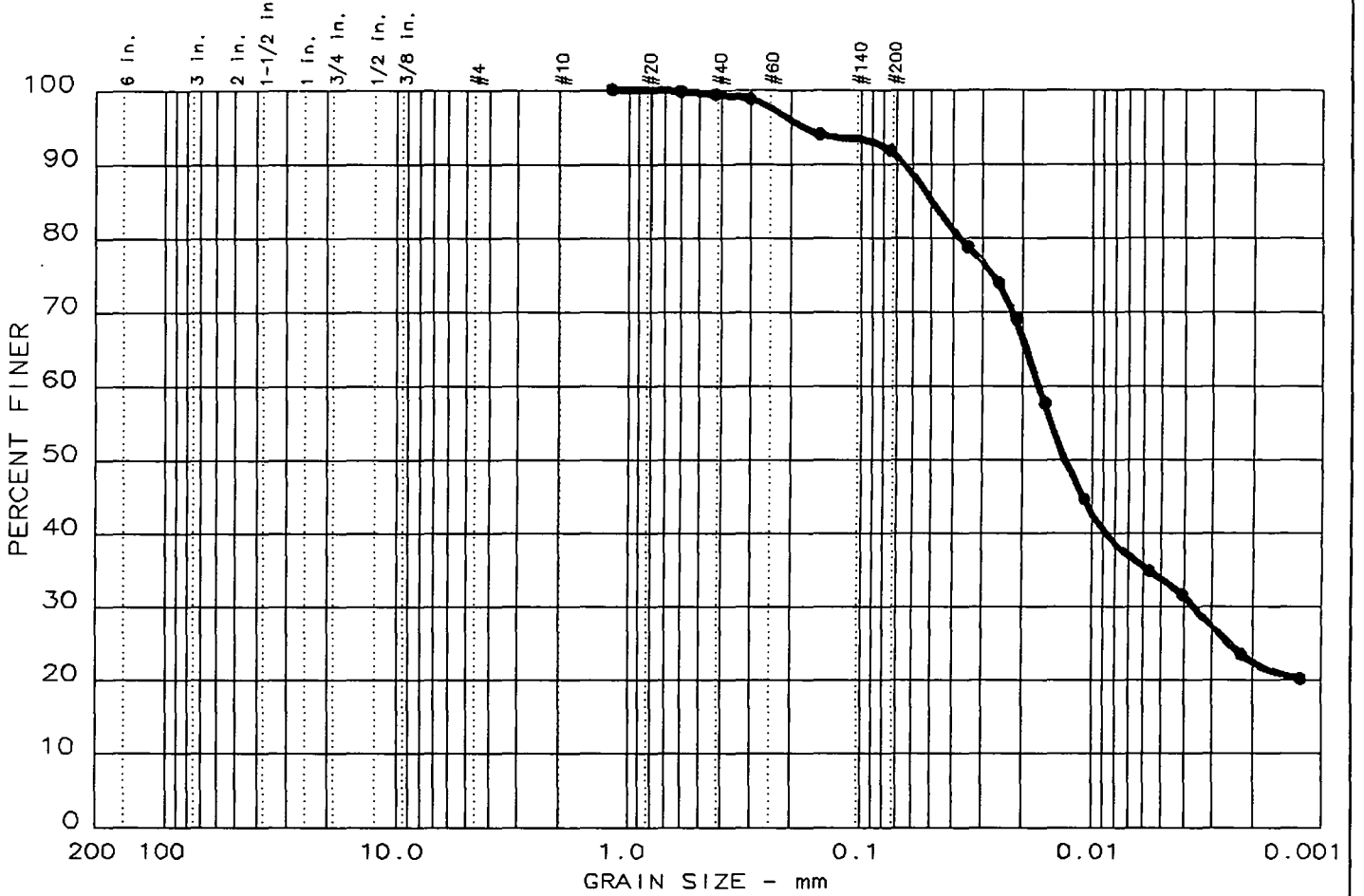
Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	15	0.0	0.0	8.2	58.1	33.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	36	17			0.013	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Little Sand	CL	A-6

Project No.: 98024.00
Project: Stoughton Landfill, Stoughton Wisconsin
● Location: Bag:CBL-10 Lift # 3, 376+00N/128+00E

Date: September 28, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

TAB 3 - CLAY BARRIER LAYER (continued)

- Field Density Test Report

Job No.	C98024
Tested By:	BM/JSG

CGC, Inc.

FIELD DENSITY TEST REPORT - NO. 1 - CLAY LAYER

CGC, Inc., 3011 Perry Street, Madison, WI 53713, 608/288-4100, FAX: 608/288-7887

PROJECT: Stoughton Landfill
Stoughton, Wisconsin

TO: Ryan Inc. Central
P.O. Box 206
Janesville, Wisconsin 53547

COPIES:

ATTN: Mr. Dick Vorpahl

TEST METHODS: Moisture-density relationship of soils based on STANDARD proctor (ASTM D698).
"METHOD" indicates: (N) Nuclear (ASTM D2922) or (S) Sand Cone (ASTM D1556)

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
8-19-98										
Clay Barrier Layer - 1st, 8" Lift, NW Corner of Landfill										
CL-1	N	25'W of 1228	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	19.0	105.4	109	97%	95%
CL-2	N	25'W of 1226	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	18.6	109.8	109	101%	95%
CL-3	N	25'W of 1224	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	18.8	107.6	109	99%	95%
CL-4	N	25'W of 1222	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	18.6	110.7	109	102%	95%
CL-5	N	25'W of 1220	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	20.9	103.8	109	95%	95%
CL-6	N	25'W of 1275	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.9	104.3	109	96%	95%
CL-7	N	25'W of 2027	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	18.7	108.1	109	99%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
1st - 8 in. Lift Clay Barrier Layer, North Half of Landfill										
CL-8	N	25'W of 1277	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.1	104.5	109	96%	95%
CL-9	N	25'W of 1273	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	18. 1	105.3	109	97%	95%
CL-5R	N	Retest of CL-5	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.3	109.1	109	100%	95%
CL-10	N	Retest of CL-5	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.1	106.2	109	97%	95%
CL-11	N	25'Wof 1271	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.7	108.9	109	100%	95%
CL-12	N	25'W of 1319	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.2	104.6	109	96%	95%
CL-13	N	25'Wof 1317	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.7	110.5	109	101%	95%
CL-14	N	25'W of 1321	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.8	104.9	109	96%	95%
CL-15	N	25'W of 1323	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.8	108.1	109	99%	95%
CL-16	N	25'W of 1325	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.7	111.5	109	102%	95%
CL-17	N	25'W, 15'N of 2061	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.8	108	109	99%	95%
CL-18	N	1730	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.8	104.1	109	96%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-19	N	1726	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.7	104.7	109	96%	95%
CL-20	N	1722	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.9	108.0	109	99%	95%
CL-21	N	15'E of 2215	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.8	107.8	109	99%	95%
CL-22	N	15'E of 2209	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.5	104.3	109	96%	95%
8-21-98										
1st - 8 in. Lift Clay Barrier Layer, North-Half of Landfill										
CL-23	N	25'W of, 15'N of 2073	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.1	105.9	109	97%	95%
CL-24	N	1606	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.0	105.4	109	97%	95%
CL-25	N	1604	:Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	18.5	106.8	109	98%	95%
CL-26	N	25'W of 1368	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	20.2	104.9	109	96%	95%
CL-27	N	25'W, 10'S of 2190	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	18.8	107.2	109	98%	95%
CL-28	N	20'W of 1388	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	18.5	105.1	109	96%	95%
8-31-98										
2nd - 8 in. Lift Clay Barrier Layer										
CL-29	N	25'E of 1226	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	16.9	105.2	109	97%	95%
CL-30	N	25'E of 1224	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	18.7	104.3	109	96%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-31	N	25'E of 1228	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	17.0	107.1	109	98%	95%
CL-32	N	25'E of 1222	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	17.2	106.7	109	98%	95%
CL-33	N	25'E of 1220	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	18.6	104.2	109	96%	95%
CL-34	N	25'E of 1271	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	17.8	105.6	109	97%	95%
CL-35	N	25'E of 1273	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	17.6	107.9	109	99%	95%
CL-36	N	25'E of 1275	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	17.1	106	109	97%	95%
CL-37	N	25'E of 1277	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	16.6	103.9	109	95%	95%
CL-38	N	25'E of 2047	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	18.4	104.9	109	96%	95%
CL-39	N	25'E of 2061	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	18.2	107.5	109	99%	95%
CL-40	N	25'E of 1325	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	17.6	105.2	109	97%	95%
CL-41	N	25'E of 1323	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	18.9	103.4	109	95%	95%
CL-42	N	25'E of 1321	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	18.7	106.3	109	98%	95%
8-31-98										
1st - 8 in. Lift Clay Barrier Layer										
CL-43	N	25'E of 2076	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17	105.2	109	97%	95%
CL-44	N	25'E of 1395	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.6	105	109	96%	95%
Cl-45	N	25'E of 1393	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.6	109.4	109	100%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-46	N	1391	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.2	104.9	109	96%	95%
9-1-98										
2nd - 8 in. Lift Clay Barrier Layer										
CL-47	N	1764	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	17.8	106.4	109	98%	95%
CL-48	N	1812	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	19	105.2	109	97%	95%
CL-49	N	15'N of 1759	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	17.1	109.6	109	101%	95%
CL-50	N	1760	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	16.3	104.8	109	96%	95%
CL-51	N	10'E of 2210	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	18.4	104.3	109	96%	95%
CL-52	N	1720	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	17.9	109.5	109	100%	95%
CL-53	N	1750	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	17.0	109	109	100%	95%
CL-54	N	25'E of 1174	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	18.2	104.3	109	96%	95%
CL-55	N	5'W of 1196	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	17.9	104.7	109	96%	95%
CL-56	N	25'E of 1269	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	17.3	105.1	109	96%	95%
CL-57	N	25'E, 15'S of 1317	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	17.1	104.8	109	96%	95%
CL-58	N	25'E of 1319	Lift 2	0	Brown Lean Clay, Some Sand, Tr Gr	17.1	104.1	109	96%	95%
1st - 8 in. Lift Clay Barrier Layer										
CL-59	N	25'E of 1343	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.5	104	109	95%	95%
CL-26R	N	25'E of 1345	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.2	105.2	109	97%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-60	N	10'E of 1559	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.3	106.3	109	98%	95%
9-1-98										
1st - 8 in. Lift Clay Barrier Layer										
CL-61	N	25'E of 1782	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.6	104.6	109	96%	95%
CL-62	N	25'E of 2018	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.5	103.4	109	95%	95%
CL-63	N	25'E of 2020	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.9	105.1	109	96%	95%
CL-64	N	25'E of 1859	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.6	103.5	109	95%	95%
CL-65	N	25'E of 2037	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.6	103.8	109	95%	95%
CL-66	N	25'E of 2035	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	18.7	105.8	109	97%	95%
CL-67	N	25'E of 2030	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.6	104.3	109	96%	95%
9-2-98										
1st - 8 in. Lift Clay Barrier Layer										
CL-68	N	25'E of 2065	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.0	110.5	109	101%	95%
CL-69	N	25'E of 2067	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.6	104.7	109	96%	95%
CL-70	N	25'E of 2069	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.0	105.4	109	97%	95%
CL-71	N	25'E of 1359	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	18.5	105.1	109	96%	95%
CL-72	N	25'E of 1361	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.4	104	109	95%	95%
CL-73	N	25'W of 1337	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.3	104.9	109	96%	95%
CL-74	N	25'E of 1857	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	18.4	105.4	109	97%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-75	N	25'E of 2054	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	18.2	103.4	109	95%	95%
CL-76	N	25'E of 2052	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.6	103.1	109	95%	95%
CL-77	N	25'E of 2050	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	17.4	107.9	109	99%	95%
CL-78	N	25'E, 15'S of 2027	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.2	105.3	109	97%	95%
CL-79	N	25'E of 1718	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.6	106.4	109	98%	95%
CL-80	N	20'E of 2205	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	18	104.4	109	96%	95%
CL-81	N	25'E of 2013	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.4	110.7	109	102%	95%
CL-82	N	25'E of 2011	Lift 1	0	Brown Lean Clay, Some Sand, Tr Gr	16.4	107	109	98%	95%
9-4-98										
1st - 8 in. Lift Clay Barrier Layer										
CL-83	N	25'E of 1370	Lift 2	0	Brown Lean Clay, Little Sand	19.4	107.2	106	101%	95%
CL-84	N	25'E of 1368	Lift 2	0	Brown Lean Clay, Little Sand	19.8	104.4	106	98%	95%
CL-85	N	25'E of 1366	Lift 2	0	Brown Lean Clay, Little Sand	16.8	106.2	106	100%	95%
CL-86	N	25'E of 1365	Lift 2	0	Brown Lean Clay, Little Sand	18.1	102.6	106	97%	95%
CL-87	N	25'N of 1342	Lift 2	0	Brown Lean Clay, Little Sand	18.9	104.5	106	99%	95%
CL-88	N	5'E of 1343	Lift 2	0	Brown Lean Clay, Little Sand	20.2	105	106	99%	95%
CL-89	N	5'E of 1345	Lift 2	0	Brown Lean Clay, Little Sand	18	106.3	106	100%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-90	N	5'E of 1344	Lift 2	0	Brown Lean Clay, Little Sand	18.7	110.2	106	104%	95%
CL-91	N	25'E of 1372	Lift 2	0	Brown Lean Clay, Little Sand	20.4	105.6	106	100%	95%
CL-92	N	25'E of 2073	Lift 2	0	Brown Lean Clay, Little Sand	18.5	107.6	106	102%	95%
CL-93	N	25'E of 1420	Lift 2	0	Brown Lean Clay, Little Sand	17.6	103.5	106	98%	95%
CL-94	N	25'E of 1418	Lift 2	0	Brown Lean Clay, Little Sand	19.3	105.6	106	100%	95%
CL-95	N	1693	Lift 2	0	Brown Lean Clay, Little Sand	18.4	103.9	106	98%	95%
CL-96	N	10'E of 1416	Lift 2	0	Brown Lean Clay, Little Sand	18.5	103.4	106	98%	95%
CL-97	N	25'E of 1776	Lift 2	0	Brown Lean Clay, Little Sand	19.6	101.9	106	96%	95%
9-8-98										
3rd 8 in. Lift Clay Barrier Layer										
CL-98	N	25'E of 1772	Lift 3	0	Brown Lean Clay, Some Sand	16.7	107.5	109	99%	95%
CL-99	N	25'E of 1768	Lift 3	0	Brown Lean Clay, Some Sand	16.7	110	109	101%	95%
CL-100	N	25'E of 1197	Lift 3	0	Brown Lean Clay, Some Sand	18.5	105.5	109	97%	95%
CL-101	N	25'E of 1253	Lift 3	0	Brown Lean Clay, Some Sand	18.7	105.6	109	97%	95%
CL-102	N	25'E of 1251	Lift 3	0	Brown Lean Clay, Some Sand	19.4	102.7	109	94%*	95%
CL-103	N	25'E of 1249	Lift 3	0	Brown Lean Clay, Little Sand	21.9	100.2	106	95%	95%
3rd - 8 in. Lift Clay Barrier Layer										
CL-103R	N	25'E of 1249	Lift 3	0	Brown Lean Clay, Little Sand	18.1	102	106	96%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-104	N	25'E of 1247	Lift 3	0	Brown Lean Clay, Trace Fine Sand	16.2	104.7	106	99%	95%
CL-105	N	25'E of 1245	Lift 3	0	Brown Lean Clay, Trace Fine Sand	17.1	106.6	106	101%	95%
9-9-98										
3rd - 8 in. Lift Clay Barrier Layer										
CL-106	N	25'E of 2062	Lift 3	0	Brown Lean Clay, Some Sand	17.8	107	109	98%	95%
CL-107	N	25'E of 1348	Lift 3	0	Brown Lean Clay, Some Sand	16.5	106.3	109	98%	95%
CL-108	N	25'E of 1302	Lift 3	0	Brown Lean Clay, Some Sand	16.3	106.2	109	97%	95%
CL-109	N	25'E of 1300	Lift 3	0	Brown Lean Clay, Some Sand	21	102.9	109	94% *	95%
CL-110	N	25'E of 1318	Lift 3	0	Brown Lean Clay, Some Sand	17	107.7	109	99%	95%
CL-111	N	25'W of 1365	Lift 3	0	Brown Lean Clay, Some Sand	18.1	106.1	109	97%	95%
CL-109R	N	Retest of CL-109	Lift 3	0	Brown Lean Clay, Some Sand	18.9	103.1	109	95%	95%
CL-112	N	25'W of 1322	Lift 3	0	Brown Lean Clay, Some Sand	17.2	109.6	109	101%	95%
CL-113	N	25'E of 1296	Lift 3	0	Brown Lean Clay, Some Sand	16.8	106.8	109	98%	95%
CL-114	N	25'E of 1344	Lift 3	0	Brown Lean Clay, Some Sand	17.1	107.4	109	99%	95%
CL-115	N	25'E of 1346	Lift 3	0	Brown Lean Clay, Trace	19.8	106.2	107	99%	95%
CL-116	N	10'W of 1390	Lift 3	0	Brown Lean Clay, Some Sand	16.2	105.8	109	97%	95%
CL-117	N	25'E of 1365	Lift 3	0	Brown Lean Clay, Some Sand	17.4	105.9	109	97%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
9-10-98										
1st - 8 in. Lift Clay Barrier Layer										
CL-118	N	25'E of 1403	Lift 1	0	Brown Lean Clay, Trace Sand	17.4	107.4	107	100%	95%
CL-119	N	25'E of 1401	Lift 1	0	Brown Lean Clay, Trace Sand	17.7	101.9	107	95%	95%
CL-120	N	25'E of 1399	Lift 1	0	Brown Lean Clay, Trace Sand	20.5	103.8	107	97%	95%
CL-121	N	10'W of 2192	Lift 1	0	Brown Lean Clay, Trace Sand	19.7	103.6	107	97%	95%
CL-122	N	10'W of 12188	Lift 1	0	Brown Lean Clay, Trace Sand	17.7	107.7	107	101%	95%
CL-123	N	10'W of 2184	Lift 1	0	Brown Lean Clay, Trace Sand	19	107.7	107	101%	95%
Cl-124	N	10'W of 2180	Lift 1	0	Brown Lean Clay, Trace Sand	19.2	104.2	107	97%	95%
CL-125	N	10'W of 2076	Lift 1	0	Brown Lean Clay, Trace Sand	18.7	102	107	95%	95%
CL-126	N	25'E of 1407	Lift 1	0	Brown Lean Clay, Trace Sand	19.2	102.1	107	95%	95%
CL-127	N	25'E of 1405	Lift 1	0	Brown Lean Clay, Trace Sand	17.8	104.8	107	98%	95%
9-12-98										
2nd - 8 in. Lift Clay Barrier Layer										
CL-128	N	10'E of 2206	Lift 2	0	Brown Lean Clay, Trace Sand	19	105.9	107	99%	95%
CL-129	N	10'E of 2204	Lift 2	0	Brown Lean Clay, Trace Sand	19.5	101.6	107	95%	95%
CL-130	N	25'E of 1750	Lift 2	0	Brown Lean Clay, Trace Sand	17.7	103.7	107	97%	95%
CL-131	N	25'E of 2016	Lift 2	0	Brown Lean Clay, Trace Sand	18.5	103	107	96%	95%
CL-132	N	25'E of 2014	Lift 2	0	Brown Lean Clay, Trace Sand	19.5	102.3	107	96%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-133	N	5'E of 2075	Lift 2	0	Brown Lean Clay, Trace Sand	17.2	103.5	107	97%	95%
3rd - 8 in. Lift Clay Barrier Layer										
CL-134	N	5'E of 1394	Lift 3	0	Brown Lean Clay, Some Sand	16.2	107	109	98%	95%
CL-135	N	5'E of 1392	Lift 3	0	Brown Lean Clay, Some Sand	16.2	104.9	109	96%	95%
CL-136	N	10'W of 2235	Lift 3	0	Brown Lean Clay, Some Sand	16	105.4	109	97%	95%
CL-137	N	1440	Lift 3	0	Brown Lean Clay, Some Sand	16.3	105.7	109	97%	95%
2nd - 8 in. Lift Clay Barrier Layer										
CL-138	N	25'E of 1236	Lift 2	0	Brown Lean Clay, Trace Sand	17.7	103	107	96%	95%
CL-139	N	25'E of 2021	Lift 2	0	Brown Lean Clay, Trace Sand	18.1	102.6	107	96%	95%
2nd - 8 in. Lift Clay Barrier Layer										
CL-140	N	25'E of 2025	Lift 2	0	Brown Lean Clay, Trace Sand	19.5	103.9	107	97%	95%
CL-141	N	25'E of 2023	Lift 2	0	Brown Lean Clay, Trace Sand	19.1	104.1	107	97%	95%
9-21-98										
1st - 8 in. Lift Clay Barrier Layer										
CL-142	N	1168	Lift 1	0	Brown Lean Clay, Some Sand	16.1	104.9	109	96%	95%
CL-143	N	25'E of 1190	Lift 1	0	Brown Lean Clay, Some Sand	17.2	105.4	109	97%	95%
9-22-98										
2nd - 8 in. Lift Clay Barrier Layer										
CL-144	N	25'E of 2043	Lift 2	0	Brown Lean Clay, Some Sand	18.1	107.7	109	99%	95%
CL-145	N	25'E of 2041	Lift 2	0	Brown Lean Clay, Some Sand	18.1	106.8	109	98%	95%
CL-146	N	25'E of 2038	Lift 2	0	Brown Lean Clay, Some Sand	18.5	109.8	109	101%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-147	N	25'E of 1858	Lift 2	0	Brown Lean Clay, Little Sand	19.8	104.1	108	96%	95%
CL-148	N	25'E of 1337	Lift 2	0	Brown Lean Clay, Some Sand	16.7	104.3	109	96%	95%
CL-149	N	25'E of 1856	Lift 2	0	Brown Lean Clay, Some Sand	17.4	107.4	109	99%	95%
CL-150	N	25'E of 2055	Lift 2	0	Brown Lean Clay, Little Sand	19.8	102.5	108	95%	95%
CL-151	N	25'E of 2057	Lift 2	0	Brown Lean Clay, Little Sand	19.2	104.2	108	96%	95%
CL-152	N	25'E of 2059	Lift 2	0	Brown Lean Clay, Some Sand	17.4	108.3	109	99%	95%
CL-153	N	25'E of 2071	Lift 2	0	Brown Lean Clay, Some Sand	17.7	107.3	109	98%	95%
CL-154	N	25'E of 1379	Lift 2	0	Brown Lean Clay, Some Sand	16.3	105.1	109	96%	95%
CL-155	N	25'E of 2070	Lift 2	0	Brown Lean Clay, Some Sand	16.2	107	109	98%	95%
CL-156	N	25'E of 2072	Lift 2	0	Brown Lean Clay, Some Sand	18.4	106	109	97%	95%
CL-157	N	25'E of 1421	Lift 2	0	Brown Lean Clay, Some Sand	17.6	105.4	109	97%	95%
CL-158	N	25'E of 1423	Lift 2	0	Brown Lean Clay, Some Sand	18.9	103.4	109	95%	95%
CL-159	N	25'E of 1425	Lift 2	0	Brown Lean Clay, Some Sand	16.3	106	109	97%	95%
CL-160	N	25'E of 1427	Lift 2	0	Brown Lean Clay, Some Sand	16.4	106.4	109	98%	95%
CL-161	N	25'E of 1429	Lift 2	0	Brown Lean Clay, Some Sand	17.2	103.6	109	95%	95%
CL-162	N	25'e OF 1431	Lift 2	0	Brown Lean Clay, Some Sand	16.7	106.3	109	98%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-163	N	25'E of 1409	Lift 1	0	Brown Lean Clay, Some Sand	16.3	105.1	109	96%	95%
CL-164	N	25'E of 1385	Lift 2	0	Brown Lean Clay, Some Sand	18.1	105.8	109	97%	95%
CL-165	N	25'E of 1383	Lift 2	0	Brown Lean Clay, Some Sand	16.8	107.3	109	98%	95%
CL-166	N	25'E of 1381	Lift 2	0	Brown Lean Clay, Some Sand	17.9	106.1	109	97%	95%
9-23-98										
1st - 8 in. Lift Clay Barrier Layer										
CL-167	N	25'W of 1188	Lift 1	0	Brown Lean Clay, Some Sand	17.2	104.2	109	96%	95%
CL-168	N	25'W of 1236	Lift 1	0	Brown Lean Clay, Some Sand	16.6	104.6	109	96%	95%
2nd - 8 in. Lift Clay Barrier Layer										
CL-169	N	25'W of 1212	Lift 2	0	Brown Lean Clay, Some Sand	17.8	103.7	109	95%	95%
1st - 8 in. Lift Clay Barrier Layer										
CL-170	N	25'W of 1190	Lift 1	0	Brown Lean Clay, Little Sand	19.7	104.3	108	97%	95%
9-28-98										
1st - 8 in. Lift Clay Barrier Layer										
CL-171	N	25'E of 1362	Lift 1	0	Brown Lean Clay, Some Sand	17.9	109.6	109	101%	95%
CL-172	N	25'E of 1364	Lift 1	0	Brown Lean Clay, Some Sand	16.9	110	109	101%	95%
CL-173	N	25'E of 1316	Lift 1	0	Brown Lean Clay, Some Sand	17.6	108	109	99%	95%
CL-174	N	25'E of 1314	Lift 1	0	Brown Lean Clay, Some Sand	18.6	106.5	109	98%	95%
CL-175	N	25'E of 1264	Lift 1	0	Brown Lean Clay, Some Sand	18.9	104.8	109	96%	95%
CL-176	N	25'E, 25'S of 1265	Lift 1	0	Brown Lean Clay, Little Sand	19.6	103.5	108	96%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-177	N	25'E of 2091	Lift 1	0	Brown Lean Clay, Some Sand	19.0	107.8	109	99%	95%
CL-178	N	30'E of 1216	Lift 1	0	Brown Lean Clay, Some Sand	18.2	108.4	109	99%	95%
CL-179	N	25'E of 2247	Lift 1	0	Brown Lean Clay, Some Sand	18.8	105.3	109	97%	95%
CL-180	N	25'E of 1214	Lift 1	0	Brown Lean Clay, Some Sand	17.8	108.6	109	100%	95%
3rd - 8 in. Lift Clay Barrier Layer										
CL-181	N	25'E of 1780	Lift 3	0	Brown Lean Clay, Some Sand	17.3	103.9	109	95%	95%
CL-182	N	25'E of 2017	Lift 3	0	Brown Lean Clay, Some Sand	18.5	103.8	109	95%	95%
CL-183	N	25'E of 2019	Lift 3	0	Brown Lean Clay, Some Sand	18.3	105.2	109	97%	95%
CL-184	N	25'E of 1860	Lift 3	0	Brown Lean Clay, Some Sand	18.5	106.1	109	97%	95%
CL-185	N	25'E of 1213	Lift 3	0	Brown Lean Clay, Little Sand	19.7	105.5	108	98%	95%
CL-186	N	25'E of 1712	Lift 3	0	Brown Lean Clay, Some Sand	17.8	108.6	109	100%	95%
CL-187	N	25'W of 1714	Lift 3	0	Brown Lean Clay, Some Sand	17.1	107	109	98%	95%
CL-188	N	25'E of 1716	Lift 3	0	Brown Lean Clay, Some Sand	16.3	106.1	109	97%	95%
CL-189	N	15'W of 1718	Lift 3	0	Brown Lean Clay, Some Sand	18.9	106.9	109	98%	95%
CL-190	N	25'E of 1161	Lift 3	0	Brown Lean Clay, Some Sand	16.4	105.1	109	96%	95%
CL-191	N	25'E of 2012	Lift 3	0	Brown Lean Clay, Some Sand	16.6	108.1	109	99%	95%
CL-192	N	25'S, 15'W of 2012	Lift 3	0	Brown Lean Clay, Some Sand	16.2	103.1	109	95%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-193	N	25'E of 1165	Lift 3	0	Brown Lean Clay, Some Sand	18.1	105.7	109	97%	95%
CL-194	N	25'E of 1167	Lift 3	0	Brown Lean Clay, Some Sand	18.0	105.4	109	97%	95%
CL-195	N	25'E of 1263	Lift 3	0	Brown Lean Clay, Little Sand	19.4	103.8	108	96%	95%
CL-196	N	25'E of 1872	Lift 3	0	Brown Lean Clay, Little Sand	18.9	105.8	108	98%	95%
CL-197	N	25'E of 2036	Lift 3	0	Brown Lean Clay, Some Sand	17.7	106.7	109	98%	95%
CL-198	N	25'E of 2033	Lift 3	0	Brown Lean Clay, Some Sand	18.8	103.9	109	95%	95%
CL-199	N	25'E of 2029	Lift 3	0	Brown Lean Clay, Some Sand	18.4	106.8	109	98%	95%
CL-200	N	25'E of 2049	Lift 3	0	Brown Lean Clay, Some Sand	17.1	106.7	109	98%	95%
CL-201	N	25'E of 2051	Lift 3	0	Brown Lean Clay, Some Sand	17.0	103.2	109	95%	95%
CL-202	N	25'E of 2053	Lift 3	0	Brown Lean Clay, Some Sand	17.9	103.5	109	95%	95%
9-29-98										
2nd - 8 in. Lift Clay Barrier Layer										
CL-203	N	25'W of 1362	Lift 2	0	Brown Lean Clay, Little Sand	19.5	102.7	108	95%	95%
CL-204	N	25'W, 10'N of 1264	Lift 2	0	Brown Lean Clay, Some Sand	18.5	111.0	109	102%	95%
CL-205	N	25'W, 10'N of 1364	Lift 2	0	Brown Lean Clay, Some Sand	18.0	111.3	109	102%	95%
CL-206	N	25'W, 25'N of 1315	Lift 2	0	Brown Lean Clay, Some Sand	18.7	105.6	109	97%	95%
CL-207	N	25'W of 1313	Lift 2	0	Brown Lean Clay, Some Sand	18.6	103.2	109	95%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-208	N	25'W of 1264	Lift 2	0	Brown Lean Clay, Some Sand	18.1	104	109	95%	95%
CL-209	N	25'W of 1266	Lift 2	0	Brown Lean Clay, Some Sand	16.0	107.7	109	99%	95%
CL-210	N	25'W,10'N of 1216	Lift 2	0	Brown Lean Clay, Little Sand	19.6	103.8	108	96%	95%
CL-211	N	25'W of 1214	Lift 2	0	Brown Lean Clay, Some Sand	17.1	106.3	109	98%	95%
CL-212	N	25'E of 1169	Lift 2	0	Brown Lean Clay, Little Sand	19.9	104.3	108	97%	95%
3rd - 8-in. Lift Clay Barrier Layer										
CL-213	N	25'E of 1874	Lift 3	0	Brown Lean Clay, Some Sand	16.4	105.2	109	97%	95%
CL-214	N	25'E of 1312	Lift 3	0	Brown Lean Clay, Some Sand	16.7	104.8	109	96%	95%
CL-215	N	25'W of 1383	Lift 3	0	Brown Lean Clay, Some Sand	17.6	105.4	109	97%	95%
CL-216	N	25'W of 1381	Lift 3	0	Brown Lean Clay, Some Sand	16.8	106.7	109	98%	95%
CL-217	N	25'E of 2068	Lift 3	0	Brown Lean Clay, Some Sand	16.5	108.6	109	100%	95%
CL-218	N	25'E of 2066	Lift 3	0	Brown Lean Clay, Some Sand	16.6	109.1	109	100%	95%
CL-219	N	25'E of 2064	Lift 3	0	Brown Lean Clay, Some Sand	16.1	108.3	109	99%	95%
9-30-98										
3rd - 8 in. Lift Clay Barrier Layer										
CL-220	N	25'E of 1406	Lift 3	0	Brown Lean Clay, Some Sand	16.4	108.2	109	99%	95%
CL-221	N	25'E of 1404	Lift 3	0	Brown Lean Clay, Some Sand	16.8	105.6	109	97%	95%
CL-222	N	25'E of 1402	Lift 3	0	Brown Lean Clay, Some Sand	16.8	104.5	109	96%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface In.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-223	N	25'E of 1400	Lift 3	0	Brown Lean Clay, Some Sand	16.1	104.7	109	96%	95%
CL-224	N	25'E of 1398	Lift 3	0	Brown Lean Clay, Some Sand	16.1	109.9	109	101%	95%
CL-225	N	10'E, 25'S of 1442	Lift 3	0	Brown Lean Clay, Some Sand	16.4	108.3	109	99%	95%
CL-226	N	10'E, 25'S of 1445	Lift 3	0	Brown Lean Clay, Some Sand	16.6	104.1	109	96%	95%
CL-227	N	10'E, 25'S of 1448	Lift 3	0	Brown Lean Clay, Some Sand	18.3	105.2	109	97%	95%
CL-228	N	10'E, 25'S of 1451	Lift 3	0	Brown Lean Clay, Some Sand	17.1	103.9	109	95%	95%
CL-229	N	25'S, 25'E of 1409	Lift 3	0	Brown Lean Clay, Some Sand	16	107.9	109	99%	95%
CL-230	N	25'S, 25'E of 1407	Lift 3	0	Brown Lean Clay, Some Sand	16.6	105.7	109	97%	95%
10-2-98										
3rd - 8 in. Lift Clay Barrier Layer										
CL-231	N	25'W of 1191	Lift 3	0	Brown Lean Clay, Little Sand	19.2	105.7	108	98%	95%
CL-232	N	25'N, 25'E of 1215	Lift 3	0	Brown Lean Clay, Little Sand	19.1	105.8	108	98%	95%
CL-233	N	10'N, 25'E of 1216	Lift 3	0	Brown Lean Clay, Little Sand	19.4	104.7	108	97%	95%
CL-234	N	25'S, 25'W of 1291	Lift 3	0	Brown Lean Clay, Little Sand	19.8	105.5	108	98%	95%
CL-235	N	25'S, 25'W of 1289	Lift 3	0	Brown Lean Clay, Little Sand	18.8	109.5	108	101%	95%
CL-236	N	25'S, 25'W of 1337	Lift 3	0	Brown Lean Clay, Little Sand	17.1	107.6	108	100%	95%
CL-237	N	25'S, 25'W of 1339	Lift 3	0	Brown Lean Clay, Little Sand	19.5	103.8	108	96%	95%

