PART 2: INTERIM REMEDIAL ACTION

801438

GENERAL FILL OFF-SITE

BORROW MATERIAL

SUBMITTAL APPROVAL / TRANSMITTAL

To: OHM Remediation Services
Bailey Site Field Office
9301 Hwy. 87
Bridge City, Texas 77611

From: Parsons Engineering Science
Bailey Site Field Office
9301 Hwy. 87
Bridge City, Texas 77611

Attention: Sid Richard

Project: Bailey Superfund Site- Modified North Marsh Waste Remediation

The following submittal prepared by **OHM Remediation Services** for the above mentioned project has been reviewed with the resulting action as indicated.

Submittal No.	Description	Action
119	Borrow Source for East Dike Temporary Cover	(B)

(A) NO EXCEPTIONS TAKEN
(B) EXCEPTIONS AS NOTED
(C) REVISE AND RESUBMIT
(D) REJECTED
(E) RECEIVED FOR RECORD PURPOSES ONLY

Exceptions As Noted:

- **Provide the testing labs visual description of the material including color and texture.**
- **Provide address and vicinity map of the borrow pit.**
- **The material does not conform to the Specifications; however, the material is acceptable for use. The contractor should be aware of the potential extra effort to obtain moisture control and compaction because of the high plasticity value of this material.**
- **Maintain a sample of the material tested on-site.**

Resubmittal Required: XX **Yes** _____ **No**

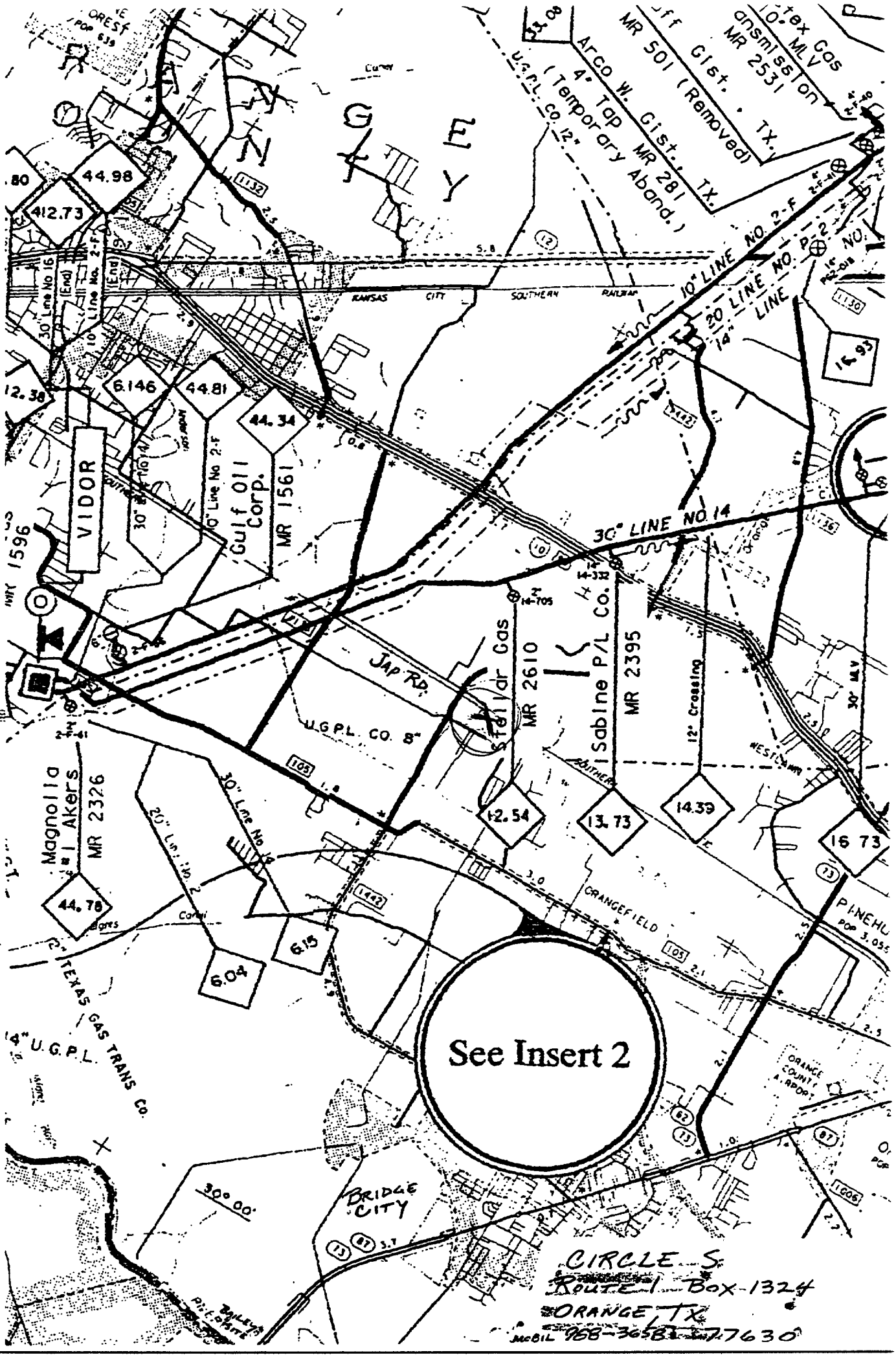
Copies to:

_____ GeoSyntec- N. Davies
_____ Parsons ES- J. Travers
_____ BSSC- P. Steerman
_____ BSSC- D. Baker
_____ file

Mark Murphy
Mark Murphy
Construction Manager

8/5/96

PARSONS ENGINEERING SCIENCE INC.



CIRCLE S
Route 1 Box 1324
ORANGE TX
MOBIL 988-3658 77630

Common Sense Engineering

T & N *Laboratories Incorporated*

1983

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705

PHONE: (409) 722-6291 / FAX: 722-6961

MOISTURE DENSITY RELATIONSHIP REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT. #270
PORT ARTHUR, TEXAS 77642

PROJECT TITLE:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB #LP-49754

CLIENT NO.: 96088

REPORT DATE: 7/27/96 **SAMPLE DATE: 7/25/96** **LAB NO.: 1772**

*** RESUBMITTING TO SHOW CORRECT "ITEM/DESCRIPTION"**

1)	**ITEM/DESCRIPTION:**	1.04 - GRAY & LT.TAN SILTY CLAY, W/SAND SEAMS(P#1)
2)	**TESTS/SAMPLE LOCATION:**	COMPOSITE FROM CIRCLE "S" BORROW
3)	**CONTRACTOR:**	OHM
4)	**ENGINEER:**	OHM

PROCEDURE	TESTING	RESULTS
1) ASTM - D698	MAXIMUM DRY DENSITY	103.0 PCF
2) ASTM - D698	OPTIMUM MOISTURE CONTENT	20.6 %
3) ASTM - D4318	LIQUID LIMIT	52
4) ASTM - D4318	PLASTICITY INDEX	27
5) ASTM - D1140	PASSING NO. 200 SIEVE	87%
6) ASTM - C136	PASSING NO. 40 SIEVE	98%
7) TXDOT-107E	LINEAR SHRINKAGE, BAR	100%
8) ASTM - D2487	SOILS CLASSIFICATION	CH
9) ASTM - D2434	PERMEABILITY TEST	N/A
10) REMARKS:	ASTM D-698 PROCTOR CURVE ATTACHED (P #1)	

T&N LABORATORIES, INC.

BY Tom A. Farmer

CC: 4 - CLIENT
1 - T&N FILE #96088

MOISTURE DENSITY RELATIONSHIP CURVE

CLIENT: OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS

PROJECT/LOCATION:

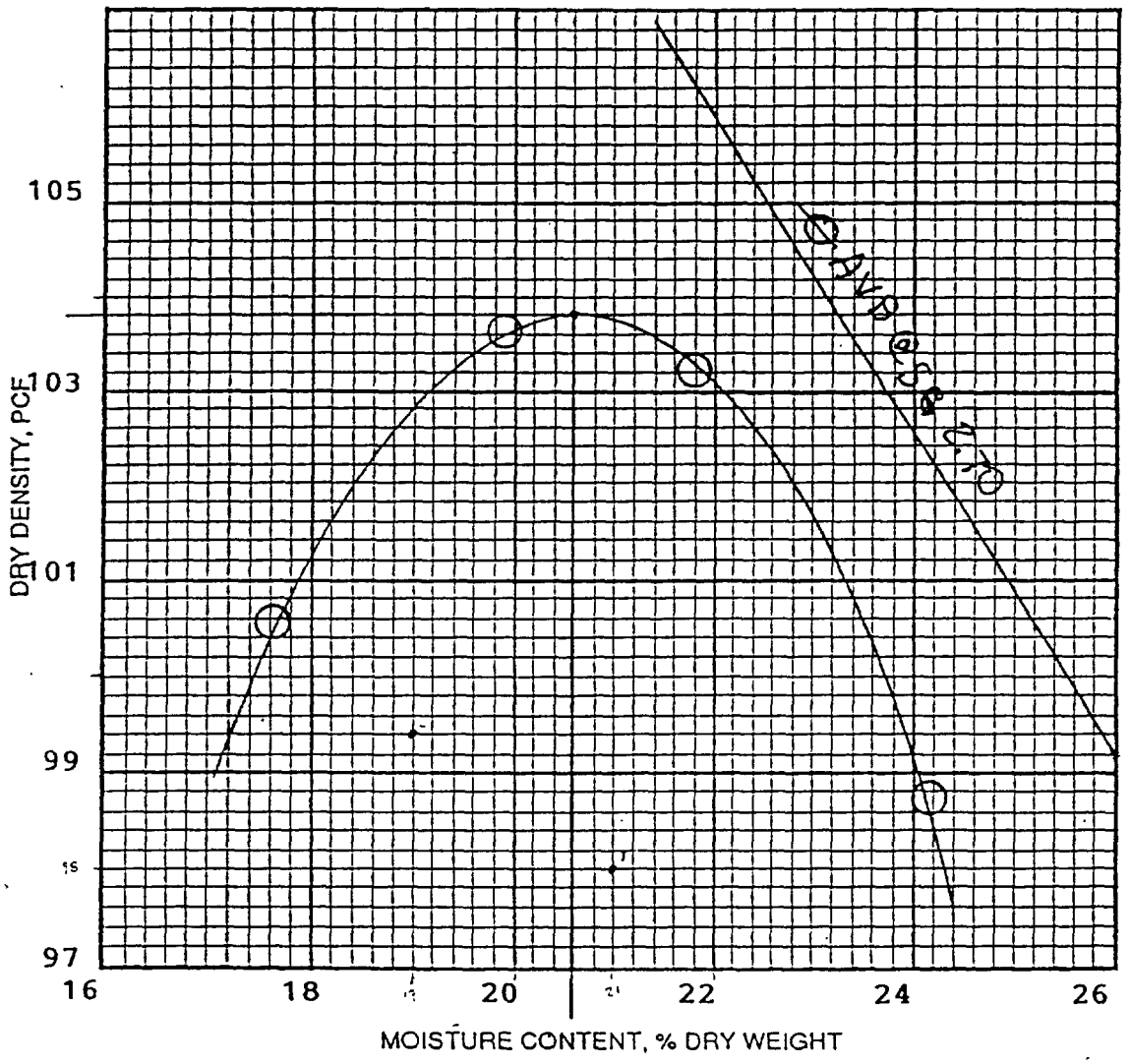
BAILEY SUPERFUND SITE
JOB #LP-49754

REPORT DATE: 7/27/96

CLIENT NO.: 96088 / 1772

Item/Description: 1.04 BORROW - SS - 004 (P #1)

Sample Source: COMPOSITE FROM CIRCLE "S" BORROW



Method of Test: ASTM - D698

Test Results:
Maximum Dry Density: 103.8 lbs/ft³
Optimum Moisture Content: 20.6 %

Atterberg Limits:
Liquid Limit: 52 , Plastic Limit: 25 , PI: 27

Common Sense Engineering

T & N *Laboratories Incorporated*

1983

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705

PHONE: (409) 727-6291 / FAX: 722-6961

MOISTURE DENSITY RELATIONSHIP REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT. #270
PORT ARTHUR, TEXAS 77642

PROJECT TITLE:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB #LP-49754

CLIENT NO.: 96088

REPORT DATE: 8/9/96 **SAMPLE DATE: 8/8/96** **LAB NO.: 1953**

1) **ITEM/DESCRIPTION:** 1.04 - TAN & GRAY SILTY CLAY - P#2

2) **TESTS/SAMPLE LOCATION:** JOBSITE IN-PLACE (BORROW MATERIAL)

3) **CONTRACTOR:** OHM

4) **ENGINEER:** OHM

PROCEDURE	TESTING	RESULTS
1) ASTM - D698	MAXIMUM DRY DENSITY	101.9 PCF
2) ASTM - D698	OPTIMUM MOISTURE CONTENT	21.4 %
3) ASTM - D4318	LIQUID LIMIT	56
4) ASTM - D4318	PLASTICITY INDEX	31
5) ASTM - D1140	PASSING NO. 200 SIEVE	89%
6) ASTM - C136	PASSING NO. 40 SIEVE	93%
7) TXDOT-107E	LINEAR SHRINKAGE, BAR	100%
8) ASTM - D2487	SOILS CLASSIFICATION	CH
9) ASTM - D2434	PERMEABILITY TEST	N/A

10) REMARKS: ASTM D-698 PROCTOR CURVE ATTACHED (P#2)

T&N LABORATORIES, INC.

BY Tom A. Faemer

CC: 4 - CLIENT
1 - T&N FILE #96088

T & N Laboratories, Inc.
JEFF COUNTY AIRPORT

MOISTURE DENSITY RELATIONSHIP CURVE

CLIENT:

OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS

PROJECT/LOCATION:

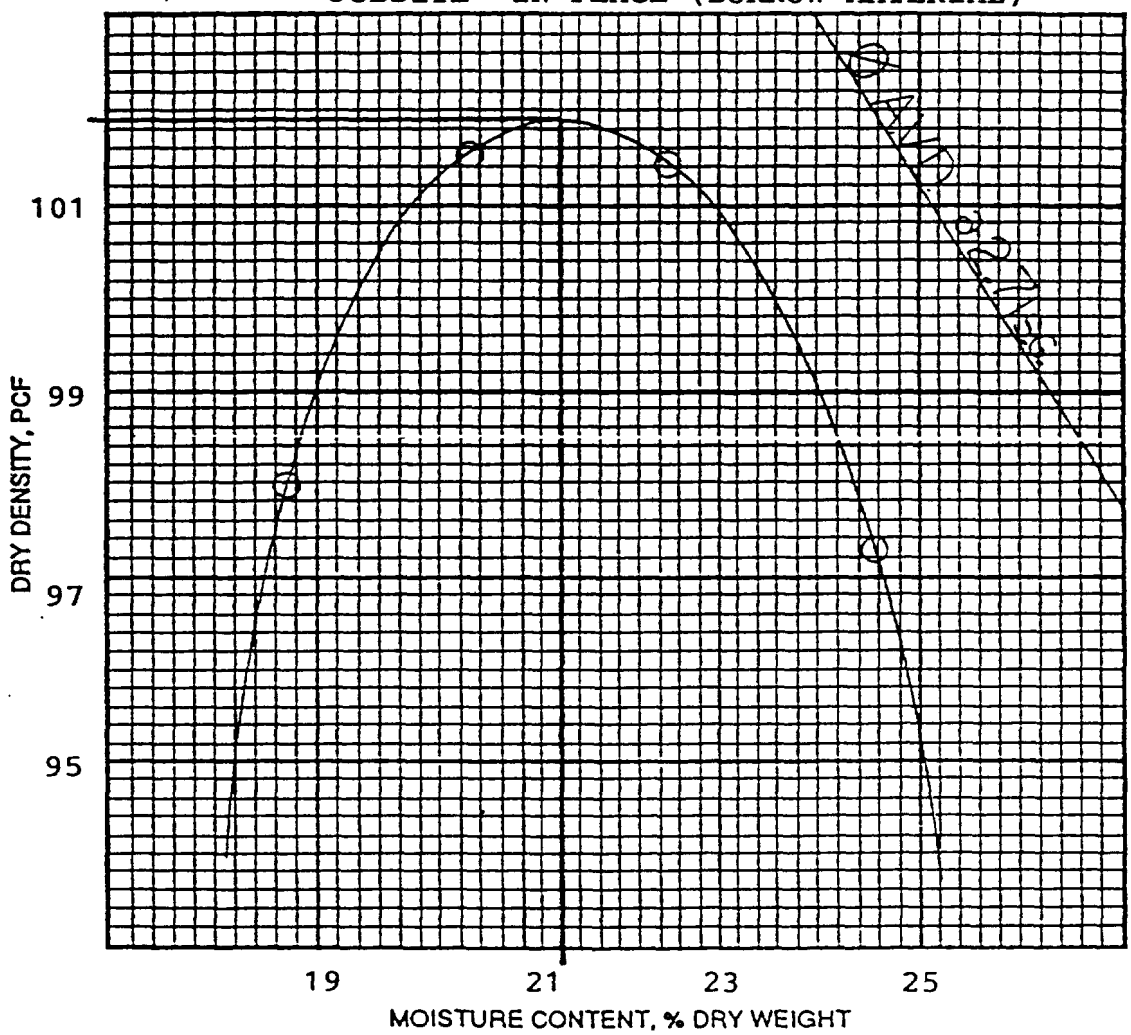
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS

REPORT DATE: 8/9/96

CLIENT NO.: 96088 - 1953

Item/Description: 1.04 - TAN & GRAY SILTY CLAY P#2

Sample Source: JOBSITE IN-PLACE (BORROW MATERIAL)



Method of Test: ASTM - D698

Test Results:
Maximum Dry Density: 101.9 lbs/ft³
Optimum Moisture Content: 21.4%

Atterberg Limits:
Liquid Limit: 56 Plastic Limit: 25 PI: 31

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1983

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705

PHONE: (409) 727-6291 / FAX: 722-6961

T&N93-19

MOISTURE DENSITY RELATIONSHIP REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT. #270
PORT ARTHUR, TEXAS 77642

PROJECT TITLE:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB #LP-49754

CLIENT NO.: 96088

REPORT DATE: 8/16/96 **SAMPLE DATE: 8/14/96** **LAB NO.: 1991**

1)	**ITEM/DESCRIPTION:**	DARK TAN & GRAY CLAY - P#3
2)	**TESTS/SAMPLE LOCATION:**	IN-PLACE- GRID #3 - 60FT. LT C/L
3)	**CONTRACTOR:**	OHM
4)	**ENGINEER:**	OHM

PROCEDURE	TESTING	RESULTS
1) ASTM - D698	MAXIMUM DRY DENSITY	107.3 PCF
2) ASTM - D698	OPTIMUM MOISTURE CONTENT	18.8 %
3) ASTM - D4318	LIQUID LIMIT	54
4) ASTM - D4318	PLASTICITY INDEX	29
5) ASTM - D422	PASSING NO. 200 SIEVE	73%
6) ASTM - D422	PASSING NO. 40 SIEVE	97%
7) ASTM - D422	PASSING NO. 4 SIEVE	100%
8) ASTM - D2487	SOILS CLASSIFICATION	CH
9) ASTM - D2216	MOISTURE CONTENT - OVEN	N/A
10)REMARKS:	ASTM D-698 PROCTOR CURVE ATTACHED (P#3)	

T&N LABORATORIES, INC.

BY Tom A. Faemer

CC: 4 - CLIENT
1 - T&N FILE #96088

T & N Laboratories, Inc.
JEFF COUNTY AIRPORT

MOISTURE DENSITY RELATIONSHIP CURVE

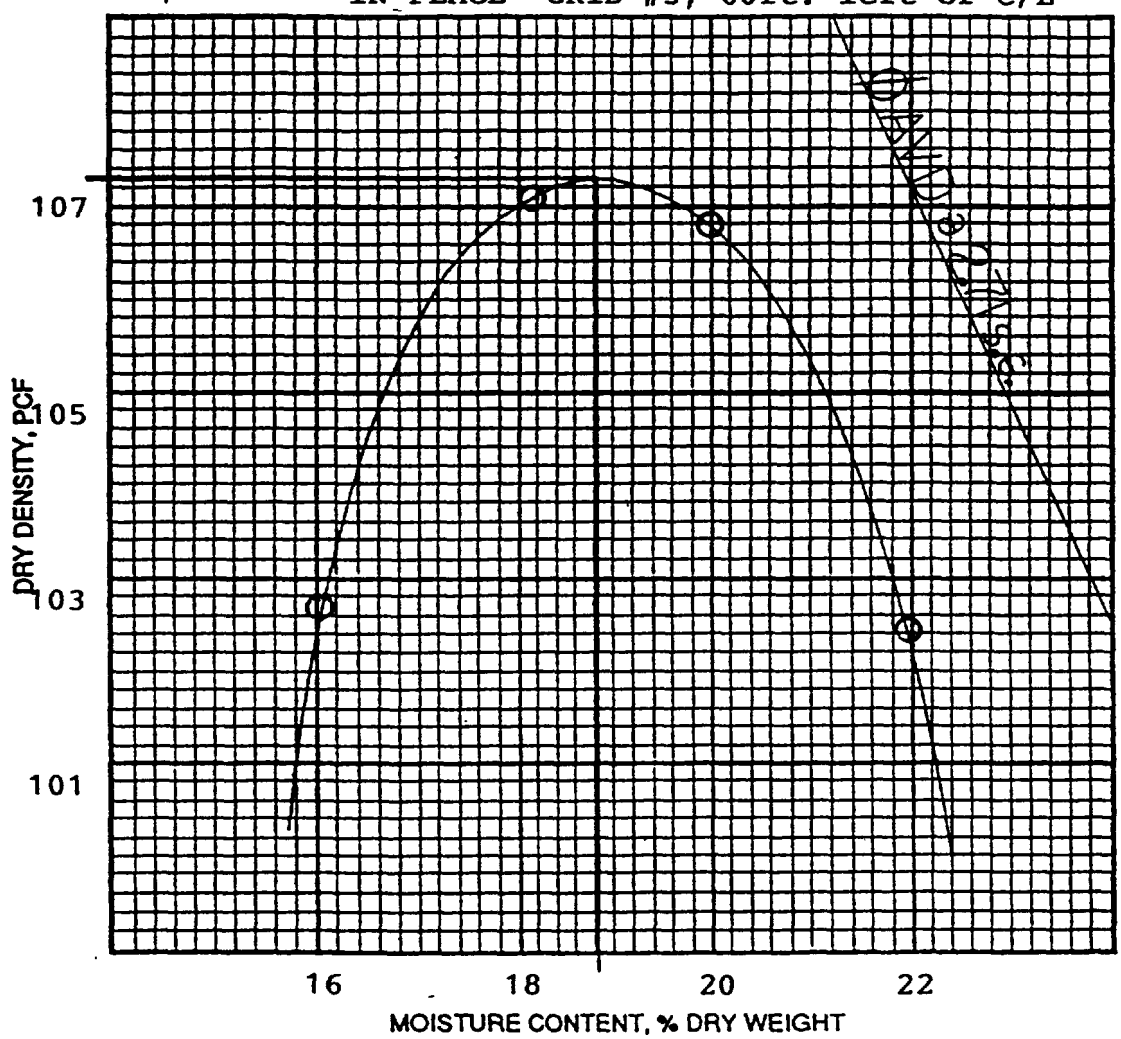
CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS

PROJECT/LOCATION:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS

REPORT DATE: 8/16/96 **CLIENT NO.:** 96088 - 1991

Item/Description: 1.04 -DARK TAN & GRAY CLAY P#3

Sample Source: IN-PLACE- GRID #3, 60ft. left of C/L



Method of Test: ASTM - D698

Test Results:
Maximum Dry Density: 107.3 lbs/ft³
Optimum Moisture Content: 18.8 %

Atterberg Limits:
Liquid Limit: 54 Plastic Limit: 25 PI: 29

IN-PLACE FIELD DENSITY TEST

Common Sense Engineering

T & N Laboratories Incorporated

1983

T&N93-26

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705

PHONE: (409) 727-6291 / FAX: 722-6961

DAILY REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT.#270
PORT ARTHUR, TEXAS 77642

PROJECT/LOCATION:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB #18464
P.O. #LP-49755 (FIELD WORK)

>>

CLIENT/LAB NO.: 96088 - 1926

WORK DISCIPLINE: 1.04 - SITEFILL AND BACKFILL

>>

WORK DATE: 8/06/96

DAY OF WEEK: TUESDAY

WEATHER: PARTLY CLOUDY

T&N TECHNICIAN: S. BRANSON

WORK TIME

A.M.	9:30	**TO**	12:30
P.M.	12:30	**TO**	6:00

SUMMARY

THE CONTRACTOR PLACED AND COMPACTED FILL MATERIAL FROM O" TO APPROXIATELY 140' OF GRID #2. MOISTURE/DENSITY TESTS WERE TAKEN (NUKE GAUGE) WITH NO VISUAL PROBLEMS NOTED. FOR RESULTS OF M/D TESTS, SEE "REPORT OF FIELD DENSITY" - **LAB #1926-1.**

WORK SCHEDULED TO RESUME 8/7/96 @ 7:00 AM.

T&N LABORATORIES, INC.

BY: SHAWN BRANSON

CC: 4 - CLIENT
1 - T&N FILE #96088

TLG

Common Sense Engineering

T & N *Laboratories Incorporated*

1983

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: 722-6961

REPORT OF FIELD DENSITY TESTS

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT. #270
PORT ARTHUR, TEXAS 77642

PROJECT/LOCATION:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB #18464
P.O. #LP-49755 (FIELD WORK)

REPORT DATE: 8/7/96 **TEST DATE: 8/6/96** **REPORT NO.: 96088 - 1926-1**

ITEM DESCRIPTION: FILL MATERIALS
ASTM -D 2922/3017

	LOCATION	LIFT	DEPTH-IN	WET DENSITY P.C.F.	DRY DENSITY P.C.F	FIELD MOISTURE 0%	PERCENT OF MAXIMUM DENSITY	SYMBOL
1	GRID #1: 36'NE.OF SURVEY POINT #12	1ST	6"	119.4	98.0	21.8	94.4	A
2	GRID #2: 23' LEFT OF CENTER @ 126'	"	"	123.4	103.7	19.0	99.9	A

SYMBOL: A) TEST RESULTS MEET REQUIREMENTS B) TEST RESULTS DO NOT MEET REQUIREMENTS

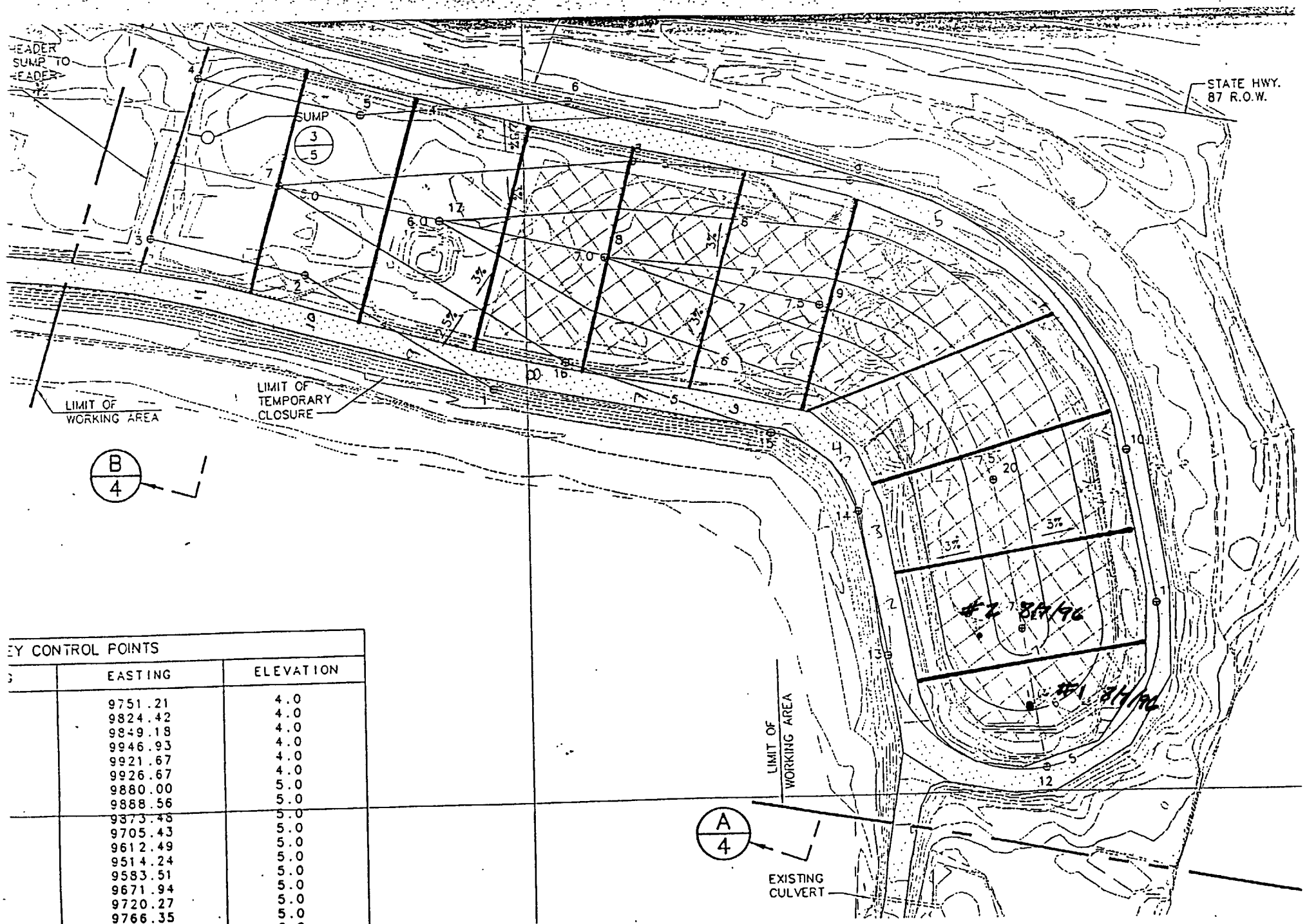
REQUIREMENTS: MAX. DRY DENSITY 103.8 PCF REQ'D COMPACTION 90 % OPTIMUM MOISTURE 20.6 %

CC: 4 - CLIENT
. - T&N FILE #96088

lg

T&N LABORATORIES, INC.

BY Jim A. Faemer



EY CONTROL POINTS

G	EASTING	ELEVATION
	9751.21	4.0
	9824.42	4.0
	9849.18	4.0
	9946.93	4.0
	9921.67	4.0
	9926.67	4.0
	9880.00	5.0
	9888.56	5.0
	9873.48	5.0
	9705.43	5.0
	9612.49	5.0
	9514.24	5.0
	9583.51	5.0
	9671.94	5.0
	9720.27	5.0
	9766.35	5.0

Common Sense Engineering
T & N *Laboratories Incorporated*
1983
RT. 4, BOX 78-B (JEFF.COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: 722-6961
T&N93-26

DAILY REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT.#270
PORT ARTHUR, TEXAS 77642

PROJECT/LOCATION:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB #18464
P.O. #LP-49755 (FIELD WORK)

>>

CLIENT/LAB NO.: 96088 - 1934

WORK DISCIPLINE: 1.04 - SITE FILL AND BACKFILL

>>

WORK DATE: 8/07/96

DAY OF WEEK: WEDNESDAY

WEATHER: RAIN

T&N TECHNICIAN: S. BRANSON

WORK TIME

A.M.	6:30	**TO**	8:30
P.M.	-	**TO**	-

SUMMARY

AFTER TECNICIAN ARRIVED ON JOBSITE, CONTRACTOR DETERMINED NO WORK COULD BE PERFORMED TODAY DUE TO WET SITE CONDITONS.

WORK IS SCHEDULED TO RESUME AT 6:30 AM ON 8/8/96.

T&N LABORATORIES, INC.

BY: SHAWN BRANSON

CC: 4 - CLIENT
1 - T&N FILE #96088

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Common Sense Engineering

T & N *Laboratories Incorporated*

1983

T&N93-26

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: 722-6961

DAILY REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT.#270
PORT ARTHUR, TEXAS 77642

PROJECT/LOCATION:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB #18464
P.O. #LP-49755 (FIELD WORK)

>>

CLIENT/LAB NO.: 96088 - 1941

WORK DISCIPLINE: Q/C FIELD INSPECTION/TESTING

>>

WORK DATE: 8/08/96

DAY OF WEEK: THURSDAY

WEATHER: PT. CLOUDY/HOT

T&N TECHNICIAN: S. BRANSON

WORK TIME

A.M. 6:30 **TO** 12:00
P.M. 12.30 **TO** 5:30

SUMMARY

THE CONTRACTOR PLACED AND COMPACTED BORROW CLAY FIL IN AN AREA APPROXIATELY 140' x 270'. SOME SLIGHT VISUAL CHANGES IN BORROW MATERIAL WAS NOTICED. DUE TO THE CHANGES AND TOTAL YARDAGE, ANOTHER PROCTOR SAMPLE WAS DELIVERED TO THE LAB. MOISTURE/DENSITY TESTS RESULTS ARE SHOWN ON REPORT #1941-1. WORK WILL RESUME AT 6:30 AM FRIDAY, 8-9-96.

T&N LABORATORIES, INC.

BY: SHAWN BRANSON

CC: 4 - CLIENT
1 - T&N FILE #96088

TLG

Common Sense Engineering
T & N Laboratories Incorporated
1983
RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
P[illegible] FAX [illegible]961

REPORT OF FIELD DENSITY TESTS

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT. #270
PORT ARTHUR, TEXAS 77642

PROJECT/LOCATION:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB #18464
P.O. #LP-49755 (FIELD WORK)

REPORT DATE: 8/9/96 **TEST DATE: 8/8/96** **REPORT NO.: 96088 - 1941-1**

ITEM DESCRIPTION:
ASTM -D 2922/3017

	LOCATION	LIFT	DEPTH-IN	WET DENSITY P.C.F.	DRY DENSITY P.C.F	FIELD MOISTURE 0%	PERCENT OF MAXIMUM DENSITY	SYMBOL
	SEE ATTACH DRAWING:							
--	GRID #3: 17' OF ROAD @ 149'	1ST	6"	117.6	97.1	21.1	93.6	A
#4	GRID #3: 28' OF ROAD @ 165'	"	"	114.0	97.3	17.2	93.7	A
#5	GRID #4: O' OF CENTER LINE @ 250'	"	"	120.7	97.7	23.5	94.2	A

SYMBOL: A) TEST RESULTS MEET REQUIREMENTS B) TEST RESULTS DO NOT MEET REQUIREMENTS

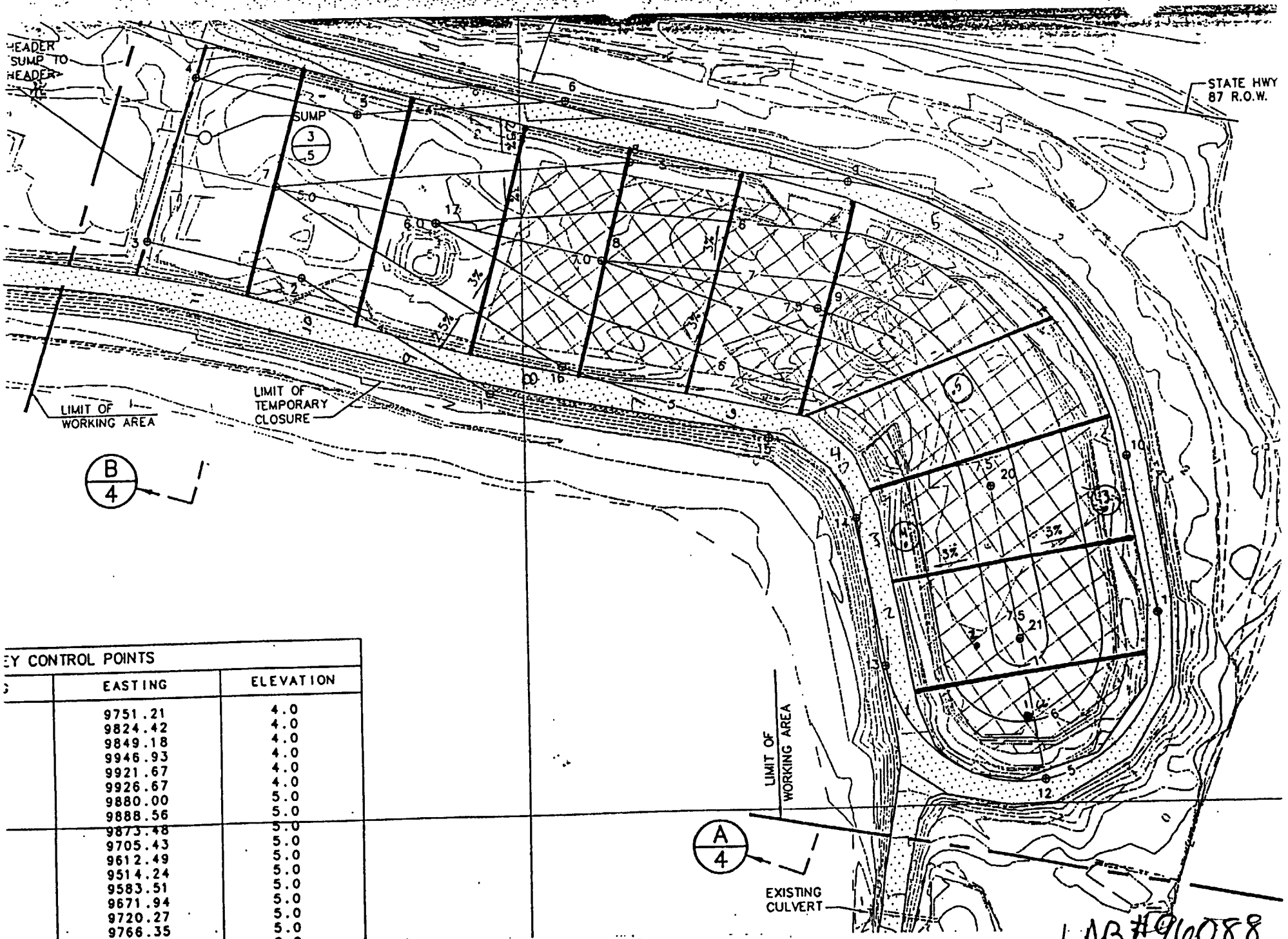
REQUIREMENTS: MAX. DRY DENSITY 103.8 PCF REQ'D COMPACTION 90 % OPTIMUM MOISTURE 20.6 %

CC: 4 - CLIENT
1 - T&N FILE #96088

T&N LABORATORIES, INC.

BY Jim A. Faemer

tlg



EY CONTROL POINTS		
	EASTING	ELEVATION
	9751.21	4.0
	9824.42	4.0
	9849.18	4.0
	9946.93	4.0
	9921.67	4.0
	9926.67	4.0
	9880.00	5.0
	9888.56	5.0
	9873.48	5.0
	9705.43	5.0
	9612.49	5.0
	9514.24	5.0
	9583.51	5.0
	9671.94	5.0
	9720.27	5.0
	9766.35	5.0

LAB #96088
(#1941-1)

Common Sense Engineering

T & N *Laboratories Incorporated*

1983

T&N93-26

RT. 4, BOX 78-B (JEFF.COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: 722-6961

DAILY REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DIVE, APT. #270
PORT ARTHUR, TEXAS 77642

PROJECT/LOCATION:
BAILEY SUPERFUND SITEION
BRIDGE CITY, TEXAS
OHM JOB # 18464
P.O. #LP-49755 (FIELD WORK)

>>

CLIENT/LAB NO.: 96088 - 1959 — 1 ST **TECHNICIAN**

WORK DISCIPLINE: Q/C INSPECTION/TESTING - SOILS

>>

WORK DATE: 8/09/96

DAY OF WEEK: FRIDAY

WEATHER: PT. CLOUDY/HOT

T&N TECHNICIAN: S. BRANSON

WORK TIME

A.M. 6:00 **TO** 12:00
P.M. 12:30 **TO** 7:00

SUMMARY

CONTRACTOR PLACED AND COMPACTED APPROXIATELY 270' TO 726' OF GRID#11. THE FIRST LIFT WAS COMPLETED TODAY AND NINE DENSITY TESTS WERE TAKEN. FOR MOISTURE/DENSITY TEST RESULTS, SEE "REPORT OF FIELD DENSITY TESTS" **#96088 - 1959-1.**

WORK SCHEDULED TO RESUME AT 6:30 AM, MONDAY 8/12/96.

T&N LABORATORIES, INC.

BY: SHAWN BRANSON

CC: 4 - CLIENT
1 - T&N FILE #96088

TLG

Common Sense Engineering

T & N Laboratories Incorporated

1983

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705

PHONE: (409) 727-6291 / FAX: 722-6961

REPORT OF FIELD DENSITY TESTS

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT. #270
PORT ARTHUR, TEXAS 77642

PROJECT/LOCATION:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB #18464
P.O. #LP-49755 (FIELD WORK)

REPORT DATE: 8/12/96 **TEST DATE: 8/9/96** **REPORT NO. 96088 - 1959-1**

ITEM DESCRIPTION:
ASTM -D 2922/3017

	LOCATION	LIFT	DEPTH-IN	WET DENSITY P.C.F.	DRY DENSITY P.C.F	FIELD MOISTURE 0%	PERCENT OF MAXIMUM DENSITY	SYMBOL
	SEE MAP ATTACHED:							
#6	50' LT. OF C/L @ 285' - GRID #5	1ST	6"	121.7	102.5	18.7	98.7	A
#7	60' RT. OF C/L @ 356' - GRID #5	"	"	123.4	104.4	18.2	100.6	A
#8	25' RT. OF C/L @ 387' - GRID #6	"	"	118.9	99.6	19.2	96.0	A
#9	58' LT. OF C/L @ 446' - GRID #7	"	"	124.2	103.7	19.7	99.9	A
#10	67' RT. OF C/L @ 409' - GRID #7	"	"	118.1	99.7	18.5	96.0	A
#11	3' RT. OF C/L @ 499' - GRID #8	"	"	123.0	102.0	20.6	98.2	A
#12	66' LT. OF C/L @ 529' - GRID #9	"	"	124.8	104.5	19.4	100.7	A
#13	41' RT. OF C/L @ 588' - GRID #9	"	"	119.8	98.0	22.2	94.4	A
#14	7' LT. OF C/L @ 619' - GRID #10	"	"	119.7	100.6	19.0	96.9	A

SYMBOL: A) TEST RESULTS MEET REQUIREMENTS B) TEST RESULTS DO NOT MEET REQUIREMENTS

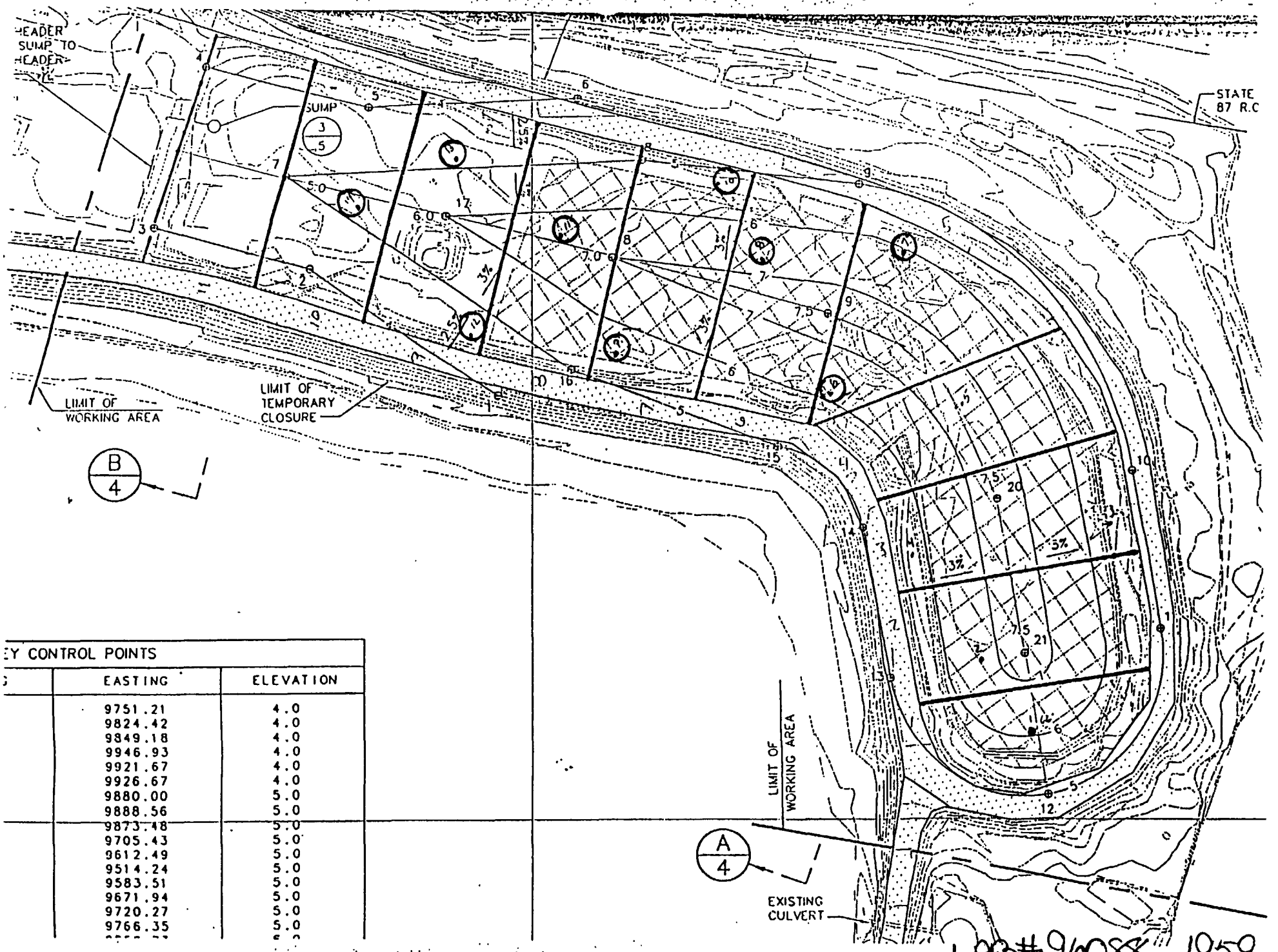
REQUIREMENTS: MAX. DRY DENSITY 103.8 PCF **REQ'D COMPACTION 90 %** **OPTIMUM MOISTURE 20.6 %**

CC: 4 - CLIENT
1 - T&N FILE #96088

tlg

T&N LABORATORIES, INC.

BY Jim A. Farmer



EY CONTROL POINTS

	EASTING	ELEVATION
	9751.21	4.0
	9824.42	4.0
	9849.18	4.0
	9946.93	4.0
	9921.67	4.0
	9926.67	4.0
	9880.00	5.0
	9888.56	5.0
	9873.48	5.0
	9705.43	5.0
	9612.49	5.0
	9514.24	5.0
	9583.51	5.0
	9671.94	5.0
	9720.27	5.0
	9766.35	5.0

LAB# 96088-1959-

Common Sense Engineering
T & N Laboratories Incorporated
1983
T&N93-26
RT. 4, BOX 78-B (JEFF.COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: 722-6961

DAILY REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DIVE, APT. #270
PORT ARTHUR, TEXAS 77642

PROJECT/LOCATION:
BAILEY SUPERFUND SITEION
BRIDGE CITY, TEXAS
OHM JOB # 18464
P.O. #LP-49755 (FIELD WORK)

>>>

CLIENT/LAB NO.: 96088 - 1973 1ST **TECHNICIAN**

WORK DISCIPLINE: Q/C INSPECTION/TESTING - SOILS

>>>

WORK DATE: 8/12/96

DAY OF WEEK: MONDAY

WEATHER: CLOUDY/HOT

T&N TECHNICIAN: S. BRANSON

WORK TIME

A.M. 6:30 **TO** 7:30
P.M. - **TO** -

SUMMARY

AFTER TECHNICIAN ARRIVED ON JOBSITE, THE CONTRACTOR DETERMINED THAT NO WORK COULD BE PERFORMED TODAY DUE TO WET SITE CONDITIONS.

CONTRACTOR WAS NOTIFIED THAT MOISTURE/ DENSITY TESTS NEED TO BE PERFORMED ON THE FIRST LIFT OF GRID #11. WORK WILL RESUME AT CONTRACTORS NOTIFICATION.

T&N LABORATORIES, INC.

BY: SHAWN BRANSON

CC: 4 - CLIENT
1 - T&N FILE #96088

TLG

Common Sense Engineering

T & N *Laboratories Incorporated*

1983

RT. 4, BOX 78-B (JEFF.COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: 722-6961

T&N93-26

DAILY REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DIVE, APT. #270
PORT ARTHUR, TEXAS 77642

PROJECT/LOCATION:
BAILEY SUPERFUND SITEION
BRIDGE CITY, TEXAS
OHM JOB # 18464
P.O. #LP-49755 (FIELD WORK)

>>

CLIENT/LAB NO.: 96088 - 2001   1ST **TECHNICIAN**

WORK DISCIPLINE: 1.04 - SITEFILL AND BACKFILL

>>

WORK DATE: 8/15/96   **DAY OF WEEK:** THURSDAY

WEATHER: CLOUDY/HOT

T&N TECHNICIAN: S. BRANSON

WORK TIME

A.M. - **TO** -
P.M. 1:00 **TO** 4:30

SUMMARY

THE CONTRACTOR REMOVED MATERIAL FROM THE TEMPORARY ROAD TO BEGIN THE SECOND (2ND) LIFT. ONE (1) MOISTURE/DENSITY TEST WAS TAKEN IN GRID #3. NO VISUAL CHANGED IN THE MATERIAL WERE NOTED FOR RESULTS OF MOISTURE/DENSITY TEST. SEE "REPORT OF FIELD DENSITY" LAB #2001-1.

WORK IS SCHEDULED TO RESUME FRIDAY, 8/16/96 AT 6:30AM.

T&N LABORATORIES, INC.

BY: SHAWN BRANSON

CC: 4 - CLIENT
1 - T&N FILE #96088

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Common Sense Engineering

T & N Laboratories Incorporated

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PHONE: (409) 727-6291 / FAX: 722-6961

DENS-OHM

REPORT OF FIELD DENSITY TESTS

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT. #270
PORT ARHTUR, TX 77642

PROJECT/LOCATION:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB#18464
PO #LP-49755 (FIELD WORK)

REPORT DATE: 8/16/96 **TEST DATE: 8/15/96** **REPORT DATE: 96088 - 2001-1**

ITEM DESCRIPTION: BACKFILL P#1
ASTM -D 2922/3017

	LOCATION	LIFT	DEPTH-IN	WET DENSITY P.C.F.	DRY DENSITY P.C.F	FIELD MOISTURE 0%	PERCENT OF MAXIMUM DENSITY	SYMBOL
#15	"SEE ATTACHED DRAWING" GRID #3 53' LT. OF C/L @ 189'	2ND	6"	119.1	104.3	14.1	97.2	A

SYMBOL: A) TEST RESULTS MEET REQUIREMENTS B) TEST RESULTS DO NOT MEET REQUIREMENTS

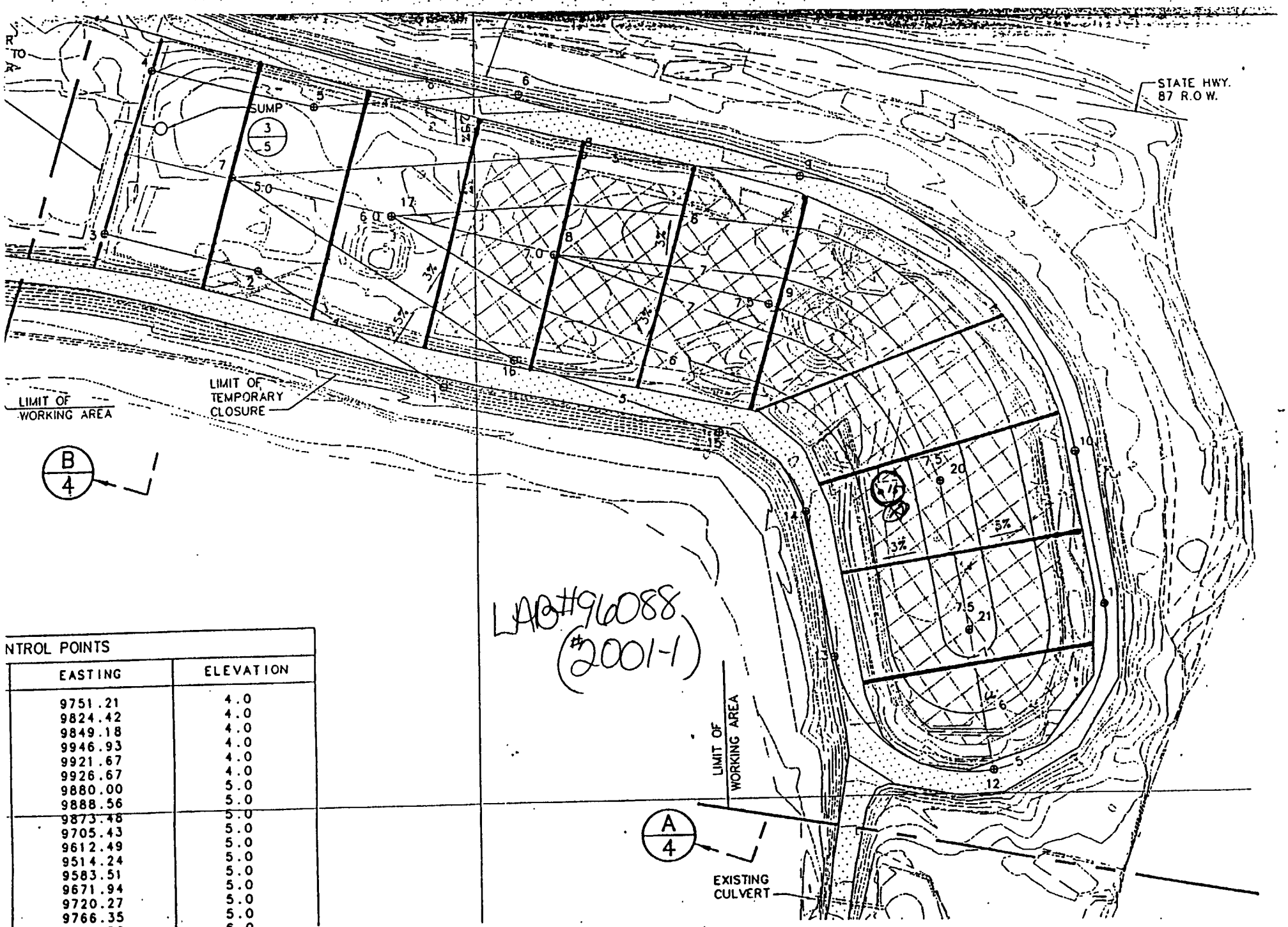
REQUIREMENTS: MAX. DRY DENSITY 107.3 PCF REQ'D COMPACTION 90% OPTMIUM MOISTURE 18.8 %

CC: 4 - CLIENT
1 - T&N FILE #96088

tlg

T&N LABORATORIES, INC.