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
CL-238	N	10'N, 25'E of 1364	Lift 3	0	Brown Lean Clay, Some Sand	16.6	109.2	109	100%	95%
CL-239	N	25'E of 1362	Lift 3	0	Brown Lean Clay, Some Sand	16.3	108.6	109	100%	95%

*Indicates measured compaction is below specification.

Signed _____ Dated 1/13/99

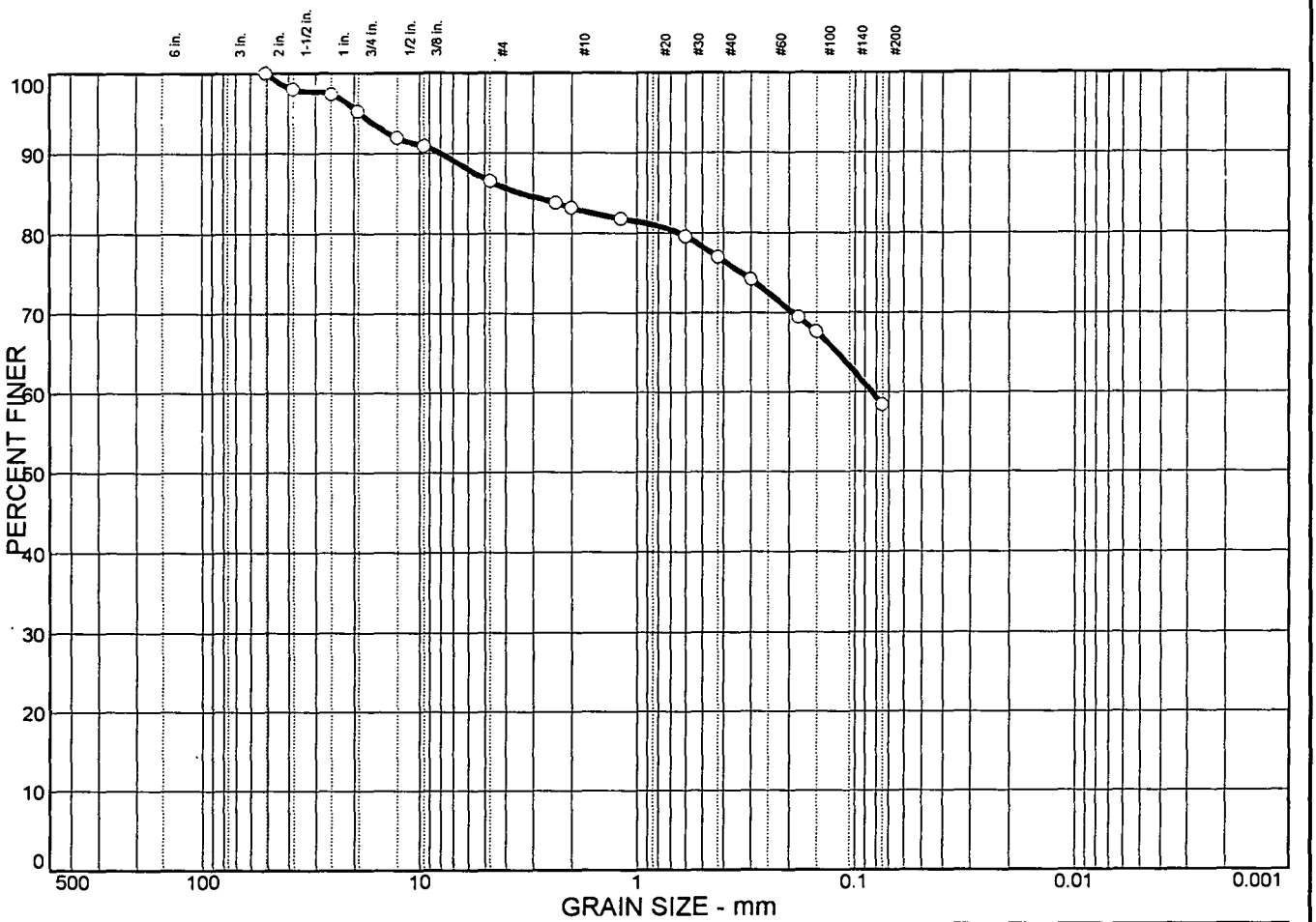
William W. Wuellner, P.E.

TAB 4: PROTECTIVE COVER LAYER

Table PCL-1
Summary of Laboratory Tests on
Protective Cover Layer
Stoughton City Landfill Cap

Sample No.	USCS	USDA
PCL-1	ML	Silt Loam
PCL-2	ML	Silty Clay Loam
PCL-3	CL-ML	Silty Clay Loam
PCL-4	ML	Clay Loam
PCL-5	CL-ML	Silty Clay Loam
PCL-6	ML	Clay Loam
PCL-7	ML	Silty Clay Loam
PCL-8	SM	Loam

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	13.5	28.1	58.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2 in.	100.0	100	
1-1/2 in.	98.0		
1 in.	97.4		
3/4 in.	95.2		
1/2 in.	91.9		
3/8 in.	90.9		
#4	86.5		
#8	83.8		
#10	83.2		
#16	81.8		
#30	79.6		
#40	77.0		
#50	74.2		
#80	69.4		
#100	67.6		
#200	58.4		

* (no specification provided)

Soil Description

Light Brown to Brown Clayey Silt, Some Sand and Gravel (Silt Loam)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 3.39 D_{60}= 0.0837 D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Tests by: KJL
Approved by:

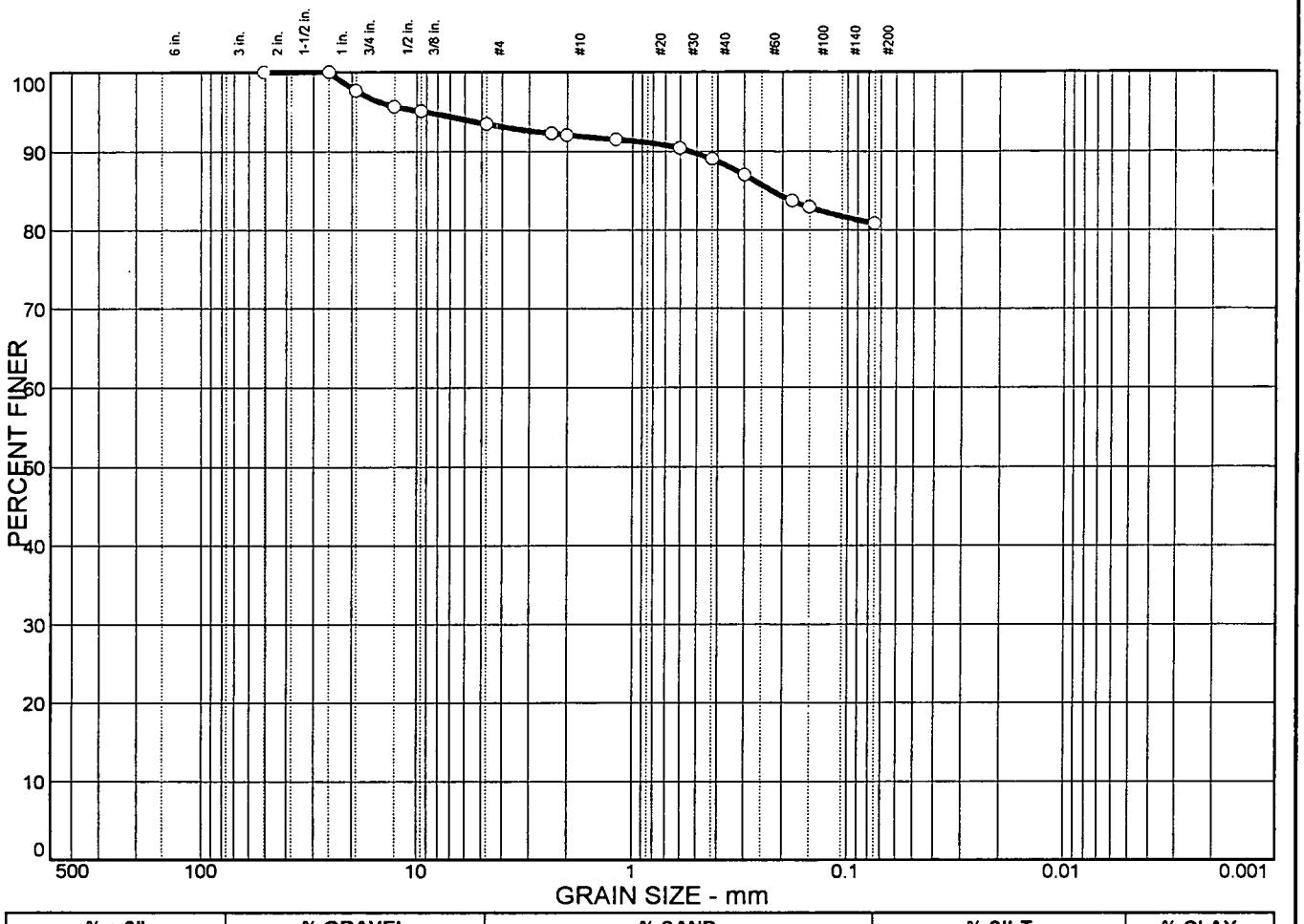
Sample No.: PCL-1 **Source of Sample:** Rosenbaum Quarry **Date:** 9/30/98
Location: 383+00N/123+50E **Elev./Depth:**

CGC,Inc.

Client: Ryan Inc.
Project: Stoughton Landfill

Project No: C98024

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	6.5	12.7	80.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2 in.	100.0		
1 in.	100.0		
3/4 in.	97.7		
1/2 in.	95.7		
3/8 in.	95.1		
#4	93.5		
#8	92.3		
#10	92.1		
#16	91.5		
#30	90.4		
#40	89.0		
#50	87.0		
#80	83.7		
#100	82.9		
#200	80.8		

* (no specification provided)

Soil Description

Brown Clayey Silt, Some Sand, Little Gravel (Silty Clay Loam)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.224 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Tests by: KJL
Approved by:

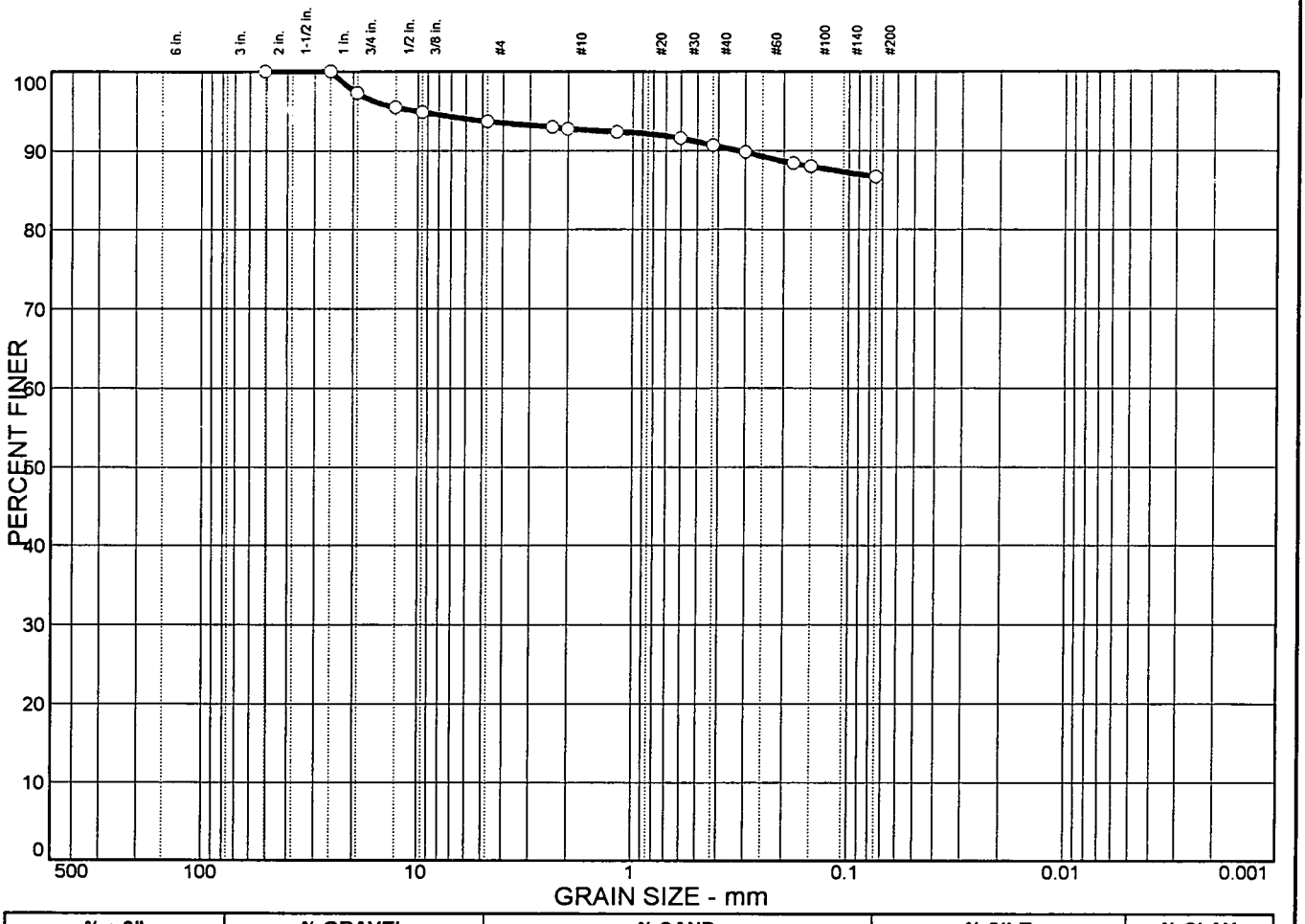
Sample No.: PCL-2 **Source of Sample:** Rosenbaum Quarry **Date:** 9/30/98
Location: 384+50N/127+00E **Elev./Depth:**

CGC,Inc.

Client: Ryan Inc.
Project: Stoughton Landfill

Project No: C98024

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	6.3	7.0	86.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2 in.	100.0		
1 in.	100.0		
3/4 in.	97.3		
1/2 in.	95.5		
3/8 in.	94.9		
#4	93.7		
#8	93.0		
#10	92.8		
#16	92.4		
#30	91.6		
#40	90.7		
#50	89.8		
#80	88.4		
#100	88.0		
#200	86.7		

* (no specification provided)

Soil Description

Black Silty Clay, Little Sand and Gravel (Silty Clay Loam)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL-ML AASHTO= A-4(0)

Remarks

Tests by: KJL
Approved by:

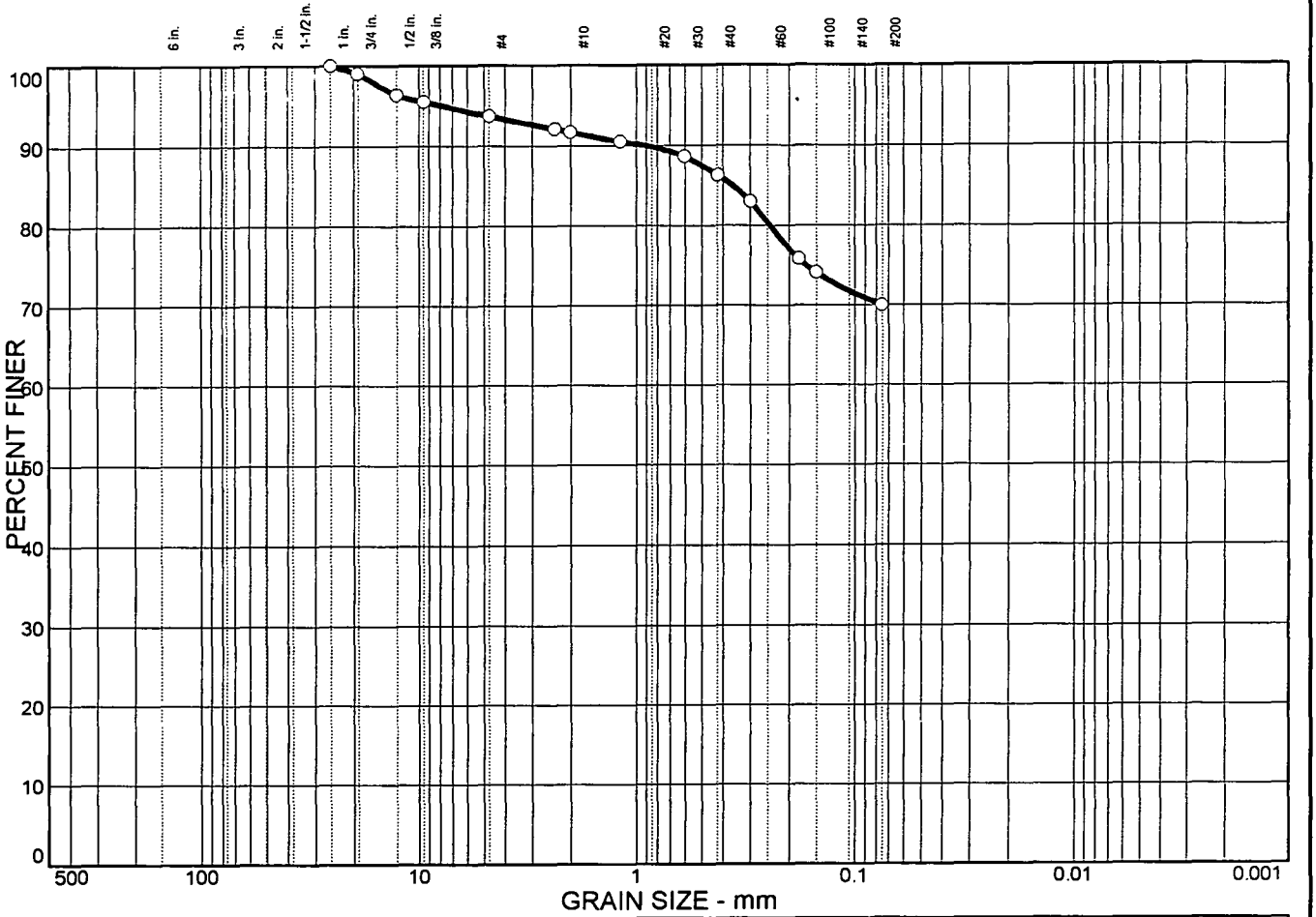
Sample No.: PCL-3 **Source of Sample:** Rosenbaum Quarry **Date:** 10/2/98
Location: 380+00N/126+00E **Elev./Depth:**

CGC, Inc.

Client: Ryan Inc.
Project: Stoughton Landfill

Project No: C98024

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	6.3	23.7	70.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
3/4 in.	99.0		
1/2 in.	96.4		
3/8 in.	95.5		
#4	93.7		
#8	92.1		
#10	91.7		
#16	90.5		
#30	88.6		
#40	86.3		
#50	83.0		
#80	75.8		
#100	74.1		
#200	70.0		

* (no specification provided)

Soil Description

Brown Clayey Silt,Some Sand,Little Gravel (Clay Loam)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.363 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

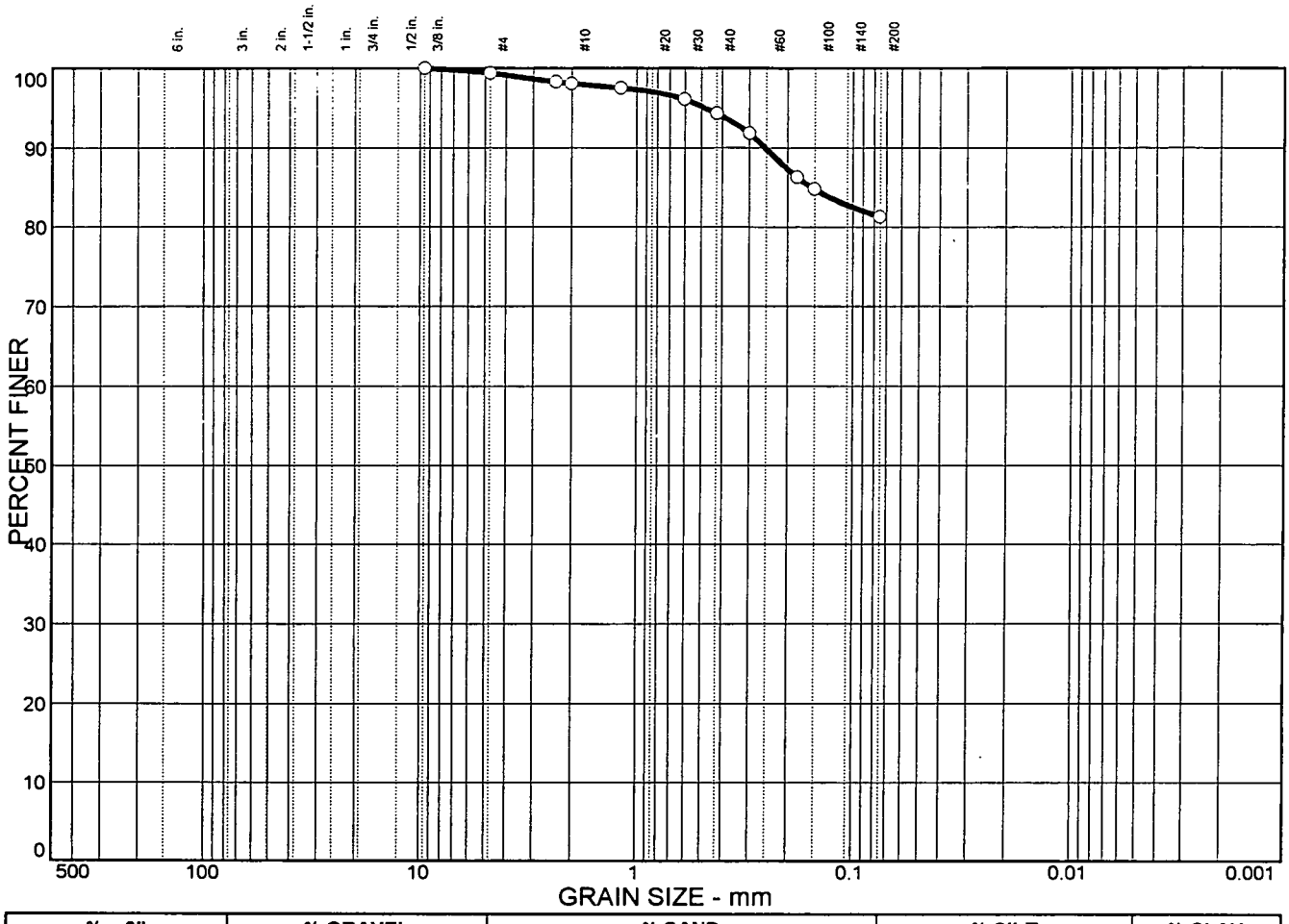
Tests by:KJL
Approved by: WWW

Sample No.: PCL-4 **Source of Sample:** Cover Layer **Date:** 10-14-98
Location: 38150N/125500E **Elev./Depth:**

CGC,Inc.

Client: Ryan Inc.
Project: Stoughton Landfill
Project No: C98024

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.6	18.1	81.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8 in.	100.0		
#4	99.4		
#8	98.3		
#10	98.1		
#16	97.5		
#30	96.1		
#40	94.3		
#50	91.8		
#80	86.3		
#100	84.8		
#200	81.3		

* (no specification provided)

Soil Description

Brown Clayey Silt, Some Sand,Trace Gravel (Silty Clay Loam)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.154 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL-ML AASHTO= A-4(0)

Remarks

Tests by:KJL
Approved by: WWW

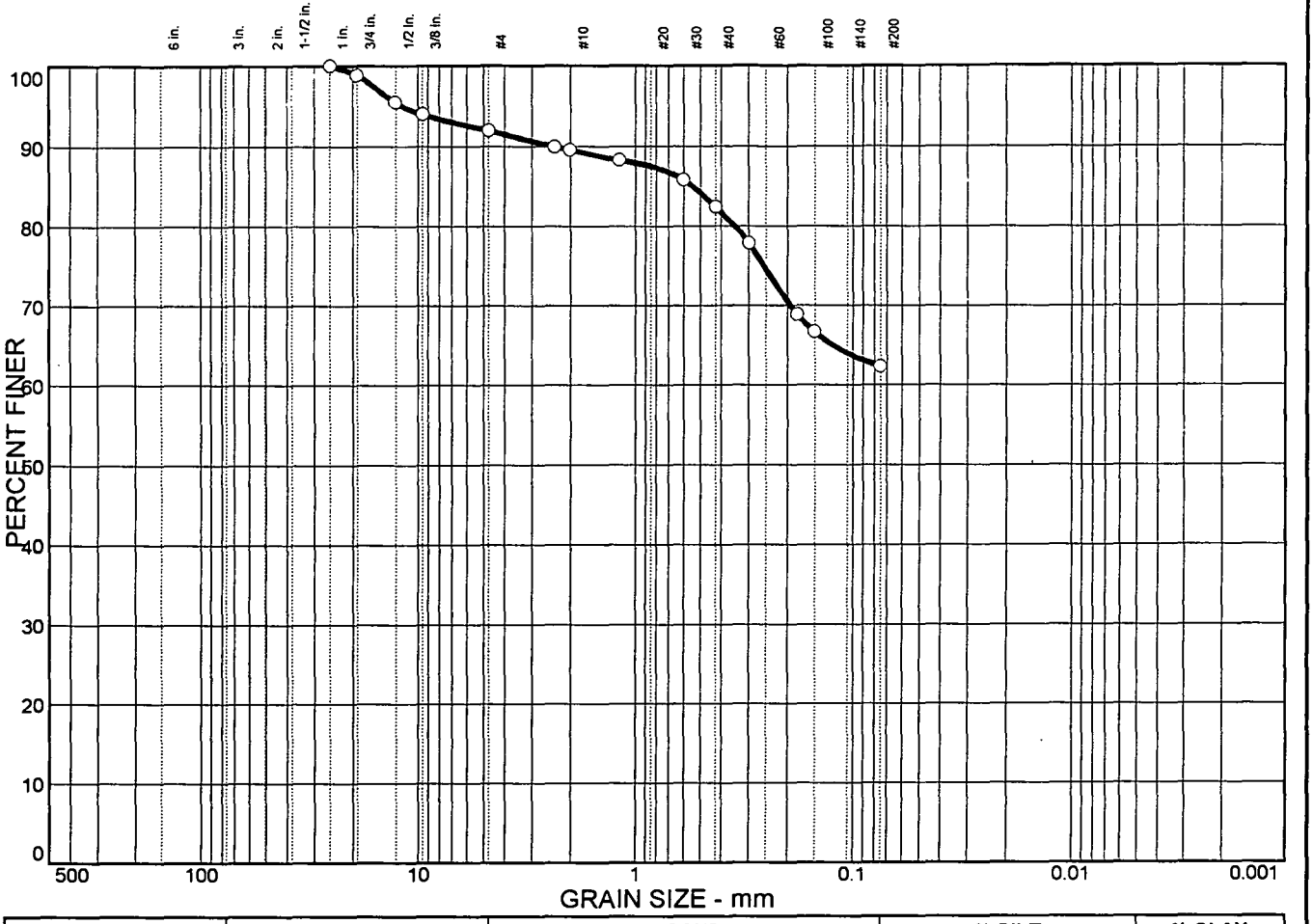
Sample No.: PCL-5 **Source of Sample:** Cover Layer **Date:** 10-14-98
Location: 38150N/127000E **Elev./Depth:**

CGC,Inc.