BY Jim A. Faemer



NTROL POINTS

EASTING	ELEVATION
9751.21	4.0
9824.42	4.0
9849.18	4.0
9946.93	4.0
9921.67	4.0
9926.67	4.0
9880.00	5.0
9888.56	5.0
9873.48	5.0
9705.43	5.0
9612.49	5.0
9514.24	5.0
9583.51	5.0
9671.94	5.0
9720.27	5.0
9766.35	5.0

Common Sense Engineering

T & N *Laboratories Incorporated*

1983

T&N93-26

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705

PHONE: (409) 727-6291 / FAX: 722-6961

DAILY REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DIVE, APT. #270
PORT ARTHUR, TEXAS 77642

PROJECT/LOCATION:
BAILEY SUPERFUND SITEION
BRIDGE CITY, TEXAS
OHM JOB # 18464
P.O. #LP-49755 (FIELD WORK)

>>

CLIENT/LAB NO.: 96088 - 2005 1ST **TECHNICIAN**

WORK DISCIPLINE: 1.04 - SITEFILL AND BACKFILL

>>>

WORK DATE: 8/16/96

DAY OF WEEK: FRIDAY

WEATHER: CLOUDY/HOT

T&N TECHNICIAN: S. BRANSON

WORK TIME

A.M. 6:30 **TO** 12:00
P.M. 12:30 **TO** 3:00

SUMMARY

THE CONTRACTOR CONTINUED TO REMOVE & COMPACT MATERIAL FROM THE TEMPORARY ROAD TO BEGIN THE SECOND (2ND) LIFT. MOISTURE/DENSITY TEST WAS TAKEN IN GRID #11 & 1. FOR TEST INFORMATION, REFER TO "REPORT OF FIELD DENSITY" LAB #2005-1.

WORK IS SCHEDULED TO RESUME MONDAY, 8/19/96, WEATHER PERMITTING.

T&N LABORATORIES, INC.

BY: SHAWN BRANSON

CC: 4 - CLIENT
1 - T&N FILE #96088

TLG

Common Sense Engineering
T & N Laboratories Incorporated
1983
RT. 4, BOX 78-B (JEFF.COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: 722-6961

DENS-OHM

REPORT OF FIELD DENSITY TESTS

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT. #270
PORT ARHTUR, TX 77642

PROJECT/LOCATION:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB#18464
PO #LP-49755 (FIELD WORK)

REPORT DATE: 8/19/96 **TEST DATE:** 8/16/96 **REPORT NO.:** 96088 - 2005-1

ITEM DESCRIPTION:
ASTM -D 2922/3017

	LOCATION	LIFT	DEPTH-IN	WET DENSITY P.C.F.	DRY DENSITY P.C.F	FIELD MOISTURE 0%	PERCENT OF MAXIMUM DENSITY	SYMBOL
	"SEE ATTACHED MAP"							
#16	GRID #1 55' RT. OF C/L @ 44'	2ND	6"	122.6	107	14.5	99.7	A
#17	GRID #11 33' RT. OF C/L @ 711'	1ST	6"	115.3	95.7	20.5	92.2	A

SYMBOL: A) TEST RESULTS MEET REQUIREMENTS B) TEST RESULTS DO NOT MEET REQUIREMENTS

REQUIREMENTS: MAX. DRY DENSITY 107.3 PCF REQ'D COMPACTION 98% OPTMIUM MOISTURE 18.8 %

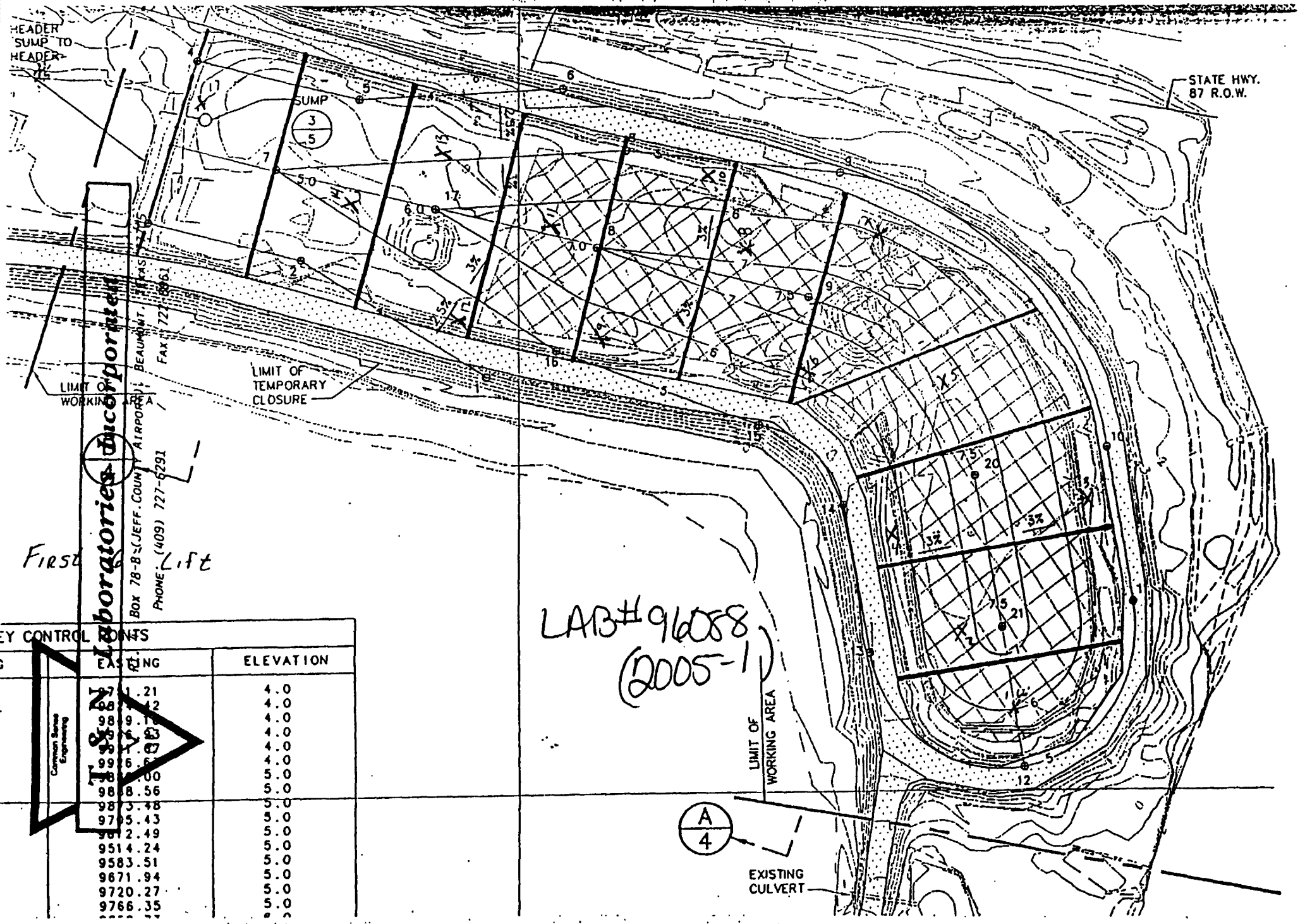
CC: 4 - CLIENT
1 - T&N FILE #96088

tlg

T&N LABORATORIES, INC.

Tom A. Faemer

BY_____

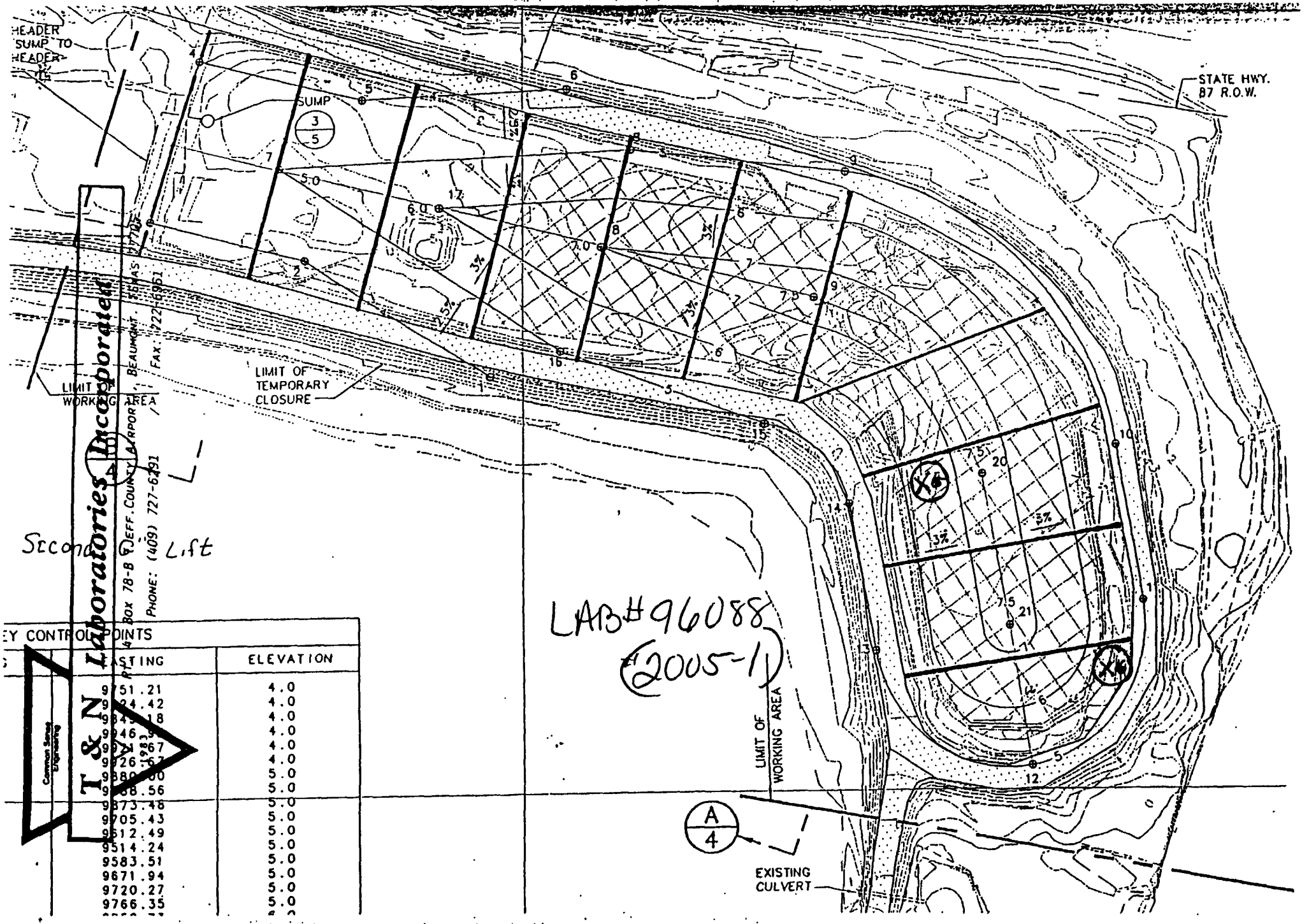


T & N Laboratories Incorporated
Box 78-B (Jeff. County Airport), Beaumont, Texas 77705
Phone: (409) 727-6291 Fax: 722-8961

First Lift

LAB# 96088
(2005-1)

EY CONTROL POINTS		
	EASTING	ELEVATION
	9721.21	4.0
	9689.12	4.0
	9689.1[illegible]	4.0
	9[illegible]	4.0
	9[illegible]	4.0
	9916.6[illegible]	4.0
	98[illegible].00	5.0
	9818.56	5.0
	9813.48	5.0
	9705.43	5.0
	9612.49	5.0
	9514.24	5.0
	9583.51	5.0
	9671.94	5.0
	9720.27	5.0
	9766.35	5.0



EY CONTROL POINTS		
	ASTING	ELEVATION
	9751.21	4.0
	9824.42	4.0
	9845.18	4.0
	9846.[illegible]	4.0
	9927.67	4.0
	9926.67	4.0
	9880.00	5.0
	9888.56	5.0
	9873.48	5.0
	9705.43	5.0
	9612.49	5.0
	9514.24	5.0
	9583.51	5.0
	9671.94	5.0
	9720.27	5.0
	9766.35	5.0

Common Sense Engineering

T & N *Laboratories Incorporated*

1983

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: 722-6961

T&N93-26

DAILY REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT.#270
PORT ARTHUR, TEXAS 77642

PROJECT/LOCATION:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB #18464
P.O. #LP-49755 (FIELD WORK)

>>

CLIENT/LAB NO.: 96088 - 2020 1ST **TECHNICIAN**

WORK DISCIPLINE: 1.04 SITEFILL AND BACKFILL

>>

WORK DATE: 8/19/96

DAY OF WEEK: MONDAY

WEATHER: HOT/CLOUDY

T&N TECHNICIAN: S. BRANSON

WORK TIME

A.M. 6:30 **TO** 12:00
P.M. 1:00 **TO** 4:30

SUMMARY

THE CONTRACTOR PLACED AND COMPACT SOIL FROM APPROXIMATELY 594 FT. TO 726 FT. NO VISUAL CHANGES WERE NOTED. FOR MOISTURE/DENSITY TEST RESULTS REFER TO "REPORT OF FIELD DENSITY" #2020-1.

T&N LABORATORIES, INC.

BY: SHAWN BRANSON

CC: 4 - CLIENT
1 - T&N FILE #96088

TLG

Common Sense Engineering
T & N Laboratories Incorporated
1983
RT. 4, BOX 78-B (JEFF.COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: 722-6961

)ENS-OHM

REPORT OF FIELD DENSITY TESTS

:LIENT:
)HM REMEDIATION CORP.
:/O MR. BLAKE RIGGS
'201 LAKE ARTHUR DRIVE, APT. #270
'ORT ARHTUR, TX 77642

PROJECT/LOCATION:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB#18464
PO #LP-49755 (FIELD WORK)

REPORT DATE: 8/20/96 **TEST DATE: 8/19/96** **REPORT NO.: 96088 - 2020-1**

TEM DESCRIPTION: 1.04 SITEFILL & BACKFILL
ASTM -D 2922/3017

	LOCATION	LIFT	DEPTH-IN	WET DENSITY P.C.F.	DRY DENSITY P.C.F	FIELD MOISTURE 0%	PERCENT OF MAXIMUM DENSITY	SYMBOL
	"SEE ATTACHED MAP"							
#18	23' RT. OF C/L @ 90'	3RD	6"	118.2	100.8	17.4	93.9	A
#19	21' LT. OF C/L @ 218'	"	"	116.2	100.6	15.5	93.7	A
#20	30' RT. OF C/L @ 285'	"	"	120.6	104.6	15.4	97.5	A
#21	5' RT. OF C/L @ 395'	"	"	115.7	100.2	15.5	93.4	A
#22	32' LT. OF C/L @ 411'	"	"	116.3	99.5	16.9	92.7	A
#23	4' LT. OF C/L @ 492'	"	"	125.3	106.1	18.1	98.9	A
#24	8' RT. OF C/L @ 541'	"	"	121.8	103.2	18.0	96.2	A
#25	17' LT. OF C/L @ 613'	"	"	120.8	103.6	16.6	96.6	A
#26	15'LT. OF C/L @ 693'	"	"	121.7	101.2	20.2	94.3	A

SYMBOL: A) TEST RESULTS MEET REQUIREMENTS B) TEST RESULTS DO NOT MEET REQUIREMENTS

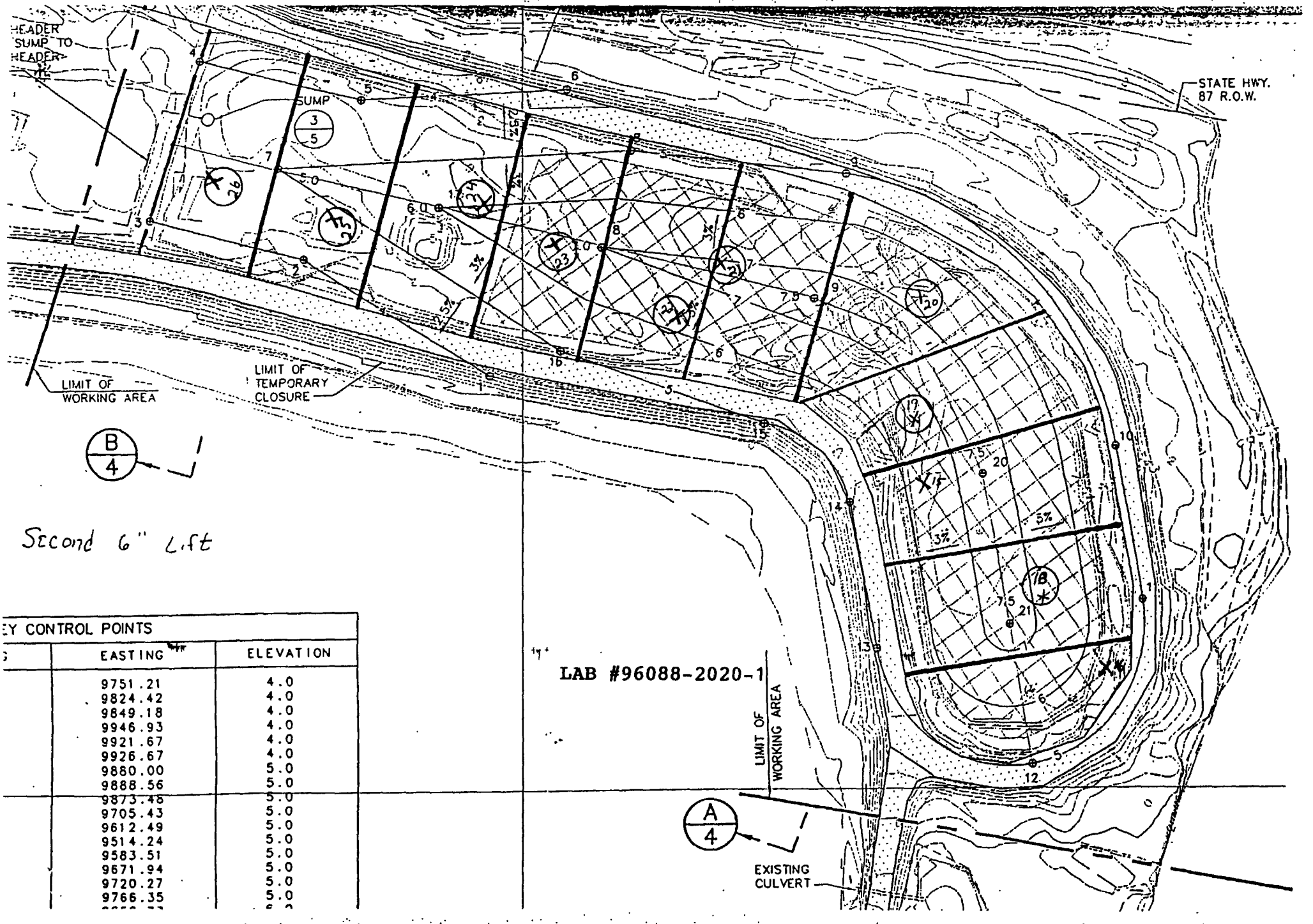
REQUIREMENTS: MAX. DRY DENSITY 107.3 PCF REQ'D COMPACTION 90% OPTMIUM MOISTURE 18.8 %

C: 4 - CLIENT
1 - T&N FILE #96088

T&N LABORATORIES, INC.

BY Jim A. Farmer

lg



Second 6" Lift

EY CONTROL POINTS		
S	EASTING	ELEVATION
	9751.21	4.0
	9824.42	4.0
	9849.18	4.0
	9946.93	4.0
	9921.67	4.0
	9926.67	4.0
	9880.00	5.0
	9888.56	5.0
	9873.48	5.0
	9705.43	5.0
	9612.49	5.0
	9514.24	5.0
	9583.51	5.0
	9671.94	5.0
	9720.27	5.0
	9766.35	5.0

PART 3: FINAL REVISED

REMEDIAL ACTION

GENERAL FILL AND PROTECTIVE

COVER OFF-SITE BORROW MATERIAL

GEOSYNTEC CONSULTANTS

BSSC
BAILEY SITE SETTLORS COMMITTEE

SOIL SAMPLE LOG

PROJECT: BAILEY SITE SETTLORS COMMITTEE

LOCATION: ORANGE COUNTY, TEXAS PROJECT NO.: GE3913 TASK NO.: 610

DESCRIPTION: REVISED FINAL REMEDIATION DATE: 3 day FEB month 1997 year

SITE SAMPLE NO.	OFF-SITE LAB SAMPLE NO.	SOIL DESCRIPTION	SOURCE (LOCATION, DEPTH, ELEVATION)	MATERIAL TYPE	DATE (day/mo)	TEST METHODS	QA ID
GF-1		BROWN SILTY CLAY	EXISTING ON-SITE, EAST DIKE - COMPOSITE, S. Gr.	GENERAL FILL	3 FEB	D 422, D 2974, D2487 ASTM D 698, 4318	JTC
GF-2		BROWN CLAY @ traces of reddish & lt. grey silt	OFF-SITE - REDWINE, EAST DIKE - 20"	"	18 FEB	ASTM D 698 - 1 PNT.	JTC
GF-3		"	OFF-SITE - REDWINE, EAST DIKE - 20"	"	19 FEB	ASTM D698, D 422, D4318 D 2487, D 2974	JTC
GF-4		GREYISH BROWN / SILTY TAN & @ traces of red / GREY	NORTH DIKE - BRIDGE CITY ON-SITE STOCKPILE	"	24 FEB	ASTM D 698, D422, D 4318 D 2487, D 2974	JTC
GF-5		GREYISH BROWN / SILTY TAN & @ traces of red / GREY	NORTH DIKE - BRIDGECITY FIRST LIFT	"	23 MAR	ASTM D 698, D422, D4318 D 2487, D 2974	JTC
GF-6		ORANGE @ GREYISH CLAY SILTY TEXTURE	"	"	24 MAR	ASTM D 698, D422, D4318 D 2487, D 2974	JTC
GF-7		GREYISH CLAY WITH RED / GREYISH TAN CLAY	REDWINE - FOUND BUNCH 2' DEEP	"	2 APR	ASTM D 698, D422, D4318 D 2487, D 2974	JTC
GF-8		Med - Drk GREY CLAY	SCALES - CIRCLES - 1st LIFT ON-SITE FROM TRUCK N. DIKE	"	14 APR	ASTM D 698, D422, D4318 D 2487, D 2974	JTC
GF-9		Dark Gray And Redish Clay - Slitley Silty	Tripel-S Pit Orange	"	22 APR	ASTM-698-D422-D2974 D-4318	BU
PC-1		Dark Gray / Redish Sandy Clay. Clay & Sand.	Circle S / Bridge City	Anchor Trench Backfill Cover material	10 may	ASTM D-698-D-422-D2974 D-4318	BU.

NOTES:

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

LABORATORY TEST SUMMARY

PROJECT: BAILEY SITE SETTLORS COMMITTEE
LOCATION: ORANGE COUNTY, TEXAS — PROJECT NO.: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION — DATE: ____ day ____ month 1997 year
SOURCE: ____ MATERIAL TYPE: ____ QA ID: ____

NOTE: Separate forms are required for each material type and source. All samples must have a site sample number and be recorded on the soil sample log.