Client: Ryan Inc.
Project: Stoughton Landfill

Project No: C98024

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	8.0	29.7	62.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
3/4 in.	98.9		
1/2 in.	95.5		
3/8 in.	94.0		
#4	92.0		
#8	90.0		
#10	89.6		
#16	88.3		
#30	85.8		
#40	82.4		
#50	77.9		
#80	68.9		
#100	66.7		
#200	62.3		

* (no specification provided)

Soil Description

Brown Silty Clay, Some Sand, Little Gravel (Clay Loam)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.546 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL-ML AASHTO= A-4(0)

Remarks

Tests by: KJL
Approved by: WWW

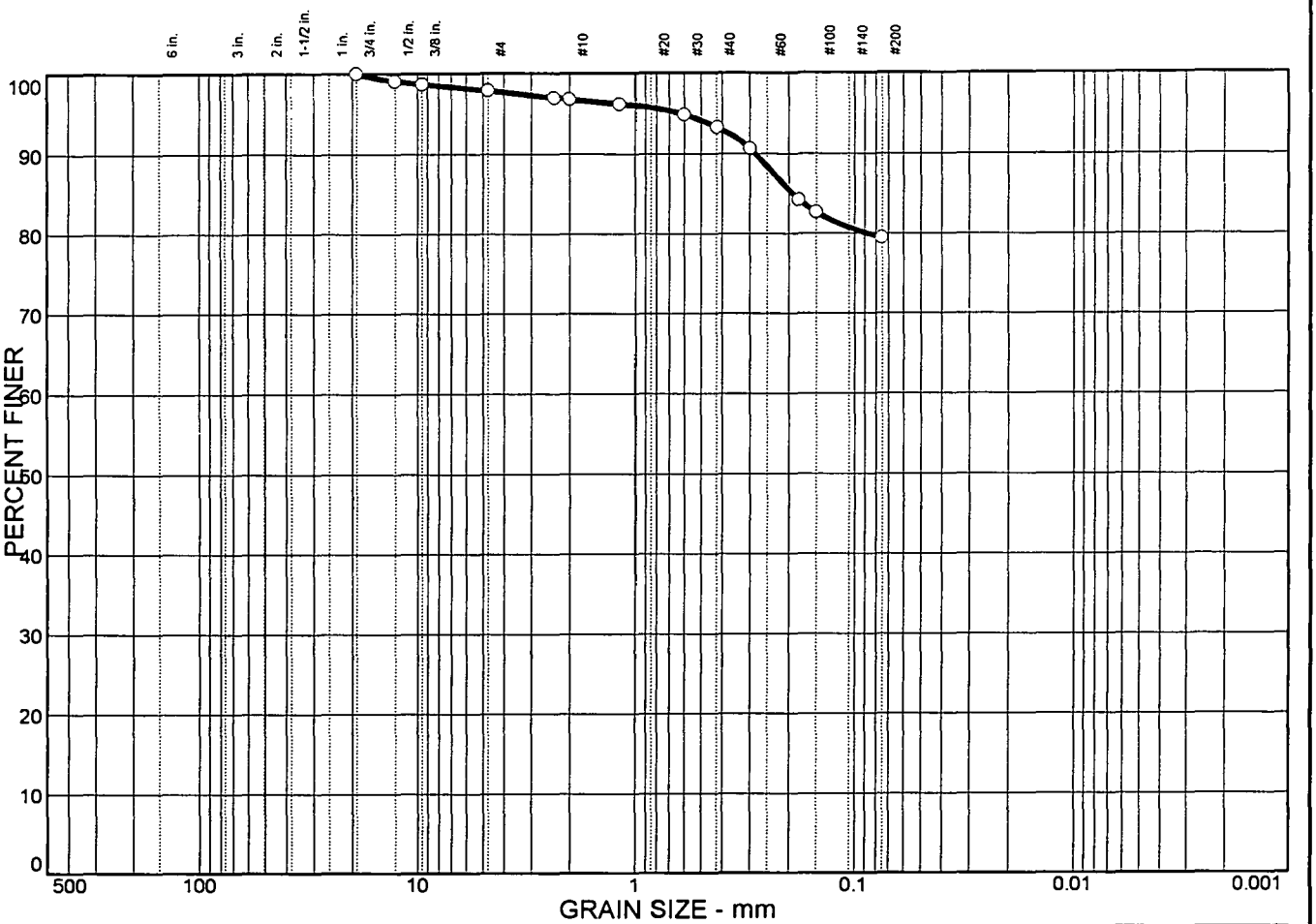
Sample No.: PCL-6 **Source of Sample:** Cover Layer **Date:** 10-27-98
Location: 378+00N/128+00E **Elev./Depth:**

CGC, Inc.

Client: Ryan Inc.
Project: Stoughton Landfill

Project No: C98024

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	2.1	18.4	79.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
1/2 in.	99.1		
3/8 in.	98.7		
#4	97.9		
#8	97.0		
#10	96.8		
#16	96.2		
#30	94.9		
#40	93.3		
#50	90.7		
#80	84.3		
#100	82.7		
#200	79.5		

* (no specification provided)

Soil Description

Brown Clayey Silt, Some Sand, Trace Gravel (Silty Clay Loam)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.192 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL-ML AASHTO= A-4(0)

Remarks

Tests by: KJL
Approved by: WWW

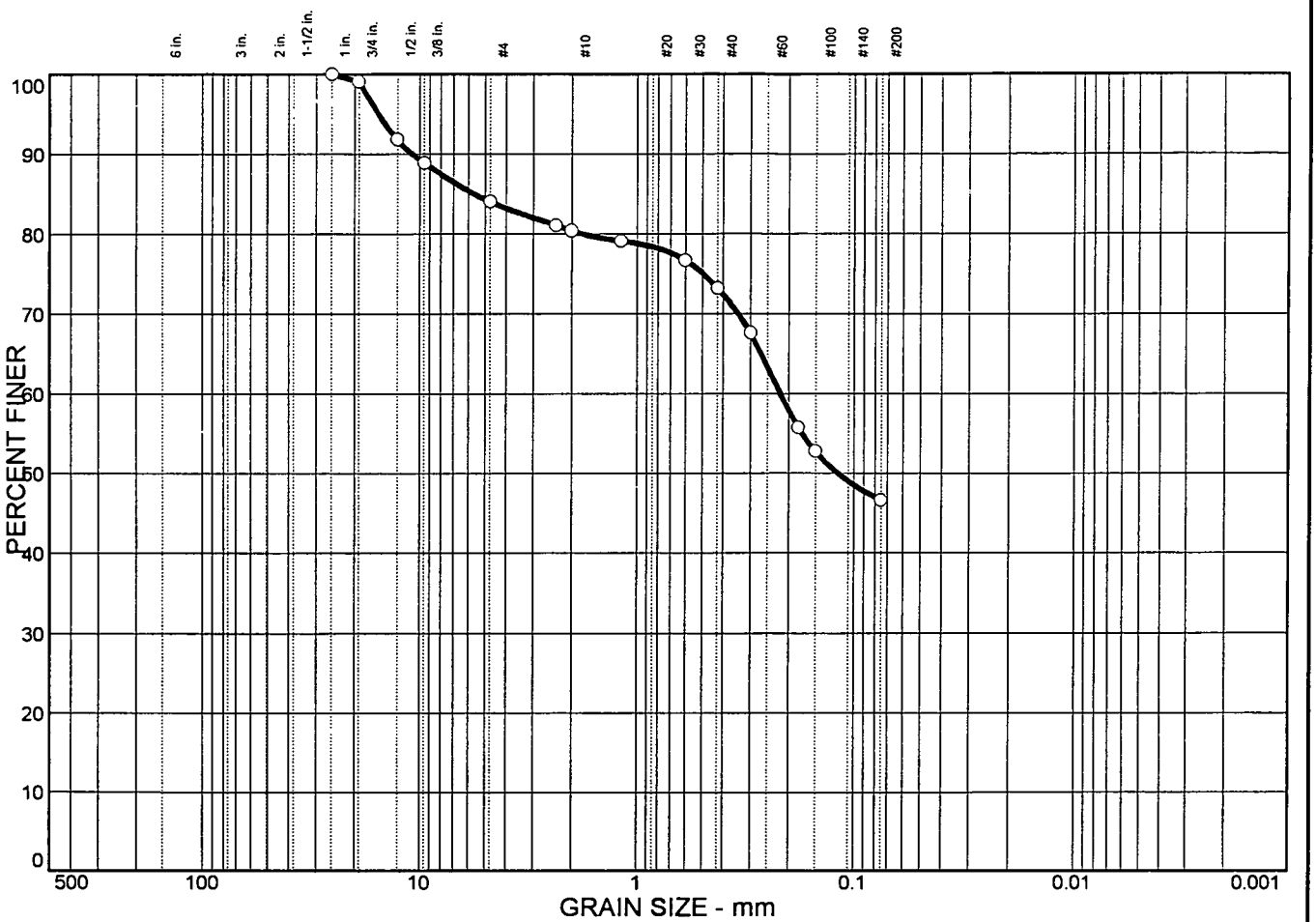
Sample No.: PCL-7 **Source of Sample:** Cover Layer **Date:** 10-27-98
Location: 375+00N/128+00E **Elev./Depth:**

CGC,Inc.

Client: Ryan Inc.
Project: Stoughton Landfill

Project No: C98024

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	16.0	37.4	46.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
3/4 in.	99.1		
1/2 in.	91.8		
3/8 in.	88.9		
#4	84.0		
#8	81.1		
#10	80.4		
#16	79.1		
#30	76.7		
#40	73.2		
#50	67.6		
#80	55.8		
#100	52.8		
#200	46.6		

* (no specification provided)

Soil Description

Brown Silty Sand, Some Gravel (Loam)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 5.64 D_{60}= 0.217 D_{50}= 0.118
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Remarks

Tests by: KJL
Approved by: WWW

Sample No.: PCL-8 **Source of Sample:** Cover Layer **Date:** 10-27-98
Location: 374+50N/125+50E **Elev./Depth:**

CGC, Inc.

Client: Ryan Inc.
Project: Stoughton Landfill

Project No: C98024

TAB 5: TOPSOIL LAYER

Table TS-1

Summary of Laboratory Tests on Topsoil Samples

Stoughton City Landfill Cap

Sample No.	Location		USDA Classification	pH	Fertilizer Recommendations			Organic Content, %
	Northing	Easting			Nitrogen	Phosphorus	Potassium	
TS-1	37450	12600	Silty Clay Loam	7.8	15	0	0	3.9
TS-2	37500	12700	Silty Clay Loam	7.7	30	0	0	1.8
TS-3	37525	12800	Silty Clay Loam	7.7	15	0	0	2.3
TS-4	37600	12800	Silt Clay Loam	7.5	15	0	0	2.2
TS-5	37750	12800	Loam	7.6	15	0	0	2.0
TS-6	37900	12800	Loam	7.6	15	0	0	2.3
TS-7	38050	12750	Silty Clay	7.5	15	0	0	2.8
TS-8	38200	12750	Loam	6.9	30	0	30	1.8
TS-9	38300	12750	Clay Loam	7.7	15	0	0	3.0
TS-10	38450	12700	Silt Loam	7.7	15	0	0	3.3
TS-11	38550	12700	Silty Clay Loam	7.7	15	0	0	2.8
TS-12	38550	12550	Silty Clay Loam	7.6	15	0	0	2.1
TS-13	38450	12550	Silty Clay Loam	7.6	30	0	0	1.8
TS-14	38300	12550	Silt Loam	7.6	15	0	0	2.1
TS-15	38250	12650	Clay	7.5	15	0	0	2.4
TS-16	38150	12550	Silt Loam	7.6	15	0	0	2.2
TS-17	38000	12550	Loam	7.7	15	0	0	2.1
TS-18	37900	12550	Silty Clay Loam	7.8	15	0	0	2.2
TS-19	37775	12550	Sandy Loam	7.6	30	0	0	1.7
TS-20	37650	12550	Silt Loam	7.7	30	0	0	1.9
TS-21	37500	12450	Clay Loam	7.7	15	0	0	2.1
TS-22	37600	12450	Loam	7.7	15	0	0	2.0
TS-23	37725	12400	Clay Loam	7.6	30	0	0	1.7
TS-24	37850	12400	Clay Loam	7.1	30	0	0	1.7
TS-25	37950	12400	Loam	7.7	30	0	0	1.9
TS-26	38100	12400	Silty Clay Loam	7.6	15	0	0	2.0
TS-27	38200	12700	Silt Loam	7.7	15	0	0	2.1
TS-28	38300	12400	Silt Loam	7.5	30	0	0	1.9
TS-29	38400	12400	Loam	7.7	30	0	0	1.9
TS-30	38500	12400	Loam to Silt Loam	7.7	30	0	0	1.5
TS-31	38250	12250	Loam	7.6	15	0	0	2.0
TS-32	38150	12250	Sandy Loam to Loam	7.7	15	0	0	2.0
TS-33	38000	12250	Silt Loam	7.5	15	0	0	2.1
TS-34	37800	12250	Loam	7.7	15	0	0	2.0
TS-35	Site	Entrance	Silt Loam	6.9	15	0	0	3.4
			Average	7.6	20	0	1	

SOIL TEST REPORT

University of Wisconsin-Extension
Univ. of Wisconsin-Madison
Soils Department, Madison, WI

SOIL & PLANT ANALYSIS LAB
5711 MINERAL POINT ROAD
MADISON, WI 53705

LAB NO. 0- 1108

Account No.

DANE 424

Date Received: 11/13/98

Date Processed: 18-Nov-98

TS- 1

.0

Name (or soil group): (UNKNOWN)

Sow Depth: 7.0

This Report is for:
CGC - DNA
3011 PERRY ST
MADISON,WI 53713

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	P_2O_5	K_2O	Fertilizer Credit Legume N	Manure N	P_2O_5	K_2O	Nutrients to Apply N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6s is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring.

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cover when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION

Cropping Sequence	Very Low	Low	Optimum	High	Very High	Excessive
CRP, grass	PPPP

Soil & Plant Analysis Lab
Madison - (608) 262-4364

Explanation of Soil Test Report
Department of Soil Science
University of Wisconsin - Madison

Soil & Forage Analysis Lab
Marshfield - (715) 387-2523

GENERAL INFORMATION

Soil test results from samples with the same field identification are averaged for making a field recommendation. If individual sample results within a field are greatly higher than the average soil test values, results of the high testing sample(s) is not used in determining the field recommendation.

LABORATORY ANALYSIS PROGRAM

The laboratory analysis methods used are: pH — water and SMP buffer; OM — loss-of-weight on ignition; available P — Bray P_1; available K-- Bray P1 ; exchangeable Ca & Mg — 1.0 N ammonium acetate; B — hot water; Zn — 0.1 N hydrochloric acid; Mn — 0.1 N phosphoric acid; SO4-S — 2N acetic acid containing 500 ppm P.

Soil test nutrients reported as parts per million (ppm) represent a weight per unit volume based on the assumption that an acre plow layer of medium textured soil weighs 2 million pounds. Soil test results in ppm can be converted to lbs/a by multiplying by 2. Laboratory texture code refers to soil texture/type. The sulfur availability index (SAI) includes SO_4-S in the soil sample plus estimates of S from soil OM, precipitation, manure and the subsoil. Estimated cation exchange capacity (CEC) is determined by summing values for exchangeable K, Ca, and Mg, and adjusting for OM content. Sample density is reported as grams of oven-dried (105°C), ground soil per cubic cm (g/cm^3) and is not the same as field bulk density.

SOIL TEST INTERPRETATION AND CROP NUTRIENT NEEDS

Crop nutrient needs are determined by several factors. Crop yield potential, soil texture and organic matter content determine crop N requirements. Yield goal, soil test level, soil name, and nutrient buffering capacity are used to estimate the need for P_2O_5 and K_2O. If soil test P and K levels are in the optimum (Opt) category, recommended applications will approximately replace the nutrients removed by the harvested crop for the specified yield goal. Soils testing in the H, VH, or E categories will require 50, 25 or 0%, respectively, of the recommendation for the Opt category. Soils testing in the VL or L categories reflect the need for additional nutrients such that the soil test level will be brought up to the Opt category over a 5-8 year period. These needs differ between crops and soils and are based, in part, on the soils' P and K buffering capacities.

FERTILIZER REPLACEMENT CREDITS

The nutrient needs section of the soil test report lists the nutrient quantities that are needed to optimize profitability. These nutrient additions can be from sources other than commercial fertilizer. The application of manure or the incorporation of legume-sod, soybean or legume cover crop residue will usually result in considerable amounts of nutrients being returned to the soil. See UWEX publication(s) - A3580 (Credit What You Spread) and A 3591(Credit Legume Nitrogen) for further information.

Manure

Nutrient credits are specific for each type of animal (dairy, beef, poultry, swine or veal), herd management (solid/liquid, finish/farrow), application method (injected, surface, or incorporated within 72 hours) and years of consecutive application. For example, each ton of solid dairy manure receives a credit of 4 lbs available N if injected or incorporated (3 lbs if surface applied), 3 lbs of available P_2O_5 and 8 lbs of available K_2O . Nutrient credits are slightly higher if manure has been applied for 2 or more consecutive years on the same field. The credit for each 1000 gallons of liquid dairy manure is 10 lbs of available N (8 lbs if surface applied), 8 lbs of available P_2O_5 and 21 lbs of available K_2O . Credits for other types of manure will differ.

Legume Sod

Where a legume sod is plowed down, the amount of nitrogen credit subtracted from the N recommendation depends on the type of legume, stand density, soil texture and the amount of regrowth before a killing frost. When alfalfa is plowed down on sandy soils, the N credit is 140 lbs N/a for a good stand (>4 plants/ft^2). 110 lbs N/a for a fair stand (1.5-4 plants/ft^2) and 80 lbs N/a for a poor stand (<1.5 plants/ft^2). For other soils, the N credit is 190 lbs N/a for a good stand, 160 lbs N/a for a fair stand and 130 lbs N/a for a poor stand. The N credit is reduced by 40 lbs N/a if the legume sod is harvested/killed with less than 8" regrowth in the fall. If the legume grown is red clover or birdsfoot trefoil instead of alfalfa, the credit is calculated as 80% of the alfalfa credit. Second year credit of 50 lbs N/a will be given for fair or good stands. No second year credit is given on sandy soils.

Soybeans

Where the previous crop was soybeans, a credit of 40 lbs N/a is given. No credit is given on sandy soils.

Legume Vegetables

A credit of 20 lbs N/a is given when the previous crop was a leguminous vegetable, such as snapbeans or peas. No credit is given on sandy soils.

NUTRIENTS TO APPLY

The amount of nutrients to apply reflects the amount of fertilizer credit supplied by manure or legume plowdown. Circumstances which have not been considered in the printed recommendations include: conservation tillage, cold soils, use of an N availability test and keeping alfalfa for more than 3 years. If those conditions apply, client adjustment of the values on the soil test report or use of new recommendations based on N availability test results is required.

WORKSPACE FOR CALCULATING YOUR TOTAL ANNUAL FERTILIZER REQUIREMENTS

Crop:	Year:			Crop:	Year:			Crop:	Year:		
	N	P_2O_5	K_2O		N	P_2O_5	K_2O		N	P_2O_5	K_2O
	lbs/a				lbs/a				lbs/a		
Nutrients to Apply				Nutrients to Apply				Nutrients to Apply			
- Additional credits				- Additional credits				- Additional credits			
+ Additional needs				+ Additional needs				+ Additional needs			
Adjusted Need				Adjusted Need				Adjusted Need			
Fertilizer Applied				Fertilizer Applied				Fertilizer Applied			
Rate	Grade N	P_2O_5	K_2O	Rate	Grade N	P_2O_5	K_2O	Rate	Grade N	P_2O_5	K_2O

LIME PROGRAM

Lime recommendations are given for the two most common lime grades used in Wisconsin (60-69 and 80-89). Recommendations are made to bring the soil pH to the optimum level for the most acid sensitive crop in the rotation specified. No lime is recommended unless the measured soil pH is more than 0.2 units below the optimum pH for the listed three-year rotation. Where lime with a neutralizing index (NI) other than 60-69 or 80-89 is used, adjust the lime requirements as indicated in the following formula:

$$\text{Lime Requirement} = (\text{T/a 60-69 required}) \times \frac{65}{\text{Midpoint of NI grade lime to be used}}$$

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1108
Account No.
DANE 424
Date Received Date Processed
11/13/98 18-Nov-98
TS- 2
.0
(UNKNOWN)
7.0

This Report is for:
CGC - DWA

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need			Fertilizer Credit				Nutrients to Apply		
		N	P_2O_5	K_2O	Legume N	Manure N	P_2O_5	K_2O	N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		30	0	0	0	0	0	0	30	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6s NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring.

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cover when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION

Cropping Sequence	Very Low	Low	Optimum	High	Very High	Excessive
CRP, grass	PPPP

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension, University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1108
Account No.
DANE 424

Date Received: 11/13/98
Date Processed: 18-Nov-98

This Report is for:
CGC - DWA

TS- 3
.0

Name (or soil group): (UNKNOWN)
Sow Depth: 7.0

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6s NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

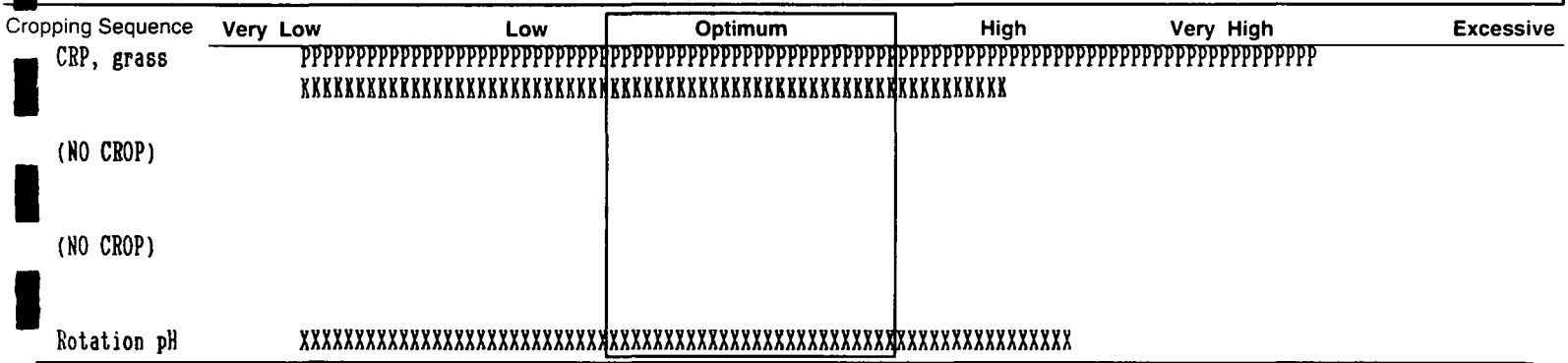
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring.

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cover when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index
3	7.7	2.3	35	110								
Adjusted Avg.	7.7	2.3	35	110								

LAB USE

Texture Code	Sample Density	Buffer Code
2	1.20	N.R.
	1.20	

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB
5711 MINERAL POINT ROAD
MADISON, WI 53705

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

Date Received: 11/25/98 Date Processed: 2-Dec-98

TS4

.0

ame (or subsoil group): (UNKNOWN)

ow Depth: 7.0

This Report is for:
CGC
3011 PERRY ST
MADISON,WI 53713

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

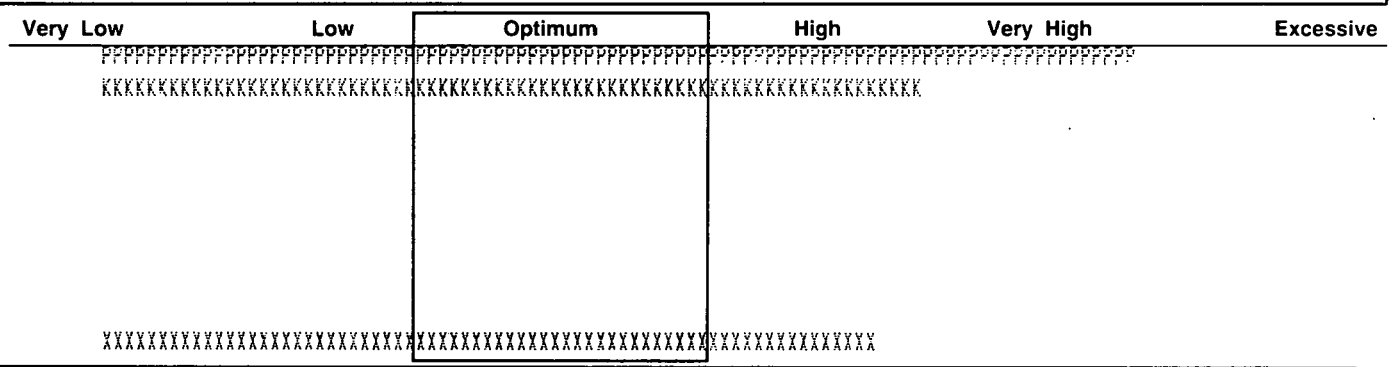
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cove when corn follows after corn. add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years. increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index
4	7.5	2.2	36	120								
Adjusted Avg.	7.5	2.2	36	120								

LAB USE

Texture Code	Sample Density	Buffer Code
2	1.26	N.R.
	1.26	

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requiremeht when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No. 424

DANE

Date Received 11/25/98

Date Processed 2-Dec-98

5

.0

Name (or subsoil group) (UNKNOWN)

7.0

Row Depth

This Report is for:
C&C

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	P_2O_5	K_2O	Fertilizer Credit Legume N	Manure N	P_2O_5	K_2O	Nutrients to Apply N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring.

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cover when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION

Cropping Sequence	Very Low	Low	Optimum	High	Very High	Excessive
CRP, grass	PPPP

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No. 424

DANE

Date Received 11/25/98

Date Processed 2-Dec-98

This Report is for:
CGC

6

.0

Name (or subsoil group) UNKNOWN

7.0

Depth

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need			Fertilizer Credit				Nutrients to Apply		
		N	P_2O_5	K_2O	Legume N	Manure N	P_2O_5	K_2O	N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

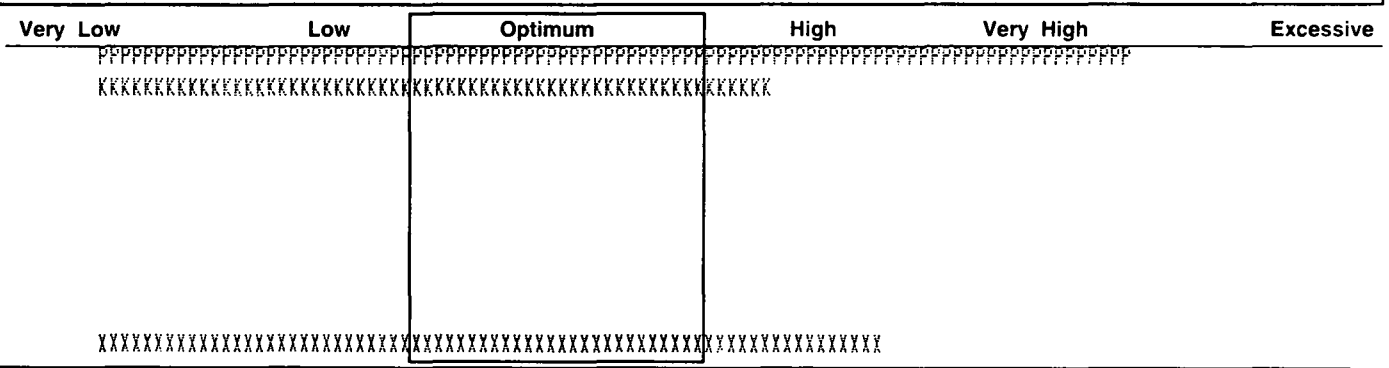
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years. increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	Sample Density	Buffer Code	
6	7.6	2.3	38	105									2	1.28	N.R.	
Adjusted Avg.	7.6	2.3	38	105										1.28		

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

Date Received: 11/25/98

Date Processed: 2-Dec-98

Field: 7

.0

Name (or subsoil group): (UNKNOWN)

Row Depth: 7.0

This Report is for:
CGC

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.4s NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

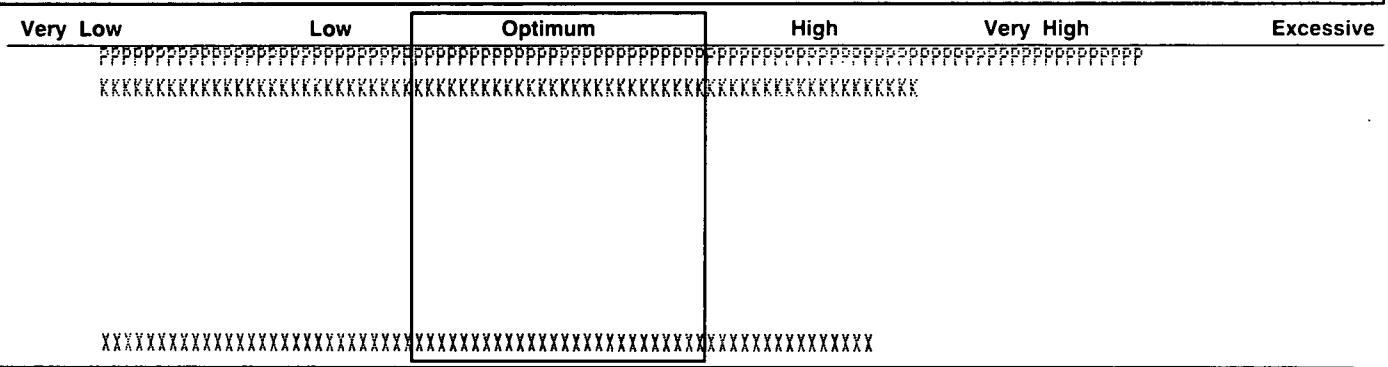
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years. increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index
7	7.5	2.8	58	120								
Adjusted Avg.	7.5	2.8	58	120								

LAB USE

Texture Code	Sample Density	Buffer Code
2	1.14	N.R.
	1.14	

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

Date Received: 11/25/98

Date Processed: 2-Dec-98

8

.0

(UNKNOWN)

7.0

This Report is for:
CGC

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		30	0	30	0	0	0	0	30	0	30
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring.

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cover when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION

Cropping Sequence	Very Low	Low	Optimum	High	Very High	Excessive
CRP, grass	P	P	P	P	P	P
	K	K	K	K	K	K
(NO CROP)						
(NO CROP)						
Rotation pH	X	X	X	X	X	X

LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	Sample Density	Buffer Code
8	6.9	1.8	23	75									2	1.33	N.R.
Weighted Avg.	6.9	1.8	23	75										1.33	

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

County DANE Account No. 424

Date Received 11/25/98 Date Processed 2-Dec-98

Field ID 9

Acres .0

Name (or subsoil group) (UNKNOWN)

Sub Depth 7.0

This Report is for:
CGC

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.4s NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

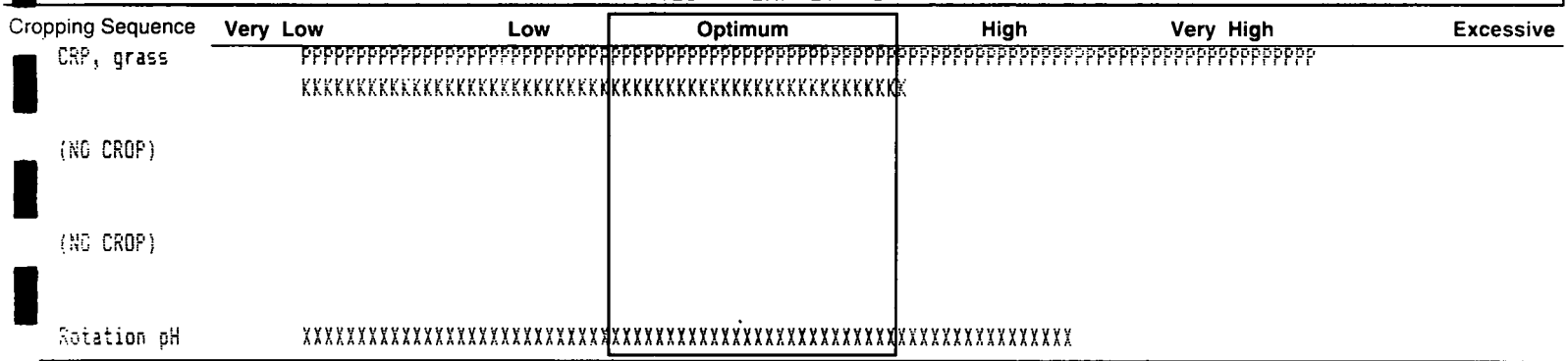
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cove when corn follows after corn. add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years. increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	Sample Density	Buffer Code	
9	7.7	3.0	31	100									2	1.28	N.R.	
Adjusted Avg.	7.7	3.0	31	100										1.28		

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No. 424

This Report is for:
DSC

DANE

Date Received: 11/25/98
Date Processed: 2-Dec-98

10
.0
(UNKNOWN)
7.0

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	P_2O_5	K_2O	Fertilizer Credit Legume N	Manure N	P_2O_5	K_2O	Nutrients to Apply N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cover when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION

Cropping Sequence	Very Low	Low	Optimum	High	Very High	Excessive
CRP, grass	PPPP

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

Date Received: 11/25/98

Date Processed: 2-Dec-98

Field: 11

.0

Name (or subsoil group): (UNKNOWN)

Row Depth: 7.0

This Report is for:
CBD

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need			Fertilizer Credit				Nutrients to Apply		
		N	P_2O_5	K_2O	Legume N	Manure N	P_2O_5	K_2O	N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.4s NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

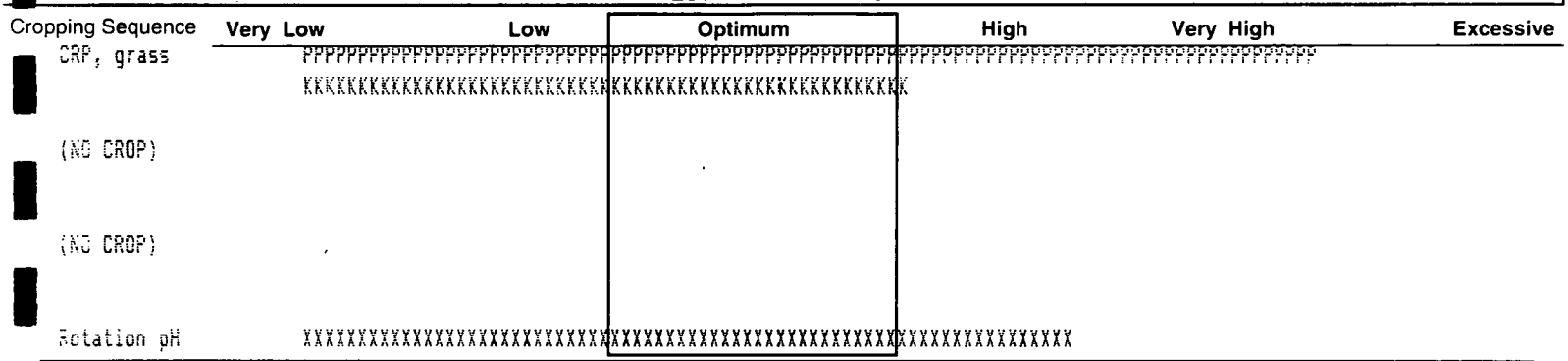
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	Sample Density	Buffer Code	
11	7.7	2.8	26	100									2	1.27	N.R.	
Adjusted Avg.	7.7	2.8	26	100										1.27		

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189
Account No.
DANE 424

Date Received 11/25/98
Date Processed 2-Dec-98

This Report is for:
CSC

12
.0
Name (or subsoil group) (UNKNOWN)
Sow Depth 7.0

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	P_2O_5	K_2O	Fertilizer Credit Legume N	Manure N	P_2O_5	K_2O	Nutrients to Apply N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring.

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cover when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION

Cropping Sequence	Very Low	Low	Optimum	High	Very High	Excessive
CRP, grass	PPPP

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189
Account No.
DANE 424

Date Received: 11/25/98
Date Processed: 2-Dec-98

This Report is for:
CGC

13
.0
(UNKNOWN)
7.0

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		30	0	0	0	0	0	0	30	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6s NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

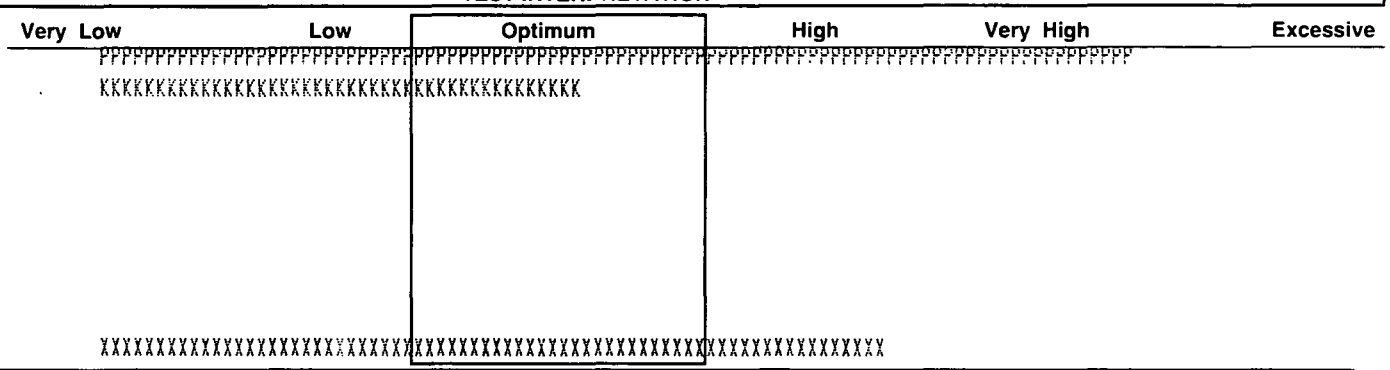
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index
13	7.6	1.8	30	90								
Adjusted Avg.	7.6	1.8	30	90								

LAB USE

Texture Code	Sample Density	Buffer Code
2	1.29	N.R.
	1.29	

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

This Report is for:
C6C

Date Received: 11/25/98
Date Processed: 2-Dec-98

14

.0

(UNKNOWN)

7.0

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.4s NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

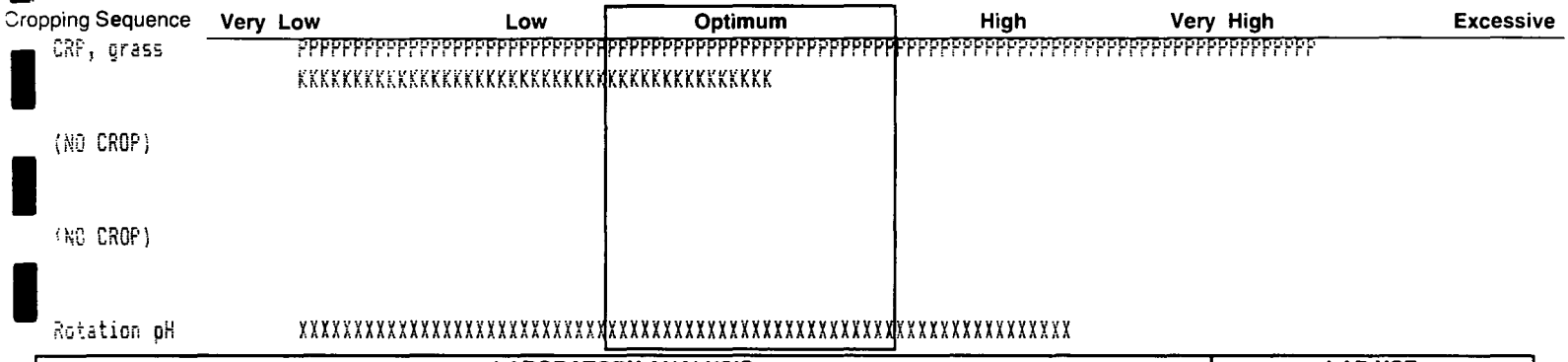
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring.