SITE SAMPLE NO.	~~GEL SAMPLE NO.~~ DATE	SAMPLE MOISTURE CONTENT ASTM D 2216 (%)	GRAIN SIZE: PASSING NO. 200 SIEVE ASTM D ~~1140~~ 422 (%)	GRAIN SIZE: ASTM D 422 SIEVE	GRAIN SIZE: ASTM D 422 HYDR.	ATTERBURG LIMITS ASTM D 4318: LL (%)	ATTERBURG LIMITS: PL (%)	ATTERBURG LIMITS: PI	SOIL CLASSIFICATION ASTM D 2487	~~LOI~~ ASTM ~~E311~~ organic content D2974 (%)	CARBO CONT. ASTM D3042 (%)	COMPACTION ASTM D 698 (or) ~~ASTM D 1557~~: MAX. DRY UNIT WT. (pcf)	COMPACTION: OPT. MOIST. CONT. (%)	PERMEABILITY ASTM D 2434(1) (or) ASTM D 5084(2): DRY UNIT WT. (pcf)	PERMEABILITY: MOIST. CONT. ASTM D 2216 (%)	PERMEABILITY: HYDRAULIC COND'VITY (cm/sec)	PASS/FAIL	ACUMUL. QUANT. PLACED (APPROX) (yd³)
GF-1	3 Feb		72.6	✓		42	15	27	CL, Lean Clay w/SA	2.2		108.3	15.6					
GF-2	18 Feb								(1-PT Proctor)			96.4	10.3					
GF-3	19 Feb		77.8	✓		38	16	22	CL, Lean Clay w/SA	2.5		108.4	17.7					
GF-4	24 Feb		77.1	✓		33	17	16	CL, Lean Clay w/SA	2.1		107.6	17.2					
GF-5	23 Mar		68.1	✓		27	18	9	CL, Sandy clay	1.8		107.3	16.3					
GF-6	24 Mar		55.0	✓		29	18	11	CL, Lean Clay	1.8		110.0	16.5					
GF-7	2 Apr		58.3	✓		46	20	26	CL, Lean Clay	3.6		100.8	19.6					
GF-8	14 Apr		89.7	✓		61	15	46	CH, Gray/Tan Clay	4.0		104.0	16.0					
GF-9	22 Apr.		94.2	✓		75	17	58	CH, Tan/Gray clay	4.0		99.5	22.0					
PC-1	10 MAY		74.1	✓		42	15	27	CL, Lean Clay			106.0	14.0					

COMMENTS: ____

NOTES: (1) HYDRAULIC CONDUCTIVITY DETERMINED AT A HYDRAULIC GRADIENT OF ____.
(2) HYDRAULIC CONDUCTIVITY DETERMINED AT AN EFFECTIVE CONFINING STRESS OF ____.

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

LABORATORY TEST SUMMARY

PROJECT: BAILEY SITE SETTLORS COMMITTEE
LOCATION: ORANGE COUNTY, TEXAS — PROJECT NO.: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION — DATE: ____ day ____ month 1997 year
SOURCE: ____ MATERIAL TYPE: ____ QA ID: ____

NOTE: Separate forms are required for each material type and source. All samples must have a site sample number and be recorded on the soil sample log.

SITE SAMPLE NO.	~~GEL SAMPLE NO.~~ DATE	SAMPLE MOISTURE CONTENT ASTM D 2216 (%)	GRAIN SIZE: PASSING NO. 200 SIEVE ASTM D ~~1140~~ 422 (%)	GRAIN SIZE: ASTM D 422 SIEVE	GRAIN SIZE: ASTM D 422 HYDR.	ATTERBURG LIMITS ASTM D 4318: LL (%)	ATTERBURG LIMITS: PL (%)	ATTERBURG LIMITS: PI	SOIL CLASSIFICATION ASTM D 2487	~~LOI~~ ASTM ~~0311~~ ORGANIC CONTENT D2974 (%)	CARBO CONT. ASTM D3042 (%)	COMPACTION ASTM D 698 (or) ~~ASTM D 1557~~: MAX. DRY UNIT WT. (pcf)	COMPACTION: OPT. MOIST. CONT. (%)	PERMEABILITY ASTM D 2434(1) (or) ASTM D 5084(2): DRY UNIT WT. (pcf)	PERMEABILITY: MOIST. CONT. ASTM D 2216 (%)	PERMEABILITY: HYDRAULIC COND'VITY (cm/sec)	PASS/FAIL	ACUMUL. QUANT. PLACED (APPROX) (yd^3)
GF-10	30 MAY		88.0			64	19	45	Gr, Rd, Tn, Yl Clay	1.9		98.0	21.5					
PC-2	17 June		96.0			62	16	46	Gr, Tn, Rd Clay			101.5	21.0					

COMMENTS: ____

NOTES: (1) HYDRAULIC CONDUCTIVITY DETERMINED AT A HYDRAULIC GRADIENT OF ____.
(2) HYDRAULIC CONDUCTIVITY DETERMINED AT AN EFFECTIVE CONFINING STRESS OF ____.

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

PARTICLE SIZE ANALYSIS MECHANICAL SIEVE METHOD (ASTM D 422)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 20 day FEB. month 1997 year
SOURCE: OFF-SITE REDWINE MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-1 QA ID: JJC

SOIL SAMPLE SIZE (ASTM D 1140)

DIAMETER OF LARGEST PARTICLE (SIEVE SIZE)	(grams)	NO. 10	NO. 4	3/4-in.
APPROXIMATE MINIMUM WT. OF SAMPLE	(grams)	200	500	1500

		BEFORE WASH	AFTER WASH
WT. OF DRY SAMPLE PLUS TARE	(grams)	1205	459.7
WT. OF TARE	(grams)	174	174
WT. OF DRY SAMPLE	(grams)	1031	285.7

SIEVE ANALYSIS

SIEVE NO.	DIAMETER (mm)	WT. RETAINED (grams)	% RETAINED	% FINER	PROJECT SPECIFICATIONS
2"	50	0	0	100	100
1"	25	0	0	100	
3/8"	9.5	0	0	100	
4	4.75	2.8	.3	99.7	
8	2.36	3.4	.3	99.7	
16	1.18	3.7	.4	99.6	
40	0.425	4.7	.5	99.5	
100	0.150	51.7	5	95	
200	0.075	282.7	27.4	72.6	
PAN	-	285			

%FINER = 100 − Σ% RETAINED

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

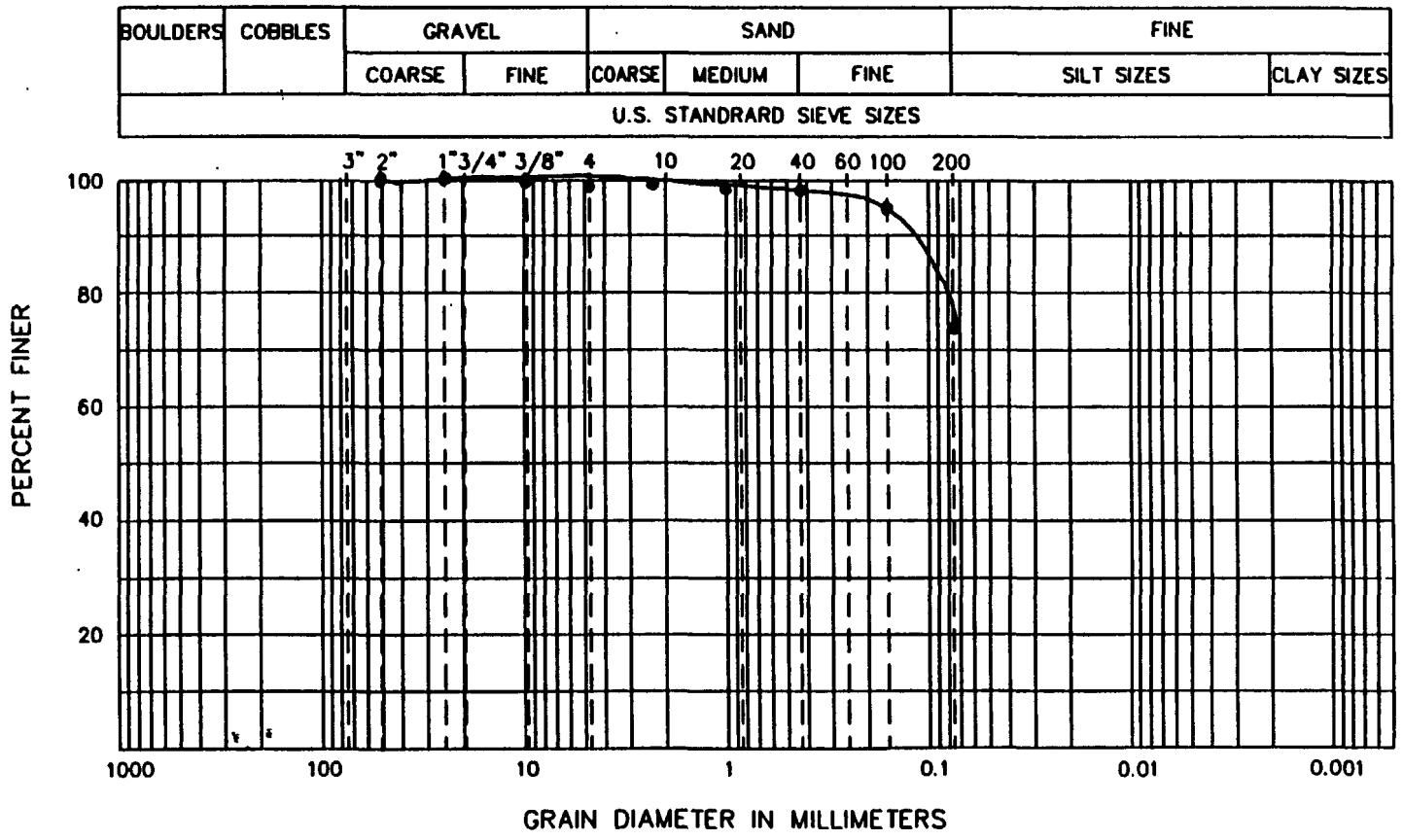
PARTICLE SIZE DISTRIBUTION AND SOIL CLASSIFICATION TEST RESULTS (ASTM D 422 & ASTM D 2487)

PROJECT: BAILEY SUPERFUND SITE

LOCATION: ORANGE COUNTY, TEXAS — PROJECT NO.: GE3913 TASK NO.: 610

DESCRIPTION: REVISED FINAL REMEDIATION — DATE: 20 day FEB month 1997 year

SOURCE: OFF-SITE. REDWINE — MATERIAL TYPE: GENERAL FILL — SAMPLE NO.: GF-1 — QA ID: JTC



CURVE COEFFICIENTS

(C_u) -

(C_c) -

ATTERBERG LIMITS

(LL) 42

(PL) 15

(PI) 27

SIEVE RESULTS

SIEVE SIZE	% FINER
3-in.	
2-in.	100
1 1/2-in.	-
1-in.	100
3/4-in.	-
1/2-in.	-
3/8-in.	100
NO. 4	99.7
NO. 18	99.7
NO. 16	99.6
NO. 40	99.5
NO. 60	-
NO. 100	95
NO. 200	72.6

SOIL CLASSIFICATION (ASTM D 2487): CL; LEAN CLAY WITH SAND

GEOSYNTEC CONSULTANTS

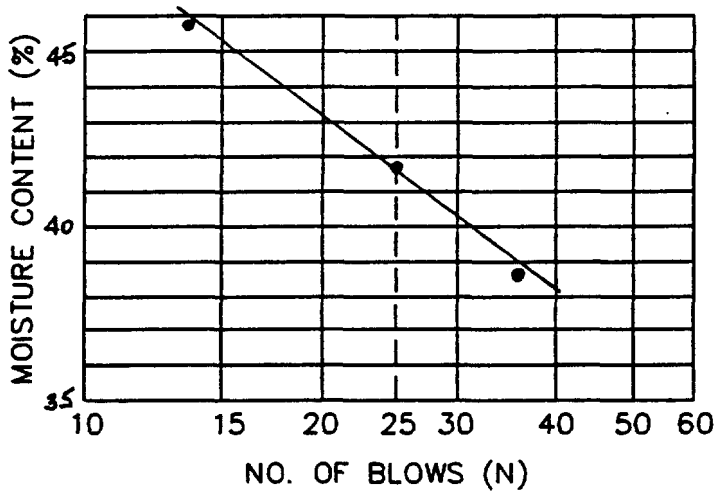
B S S C
BAILEY SITE SETTLORS COMMITTEE

ATTERBERG LIMITS TEST (ASTM D 4318)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 20 day FEB month 1997 year
SOURCE: OFF-SITE REDWINE MATERIAL TYPE: GEN. FILL SAMPLE NO.: GF-1 QA ID: JRC

LIQUID LIMIT DETERMINATION

	TARE NO.		10 40 40	201	6	
A	WT. OF TARE	(grams)	19.2	11.9	19.3	
B	WT. OF WET SOIL & TARE	(grams)	28.1	22.1	28.6	
C	WT. OF DRY SOIL & TARE	(grams)	25.3	19.1	26	
D	WT. OF WATER = B−C	(grams)	2.8	3	2.6	
E	WT. OF DRY SOIL = C−A	(grams)	6.1	7.2	6.7	
F	MOISTURE CONTENT = (D/E)X100	(%)	45.9	41.7	38.8	
N	NUMBER OF BLOWS		13	25	36	



PLASTIC LIMIT DETERMINATION

	TARE NO.		205	5	210	
A	WT. OF TARE	(grams)	14.5	19.4	12.3	
B	WT. OF WET SOIL & TARE	(grams)	19.7	25.9	18.4	
C	WT. OF DRY SOIL & TARE	(grams)	19.1	24.9	17.6	
D	WT. OF WATER = B−C	(grams)	.6	1	.8	
E	WT. OF DRY SOIL = C−A	(grams)	4.6	5.5	5.3	
F	MOISTURE CONTENT = (D/E)X100	(%)	13	18.2	15.1	

LIQUID LIMIT (LL) = 42 PLASTIC LIMIT (PL) = 15 PLASTICITY INDEX (PI) = 27

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

FIELD LABORATORY COMPACTION TEST (ASTM D 698 METHOD A)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO.: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 4 day FEB month 1997 year
SOURCE: ON-SITE (EXISTING) MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-1 QA ID: JTC

THIS METHOD WILL BE USED IF THE MATERIAL RETAINED ON THE NO. 3/4-in. (19-mm) SIEVE IS LESS THAN 30% AND IF THE MATERIAL RETAINED ON THE NO. 4 (4.75-mm) SIEVE IS LESS THAN 20%.
ALL MATERIAL RETAINED ON THE NO. 4 (4.75-mm) SIEVE IS DISCARDED.
USE OVERSIZE CORRECTION IF MORE THAN 5% IS DISCARDED ACCORDING TO ASTM D 4718.
USE A 4-in. DIAMETER MOLD / 5.5-lb RAMMER / 12-in. DROP / 3 LAYERS / 25 BLOWS PER LAYER.

COMPACTION OF SOIL

A	WT. OF SOIL & MOLD	(grams)	6146.3	6064.6	6110.0	5955.8	
B	WT. OF MOLD	(grams)	4250	4250	4250	4250	
C	WT. OF SOIL = A − B	(grams)	1896.3	1814.6	1860	1705.8	
D	WET UNIT WT.(1) = C X 0.066	(pcf)	125.2	119.8	122.8	112.6	
E	DRY UNIT WT. = D / [1 + (K/100)]	(pcf)	108.3	96.5	106.2	102.3	

NOTE: (1) IF CALIBRATED MOLD OF 1/30 FT^3 IS USED, THE WET DENSITY IS CALCULATED FROM THE WEIGHT OF SOIL, THE VOLUME OF THE MOLD AND THE CONVERSION FROM GRAMS TO POUNDS (I.E., CONVERSION FACTOR = (30 / 453.6) = 0.066). THE MOLD MUST BE CALIBRATED TO VERIFY A CAPACITY OF 1/30 ± 0.0005 FT^3 ON INTERVALS NOT TO EXCEED 1000 TIMES THAT THE MOLD IS FILLED.

MOISTURE CONTENT – ASTM D 2216

	TARE NO.		12	14	10	12	
F	WT. OF TARE	(grams)	8.5	8.4	8.7	8.6	
G	WT. OF WET SOIL & TARE	(grams)	202.4	217.7	169.4	167.2	
H	WT. OF DRY SOIL & TARE	(grams)	176.3	176.9	147.8	152.7	
I	WT. OF WATER = G − H	(grams)	26.1	40.8	21.6	14.5	
J	WT. DRY SOIL = H − F	(grams)	167.9	168.5	139.1	144.1	
K	MOISTURE CONTENT = (I/J) X 100	(%)	15.6	24.2	15.5	10.1	

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

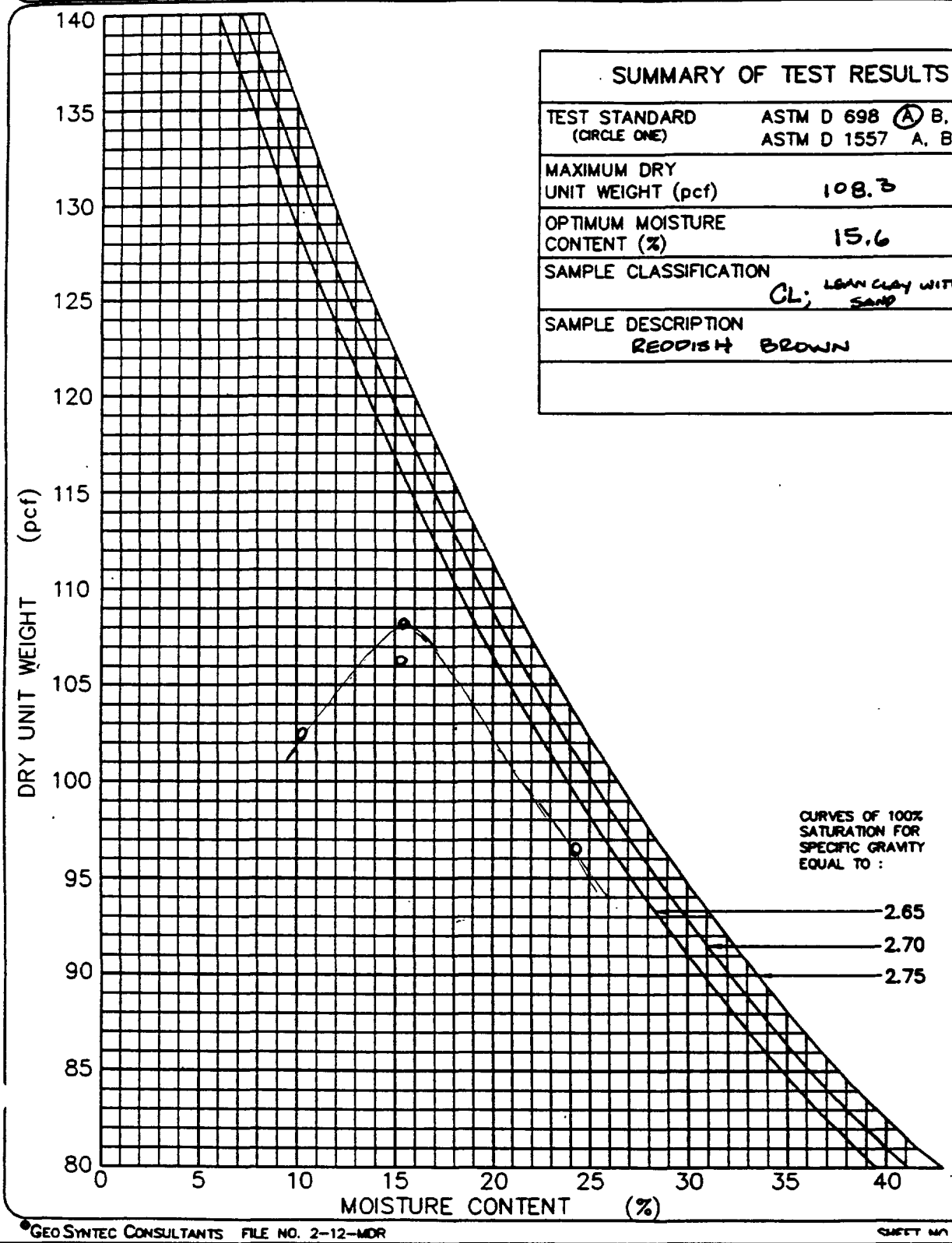
MOISTURE-DENSITY RELATIONSHIP

PROJECT: BAILEY SUPERFUND SITE

LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610

DESCRIPTION: REVISED FINAL REMEDIATION DATE: 4 day FEB month 1997 year

SOURCE: ON-SITE (EXISTING) MATERIAL TYPE: GEN. FILL SAMPLE NO.: GF-1 QA ID: JIC



SUMMARY OF TEST RESULTS	
TEST STANDARD (CIRCLE ONE)	ASTM D 698 (A) B, C ASTM D 1557 A, B, C
MAXIMUM DRY UNIT WEIGHT (pcf)	108.3
OPTIMUM MOISTURE CONTENT (%)	15.6
SAMPLE CLASSIFICATION	CL; LEAN CLAY WITH SAND
SAMPLE DESCRIPTION	REDDISH BROWN

GEOSYNTEC CONSULTANTS FILE NO. 2-12-MDR

SHEET NO. 3 OF 6

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

LABORATORY DETERMINATION OF MOISTURE CONTENT OF SOIL

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 4 day FEB month 1997 year
SOURCE: ON-SITE (EXISTING) MATERIAL TYPE: GEN. FILL SAMPLE NO.: GF-1 QA ID: JJC

OVEN METHOD (ASTM D 2216)

RECOMMENDED MASS OF MOIST SAMPLE WEIGHT

100% PASING THE NO. 10 (2-mm) SIEVE	20 grams
100% PASSING THE NO. 4 (4.75-mm) SIEVE	100 grams
100% PASSING THE NO. 3/8-in. (9.5-mm) SIEVE	500 grams
100% PASSING THE NO. 3/4-in. (19-mm) SIEVE	2.5 kilograms

	TARE NO.					
A	WT. OF TARE					
B	WT. OF WET SOIL & TARE					
C	WT. OF DRY SOIL & TARE					
D	WT. OF WATER = B-C					
E	WT. OF DRY SOIL = C-A					
F	MOISTURE CONTENT = (D/E) X 100					

MICROWAVE METHOD (ASTM D 4643)

RECOMMENDED MASS OF MOIST SAMPLE WEIGHT

90% PASSING THE NO. 10 (2-mm) SIEVE	100 TO 200 grams
90% PASSING THE NO. 4 (4.75-mm) SIEVE	200 TO 500 grams
90% PASSING THE 3/4-in. (19-mm) SIEVE	500 TO 1000 grams

INITIAL SETTING TO BE AT 3.0 MINUTES, CONTINUE DRYING SAMPLE AT 1.0 MINUTE SETTING UNTIL MOISTURE CONTENT VARIATION BETWEEN SETTINGS IS LESS THAN 0.1%

	TARE NO.	1	1	4	2	
A	WT. OF TARE	100	100	100	100	
B	WT. OF WET SOIL & TARE	317	309.8	235.3	303.9	
C	WT. OF DRY SOIL & TARE	275.8	281.8	216.8	284	
D	WT. OF WATER = B-C	42	28	18.5	19.9	
E	WT. OF DRY SOIL = C-A	175.8	181.8	116.8	184	
F	MOISTURE CONTENT = (D/E) X 100	23.9	15.4	15.8	10.8	

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

FIELD LABORATORY COMPACTION TEST (ASTM D 698 METHOD A)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO.: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 18 day FEB month 1997 year
SOURCE: OFF-SITE, REDWINE MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-2 QA ID: JK

THIS METHOD WILL BE USED IF THE MATERIAL RETAINED ON THE NO. 3/4-in. (19-mm) SIEVE IS LESS THAN 30% AND IF THE MATERIAL RETAINED ON THE NO. 4 (4.75-mm) SIEVE IS LESS THAN 20%.
ALL MATERIAL RETAINED ON THE NO. 4 (4.75-mm) SIEVE IS DISCARDED.
USE OVERSIZE CORRECTION IF MORE THAN 5% IS DISCARDED ACCORDING TO ASTM D 4718.
USE A 4-in. DIAMETER MOLD / 5.5-lb RAMMER / 12-in. DROP / 3 LAYERS / 25 BLOWS PER LAYER.

COMPACTION OF SOIL

A	WT. OF SOIL & MOLD	(grams)	5860.5				
B	WT. OF MOLD	(grams)	4250				
C	WT. OF SOIL = A − B	(grams)	1610.5				
D	WET UNIT WT.(1) = C X 0.066	(pcf)	106.3				
E	DRY UNIT WT. = D / [1 + (K/100)]	(pcf)	96.4				

NOTE: (1) IF CALIBRATED MOLD OF 1/30 FT^3 IS USED, THE WET DENSITY IS CALCULATED FROM THE WEIGHT OF SOIL, THE VOLUME OF THE MOLD AND THE CONVERSION FROM GRAMS TO POUNDS (I.E., CONVERSION FACTOR = (30 / 453.6) = 0.066). THE MOLD MUST BE CALIBRATED TO VERIFY A CAPACITY OF 1/30 ± 0.0005 FT^3 ON INTERVALS NOT TO EXCEED 1000 TIMES THAT THE MOLD IS FILLED.