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index
14	7.6	2.1	28	90								
Adjusted Avg.	7.6	2.1	28	90								

LAB USE

Texture Code	Sample Density	Buffer Code
2	1.22	N.R.
	1.22	

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189
Account No.
DANE 424

Date Received 11/25/98
Date Processed 2-Dec-98

15
.0
me (or subsoil group) (UNKNOWN)
7.0
ow Depth

This Report is for:
CGC

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring.

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cover when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION

Cropping Sequence	Very Low	Low	Optimum	High	Very High	Excessive
CRP, grass	PPPP

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

Date Received 11/25/98

Date Processed 2-Dec-98

16

.0

(UNKNOWN)

7.0

This Report is for:
CGC

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.4s NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

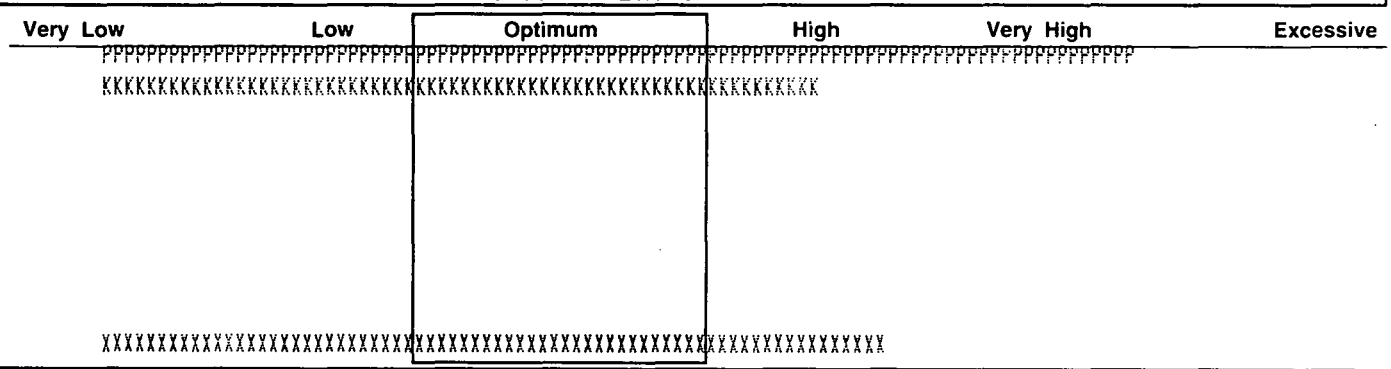
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring.

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	LAB USE Sample Density	LAB USE Buffer Code	
16	7.6	2.2	33	110									2	1.25	N.R.	
djusted Avg.	7.6	2.2	33	110										1.25		

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.
DANE 424

Date Received 11/25/98
Date Processed 2-Dec-98

17
.0
(UNKNOWN)
7.0

This Report is for:
CBC

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	P_2O_5	K_2O	Fertilizer Credit Legume N	Manure N	P_2O_5	K_2O	Nutrients to Apply N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.4s NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

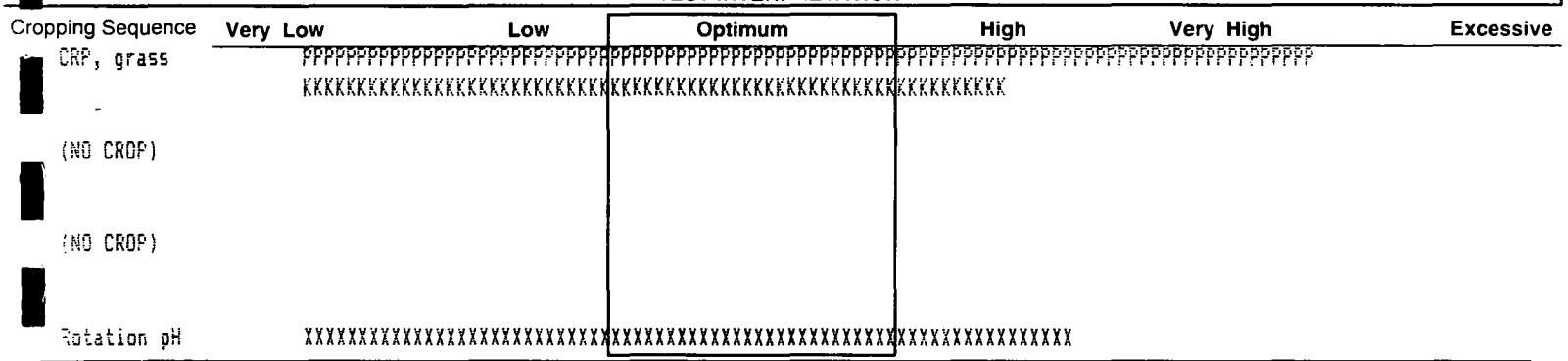
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring.

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	Sample Density	Buffer Code	
17	7.7	2.1	34	110									2	1.24	N.R.	
Adjusted Avg.	7.7	2.1	34	110										1.24		

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

This Report is for:
CGC

Date Received: 11/25/98 Date Processed: 2-Dec-98

18

.0

Name (or subsoil group): UNKNOWN

Subsoil Depth: 7.0

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	P_2O_5	K_2O	Fertilizer Credit Legume N	Manure N	P_2O_5	K_2O	Nutrients to Apply N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

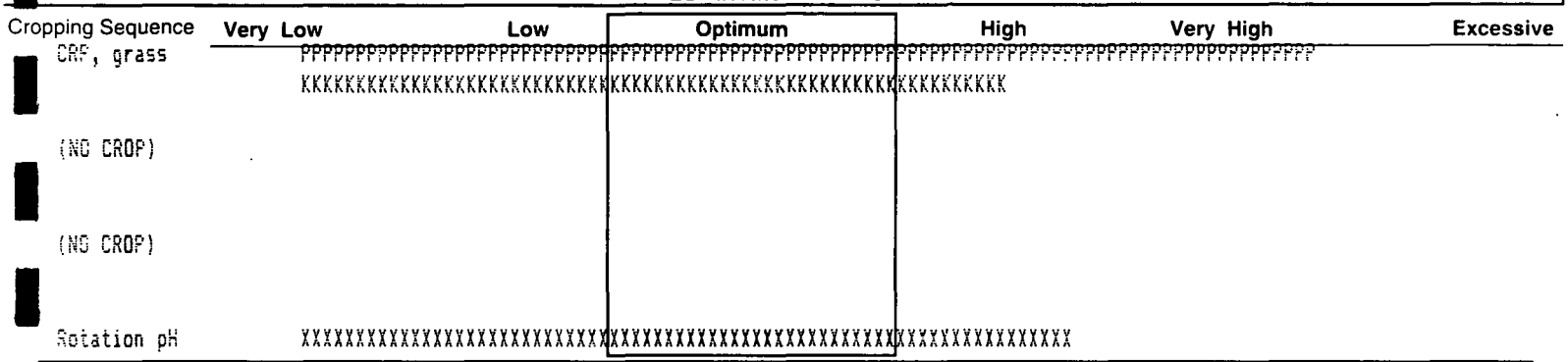
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	Sample Density	Buffer Code	
15	7.8	2.2	33	110									2	1.29	N.R.	
Adjusted Avg.	7.8	2.2	33	110										1.29		

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189
Account No.
DANE 424

Date Received 11/25/98
Date Processed 2-Dec-98

19
.0
me (or subsoil group) (UNKNOWN)
ow Depth 7.0

This Report is for:
CGC

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	P_2O_5	K_2O	Fertilizer Credit Legume N	Manure N	P_2O_5	K_2O	Nutrients to Apply N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		30	0	0	0	0	0	0	30	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cover when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION

Cropping Sequence	Very Low	Low	Optimum	High	Very High	Excessive
CRP, grass	PPPP

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

ate Received Date Processed

11/25/98 2-Dec-98

This Report is for:
CGC

20

.0

me (or subsoil group) (UNKNOWN)

7.0

low Depth

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	P_2O_5	K_2O	Fertilizer Credit Legume N	Manure N	P_2O_5	K_2O	Nutrients to Apply N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		30	0	0	0	0	0	0	30	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cove when corn follows after corn. add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years. increase recommended K_2O by 20% each year.

TEST INTERPRETATION

Cropping Sequence	Very Low	Low	Optimum	High	Very High	Excessive
CRP, grass	P	P	P	P	P	P
	K	K	K	K	K	K
(NO CROP)						
(NO CROP)						
Rotation pH	X	X	X	X	X	X

LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index
20	7.7	1.9	37	100								
djusted Avg.	7.7	1.9	37	100								

LAB USE

Texture Code	Sample Density	Buffer Code
2	1.33	N.R.
	1.33	

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189
Account No.
DANE 424

Date Received 11/25/98
Date Processed 2-Dec-98

Field 21
.0
Lime (or subsoil group) (UNKNOWN)
Row Depth 7.0

This Report is for:
C&C

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.4 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring.

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cover when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION

Cropping Sequence	Very Low	Low	Optimum	High	Very High	Excessive
CRP, grass	PPPP

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

This Report is for:
C&C

Date Received: 11/25/98
Date Processed: 2-Dec-98

22

.0

(UNKNOWN)

7.0

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

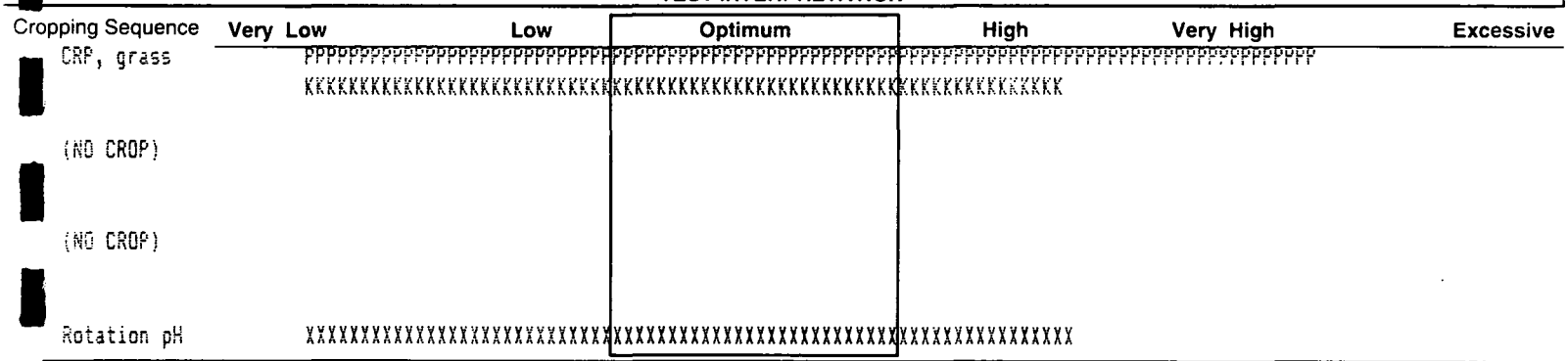
Starter fertilizer (e.g. 10+20+20 lbs $N+P_2O_5+K_2O$/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cove when corn follows after corn. add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	Sample Density	Buffer Code	
22	7.7	2.0	34	115									2	1.26	N.R.	
Adjusted Avg.	7.7	2.0	34	115										1.26		

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189
Account No.
DANE 424

Date Received: 11/25/98
Date Processed: 2-Dec-98

This Report is for:
CGC

23
.0
(UNKNOWN)
7.0

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		30	0	0	0	0	0	0	30	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

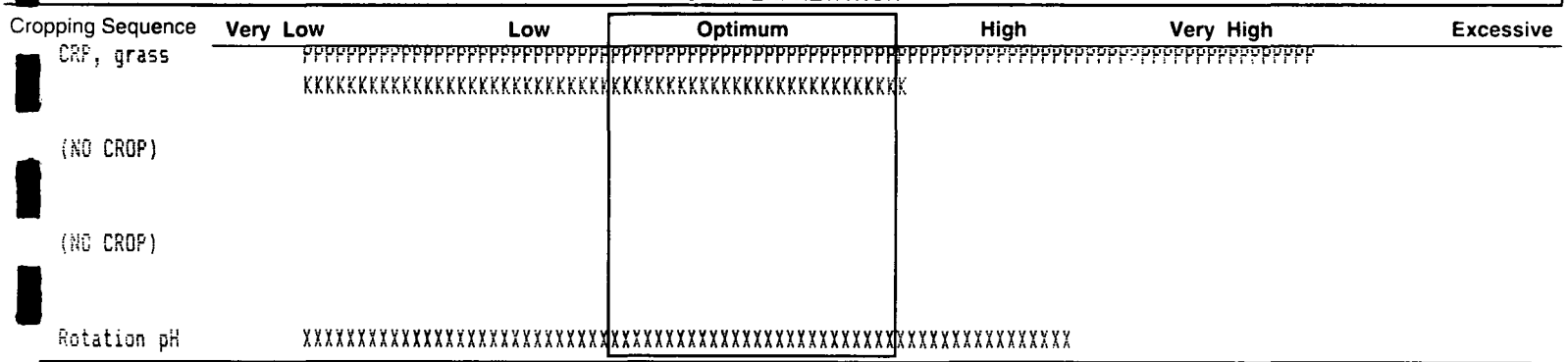
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years. increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	Sample Density	Buffer Code	
23	7.6	1.7	43	100									2	1.32	N.R.	
Adjusted Avg.	7.6	1.7	43	100										1.32		

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

Date Received 11/25/98

Date Processed 2-Dec-98

24

.0

(UNKNOWN)

7.0

This Report is for:
C&C

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need			Fertilizer Credit				Nutrients to Apply		
		N	P_2O_5	K_2O	Legume N	Manure N	P_2O_5	K_2O	N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		30	0	0	0	0	0	0	30	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.4s NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

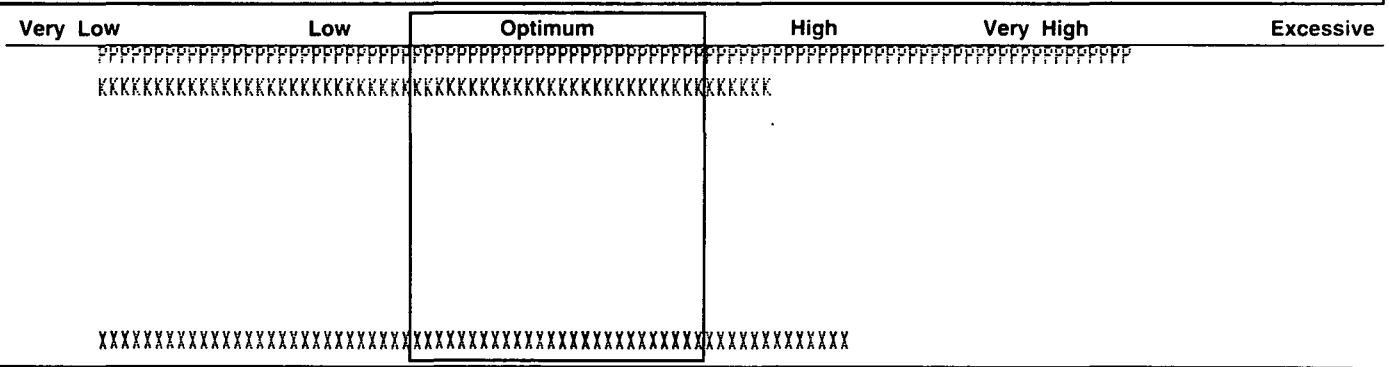
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index
24	7.1	1.7	33	105								
Adjusted Avg.	7.1	1.7	33	105								

LAB USE

Texture Code	Sample Density	Buffer Code
2	1.34	N.R.
	1.34	

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

Date Received: 11/25/98

Date Processed: 2-Dec-98

25

.0

me (or subsoil group) (UNKNOWN)

7.0

ow Depth

This Report is for:
CBC

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		30	0	0	0	0	0	0	30	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cover when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION

Cropping Sequence	Very Low	Low	Optimum	High	Very High	Excessive
CRP, grass	PPPP

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

Date Received 11/25/98

Date Processed 2-Dec-98

Field 26

.0

Farm (or soil group) (UNKNOWN)

Row Depth 7.0

This Report is for:
CGC

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	P_2O_5	K_2O	Fertilizer Credit Legume N	Manure N	P_2O_5	K_2O	Nutrients to Apply N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

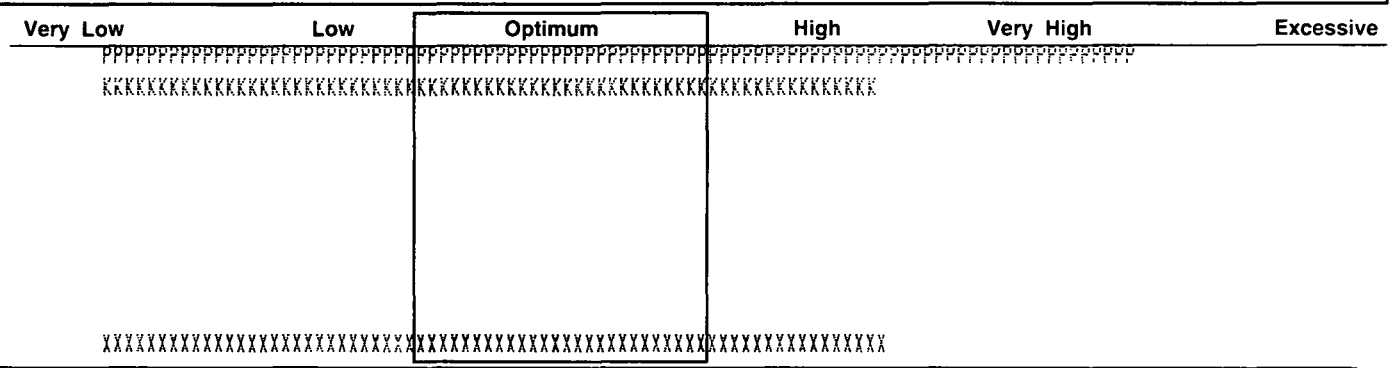
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	Sample Density	Buffer Code	
26	7.6	2.0	31	113									2	1.23	N.R.	
Adjusted Avg.	7.6	2.0	31	115										1.23		

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189
Account No.
DANE 424

This Report is for:
CGC

Date Received: 11/25/98
Date Processed: 2-Dec-98

27
.0
(UNKNOWN)
7.0

ame (or subsoil group)
ow Depth

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	P_2O_5	K_2O	Fertilizer Credit Legume N	Manure N	P_2O_5	K_2O	Nutrients to Apply N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.4s NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

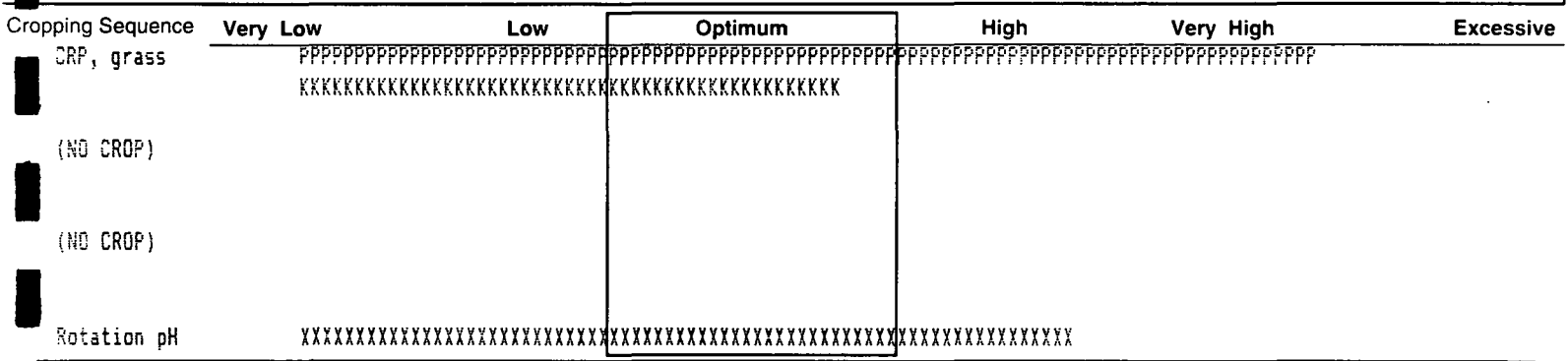
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring.

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cove when corn follows after corn. add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years. increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	Sample Density	Buffer Code	
27	7.7	2.1	35	95									2	1.28	N.R.	
Adjusted Avg.	7.7	2.1	35	95										1.28		

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.
DANE 424

Date Received 11/25/98
Date Processed 2-Dec-98

28
.0
(UNKNOWN)
7.0

This Report is for:
C&C

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	P_2O_5	K_2O	Fertilizer Credit Legume N	Manure N	P_2O_5	K_2O	Nutrients to Apply N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		30	0	0	0	0	0	0	30	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

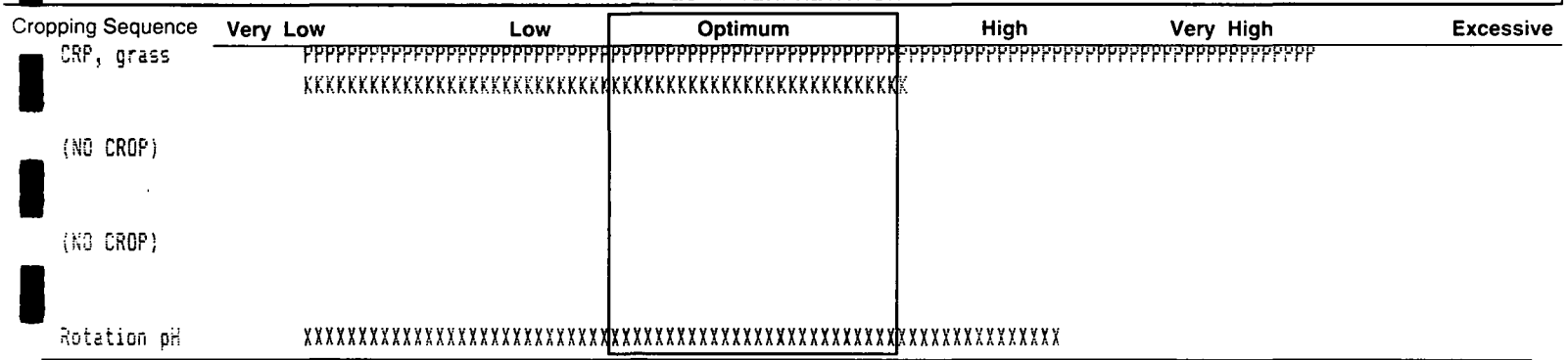
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index
28	7.5	1.9	34	100								
Adjusted Avg.	7.5	1.9	34	100								

LAB USE

Texture Code	Sample Density	Buffer Code
2	1.24	N.R.
	1.24	

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

Date Received: 11/25/98 Date Processed: 2-Dec-98

This Report is for:
CBC

29

.0

Name (or subsoil group): (UNKNOWN)

Plow Depth: 7.0

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		30	0	0	0	0	0	0	30	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.4s is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION

Cropping Sequence	Very Low	Low	Optimum	High	Very High	Excessive
CRP, grass	PPPP

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189
Account No.
DANE 424

Date Received 11/25/98
Date Processed 2-Dec-98

This Report is for:
CGC

30
.0
(UNKNOWN)
7.0

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	P_2O_5	K_2O	Fertilizer Credit Legume N	Manure N	P_2O_5	K_2O	Nutrients to Apply N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		30	0	0	0	0	0	0	30	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cover when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION

Cropping Sequence	Very Low	Low	Optimum	High	Very High	Excessive
CRP, grass	PPPP

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189
County DANE Account No. 424
Date Received 11/25/98 Date Processed 2-Dec-98
Field 31 .0
Crop name (or subsoil group) (UNKNOWN)
Sub Depth 7.0

This Report is for:
C&C

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	Crop Nutrient Need P_2O_5	Crop Nutrient Need K_2O	Fertilizer Credit Legume N	Fertilizer Credit Manure N	Fertilizer Credit P_2O_5	Fertilizer Credit K_2O	Nutrients to Apply N	Nutrients to Apply P_2O_5	Nutrients to Apply K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6s NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

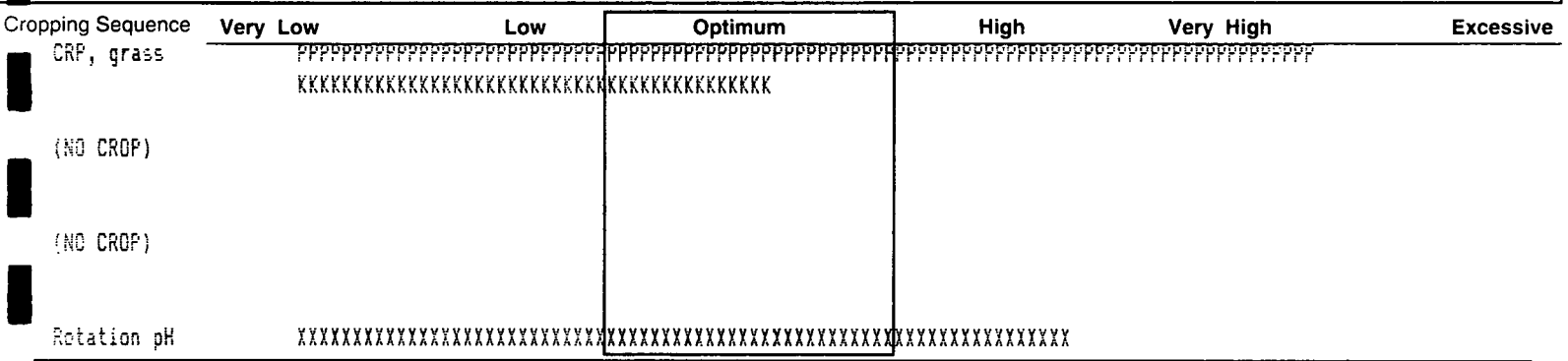
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	Sample Density	Buffer Code	
31	7.6	2.0	36	90									2	1.33	N.R.	
Adjusted Avg.	7.6	2.0	36	90										1.33		

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

ate Received 11/25/98 Date Processed 2-Dec-98

eld 32

.0

ime (or subsoil group) (UNKNOWN)

ow Depth 7.0

This Report is for:
C&C

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need			Fertilizer Credit				Nutrients to Apply		
		N	P_2O_5	K_2O	Legume N	Manure N	P_2O_5	K_2O	N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.4s NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

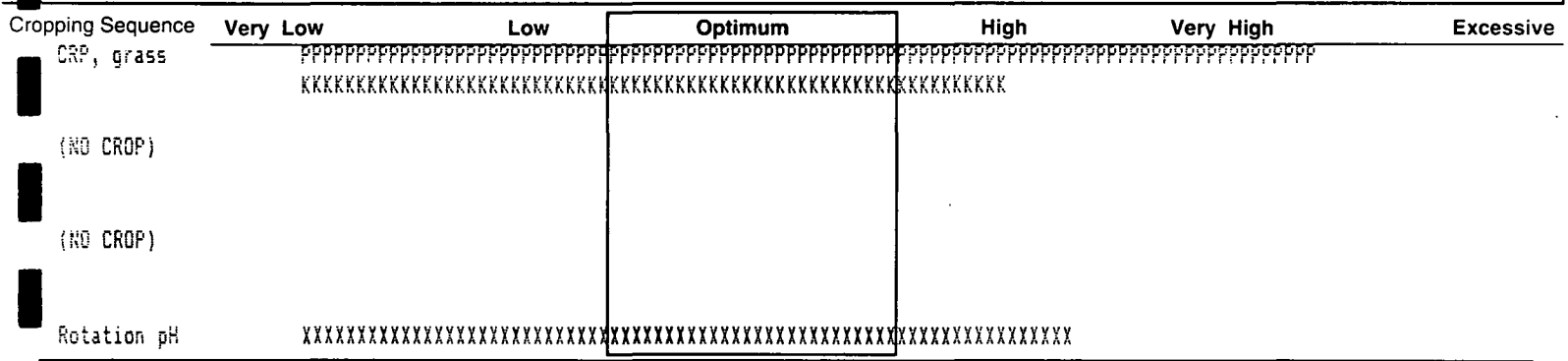
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring.

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	Sample Density	Buffer Code	
32	7.7	2.0	31	110									2	1.26	N.R.	
Adjusted Avg.	7.7	2.0	31	110										1.26		

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No. 424

DANE

Date Received 11/25/98

Date Processed 2-Dec-98

This Report is for:
CBC

33

.0

(UNKNOWN)

7.0

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need			Fertilizer Credit				Nutrients to Apply		
		N	P_2O_5	K_2O	Legume N	Manure N	P_2O_5	K_2O	N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

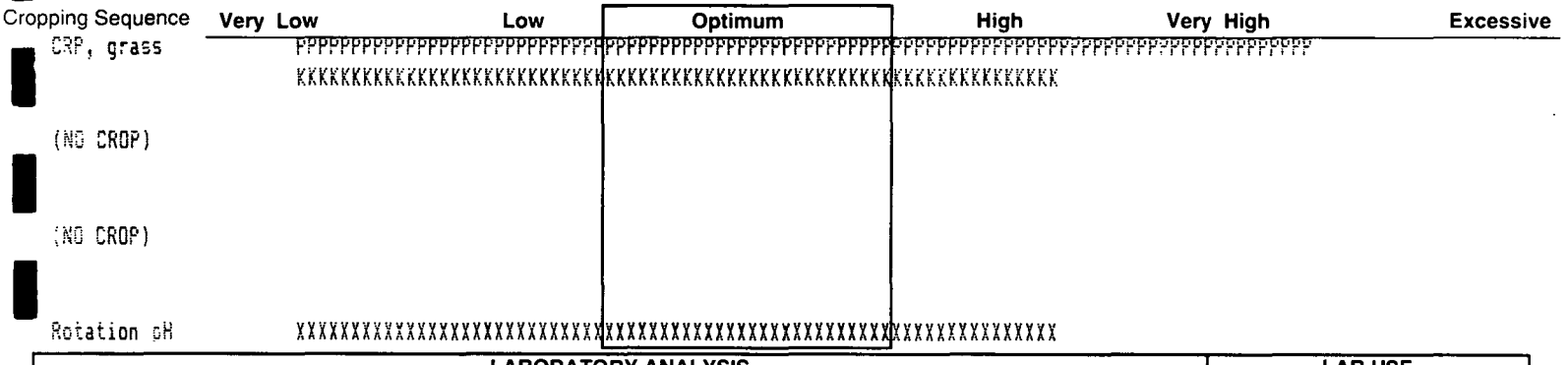
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index
33	7.3	2.1	37	115								
Adjusted Avg.	7.5	2.1	37	115								

LAB USE

Texture Code	Sample Density	Buffer Code
2	1.25	N.R.
	1.25	

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

Account No.

DANE 424

Date Received 11/25/98

Date Processed 2-Dec-98

34

.0

Name (or subsoil group) (UNKNOWN)

7.0

Plow Depth

This Report is for:
CGC

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	P_2O_5	K_2O	Fertilizer Credit Legume N	Manure N	P_2O_5	K_2O	Nutrients to Apply N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

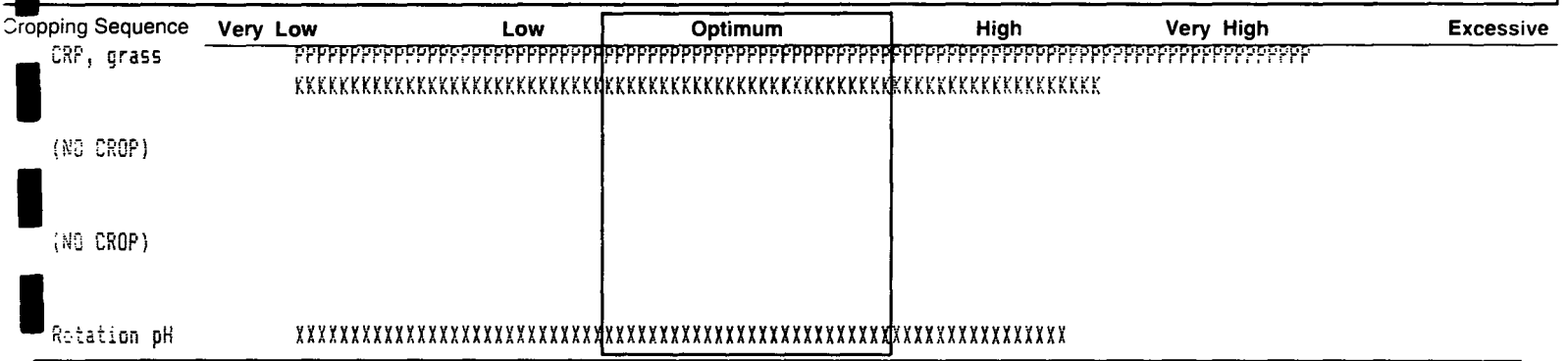
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring.

A soil nitrate test may better estimate actual corn N needs.

If conservation tillage leaves more than 50% residue cover when corn follows after corn, add an additional 30 N lbs/a.

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	Sample Density	Buffer Code
34	7.7	2.0	36	120									2	1.30	N.R.
Adjusted Avg.	7.7	2.0	36	120										1.30	

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

SOIL & PLANT ANALYSIS LAB

SOIL TEST REPORT

University of Wisconsin-Extension
University of Wisconsin-Madison
Soils Department, Madison, WI

LAB NO. 0- 1189

County DANE Account No. 424

Date Received 11/25/98 Date Processed 2-Dec-98

This Report is for:
CGC

35
.0

Name (or subsoil group) (UNKNOWN)
7.0

Row Depth

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need N	P_2O_5	K_2O	Fertilizer Credit Legume N	Manure N	P_2O_5	K_2O	Nutrients to Apply N	P_2O_5	K_2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
CRP, grass		15	0	0	0	0	0	0	15	0	0
(NO CROP)											
(NO CROP)											

The lime required for this rotation to reach pH 5.6 is NO T/a of 60-69 lime or NO T/a of 80-89 lime.

ADDITIONAL INFORMATION

Soil name not specified. More specific recommendations are possible if soil name is provided.

A lime recommendation is calculated only when soil pH is more than 0.2 units below the optimum pH.

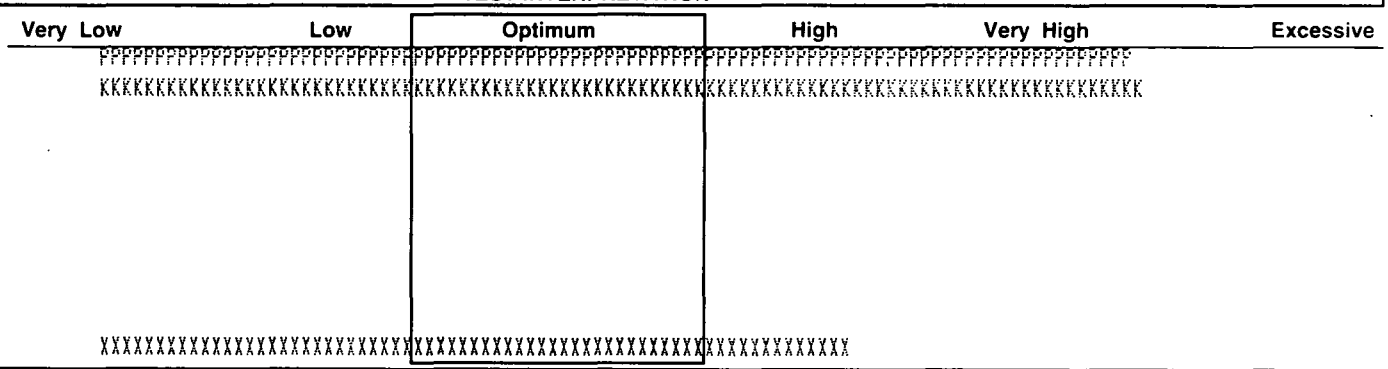
Starter fertilizer (e.g. 10+20+20 lbs N+P_2O_5+K_2O/a) is advisable for row crops on soils slow to warm in the spring

A soil nitrate test may better estimate actual corn N needs

If conservation tillage leaves more than 50% residue cove when corn follows after corn, add an additional 30 N lbs/a

If alfalfa will be maintained for more than three years, increase recommended K_2O by 20% each year.

TEST INTERPRETATION



LABORATORY ANALYSIS

Sample Identification	Soil pH	O.M. %	Phosphorus ppm	Potassium ppm	Calcium ppm	Magnesium ppm	Estimated CEC	Boron ppm	Manganese ppm	Zinc ppm	Sulfate-Sulfur ppm	Sulfur Avail. Index	LAB USE Texture Code	Sample Density	Buffer Code	
35	6.9	3.4	29	180									2	1.23	N.R.	
Adjusted Avg.	6.9	3.4	29	180										1.23		

SECONDARY & MICRONUTRIENT RECOMMENDATIONS

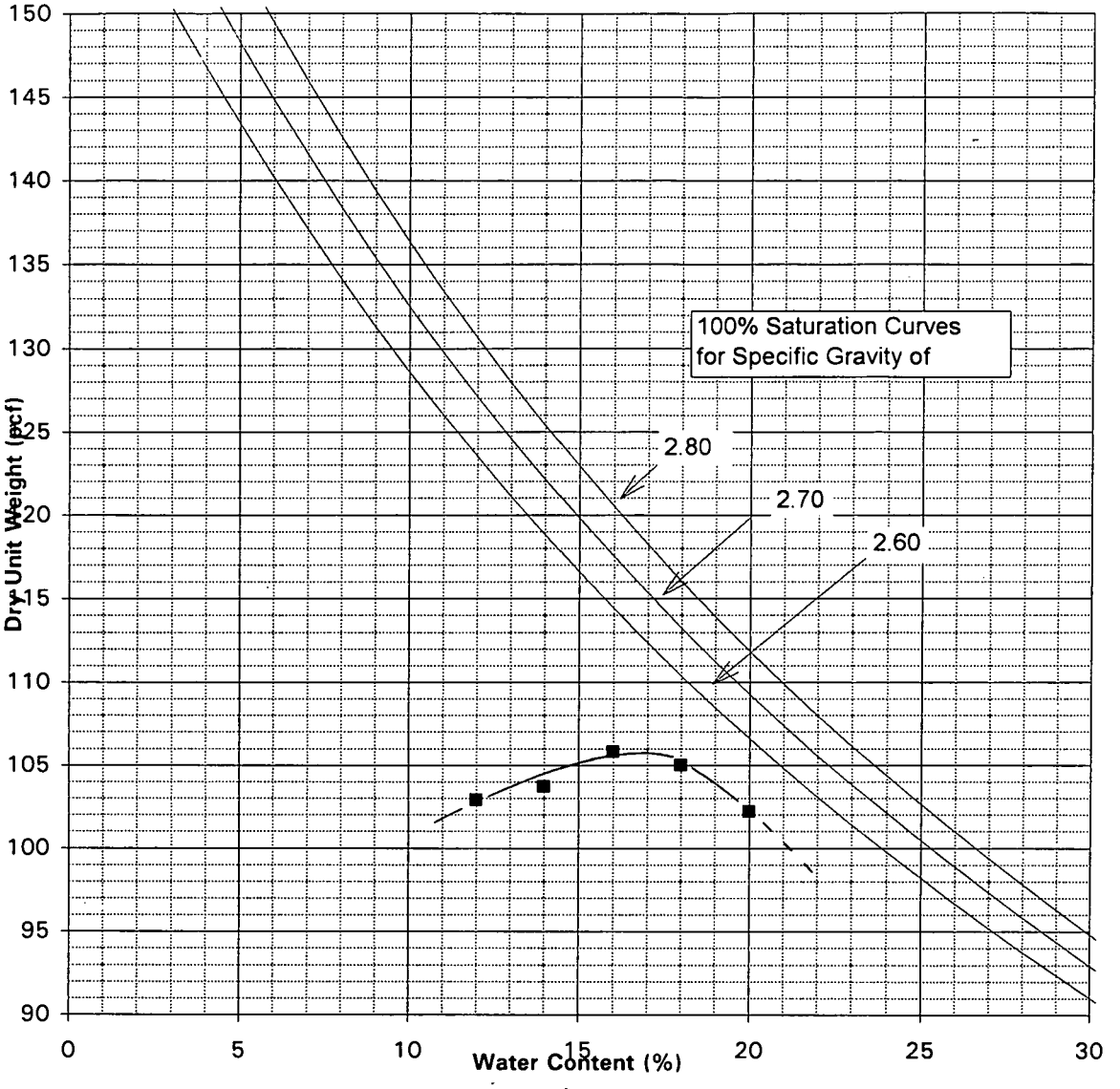
N.R. = Not required for calculation of lime requirement when the soil pH is 6.6 or higher.