MOISTURE CONTENT – ASTM D 2216

				ASTM D 4643 FOR COMPARISON			
	TARE NO.		103	2			
F	WT. OF TARE	(grams)	13.9	100			
G	WT. OF WET SOIL & TARE	(grams)	327.8	307.3			
H	WT. OF DRY SOIL & TARE	(grams)	298.5	288.8			
I	WT. OF WATER = G − H	(grams)	29.3	18.5			
J	WT. DRY SOIL = H − F	(grams)	284.6	188.8			
K	MOISTURE CONTENT = (I/J) X 100	(%)	10.3	9.8			

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

PARTICLE SIZE ANALYSIS MECHANICAL SIEVE METHOD (ASTM D 422)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 19 day FEB month 1997 year
SOURCE: OFF-SITE RED WINE MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-3 QA ID: JJC

SOIL SAMPLE SIZE (ASTM D 1140)

DIAMETER OF LARGEST PARTICLE (SIEVE SIZE)	(grams)	NO. 10	NO. 4	3/4-in.
APPROXIMATE MINIMUM WT. OF SAMPLE	(grams)	200	✓ 500	1500

		BEFORE WASH	AFTER WASH
WT. OF DRY SAMPLE PLUS TARE	(grams)	594.5	147.6
WT. OF TARE	(grams)	18	18
WT. OF DRY SAMPLE	(grams)	576.5	129.6

SIEVE ANALYSIS

SIEVE NO.	DIAMETER (mm)	WT. RETAINED (grams)	% RETAINED	% FINER	PROJECT SPECIFICATIONS
2"	50	0	0	100	100
1"	25	0	0	100	
3/8"	9.5	6	1	99	
4	4.75	14.7	2.5	97.5	
8	2.36	17.5	3	97	
16	1.18	18.6	3.2	96.8	
40	0.425	20.3	3.5	96.5	
100	0.150	31.8	5.5	94.5	
200	0.075	127.9	22.2	77.8	
PAN	–	128.7			

%FINER = 100 − Σ% RETAINED

GEOSYNTEC CONSULTANTS

B S S C

BAILEY SITE SETTLORS COMMITTEE

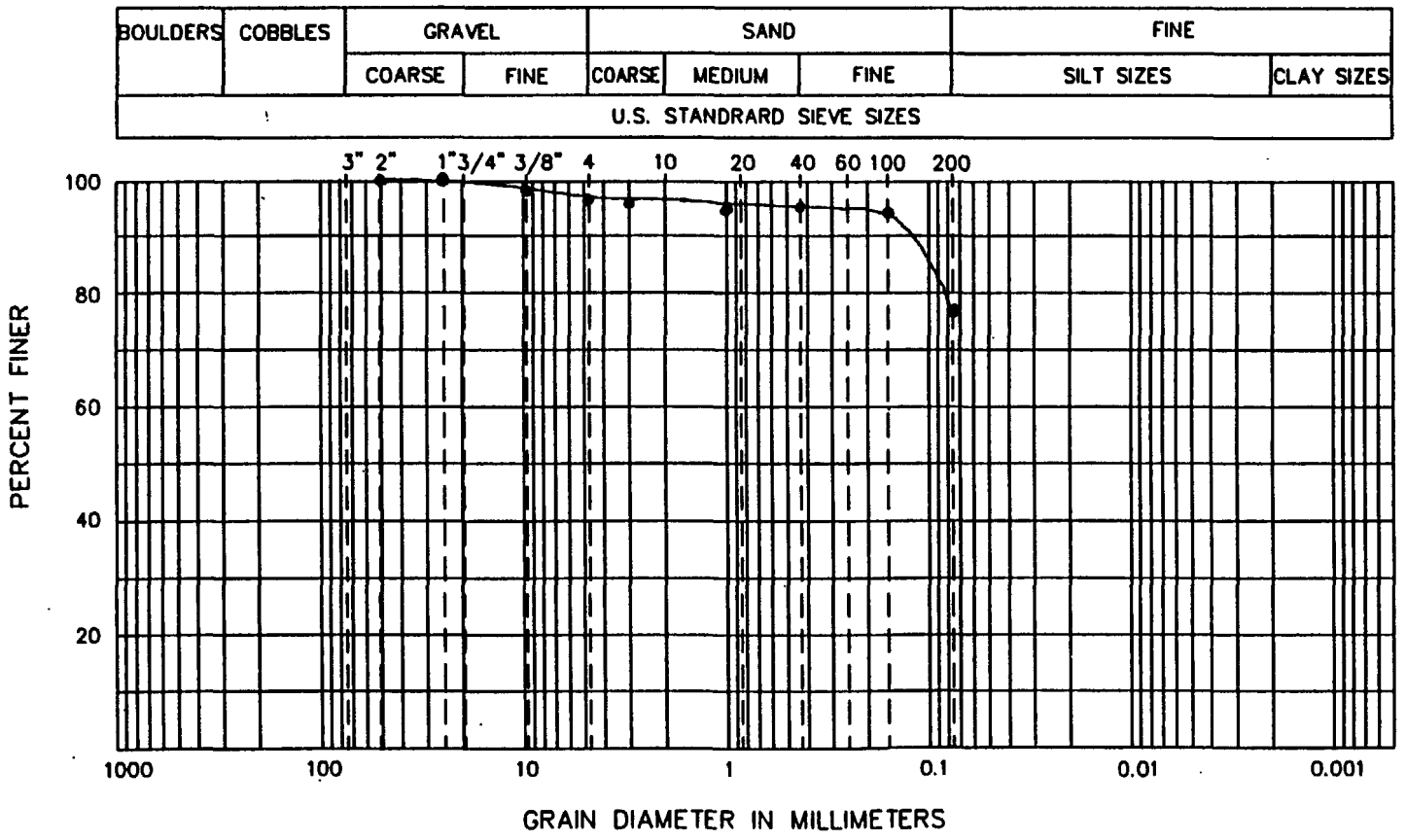
PARTICLE SIZE DISTRIBUTION AND SOIL CLASSIFICATION TEST RESULTS (ASTM D 422 & ASTM D 2487)

PROJECT: BAILEY SUPERFUND SITE

LOCATION: ORANGE COUNTY, TEXAS PROJECT NO.: GE3913 TASK NO.: 610

DESCRIPTION: REVISED FINAL REMEDIATION DATE: 19 day FEB month 1997 year

SOURCE: OFF-SITE, RED WINE MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-3 QA ID: JTC



CURVE COEFFICIENTS

(C_u) —

(C_c) —

ATTERBERG LIMITS

(LL) 38

(PL) 16

(PI) 22

SIEVE RESULTS

SIEVE SIZE	% FINER
3-in.	
2-in.	100
1 1/2-in.	—
1-in.	100
3/4-in.	—
1/2-in.	—
3/8-in.	99
NO. 4	97.5
NO. ~~10~~ 8	97
NO. 20 16	96.8
NO. 40	96.5
NO. 60	—
NO. 100	94.5
NO. 200	77.8

SOIL CLASSIFICATION (ASTM D 2487): CL; lean clay with sand

GEOSYNTEC CONSULTANTS

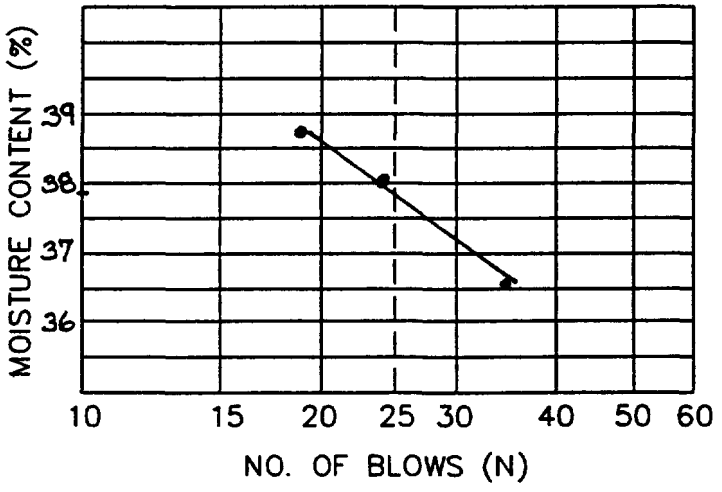
B S S C
BAILEY SITE SETTLORS COMMITTEE

ATTERBERG LIMITS TEST (ASTM D 4318)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 12 day March month 1997 year
SOURCE: OFF-SITE BEDINLINE MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-3 QA ID: JTC/DES

LIQUID LIMIT DETERMINATION

	TARE NO.		# 11	# 10	#206	
A	WT. OF TARE	(grams)	19.58	19.35	12.37	
B	WT. OF WET SOIL & TARE	(grams)	33.09	31.06	23.62	
C	WT. OF DRY SOIL & TARE	(grams)	29.32	27.83	20.61	
D	WT. OF WATER = B–C	(grams)	3.77	3.23	3.01	
E	WT. OF DRY SOIL = C–A	(grams)	9.74	8.48	8.24	
F	MOISTURE CONTENT = (D/E)X100	(%)	38.71	38.09	36.53	
N	NUMBER OF BLOWS		19	24	35	



PLASTIC LIMIT DETERMINATION

	TARE NO.		# 6	# 1	# 5	
A	WT. OF TARE	(grams)	19.48	18.64	19.56	
B	WT. OF WET SOIL & TARE	(grams)	21.31	20.92	21.10	
C	WT. OF DRY SOIL & TARE	(grams)	21.05	20.59	20.88	
D	WT. OF WATER = B–C	(grams)	0.26	0.33	0.22	
E	WT. OF DRY SOIL = C–A	(grams)	1.57	1.95	1.32	
F	MOISTURE CONTENT = (D/E)X100	(%)	16.56	16.92	16.67	

LIQUID LIMIT (LL) = 38 PLASTIC LIMIT (PL) = 16 PLASTICITY INDEX (PI) = 22

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

FIELD LABORATORY COMPACTION TEST (ASTM D 698 METHOD A)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO.: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 19 day FEB month 1997 year
SOURCE: OFF-SITE, REDWINE MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-3 QA ID: JTC

THIS METHOD WILL BE USED IF THE MATERIAL RETAINED ON THE NO. 3/4-in. (19-mm) SIEVE IS LESS THAN 30% AND IF THE MATERIAL RETAINED ON THE NO. 4 (4.75-mm) SIEVE IS LESS THAN 20%.
ALL MATERIAL RETAINED ON THE NO. 4 (4.75-mm) SIEVE IS DISCARDED.
USE OVERSIZE CORRECTION IF MORE THAN 5% IS DISCARDED ACCORDING TO ASTM D 4718.
USE A 4-in. DIAMETER MOLD / 5.5-lb RAMMER / 12-in. DROP / 3 LAYERS / 25 BLOWS PER LAYER.

COMPACTION OF SOIL

A	WT. OF SOIL & MOLD	(grams)	6182.6	6105.5	6051	6101	
B	WT. OF MOLD	(grams)	4250	4250	4250	4250	
C	WT. OF SOIL = A - B	(grams)	1932.6	1855.5	1801	1851	
D	WET UNIT WT.(1) = C X 0.066	(pcf)	127.6	122.5	118.9	122.2	
E	DRY UNIT WT. = D / [1 + (K/100)]	(pcf)	108.4	100	102.6	101.7	

NOTE: (1) IF CALIBRATED MOLD OF 1/30 FT^3 IS USED, THE WET DENSITY IS CALCULATED FROM THE WEIGHT OF SOIL, THE VOLUME OF THE MOLD AND THE CONVERSION FROM GRAMS TO POUNDS (I.E., CONVERSION FACTOR = (30 / 453.6) = 0.066). THE MOLD MUST BE CALIBRATED TO VERIFY A CAPACITY OF 1/30 ± 0.0005 FT^3 ON INTERVALS NOT TO EXCEED 1000 TIMES THAT THE MOLD IS FILLED.

MOISTURE CONTENT - ASTM D 2216

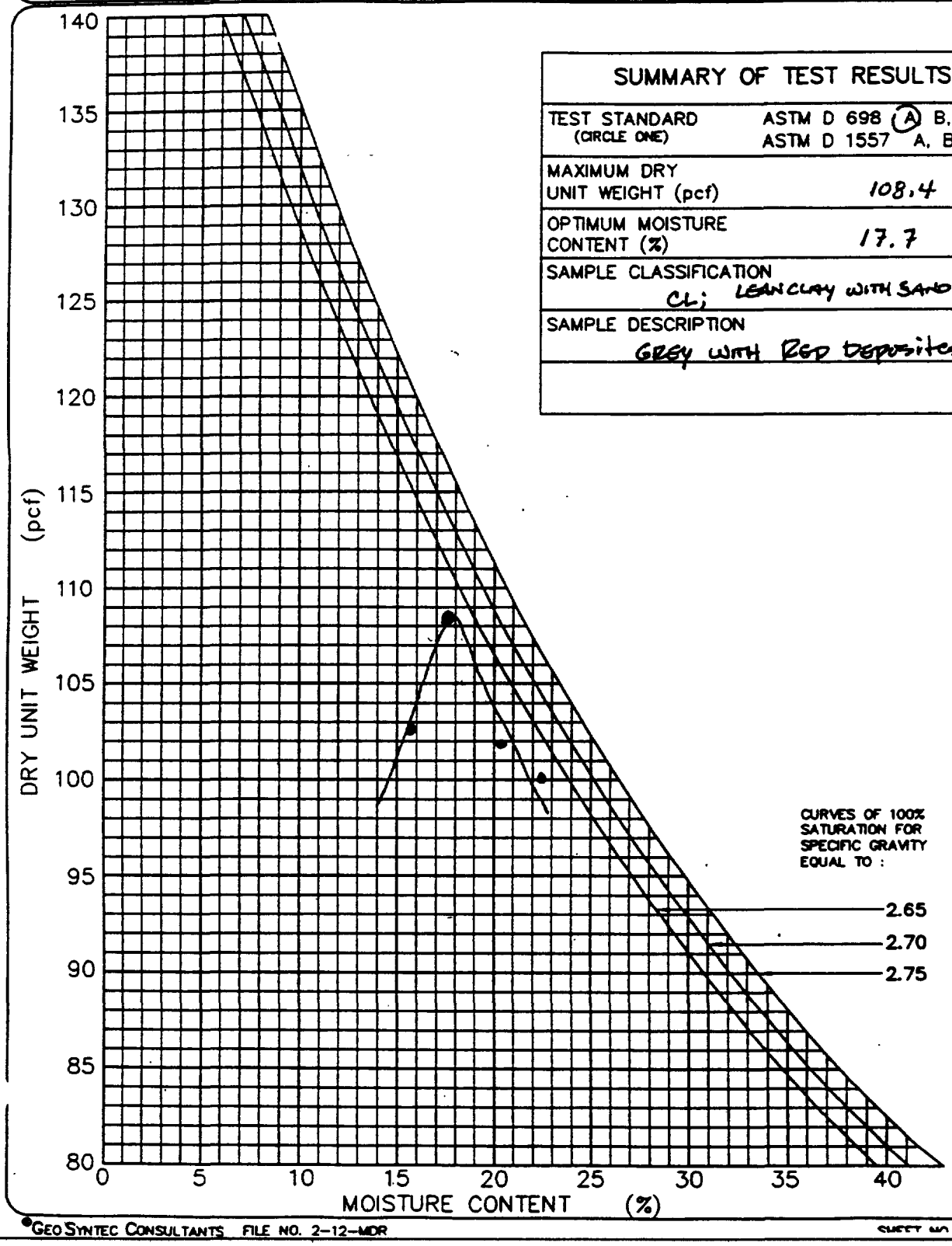
	TARE NO.		S-3	#103	#104	#102	
F	WT. OF TARE	(grams)	8.4	13.7	14.2	14	
G	WT. OF WET SOIL & TARE	(grams)	252.7	222.	343	391.3	
H	WT. OF DRY SOIL & TARE	(grams)	216	183.7	298	328	
I	WT. OF WATER = G - H	(grams)	36.7	38.3	45	63.3	
J	WT. DRY SOIL = H - F	(grams)	207.6	170	283.8	314	
K	MOISTURE CONTENT = (I/J) X 100	(%)	17.7	22.5	15.9	20.2	

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

MOISTURE-DENSITY RELATIONSHIP

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 19 day FEB month 1997 year
SOURCE: OFF-SITE, REDWINE MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-3 QA ID: JJC



SUMMARY OF TEST RESULTS	
TEST STANDARD (CIRCLE ONE)	ASTM D 698 (A) B, C ASTM D 1557 A, B, C
MAXIMUM DRY UNIT WEIGHT (pcf)	108.4
OPTIMUM MOISTURE CONTENT (%)	17.7
SAMPLE CLASSIFICATION	CL; LEAN CLAY WITH SAND
SAMPLE DESCRIPTION	GREY WITH RED DEPOSITES

GEOSYNTEC CONSULTANTS FILE NO. 2-12-MDR

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

PARTICLE SIZE ANALYSIS MECHANICAL SIEVE METHOD (ASTM D 422)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 27 day FEB month 1997 year
SOURCE: OFF-SITE BRIDGE CITY MATERIAL TYPE: GEN. FILL SAMPLE NO.: GF-4 QA ID: JTC

SOIL SAMPLE SIZE (ASTM D 1140)

DIAMETER OF LARGEST PARTICLE (SIEVE SIZE)	(grams)	NO. 10	NO. 4	3/4-in.
APPROXIMATE MINIMUM WT. OF SAMPLE	(grams)	200	500	1500

		BEFORE WASH	AFTER WASH
WT. OF DRY SAMPLE PLUS TARE	(grams)	842.0	375.0
WT. OF TARE	(grams)	234.8	234.8
WT. OF DRY SAMPLE	(grams)	607.2	140.2

SIEVE ANALYSIS

SIEVE NO.	DIAMETER (mm)	WT. RETAINED (grams)	% RETAINED	% FINER	PROJECT SPECIFICATIONS
2"	50	0	0	100	100
1"	25	0	0	100	
3/8"	9.5	0	0	100	
4	4.75	1.7	.3	99.7	
8	2.36	3.0	.5	99.5	
16	1.18	4.3	.7	99.3	
40	0.425	6.0	1	99	
100	0.150	20.3	3.3	96.7	
200	0.075	138.8	22.9	77.1	
PAN	—	140.0			

%FINER = 100 − Σ% RETAINED

GEOSYNTEC CONSULTANTS

B S S C

BAILEY SITE SETTLORS COMMITTEE

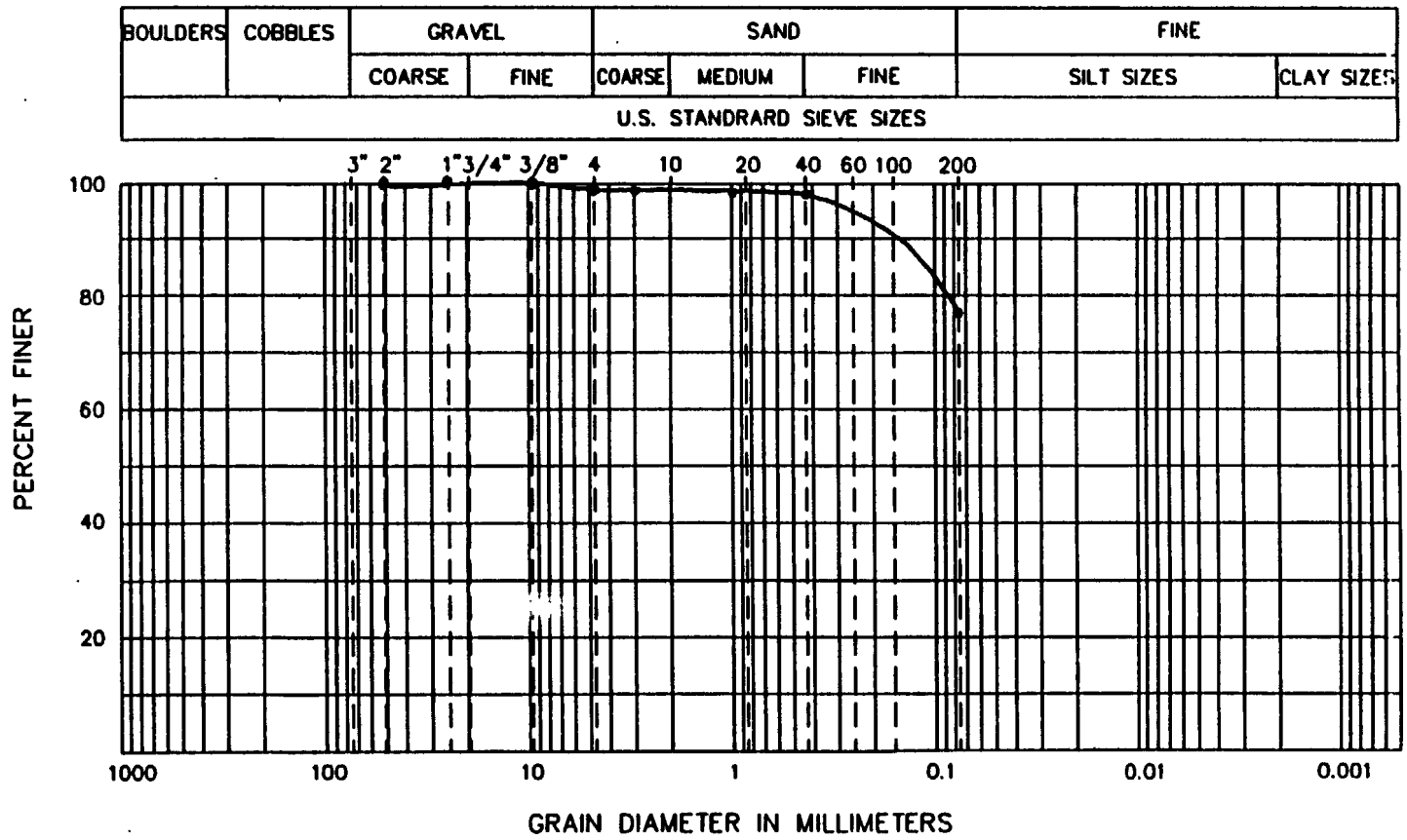
PARTICLE SIZE DISTRIBUTION AND SOIL CLASSIFICATION TEST RESULTS (ASTM D 422 & ASTM D 2487)

PROJECT: BAILEY SUPERFUND SITE

LOCATION: ORANGE COUNTY, TEXAS PROJECT NO.: GE3913 TASK NO.: 610

DESCRIPTION: REVISED FINAL REMEDIATION DATE: 27 day FEB month 1997 year

SOURCE: OFF-SITE BRIDGE CITY MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-4 QA ID: JJC



CURVE COEFFICIENTS

(C_u) –

(C_c) –

ATTERBERG LIMITS

(LL) 33.5

(PL) 17

(PI) 16.5

SIEVE RESULTS

SIEVE SIZE	% FINER
3-in.	
2-in.	100
1 1/2-in.	–
1-in.	100
3/4-in.	–
1/2-in.	–
3/8-in.	100
NO. 4	99.7
NO. ~~10~~ 8	99.5
NO. ~~20~~ 16	99.3
NO. 40	99
NO. 60	–
NO. 100	96.7
NO. 200	77.1

SOIL CLASSIFICATION (ASTM D 2487): CL; LEAN CLAY WITH SAND

GEOSYNTEC CONSULTANTS

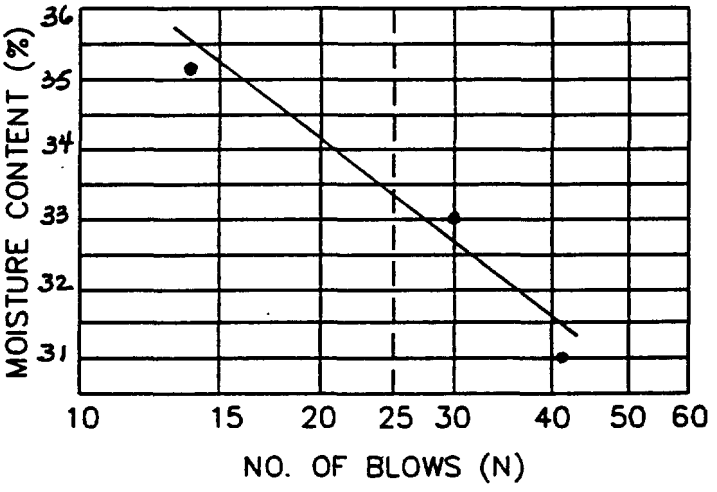
B S S C
BAILEY SITE SETTLORS COMMITTEE

ATTERBERG LIMITS TEST (ASTM D 4318)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 27 day FEB month 1997 year
SOURCE: OFF-SITE BRIDGE CITY MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-4 QA ID: JJC

LIQUID LIMIT DETERMINATION

	TARE NO.		1	5	11	
A	WT. OF TARE	(grams)	18.5	19.3	19.5	
B	WT. OF WET SOIL & TARE	(grams)	28.5	28.6	26.3	
C	WT. OF DRY SOIL & TARE	(grams)	25.9	26.4	24.6	
D	WT. OF WATER = B−C	(grams)	2.6	2.2	1.7	
E	WT. OF DRY SOIL = C−A	(grams)	7.4	7.1	5.1	
F	MOISTURE CONTENT = (D/E)X100	(%)	35.1	31	33	
N	NUMBER OF BLOWS		14	41	30	



PLASTIC LIMIT DETERMINATION

	TARE NO.		200	210		
A	WT. OF TARE	(grams)	12.1	12.2		
B	WT. OF WET SOIL & TARE	(grams)	18.1	18.2		
C	WT. OF DRY SOIL & TARE	(grams)	17.3	17.3		
D	WT. OF WATER = B−C	(grams)	.8	.9		
E	WT. OF DRY SOIL = C−A	(grams)	5.2	5.1		
F	MOISTURE CONTENT = (D/E)X100	(%)	15.4	17.6		

LIQUID LIMIT (LL) = 33.5 PLASTIC LIMIT (PL) = 17 PLASTICITY INDEX (PI) = 16.5

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

FIELD LABORATORY COMPACTION TEST (ASTM D 698 METHOD A)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO.: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 27 day FEB month 1997 year
SOURCE: OFF-SITE BRIDGE CITY MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-4 QA ID: JK

THIS METHOD WILL BE USED IF THE MATERIAL RETAINED ON THE NO. 3/4-in. (19-mm) SIEVE IS LESS THAN 30% AND IF THE MATERIAL RETAINED ON THE NO. 4 (4.75-mm) SIEVE IS LESS THAN 20%.
ALL MATERIAL RETAINED ON THE NO. 4 (4.75-mm) SIEVE IS DISCARDED.
USE OVERSIZE CORRECTION IF MORE THAN 5% IS DISCARDED ACCORDING TO ASTM D 4718.
USE A 4-in. DIAMETER MOLD / 5.5-lb RAMMER / 12-in. DROP / 3 LAYERS / 25 BLOWS PER LAYER.

COMPACTION OF SOIL

A	WT. OF SOIL & MOLD	(grams)	6091.8	6155.3	6146.3	6160	
B	WT. OF MOLD	(grams)	4250	4250	4250	4250	
C	WT. OF SOIL = A - B	(grams)	1841.8	1905.3	1896.0	1910	
D	WET UNIT WT.(1) = C X 0.066	(pcf)	121.6	125.7	125.1	126.1	
E	DRY UNIT WT. = D / [1 + (K/100)]	(pcf)	105.7	105.6	104.6	107.6	

NOTE: (1) IF CALIBRATED MOLD OF 1/30 FT^3 IS USED, THE WET DENSITY IS CALCULATED FROM THE WEIGHT OF SOIL, THE VOLUME OF THE MOLD AND THE CONVERSION FROM GRAMS TO POUNDS (I.E., CONVERSION FACTOR = (30 / 453.6) = 0.066). THE MOLD MUST BE CALIBRATED TO VERIFY A CAPACITY OF 1/30 ± 0.0005 FT^3 ON INTERVALS NOT TO EXCEED 1000 TIMES THAT THE MOLD IS FILLED.