Farmer's Copy

TAB 6: MISCELLANEOUS TEST REPORTS

- Dewatering Pad
- Gas Vent Gravel
- Aggregate Base Course
- Clay Borrow Pit - In Situ Densities

TEST REPORT



Specimen No.	Maximum Dry Unit Weight, pcf	Optimum Water Content, %
Dewatering Pad Clay	**106.0**	**17.0**

Specimen Description
Brown Lean Clay, Trace Sand

Corrected Maximum Dry Unit Weight, pcf	Corrected Optimum Water Content, %	
N/A	**N/A**	

Test Method		Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity
ASTM D698, Method A		49	22	27	2.7 (est.)
Preparation Method	USCS	% Gravel	% Sand	% Fines	% Oversize
Dry	CL	0.0	3.6	60.3	-

PROJECT: Stoughton Landfill

PROJECT NUMBER: C98024

LABORATORY COMPACTION TEST

CGC, Inc.

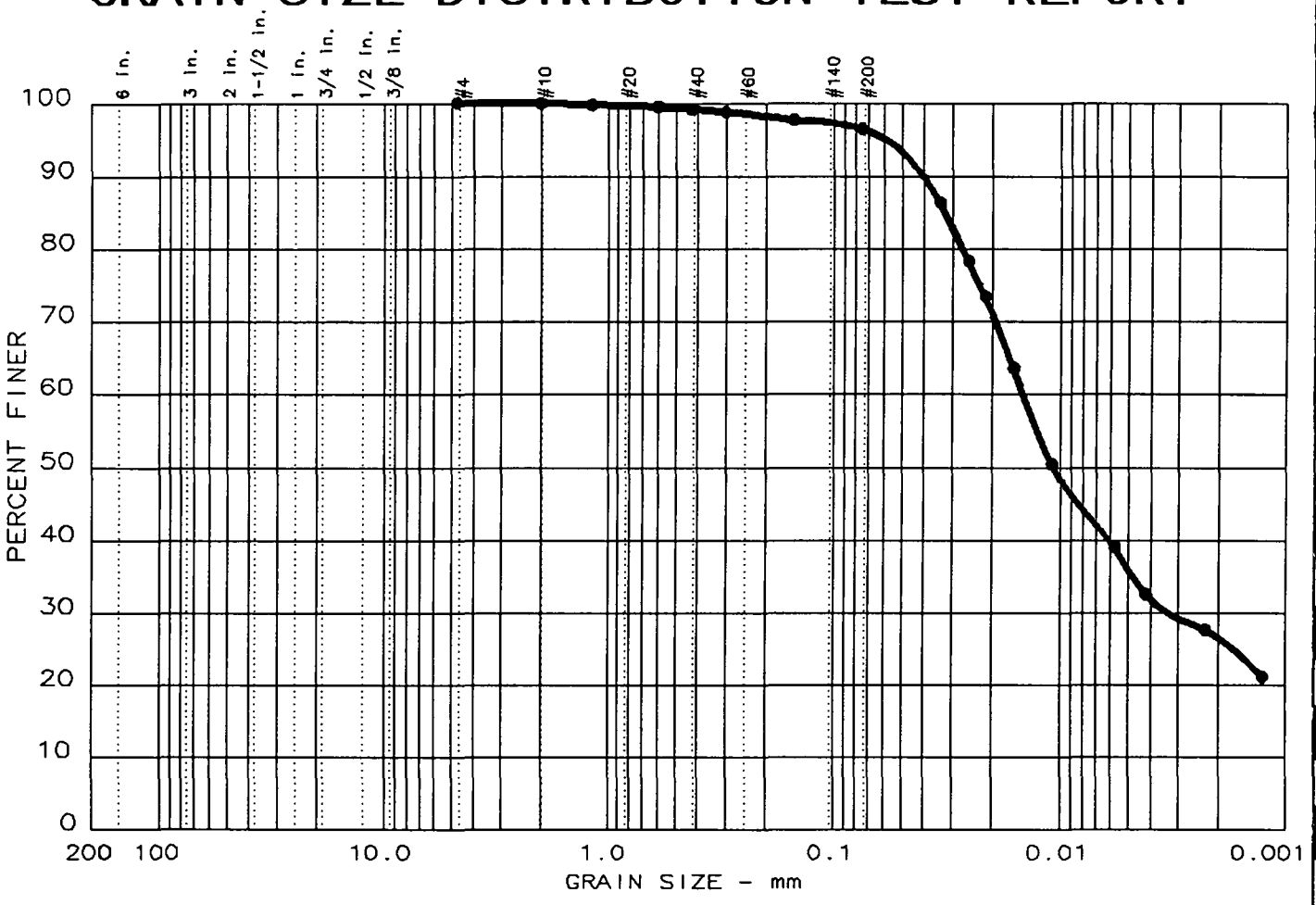
CHECKED BY: JSG

REVIEWED BY: WWW

DATE: 6-10-98

File:98024K.XLS

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	9	0.0	0.0	3.6	60.3	36.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	49	27			0.011	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● Brown Lean CLAY, Trace Sand	CL	A-7-6

Project No.: 98024.00
Project: Stoughton Landfill, Stoughton WI
● Location: Dewatering Pad Bag Sample"A"(6/10/98)

Date: June 12, 1998

GRAIN SIZE DISTRIBUTION TEST REPORT

CGC, Inc.

Remarks:

Tested By: DWA

Input By : DWA

Checked By : WWW

Approved By : WWW

Figure No. _____

Job No.	C98024
Tested By:	TBM/JSG

CGC, Inc.

FIELD DENSITY TEST REPORT - NO. 1 - DEWATERING PAD

CGC, Inc., 3011 Perry Street, Madison, WI 53713, 608/288-4100, FAX: 608/288-7887

PROJECT: Stoughton Landfill
Stoughton, Wisconsin

TO: Ryan Inc. Central
P.O. Box 206
Janesville, Wisconsin 53547

COPIES:

ATTN: Mr. Dick Vorpahl

TEST METHODS: Moisture-density relationship of soils based on STANDARD proctor (ASTM D698).
"METHOD" indicates: (N) Nuclear (ASTM D2922) or (S) Sand Cone (ASTM D1556)

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
5-20-98										
Dewatering Pad										
DW1	N	10'W of Pt. 1404	1st - 1 ft Layer	3	Brown Lean Clay, Trace Sand	20.7	103.7	106	98%	95%
DW2	N	25'W of Pt. 1426	1st - 1 ft Layer	3	Brown Lean Clay, Trace Sand	22.9	99.3	106	94% *	95%
DW3	N	20'S, 25'W of Pt. 1403	1st - 1 ft Layer	3	Brown Lean Clay, Trace Sand	25.4	98.5	106	93% *	95%
5/21/98										
Dewatering Pad										
DW4	N	Retest of DW3	1st - 1 ft Layer	3	Brown Lean Clay, Trace Sand	19.2	104.3	106	98%	95%
DW5	N	20'S, 30'W of Pt. 1425	1st - 1 ft Layer	3	Brown Lean Clay, Trace Sand	20.5	102.3	106	97%	95%
DW6	N	Retest of DW2	1st - 1 ft Layer	3	Brown Lean Clay, Trace Sand	18.6	105.2	106	99%	95%

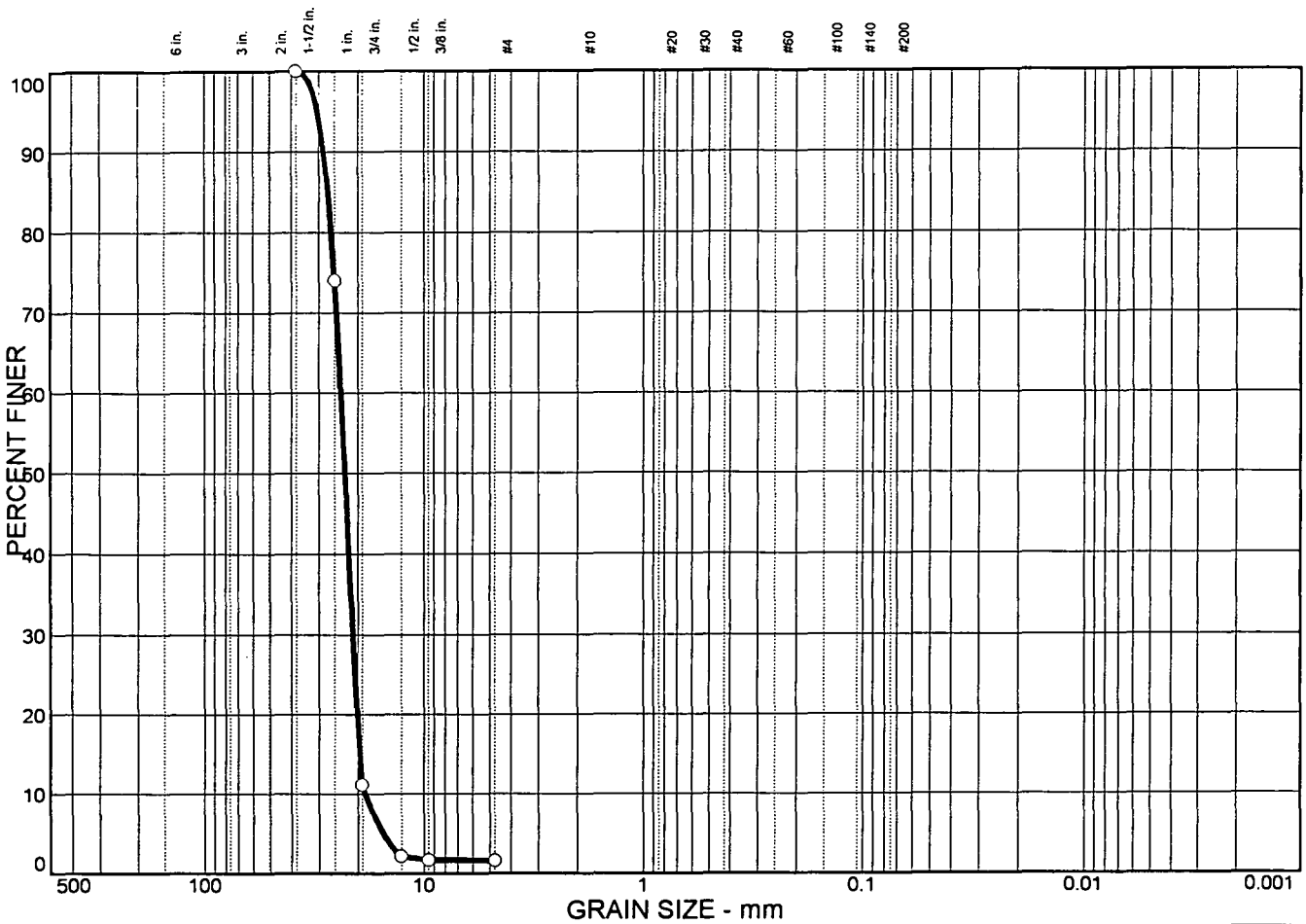
Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Maximum Density lb/cuft	Meas. Comp.	Spec. Comp.
5/22/98										
Dewatering Pad										
DW7	N	20'N, 25'E of Pt. 1382	2nd - 1 ft Layer	3	Brown Lean Clay, Trace Sand	20.5	104.8	106	99%	95%
DW8	N	25'S, 25'E of Pt. 1379	2nd - 1 ft Layer	3	Brown Lean Clay, Trace Sand	21.1	100.7	106	95%	95%
DW9	N	15'N, 15'W of Pt. 1427	2nd - 1 ft Layer	3	Brown Lean Clay, Trace Sand	19.7	100.8	106	95%	95%
DW10	N	25'N, 25'W of Pt. 1428	2nd - 1 ft Layer	3	Brown Lean Clay, Trace Sand	20.6	104.8	106	99%	95%

*Indicates measured compaction is below specification.

Signed _____ Dated 1/13/99

William W. Wuellner, P.E.

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	98.4	1.6		

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1-1/2 in.	100.0		
1 in.	74.0		
3/4 in.	11.1		
1/2 in.	2.1		
3/8 in.	1.7		
#4	1.6		

* (no specification provided)

Soil Description

Fine and Coarse Gravel, Trace Sand

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 27.3 D_{60}= 23.8 D_{50}= 22.8
D_{30}= 21.0 D_{15}= 19.5 D_{10}= 18.4
C_u= 1.29 C_c= 1.00

Classification

USCS= AASHTO=

Remarks

Tested by:
Reviewed by:

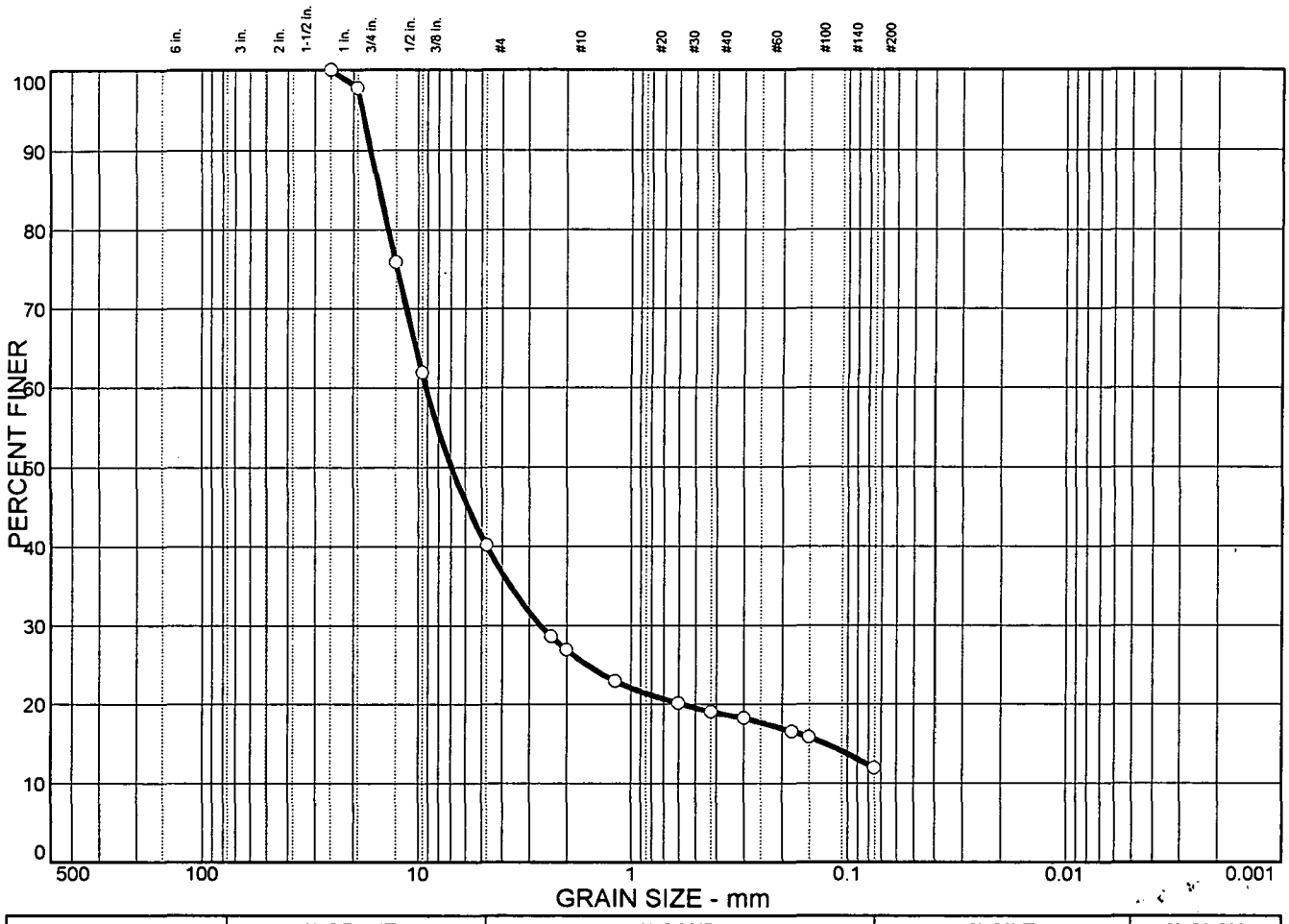
Sample No.: 1 **Source of Sample:** Gas Vent Gravel **Date:** 7-22-98
Location: At 383+00N/125+50E **Elev./Depth:**

CGC,Inc.

Client: Ryan Inc.
Project: Stoughton Landfill

Project No: C98024

PARTICLE SIZE DISTRIBUTION TEST REPORT



% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
0.0	59.8	28.3	11.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
3/4 in.	97.8		
1/2 in.	75.9		
3/8 in.	61.9		
#4	40.2		
#8	28.6		
#10	26.9		
#16	22.9		
#30	20.1		
#40	19.0		
#50	18.2		
#80	16.5		
#100	15.8		
#200	11.9		

* (no specification provided)

Soil Description

Brown Fine-Coarse Sandy Gravel (Base Course)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 15.1 D_{60}= 9.11 D_{50}= 6.91
D_{30}= 2.65 D_{15}= 0.126 D_{10}=
C_u= C_c=

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Tested By:
Reviewed By:

Sample No.: 1 **Source of Sample:** Rosenbaum Quarry **Date:** 01/08/99
Location: Site Entrance **Elev./Depth:**

CGC, Inc.

Client: Ryan Inc.
Project: Stoughton Landfill

Project No: C98024

CGC, Inc.

Job No.	C98024
Tested By:	JSG

FIELD DENSITY TEST REPORT - NO. 1 - IN-SITU DENSITIES

CGC, Inc., 3011 Perry Street, Madison, WI 53713, 608/288-4100, FAX: 608/288-7887

PROJECT: Stoughton Landfill
Stoughton, Wisconsin

TO: Ryan Inc. Central
P.O. Box 206
Janesville, Wisconsin 53547

COPIES:

ATTN: Mr. Dick Vorpahl

TEST METHODS: Moisture-density relationship of soils based on MODIFIED proctor (ASTM D1557).
"METHOD" indicates: (N) Nuclear (ASTM D2922) or (S) Sand Cone (ASTM D1556)

Test No.	METHOD	Location	(1) Test Elevation	Distance Below Fill Surface in.	Description of Material Tested	Moisture %	Dry Density lb/cuft	Wet Density lb/cuft	Meas. Comp.	Spec. Comp.
9-4-98										
Borrow Pit - Rosenbaum Property										
1	N		NA	0	Brown Lean Clay	29.0	92.9	119.9	NA	NA
2	N		NA	0	Brown Lean Clay	27.7	97.6	124.7	NA	NA
9-10-98										
Borrow Pit - Rosenbaum Property										
3	N		NA	0	Brown Lean Clay	21.4	99.6	120.9	NA	NA
4	N		NA	0	Brown Lean Clay	21.6	91.8	111.6	NA	NA
5	N		NA	0	Brown Lean Clay	29.8	90.1	116.9	NA	NA

*Indicates measured compaction is below specification.

Signed _____ Dated 1/13/99
William W. Wuellner, P.E.