MOISTURE CONTENT - ASTM D 2216

	TARE NO.		104	103	106	102	
F	WT. OF TARE	(grams)	14	13.8	14.2	14	
G	WT. OF WET SOIL & TARE	(grams)	290.5	303.3	299.7	442.8	
H	WT. OF DRY SOIL & TARE	(grams)	254.40	257.1	253.0	380	
I	WT. OF WATER = G - H	(grams)	36.1	46.2	46.7	62.8	
J	WT. DRY SOIL = H - F	(grams)	240.4	243.3	238.8	366	
K	MOISTURE CONTENT = (I/J) X 100	(%)	15	19	19.6	17.2	

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

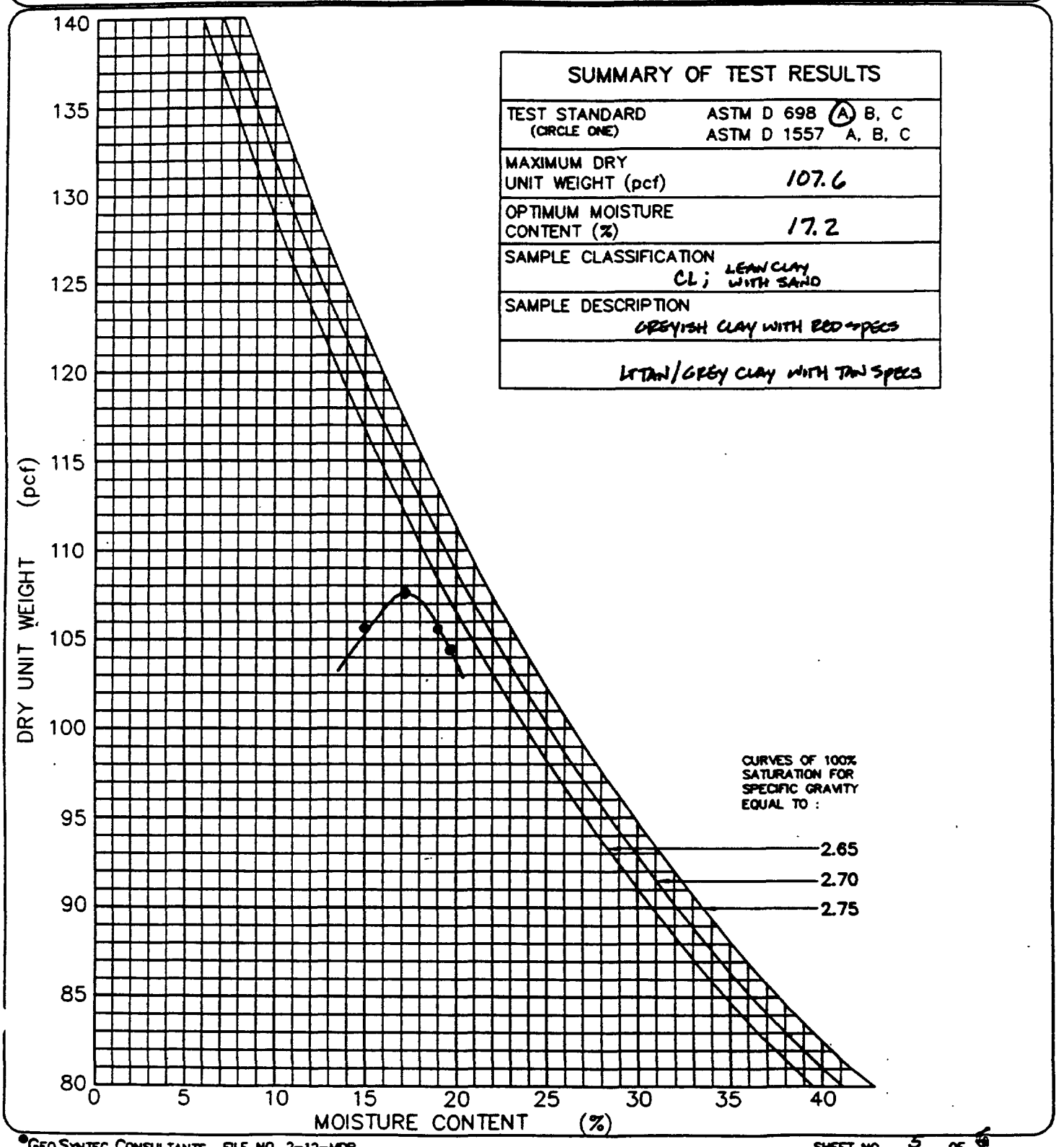
MOISTURE-DENSITY RELATIONSHIP

PROJECT: BAILEY SUPERFUND SITE

LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610

DESCRIPTION: REVISED FINAL REMEDIATION DATE: 27 day FEB month 1997 year

SOURCE: OFF-SITE BRIDGE CITY MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-4 QA ID: JTC



SUMMARY OF TEST RESULTS	
TEST STANDARD (CIRCLE ONE)	ASTM D 698 (A) B, C ASTM D 1557 A, B, C
MAXIMUM DRY UNIT WEIGHT (pcf)	107.6
OPTIMUM MOISTURE CONTENT (%)	17.2
SAMPLE CLASSIFICATION	CL; LEAN CLAY WITH SAND
SAMPLE DESCRIPTION	GREYISH CLAY WITH RED SPECS
	LTTAN/GREY CLAY WITH TAN SPECS

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

PARTICLE SIZE ANALYSIS MECHANICAL SIEVE METHOD (ASTM D 422)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 25 day MAR month 1997 year
SOURCE: Bridge City MATERIAL TYPE: GEN. FILL SAMPLE NO.: GF-5 QA ID: JTC

SOIL SAMPLE SIZE (ASTM D 1140)

DIAMETER OF LARGEST PARTICLE (SIEVE SIZE)	(grams)	NO. 10	NO. 4	3/4-in.
APPROXIMATE MINIMUM WT. OF SAMPLE	(grams)	200	500	1500

		BEFORE WASH	AFTER WASH
WT. OF DRY SAMPLE PLUS TARE	(grams)	725.7	246
WT. OF TARE	(grams)	17.7	17.7
WT. OF DRY SAMPLE	(grams)	708	228.3

SIEVE ANALYSIS

SIEVE NO.	DIAMETER (mm)	WT. RETAINED (grams)	% RETAINED	% FINER	PROJECT SPECIFICATIONS
2"	50	0	0	100	100
1"	25	0	0	100	
3/8"	9.5	2	.3	99.7	
4	4.75	2.5	.4	99.6	
8	2.36	3.3	.5	99.5	
16	1.18	4.2	.6	99.4	
40	0.425	5.8	.8	99.2	
100	0.150	57.8	8.2	91.8	
200	0.075	225.5	31.9	68.1	
PAN	—	227.2			

%FINER = 100 − Σ% RETAINED

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GEOSYNTEC CONSULTANTS

B S S C

BAILEY SITE SETTLORS COMMITTEE

PARTICLE SIZE DISTRIBUTION AND SOIL CLASSIFICATION TEST RESULTS

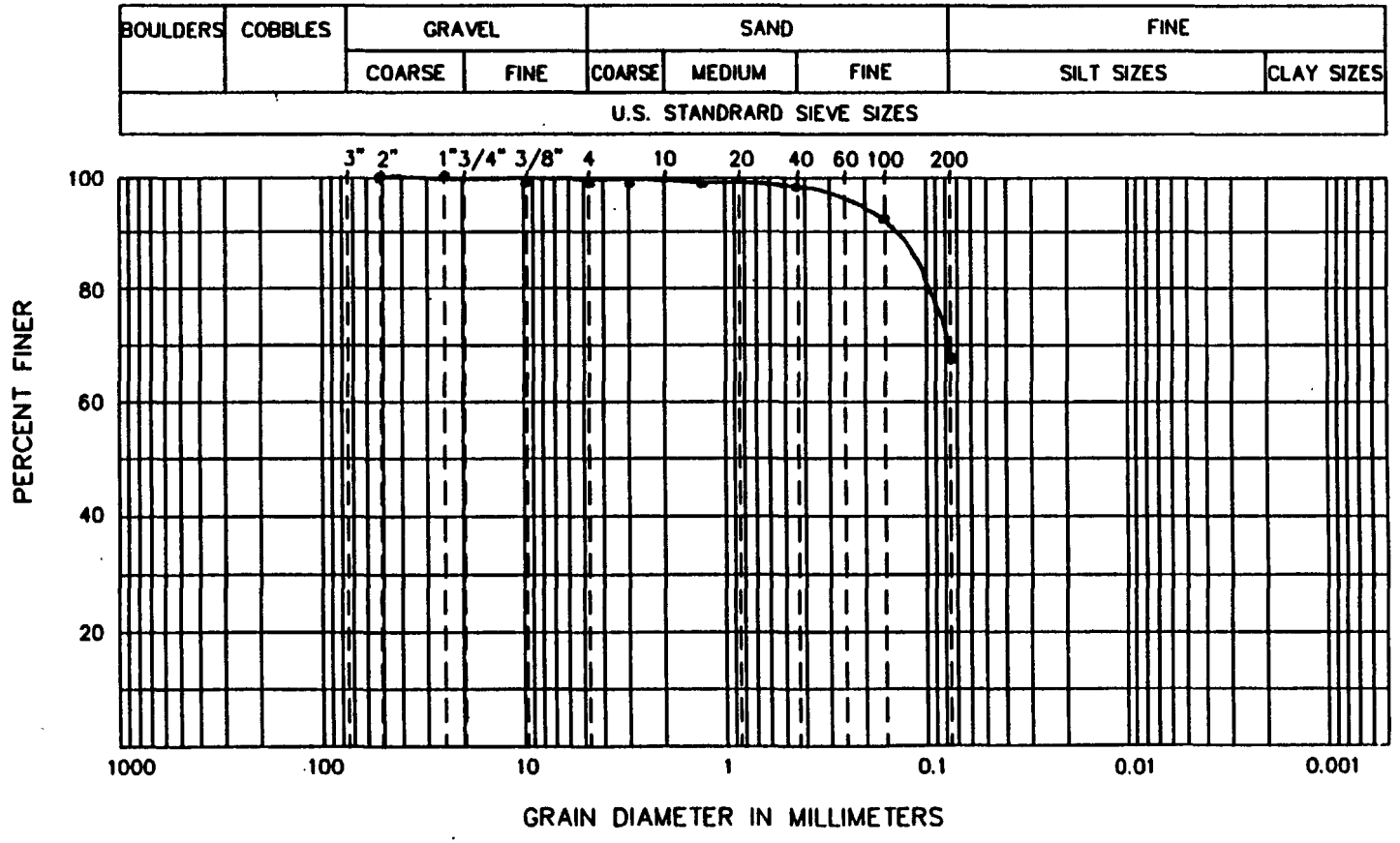
(ASTM D 422 & ASTM D 2487)

PROJECT: BAILEY SUPERFUND SITE

LOCATION: ORANGE COUNTY, TEXAS — PROJECT NO.: GE3913 TASK NO.: 610

DESCRIPTION: REVISED FINAL REMEDIATION — DATE: 25 day MAR month 1997 year

SOURCE: OFF-SITE BRIDGE City MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-5 QA ID: JK



CURVE COEFFICIENTS

(C_u) N/A

(C_c) N/A

ATTERBERG LIMITS

(LL) 27

(PL) 18

(PI) 9

SIEVE RESULTS

SIEVE SIZE	% FINER
3-in.	—
2-in.	100
1 1/2-in.	—
1-in.	100
3/4-in.	—
1/2-in.	—
3/8-in.	99.7
NO. 4	99.6
NO. ~~10~~ 8	99.5
NO. ~~20~~ 16	99.4
NO. 40	99.2
NO. ~~60~~	—
NO. 100	91.8
NO. 200	68.1

SOIL CLASSIFICATION (ASTM D 2487): CL - Lean Clay

GEOSYNTEC CONSULTANTS

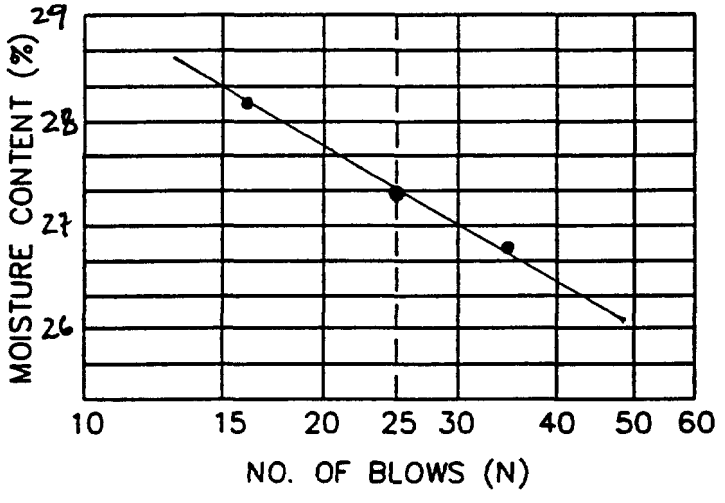
B S S C
BAILEY SITE SETTLORS COMMITTEE

ATTERBERG LIMITS TEST (ASTM D 4318)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 3 day APR. month 1997 year
SOURCE: Bridge City OFF-SITE MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-5 QA ID: JJC/BU

LIQUID LIMIT DETERMINATION

	TARE NO.		200	210	201	
A	WT. OF TARE	(grams)	12.26	12.24	12.11	
B	WT. OF WET SOIL & TARE	(grams)	49.25	47.34	52.85	
C	WT. OF DRY SOIL & TARE	(grams)	41.3	39.93	43.88	
D	WT. OF WATER = B−C	(grams)	7.95	7.41	8.97	
E	WT. OF DRY SOIL = C−A	(grams)	29.04	27.69	31.77	
F	MOISTURE CONTENT = (D/E)X100	(%)	27.4	26.8	28.2	
N	NUMBER OF BLOWS		25	35	16	



PLASTIC LIMIT DETERMINATION

	TARE NO.		205			
A	WT. OF TARE	(grams)	14.75			
B	WT. OF WET SOIL & TARE	(grams)	23.62			
C	WT. OF DRY SOIL & TARE	(grams)	22.25			
D	WT. OF WATER = B−C	(grams)	1.37			
E	WT. OF DRY SOIL = C−A	(grams)	7.5			
F	MOISTURE CONTENT = (D/E)X100	(%)	18.3			

LIQUID LIMIT (LL) = 27.4 PLASTIC LIMIT (PL) = 18.3 PLASTICITY INDEX (PI) = 9.1

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

FIELD LABORATORY COMPACTION TEST (ASTM D 698 METHOD A)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO.: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION. DATE: 25 day MAR month 1997 year
SOURCE: BRIDGECITY - OFF-SITE MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-5 QA ID: JTC

THIS METHOD WILL BE USED IF THE MATERIAL RETAINED ON THE NO. 3/4-in. (19-mm) SIEVE IS LESS THAN 30% AND IF THE MATERIAL RETAINED ON THE NO. 4 (4.75-mm) SIEVE IS LESS THAN 20%.
ALL MATERIAL RETAINED ON THE NO. 4 (4.75-mm) SIEVE IS DISCARDED.
USE OVERSIZE CORRECTION IF MORE THAN 5% IS DISCARDED ACCORDING TO ASTM D 4718.
USE A 4-in. DIAMETER MOLD / 5.5-lb RAMMER / 12-in. DROP / 3 LAYERS / 25 BLOWS PER LAYER.

COMPACTION OF SOIL

A	WT. OF SOIL & MOLD	(grams)	6141.7	6155	6132.7	6085	
B	WT. OF MOLD	(grams)	4250	4250	4250	4250	
C	WT. OF SOIL = A - B	(grams)	1891.7	1905	1882.7	1835	
D	WET UNIT WT.(1) = C X 0.066	(pcf)	124.8	125.7	124.3	121.1	
E	DRY UNIT WT. = D / [1 + (K/100)]	(pcf)	107.3	107	103.9	105.5	

NOTE: (1) IF CALIBRATED MOLD OF 1/30 FT^3 IS USED, THE WET DENSITY IS CALCULATED FROM THE WEIGHT OF SOIL, THE VOLUME OF THE MOLD AND THE CONVERSION FROM GRAMS TO POUNDS (I.E., CONVERSION FACTOR = (30 / 453.6) = 0.066). THE MOLD MUST BE CALIBRATED TO VERIFY A CAPACITY OF 1/30 ± 0.0005 FT^3 ON INTERVALS NOT TO EXCEED 1000 TIMES THAT THE MOLD IS FILLED.

MOISTURE CONTENT - ASTM D 2216

	TARE NO.		A	106	103	102	
F	WT. OF TARE	(grams)	8.5	14.3	14	13.8	
G	WT. OF WET SOIL & TARE	(grams)	258	297	338.6	325.1	
H	WT. OF DRY SOIL & TARE	(grams)	223	254.8	285.3	285	
I	WT. OF WATER = G - H	(grams)	35	42.2	53.3	40.1	
J	WT. DRY SOIL = H - F	(grams)	214.5	240.5	271.3	271.2	
K	MOISTURE CONTENT = (I/J) X 100	(%)	16.3	17.5	19.6	14.8	

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

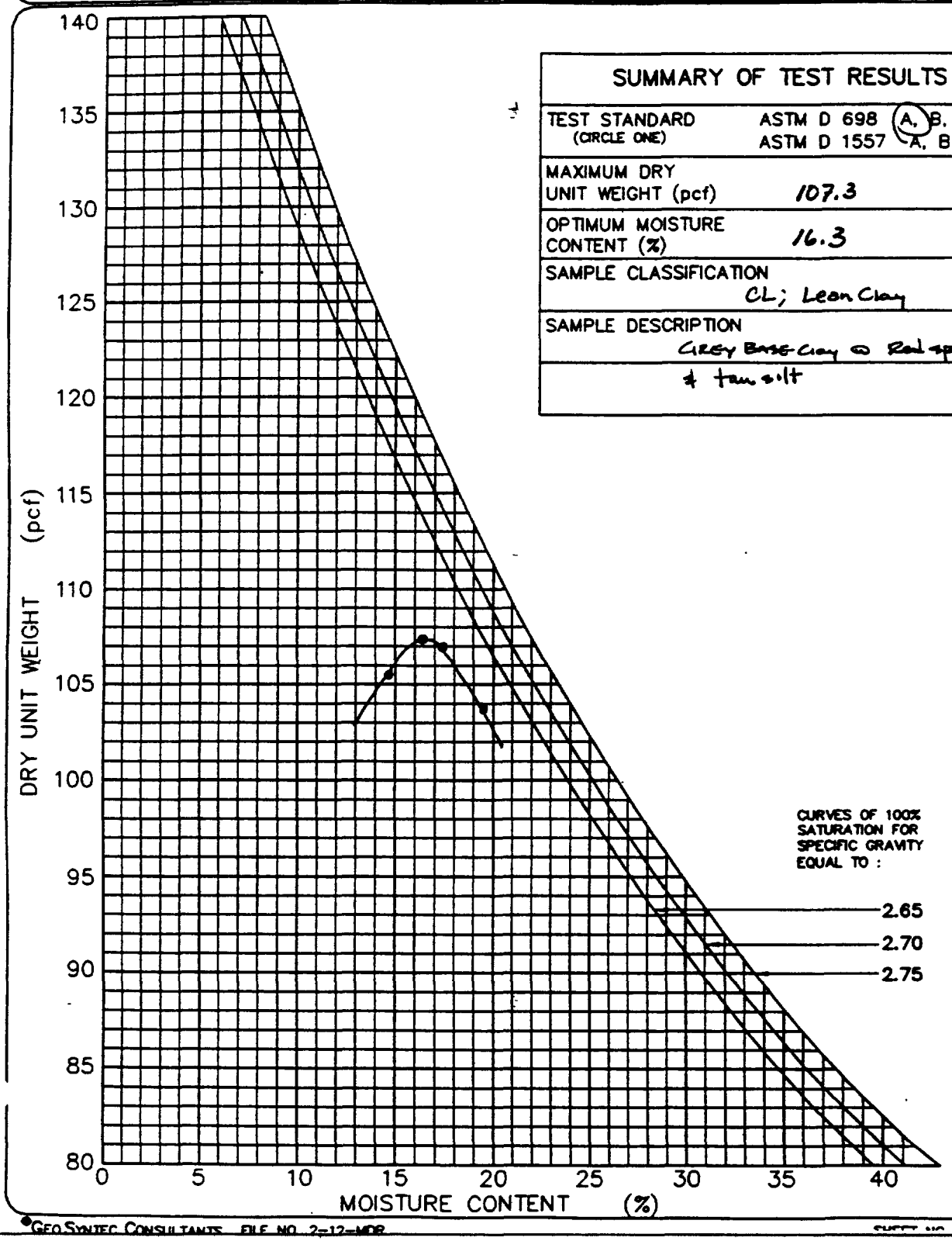
MOISTURE-DENSITY RELATIONSHIP

PROJECT: BAILEY SUPERFUND SITE

LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610

DESCRIPTION: REVISED FINAL REMEDIATION DATE: 25 day MAR. month 1997 year

SOURCE: BRIDGE City MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-5 QA ID: JJC



SUMMARY OF TEST RESULTS	
TEST STANDARD (CIRCLE ONE)	ASTM D 698 (A), B, C ASTM D 1557 A, B, C
MAXIMUM DRY UNIT WEIGHT (pcf)	107.3
OPTIMUM MOISTURE CONTENT (%)	16.3
SAMPLE CLASSIFICATION	CL; Lean Clay
SAMPLE DESCRIPTION	Grey Base Clay @ Red spots + tan silt

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

PARTICLE SIZE ANALYSIS MECHANICAL SIEVE METHOD (ASTM D 422)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 26 day MAR month 1997 year
SOURCE: Bridge City OFF-SITE MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-6 QA ID: JTC

SOIL SAMPLE SIZE (ASTM D 1140)

DIAMETER OF LARGEST PARTICLE (SIEVE SIZE)	(grams)	NO. 10	NO. 4	3/4-in.
APPROXIMATE MINIMUM WT. OF SAMPLE	(grams)	200	500	1500

		BEFORE WASH	AFTER WASH
WT. OF DRY SAMPLE PLUS TARE	(grams)	691	418.9
WT. OF TARE	(grams)	174	174
WT. OF DRY SAMPLE	(grams)	517	244.9

SIEVE ANALYSIS

SIEVE NO.	DIAMETER (mm)	WT. RETAINED (grams)	% RETAINED	% FINER	PROJECT SPECIFICATIONS
2"	50	0	0	100	100
1"	25	0	0	100	
3/8"	9.5	0	0	100	
4	4.75	.3	.1	99.9	
8	2.36	.5	.2	99.8	
16	1.18	.9	.2	99.9	
40	0.425	2.1	.4	99.6	
100	0.150	76.3	14.8	85.2	
200	0.075	232.9	45	55	
PAN	–	244	–		

%FINER = 100 − Σ% RETAINED

GEOSYNTEC CONSULTANTS

B S S C

BAILEY SITE SETTLORS COMMITTEE

PARTICLE SIZE DISTRIBUTION AND SOIL CLASSIFICATION TEST RESULTS

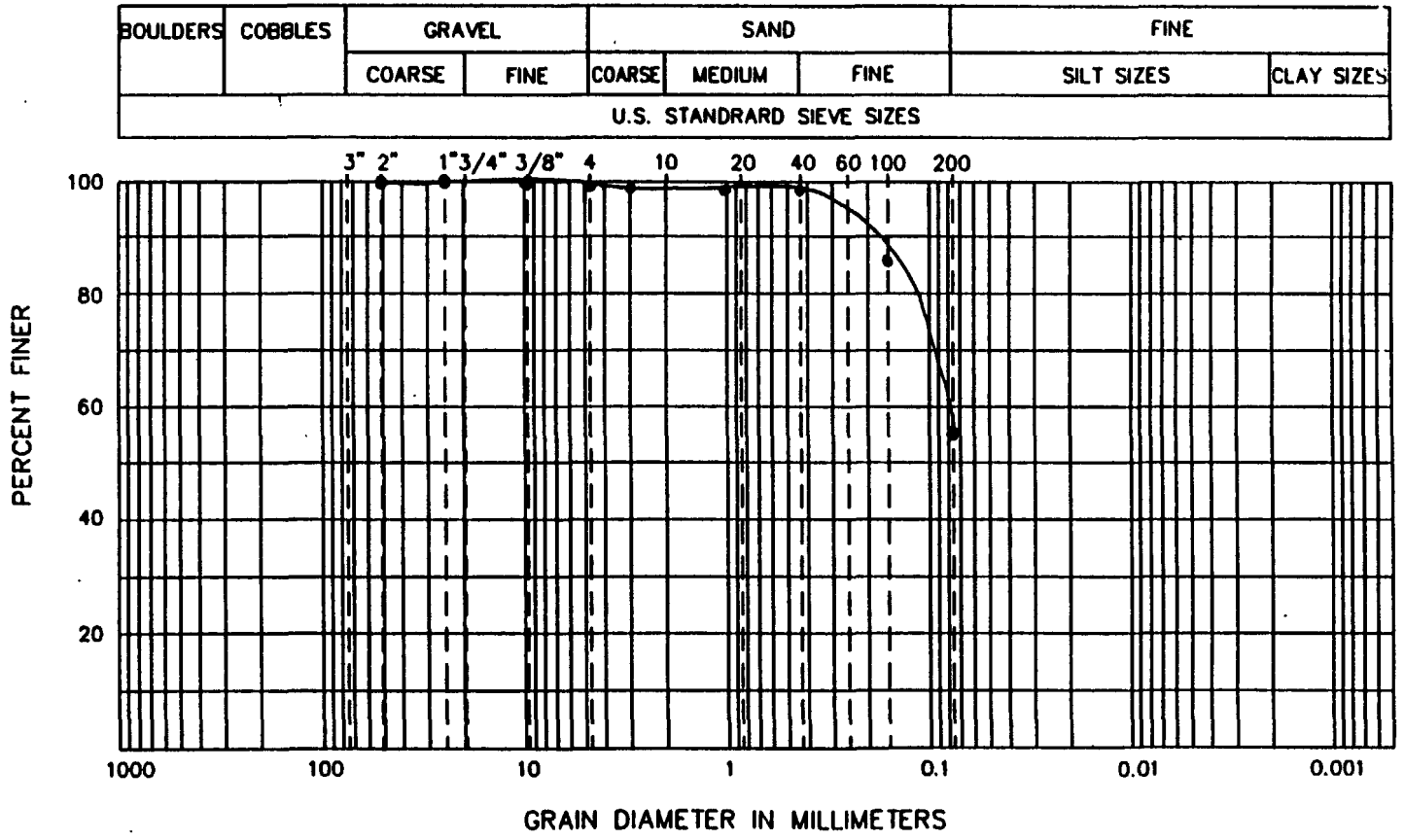
(ASTM D 422 & ASTM D 2487)

PROJECT: BAILEY SUPERFUND SITE

LOCATION: ORANGE COUNTY, TEXAS — PROJECT NO.: GE3913 TASK NO.: 610

DESCRIPTION: REVISED FINAL REMEDIATION — DATE: 26 day MAR month 1997 year

SOURCE: BRIDGE CITY OFF-SITE MATERIAL TYPE: GENERAL FILL — SAMPLE NO.: GF-6 QA ID: ____



CURVE COEFFICIENTS

(C_u) N/A

(C_c) N/A

ATTERBERG LIMITS

(LL) 29

(PL) 18

(PI) 11

SIEVE RESULTS

SIEVE SIZE	% FINER
3-in.	—
2-in.	100
1 1/2-in.	—
1-in.	100
3/4-in.	—
1/2-in.	—
3/8-in.	100
NO. 4	99.9
NO. 10 8	99.8
NO. 20 16	99.8
NO. 40	99.6
NO. 60	—
NO. 100	85.2
NO. 200	55

SOIL CLASSIFICATION (ASTM D 2487): CL - Lean Clay

GEOSYNTEC CONSULTANTS

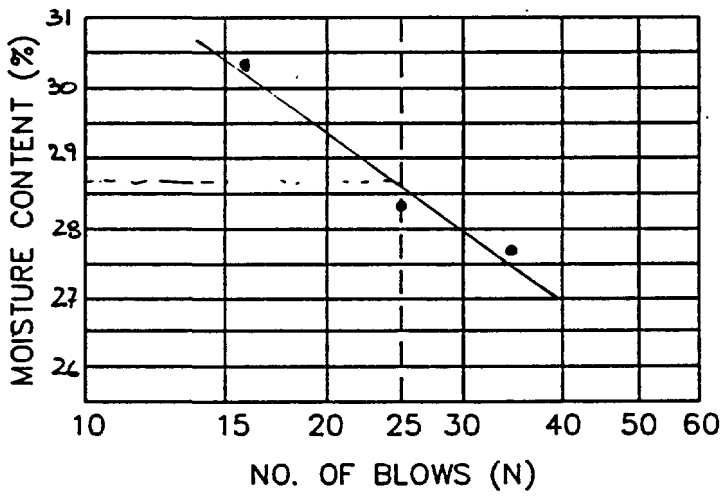
B S S C
BAILEY SITE SETTLORS COMMITTEE

ATTERBERG LIMITS TEST (ASTM D 4318)

PROJECT: BAILEY SITE SETTLORS COMMITTEE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 3 day APR month 1997 year
SOURCE: Bridge City MATERIAL TYPE: Granular Fill SAMPLE NO.: GF-6 QA ID: 34

LIQUID LIMIT DETERMINATION

	TARE NO.		11	5	10	
A	WT. OF TARE	(grams)	19.58	19.56	19.37	
B	WT. OF WET SOIL & TARE	(grams)	52.96	51.18	48.64	
C	WT. OF DRY SOIL & TARE	(grams)	45.72	44.2	41.81	
D	WT. OF WATER = B−C	(grams)	7.24	6.98	6.83	
E	WT. OF DRY SOIL = C−A	(grams)	26.14	24.64	22.44	
F	MOISTURE CONTENT = (D/E)X100	(%)	27.7	28.3	30.4	
N	NUMBER OF BLOWS		35	25	16	



PLASTIC LIMIT DETERMINATION

	TARE NO.		206			
A	WT. OF TARE	(grams)	12.36			
B	WT. OF WET SOIL & TARE	(grams)	22.44			
C	WT. OF DRY SOIL & TARE	(grams)	20.93			
D	WT. OF WATER = B−C	(grams)	1.51			
E	WT. OF DRY SOIL = C−A	(grams)	8.57			
F	MOISTURE CONTENT = (D/E)X100	(%)	17.6			

LIQUID LIMIT (LL) = 28.7 PLASTIC LIMIT (PL) = 17.6 PLASTICITY INDEX (PI) = 11.1

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

FIELD LABORATORY COMPACTION TEST (ASTM D 698 METHOD A)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO.: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 3 day APR month 1997 year
SOURCE: Bridge City - Red Clay MATERIAL TYPE: GEN. FILL SAMPLE NO.: GF-6 QA ID: JTC

THIS METHOD WILL BE USED IF THE MATERIAL RETAINED ON THE NO. 3/4-in. (19-mm) SIEVE IS LESS THAN 30% AND IF THE MATERIAL RETAINED ON THE NO. 4 (4.75-mm) SIEVE IS LESS THAN 20%.
ALL MATERIAL RETAINED ON THE NO. 4 (4.75-mm) SIEVE IS DISCARDED.
USE OVERSIZE CORRECTION IF MORE THAN 5% IS DISCARDED ACCORDING TO ASTM D 4718.
USE A 4-in. DIAMETER MOLD / 5.5-lb RAMMER / 12-in. DROP / 3 LAYERS / 25 BLOWS PER LAYER.

COMPACTION OF SOIL

A	WT. OF SOIL & MOLD	(grams)	6138	6194	6142	6059	
B	WT. OF MOLD	(grams)	4250	4250	4250	4250	
C	WT. OF SOIL = A - B	(grams)	1888	1944	1892	1809	
D	WET UNIT WT.(1) = C X 0.066	(pcf)	124.6	128.3	124.9	119.4	
E	DRY UNIT WT. = D / [1 + (K/100)]	(pcf)	108.7	109.6	103.6	105.8	

NOTE: (1) IF CALIBRATED MOLD OF 1/30 FT^3 IS USED, THE WET DENSITY IS CALCULATED FROM THE WEIGHT OF SOIL, THE VOLUME OF THE MOLD AND THE CONVERSION FROM GRAMS TO POUNDS (I.E., CONVERSION FACTOR = (30 / 453.6) = 0.066). THE MOLD MUST BE CALIBRATED TO VERIFY A CAPACITY OF 1/30 ± 0.0005 FT^3 ON INTERVALS NOT TO EXCEED 1000 TIMES THAT THE MOLD IS FILLED.

MOISTURE CONTENT - ASTM D 2216

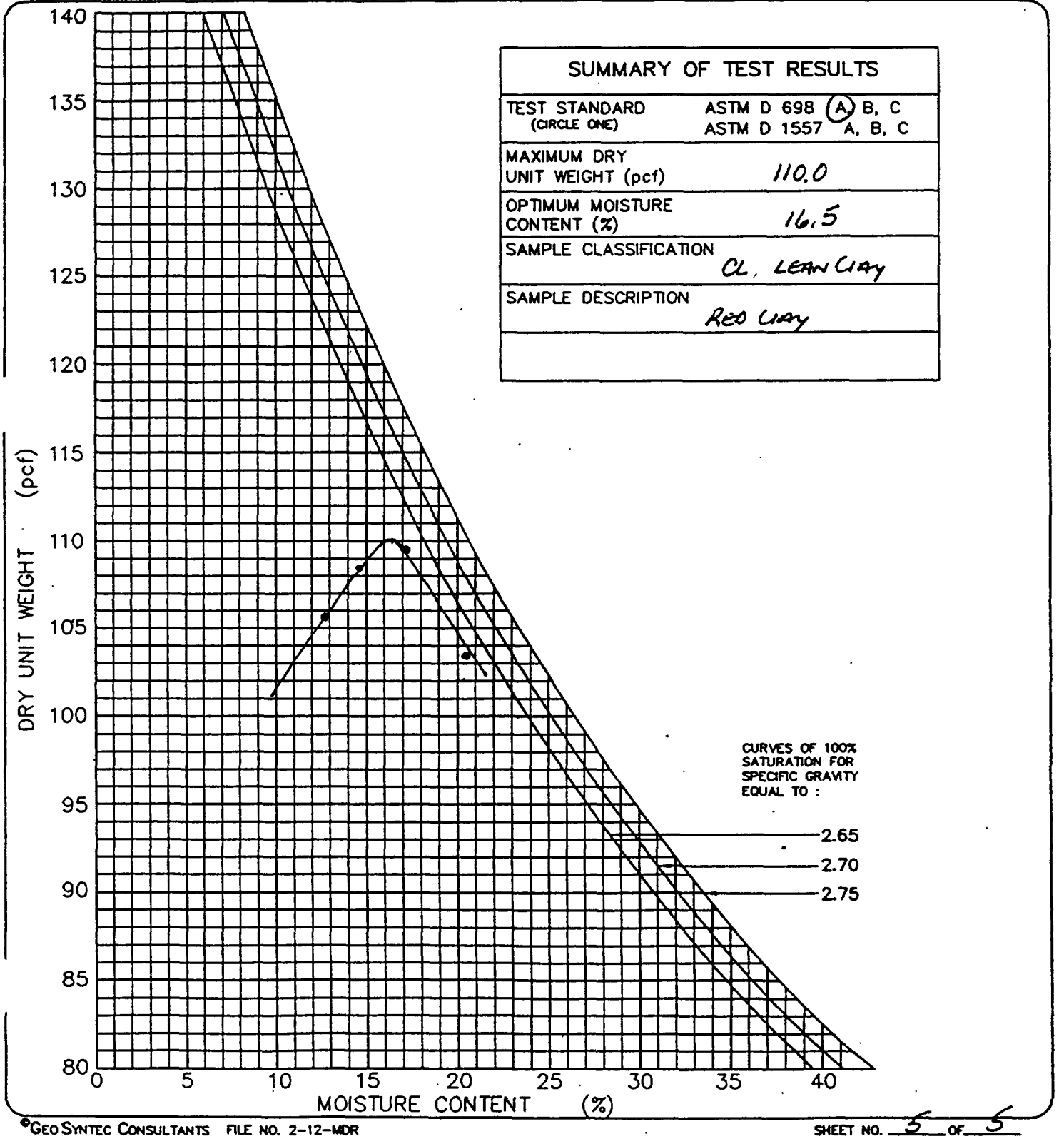
	TARE NO.		M1	C2	A1	S5	
F	WT. OF TARE	(grams)	8.5	8.5	8.5	8.5	
G	WT. OF WET SOIL & TARE	(grams)	126.9	174.5	178.7	127.4	
H	WT. OF DRY SOIL & TARE	(grams)	111.8	150.3	149.6	113.8	
I	WT. OF WATER = G - H	(grams)	15.1	24.2	29.1	13.6	
J	WT. DRY SOIL = H - F	(grams)	103.3	141.8	141.1	105.3	
K	MOISTURE CONTENT = (I/J) X 100	(%)	14.6	17.1	20.6	12.9	

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

MOISTURE-DENSITY RELATIONSHIP

PROJECT: BAILEY SITE SETTLORS COMMITTEE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 3 day APR month 1997 year
SOURCE: Bridge City MATERIAL TYPE: GEN. FILL SAMPLE NO.: GF-6 QA ID: JJC



SUMMARY OF TEST RESULTS	
TEST STANDARD (CIRCLE ONE)	ASTM D 698 (A) B, C ASTM D 1557 A, B, C
MAXIMUM DRY UNIT WEIGHT (pcf)	110.0
OPTIMUM MOISTURE CONTENT (%)	16.5
SAMPLE CLASSIFICATION	CL, LEAN CLAY
SAMPLE DESCRIPTION	RED CLAY

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

PARTICLE SIZE ANALYSIS MECHANICAL SIEVE METHOD (ASTM D 422)

PROJECT: BAILEY SITE SETTLORS COMMITTEE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 9 day APR month 1997 year
SOURCE: Red Wine-Rainbo Bunch Gray Base Red & Tan MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-7 QA ID: JTC

SOIL SAMPLE SIZE (ASTM D 1140)

DIAMETER OF LARGEST PARTICLE (SIEVE SIZE)	(grams)	NO. 10	NO. 4	3/4-in.
APPROXIMATE MINIMUM WT. OF SAMPLE	(grams)	200	500	1500

		BEFORE WASH	AFTER WASH
WT. OF DRY SAMPLE PLUS TARE	(grams)	588.4	265.2
WT. OF TARE	(grams)	14	14
WT. OF DRY SAMPLE	(grams)	574.4	251.2

SIEVE ANALYSIS

SIEVE NO.	DIAMETER (mm)	WT. RETAINED (grams)	% RETAINED	% FINER	PROJECT SPECIFICATIONS
2"	50	0	0	100	100
1"	25	0	0	100	
3/8"	9.5	0	0	100	
4	4.75	2.3	.4	99.6	
8	2.36	2.7	.5	99.5	
16	1.18	3.5	.6	99.4	
40	0.425	6.8	1.2	98.8	
100	0.150	117.3	20.4	79.6	
200	0.075	239.4	41.7	58.3	
PAN		247.5			

%FINER = 100 − Σ% RETAINED

GEOSYNTEC CONSULTANTS

B S S C

BAILEY SITE SETTLORS COMMITTEE

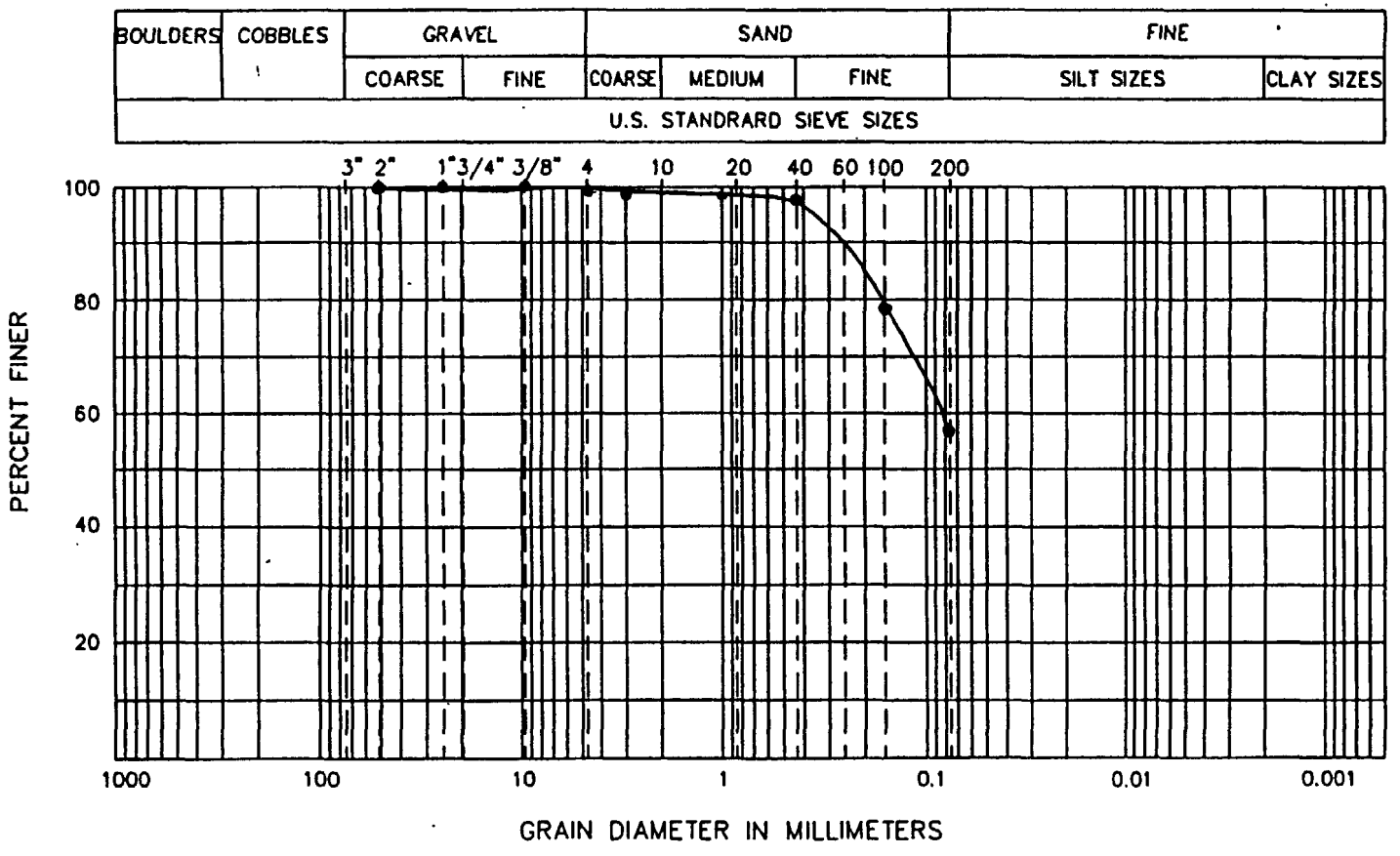
PARTICLE SIZE DISTRIBUTION AND SOIL CLASSIFICATION TEST RESULTS (ASTM D 422 & ASTM D 2487)

PROJECT: BAILEY SITE SETTLORS COMMITTEE

LOCATION: ORANGE COUNTY, TEXAS PROJECT NO.: GE3913 TASK NO.: 610

DESCRIPTION: REVISED FINAL REMEDIATION DATE: 3 day APR. month 1997 year

SOURCE: Red Wine - Rosso Bunch MATERIAL TYPE: General Fill SAMPLE NO.: GF- 7 QA ID: _____



CURVE COEFFICIENTS

(C_u) .....

(C_c) .....

ATTERBERG LIMITS

(LL) 46

(PL) 20

(PI) 26

SIEVE RESULTS

SIEVE SIZE	% FINER
3-in.	—
2-in.	100
1 1/2-in.	—
1-in.	100
3/4-in.	—
1/2-in.	—
3/8-in.	100
NO. 4	99.6
NO. 10 8	99.5
NO. 20 16	99.4
NO. 40	98.8
NO. 60	—
NO. 100	79.6
NO. 200	58.3

SOIL CLASSIFICATION (ASTM D 2487): CL, Lean clay

©GEOSYNTEC CONSULTANTS FILE NO. 2-15-PSD

GEOSYNTEC CONSULTANTS

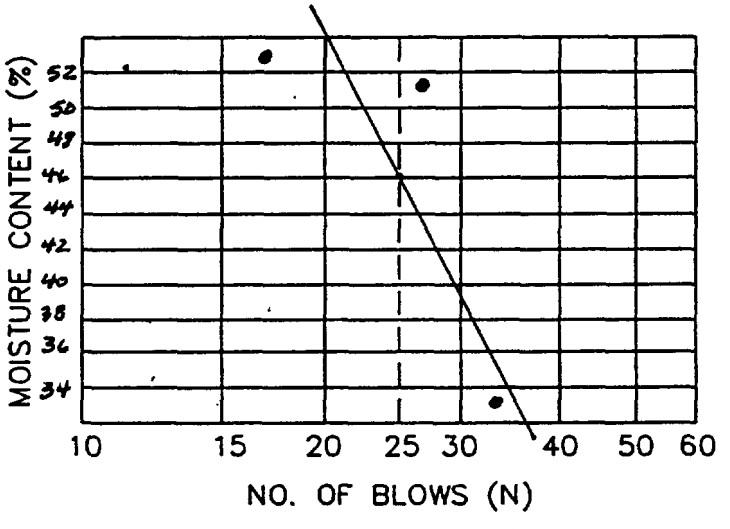
B S S C
BAILEY SITE SETTLORS COMMITTEE

ATTERBERG LIMITS TEST (ASTM D 4318)

PROJECT: BAILEY SITE SETTLORS COMMITTEE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 11 day APR. month 1997 year
SOURCE: RED WINE - ROUND BUNCH MATERIAL TYPE: GEN. FILL SAMPLE NO.: GF-7 QA ID: JTC

LIQUID LIMIT DETERMINATION

	TARE NO.		10	5	11	
A	WT. OF TARE	(grams)	19.5	19.5	19.6	
B	WT. OF WET SOIL & TARE	(grams)	27.9	28.3	28.8	
C	WT. OF DRY SOIL & TARE	(grams)	25.1	25.3	25.6	
D	WT. OF WATER = B−C	(grams)	2.8	3.0	3.2	
E	WT. OF DRY SOIL = C−A	(grams)	8.4	5.8	6.0	
F	MOISTURE CONTENT = (D/E)X100	(%)	33.3	51.7	53.3	
N	NUMBER OF BLOWS		33	27	17	



PLASTIC LIMIT DETERMINATION

	TARE NO.			210	200	
A	WT. OF TARE	(grams)		12.3	12.3	
B	WT. OF WET SOIL & TARE	(grams)		19.4	19.6	
C	WT. OF DRY SOIL & TARE	(grams)		18.3	18.3	
D	WT. OF WATER = B−C	(grams)		1.1	1.3	
E	WT. OF DRY SOIL = C−A	(grams)		6.0	6.0	
F	MOISTURE CONTENT = (D/E)X100	(%)		18.3	21.7	

LIQUID LIMIT (LL) = 46 PLASTIC LIMIT (PL) = 20 PLASTICITY INDEX (PI) = 26

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

FIELD LABORATORY COMPACTION TEST (ASTM D 698 METHOD A)

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO.: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION. DATE: 12 day APR. month 1997 year
SOURCE: OFF-SITE, BROWNING ROUND BUNCH MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-7 QA ID: JR

THIS METHOD WILL BE USED IF THE MATERIAL RETAINED ON THE NO. 3/4-in. (19-mm) SIEVE IS LESS THAN 30% AND IF THE MATERIAL RETAINED ON THE NO. 4 (4.75-mm) SIEVE IS LESS THAN 20%.
ALL MATERIAL RETAINED ON THE NO. 4 (4.75-mm) SIEVE IS DISCARDED.
USE OVERSIZE CORRECTION IF MORE THAN 5% IS DISCARDED ACCORDING TO ASTM D 4718.
USE A 4-in. DIAMETER MOLD / 5.5-lb RAMMER / 12-in. DROP / 3 LAYERS / 25 BLOWS PER LAYER.

COMPACTION OF SOIL

A	WT. OF SOIL & MOLD	(grams)	6078	6101	5988	6046	
B	WT. OF MOLD	(grams)	4250	4250	4250	4250	
C	WT. OF SOIL = A - B	(grams)	1828	1851	1738	1796	
D	WET UNIT WT.(1) = C X 0.066	(pcf)	120.6	122.2	114.7	118.5	
E	DRY UNIT WT. = D / [1 + (K/100)]	(pcf)	100.8	99.8	98	94.6	

NOTE: (1) IF CALIBRATED MOLD OF 1/30 FT^3 IS USED, THE WET DENSITY IS CALCULATED FROM THE WEIGHT OF SOIL, THE VOLUME OF THE MOLD AND THE CONVERSION FROM GRAMS TO POUNDS (I.E., CONVERSION FACTOR = (30 / 453.6) = 0.066). THE MOLD MUST BE CALIBRATED TO VERIFY A CAPACITY OF 1/30 ± 0.0005 FT^3 ON INTERVALS NOT TO EXCEED 1000 TIMES THAT THE MOLD IS FILLED.

MOISTURE CONTENT - ASTM D 2216

	TARE NO.		102	106	104	S-7	
F	WT. OF TARE	(grams)	14	14	14	8.43	
G	WT. OF WET SOIL & TARE	(grams)	502	287	342	201.45	
H	WT. OF DRY SOIL & TARE	(grams)	422	237	294	162.61	
I	WT. OF WATER = G - H	(grams)	80	50	48	39	
J	WT. DRY SOIL = H - F	(grams)	408	223	280	154	
K	MOISTURE CONTENT = (I/J) X 100	(%)	19.6	22.4	17.1	25.3	

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

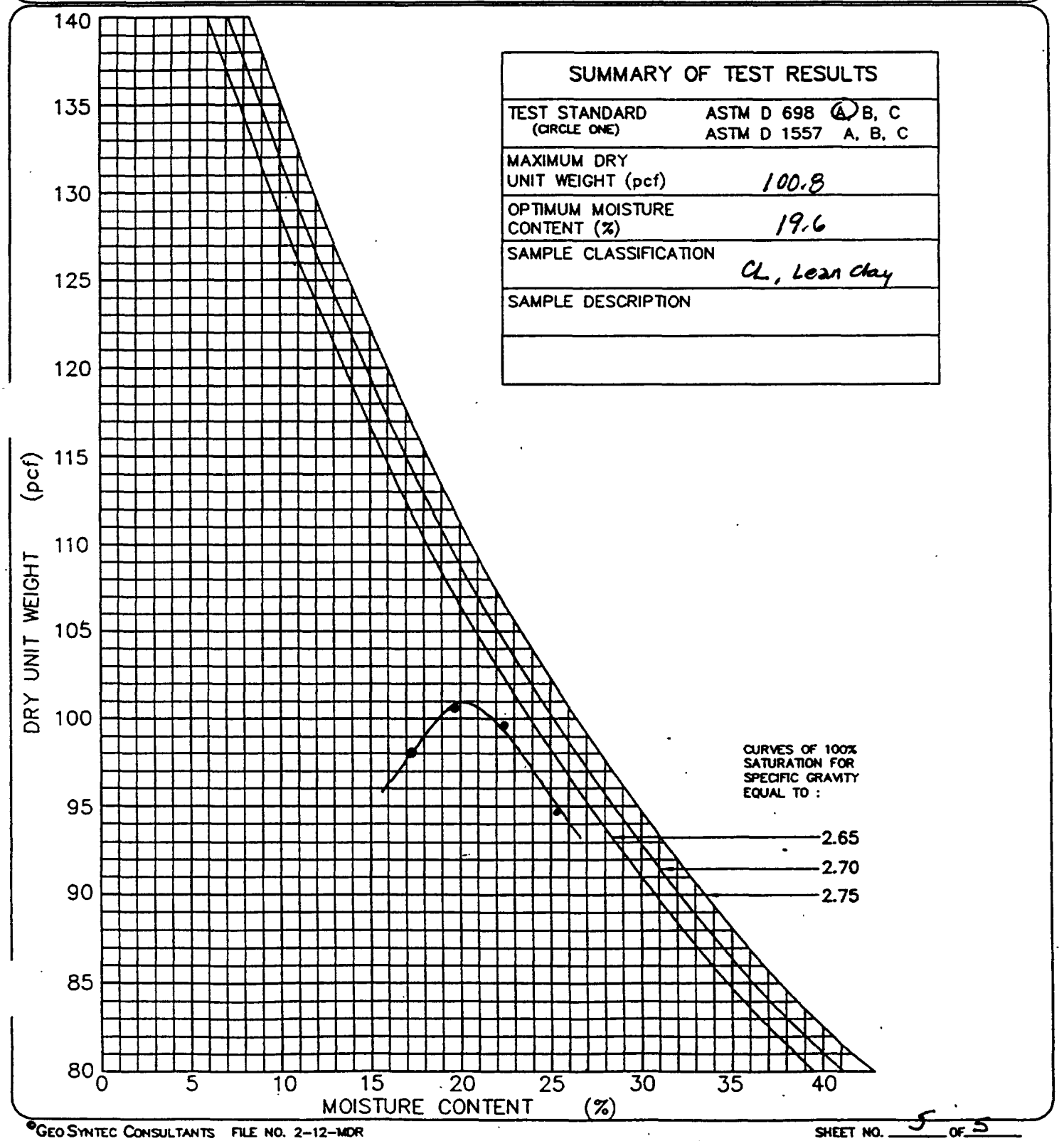
MOISTURE-DENSITY RELATIONSHIP

PROJECT: BAILEY SITE SETTLORS COMMITTEE

LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610

DESCRIPTION: REVISED FINAL REMEDIATION DATE: 12 day APR. month 1997 year

SOURCE: OFF SITE REDWINE ROUND BUNCH MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-7 QA ID: JTC



SUMMARY OF TEST RESULTS	
TEST STANDARD (CIRCLE ONE)	ASTM D 698 (A) B, C ASTM D 1557 A, B, C
MAXIMUM DRY UNIT WEIGHT (pcf)	100.8
OPTIMUM MOISTURE CONTENT (%)	19.6
SAMPLE CLASSIFICATION	CL, Lean clay
SAMPLE DESCRIPTION	

MAXIM ECHNOLOGIES INC

Maxim Technologies, Inc.
1850 Interstate 10 South • P.O. Box 5296
Beaumont, Texas 77726
Telephone: (409) 842-0414
FAX: (409) 842-3949

REPORT OF LABORATORY TESTING

CLIENT: GEOSYNTEC CONSULTANTS
P.O. BOX 457
BRIDGE CITY, TX 77611

PROJECT NO.: 1503702970
REPORT NO.: 26479
DATE OF SERVICE: 4/03/97
AUTHORIZATION: Jim Brewer
REPORT DATE: 4/16/97

PROJECT: Bailey Superfund Site
Hwy. 87, Bridge City, TX
Project #97C-115

SERVICES: Perform Organic Content Analysis on Soil in General Accordance with ASTM D2974

REPORT OF TESTS

Soil Description: Reddish-Brown Tan and Light Gray Sandy Clay

Sample GF-7 for Redwine Roundbunch

Organic Content: 3.6% ✓ PASS JJC 29APR.97
Ash Content: 96.4%
Furnace Temperature: 750 deg. C
Moisture Content: 10.9% (based on oven-dried mass)

Technician: Barry A. Uptigrove

port Distribution:
.0) GEOSYNTEC CONSULTANTS

MAXIM TECHNOLOGIES, INC.

Jeffrey W. Williams, P.E.
Manager, Engineering Srvc

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REPORT OF MOISTURE-DENSITY RELATIONS

JTC
Rec. 23Apr.97
PASS

CLIENT: GEOSYNTEC CONSULTANTS
P.O. BOX 457
BRIDGE CITY, TX 77611

PROJECT NO.: 1503702970
REPORT NO.: 26475
DATE OF SERVICE: 4/15/97
AUTHORIZATION: Jim Brewer
REPORT DATE: 4/22/97

PROJECT: Bailey Superfund Site
Hwy. 87, Bridge City, TX
Project #97C-115

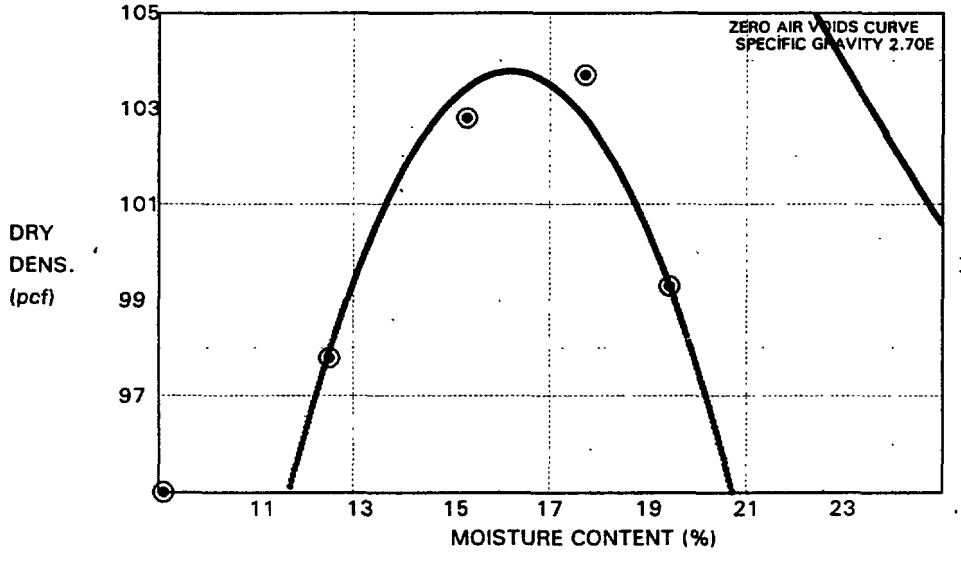
SERVICES: Obtain sample of material used for construction, prepare samples and perform moisture-density relations test to establish the maximum density and optimum moisture of the material.

PROJECT DATA

CONTRACTOR: Not specified
DATE SAMPLED: 4/15/97
SAMPLED BY: Barry A. Uptigrove
TEST FOR: General Fill
SAMPLE LOCATION: ~~GF~~-8; delivered to site from ~~SC~~ Scales-Circle S

TEST DATE: 4/18/97
MATERIAL: Gray and Tan Clay
CLASSIFICATION: CH PASS
MATERIAL PREPARATION METHOD: Moist
RAMMER TYPE: Mechanical
METHOD OF TEST: ASTM D698, Method A
ASTM D4318, Proc. A

REPORT OF TESTS



MAXIMUM DENSITY, PCF: 104.0 ✓

OPTIMUM MOISTURE (%): 16.0

LIQUID LIMIT: 61
PLASTIC LIMIT: 15
PLASTICITY INDEX: 46 ✓

E = Estimated Value

Report Of Tests Continued On Page 2

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MAXIM

JJC
23 APR 97
PASS

GEOSYNTEC CONSULTANTS
PROJECT NO. 1503702970
DATE OF SERVICE: 4/15/97

REPORT OF TESTS 6F-8

ADDITIONAL COMMENTS:

<5% PASS

ASTM D 2974	Organic Content: 4.0%	Ash Content: 96.0%
	Furnace Temp: 750 deg C	Moisture Cont: 4.5%
		(based on oven-dried mass)

Sieve analysis results reported on attachments.

Technician: Kerry J. Jean

eport Distribution:
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Manager, Engineering Srvc

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FAX: (409) 842-3949

REPORT OF TESTS

CLIENT: GEOSYNTEC CONSULTANTS
P.O. BOX 457
BRIDGE CITY, TX 77611

PAGE 1 OF 1

PROJECT NO.: 1503702970
REPORT NO.: 26475A
DATE OF SERVICE: 4/15/97
AUTHORIZATION: Jim Brewer
REPORT DATE: 4/29/97

PROJECT: Bailey Superfund Site
Hwy. 87, Bridge City, TX
Project #97C-115

SERVICES: Perform Sieve Analysis according to ASTM D422, on material which was sampled and delivered to the laboratory by Barry Uptigrove.

REPORT OF TESTS

Sample ID: GF-8

U.S. Sieve Size	Percent Passing
2"	100
1"	100
3/8"	100
#4	100
#8	99.3
#16	70.5
#40	46.0
#100	30.5
#200	17.5

Dry Sieve Analysis!
Request made for a wash sieve - Minus #200
Extra sample tested.
#200 = 89.7% Percent Passing

Technician: Kerry J. Jean

Report Distribution:
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Manager, Engineering Srvc

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OISTURE CONTENT/DENSITY/ATTERBERG LIMITS/% PASSING NO. 200

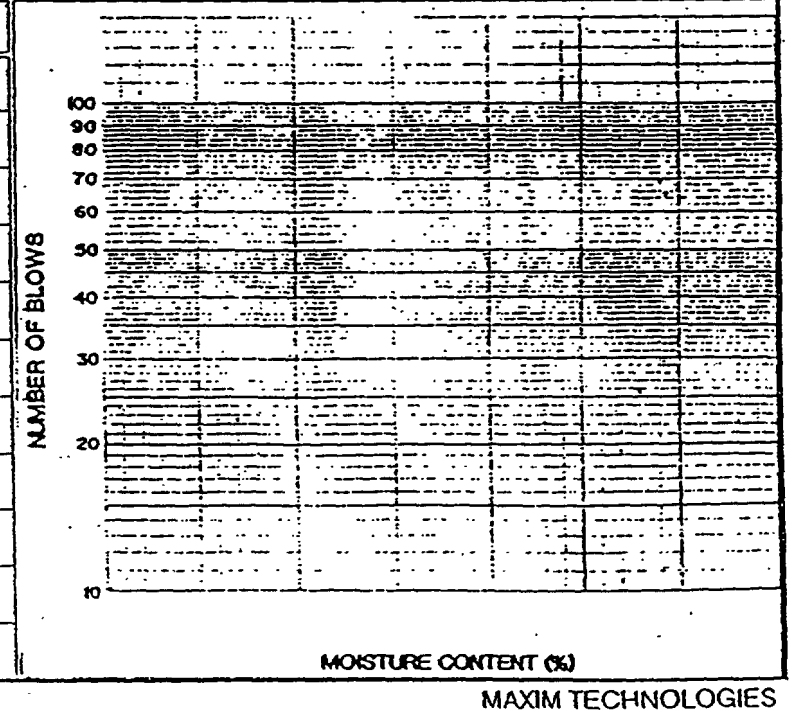
ROJECT NO. GF - 8	BORING NO.	DEPTH, ft.	
ROJECT T & G CL	TECH KJ	DATE 5/12	

OIL DESCRIPTION

MOISTURE CONTENT (ASTM D2216)		DENSITY (ASTM D2937)		% PASSING NO. 200 SIEVE (ASTM D1140)	
ARE NUMBER	34	DIAMETER, in.		TARE NUMBER	34
ARE + WET SOIL, g.	287.17	HEIGHT, in.		TARE + DRY SOIL, g.	276.2
ARE + DRY SOIL, g.	276.2	WET WEIGHT, g.		TARE, g.	135.26
ARE, g.	135.26	AREA, sq. in.		DRY WT. RETAINED, g.	14.45
T. OF WATER, g.		VOLUME, cu. in.		INITIAL DRY WT., g.	
RY SOIL, g.		WET UNIT WT, lb. cu. ft.		PERCENT RETAINED	10.3
IOISTURE CONTENT, %	8	DRY UNIT WT., lb. cu. ft.		PERCENT PASSING	89.7

	LIQUID LIMIT (ASTM D4318)				PLASTIC LIMIT (D4318)		
ARE NUMBER							
ARE + WET SOIL, g.							
ARE + DRY SOIL, g.							
, g.							
VT. OF WATER, g.							
DRY SOIL, g.							
MOISTURE CONTENT, %							
NUMBER OF BLOWS							

SUMMARY OF RESULTS	
MOISTURE CONTENT, %	
DRY DENSITY, pcf	
LIQUID LIMIT	
PLASTIC LIMIT	
PLASTICITY INDEX	
% PASS. 200 SIEVE	
COMP. STRENGTH, tsf	
FAILURE STRAIN, %	
NF. PRESSURE, psi	
AILURE TYPE	
COMMENTS	



G:/SS/GEO/DATA

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Maxim Technologies, Inc.
1850 Interstate 10 South • P.O. Box 5296
Beaumont, Texas 77726
Telephone: (409) 842-0414
FAX: (409) 842-3949

REPORT OF MOISTURE-DENSITY RELATIONS

CLIENT: GEOSYNTEC CONSULTANTS
P.O. BOX 457
BRIDGE CITY, TX 77611

PROJECT NO.: 1503702970
REPORT NO.: 26514
DATE OF SERVICE: 4/22/97
AUTHORIZATION: John
REPORT DATE: 4/29/97

PROJECT: Bailey Superfund Site
Hwy. 87, Bridge City, TX
Project #97C-115

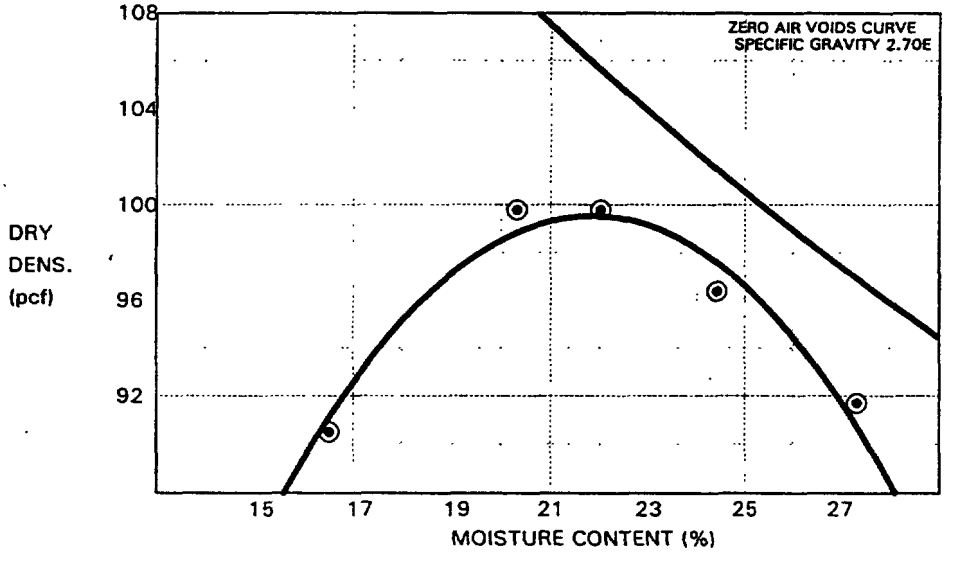
SERVICES: Obtain sample of material used for construction, prepare samples and perform moisture-density relations test to establish the maximum density and optimum moisture of the material.

PROJECT DATA

CONTRACTOR: OHM
DATE SAMPLED: 4/22/97
SAMPLED BY: Barry A. Uptigrove
TEST FOR: General Fill
SAMPLE LOCATION: GF-9 - from Circle S

TEST DATE: 4/28/97
MATERIAL: Tan and Gray Clay
CLASSIFICATION: CH
MATERIAL PREPARATION METHOD: Moist
RAMMER TYPE: Mechanical
METHOD OF TEST: ASTM D698, Method A
ASTM D4318, Proc. A

REPORT OF TESTS



MAXIMUM DENSITY, PCF:	99.5
OPTIMUM MOISTURE (%):	22.0
LIQUID LIMIT:	75
PLASTIC LIMIT:	17
PLASTICITY INDEX:	58
% PASSING #4:	100.0

E = Estimated Value

Technician: Kerry J. Jean

Report Distribution:
GEOSYNTEC CONSULTANTS

MAXIM TECHNOLOGIES, INC.

Jeffrey W. Williams, P.E.
Manager, Engineering Srvc

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REPORT OF TESTS

CLIENT: GEOSYNTEC CONSULTANTS
P.O. BOX 457
BRIDGE CITY, TX 77611

PROJECT NO.: 1503702970
REPORT NO.: 26515
DATE OF SERVICE: 4/22/97
AUTHORIZATION: John
REPORT DATE: 4/29/97

PROJECT: Bailey Superfund Site
Hwy. 87, Bridge City, TX
Project #97C-115

SERVICES: Perform Sieve Analysis according to ASTM D422 on material which was sampled and delivered to the laboratory by Barry Uptigrove.

REPORT OF TESTS

Sample ID: GF-9

U.S. Sieve Size	Percent Passing
2"	100
1"	100
3/8"	100
#4	100
#8	94.7
#16	63.2
#40	40.8
#100	27.4
#200	19.1

Dry Sieve Analysis
Request made for a wash sieve - Minus #200
Extra sample tested
#200 = 94.2% Passing.

Organic Content: 4.0 %
Ash Content: 96.0 %
Furnace Temperature: 750 deg. C
Moisture Content: 11.7 %

Technician: Barry A. Uptigrove

port Distribution:
JI GEOSYNTEC CONSULTANTS

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Jeffrey W. Williams, P.E.
Manager, Engineering Srvc

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1099 PMN

MOISTURE CONTENT/DENSITY/ATTERBERG LIMITS/% PASSING NO. 200

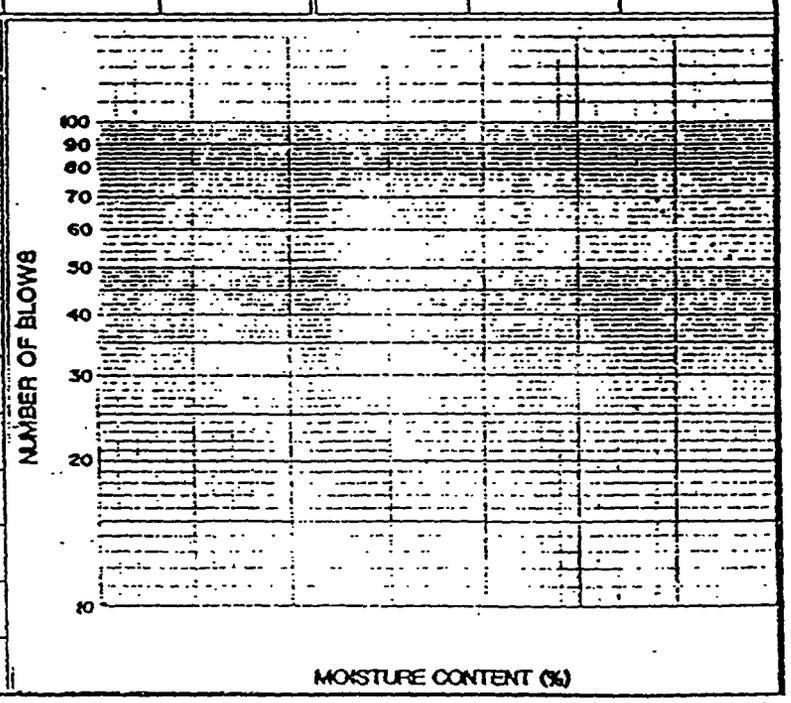
PROJECT NO. G-F.9	BORING NO. Circles S	DEPTH, ft.
PROJECT T & G CL	TECH	DATE

SOIL DESCRIPTION

MOISTURE CONTENT (ASTM D2216)		DENSITY (ASTM D2937)		% PASSING NO. 200 SIEVE (ASTM D1140)	
TARE NUMBER	28	DIAMETER, in.		TARE NUMBER	28
TARE + WET SOIL, g.	283.3	HEIGHT, in.		TARE + DRY SOIL, g.	271.7
TARE + DRY SOIL, g.	271.7	WET WEIGHT, g.		TARE, g.	134.0
TARE, g.	134.0	AREA, sq. in.		DRY WT. RETAINED, g.	8.02
WT. OF WATER, g.		VOLUME, cu. in.		INITIAL DRY WT., g.	
DRY SOIL, g.		WET UNIT WT, lb. cu. ft.		PERCENT RETAINED	5.8
MOISTURE CONTENT, %	9	DRY UNIT WT., lb. cu. ft.		PERCENT PASSING	94.2

	LIQUID LIMIT (ASTM D4318)				PLASTIC LIMIT (D4318)		
TARE NUMBER							
TARE + WET SOIL, g.							
TARE + DRY SOIL, g.							
, g.							
WT. OF WATER, g.							
DRY SOIL, g.							
MOISTURE CONTENT, %							
NUMBER OF BLOWS							

SUMMARY OF RESULTS	
MOISTURE CONTENT, %	
DRY DENSITY, pcf	
LIQUID LIMIT	
PLASTIC LIMIT	
PLASTICITY INDEX	
% PASS. 200 SIEVE	
COMP. STRENGTH, tsf	
FAILURE STRAIN, %	
CONF. PRESSURE, psi	
FAILURE TYPE	
COMMENTS	



MAXIM
TECHNOLOGIES INC

June 6, 1997

Mr. Jim Brewer
Geosyntec Consultants, Inc.
P. O. Box 457
Bridge City, Texas 77611

Re: Laboratory Test Results
GF-8, GF-9 and PC-1
Bailey Superfund Site
Bridge City, Texas
Maxim Project No. 97C-115

Dear Mr. Brewer:

The following results were obtained for the wash sieve analysis (ASTM D1140):

Sample No.	Minus No. 200
GF-8	89.7 %
GF-9	94.2 %
PC-1	74.1 %

The testing for PC-1 revealed the following results:

Atterberg Limits	LL=42	PI=27	
Proctor Compaction	Max. Density= 106.0 pcf		Opt. Moisture = 14.0%

The Proctor compaction curve is attached for your information. If you have any questions, please call me.

Sincerely,

MAXIM TECHNOLOGIES, INC.

Jack C. Lind, P.E.
Manager - Engineering & Environmental

Attachment

CME\REPORTS\702970LE.JCL

1850 Interstate 10S • P.O. Box 5296 • Beaumont, Texas 77726-5296 • 409/842-0414 • FAX 409/842-3949

Asteco • Austin Research Engineers • Chen-Northern • Empire Soils Investigations • Kansas City Testing
Maxim Engineers • Nebraska Testing • Patzig Testing • Southwestern Laboratories • Thomas-Hartig • Twin City Testing

MAXIM ECHNOLOGIES INC

Maxim Technologies, Inc.
1850 Interstate 10 South • P.O. Box 5296
Beaumont, Texas 77726
Telephone: (409) 842-0414
FAX: (409) 842-3949

REPORT OF TESTS

CLIENT: GEOSYNTEC CONSULTANTS
P.O. BOX 457
BRIDGE CITY, TX 77611

PAGE 1 OF 1

PROJECT NO.: 1503702970
REPORT NO.: 26686
DATE OF SERVICE: 5/10/97
AUTHORIZATION: Jim Brewer
REPORT DATE: 6/02/97

PROJECT: Bailey Superfund Site
Hwy. 87, Bridge City, TX
Project #97C-115

SERVICES: Perform Sieve Analysis according to ASTM D422 on material which was sampled and delivered to the laboratory by Barry Uptigrove.

REPORT OF TESTS

Sample ID: PC-1

U.S. Sieve Size	Percent Passing
2"	100
1"	100
3/8"	100
#4	100
#8	99.8
#16	90.3
#40	73.6
#100	56.9
#200	29.4

Dry Sieve Analysis
Request made for a wash sieve - Minus #200
Extra sample tested
#200 = 74.1% Passing

Moisture Content: 11%

Note: Dry Sieve Analysis

Technician: Barry A. Uptigrove

Report Distribution:
(0) GEOSYNTEC CONSULTANTS

MAXIM TECHNOLOGIES, INC.

Jack C. Lind, P.E.
Project Manager

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Telephone: (409) 842-0414
FAX: (409) 842-3949

REPORT OF MOISTURE-DENSITY RELATIONS

CLIENT: GEOSYNTEC CONSULTANTS
P.O. BOX 457
BRIDGE CITY, TX 77611

PAGE 1 OF 1

PROJECT NO.: 1503702970
REPORT NO.: 26608
DATE OF SERVICE: 5/10/97
AUTHORIZATION: Jim
REPORT DATE: 5/30/97

PROJECT: Bailey Superfund Site
Hwy. 87, Bridge City, TX
Project #97C-115

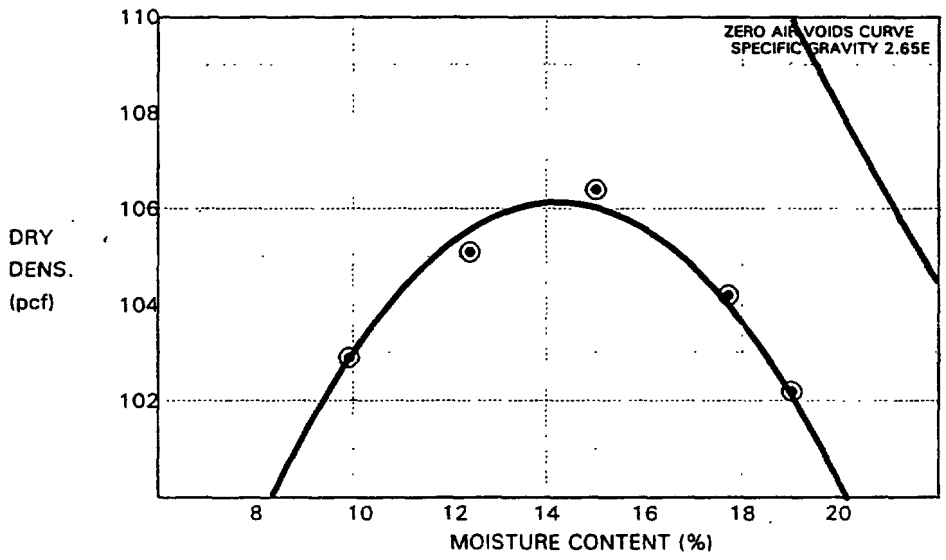
SERVICES:

PROJECT DATA

CONTRACTOR: Geosyntec Consultants
DATE SAMPLED: 5/12/97
SAMPLED BY: Barry Uptigrove
TEST FOR: Protective Cover
SAMPLE LOCATION: PC-1

TEST DATE: 5/30/97
MATERIAL: T-L-CL
CLASSIFICATION: CL
MATERIAL PREPARATION METHOD: Moist
RAMMER TYPE: Mechanical
METHOD OF TEST: ASTM D698, Method A

REPORT OF TESTS



MAXIMUM DENSITY, PCF: 106.0

OPTIMUM MOISTURE (%): 14.0

LIQUID LIMIT: 42
PLASTIC LIMIT: 15
PLASTICITY INDEX: 27

E = Estimated Value

Technician: Curtis B. Watts

Report Distribution:
(0) GEOSYNTEC CONSULTANTS

MAXIM TECHNOLOGIES, INC.

Jack C. Lind, P.E.
Project Manager

Our letters and reports are for the exclusive use of the client to whom they are addressed and shall not be reproduced except in full without the approval of the testing laboratory. The use of our name must receive our written approval. Our letters and reports apply only to the sample tested and/or inspected, and are not indicative of the quantities of apparently identical or similar products

SAMPLE RETRIEVED AT THE SITE BY MAXIMUM (BARRY UPTGROVE) ON 10 JUNE 1997.

GEOSYNTEC CONSULTANTS

GEOMECHANICS AND ENVIROMENTAL LABORATORY

LABORATORY TEST REQUEST

(FOR INTERNAL USE ONLY)

PROJECT: BAILEY SUPERFUND SITE

LOCATION: _____ PROJECT NO.: GE3913 TASK NO.: 612

DESCRIPTION: _____ DATE: 30 day MAY month 1997 year

SOURCE: CIRCLE S, BRIDGECITY MAT. VISUAL DESC.: GRAY-RED-TAN YELLOW SILTY CLAY MATERIAL APPLICATION: GENERAL FILL

SITE SAMPLE ID: GE-10

SHIPPER: _____ REQUESTED BY: B NAGEL DATE: 30MAY97 GEL SAMPLE NO.: _____

TASK	AS RECEIVED MOISTURE CONTEST ☐ ASTM D 2216 (%)	PERCENT PASSING NO. 200 ☐ ASTM D 1140 (%)	SPECIFIC GRAVITY ☐ ASTM D 854	GRAIN SIZE ASTM D 422: SIEVE ☐	GRAIN SIZE ASTM D 422: HYDROMETER ☐	ATTEBERG LIMITS ASTM D 4318: LL ☐ (%)	ATTEBERG LIMITS ASTM D 4318: PL ☐ (%)	ATTEBERG LIMITS ASTM D 4318: PI ☐	SOIL CLASSIFICATION ASTM D 2487	LOI ORGANIC CONTENT ☐ ASTM ~~G-311~~ 297-i (%)	CARBO CONT. ☐ ASTM D3042 (%)	COMPACTION ASTM D 698 ☒ ASTM D 1557 ☐ A B C: MAX DRY UNIT WT. (pcf)	COMPACTION: OPT. MOIST. CONT. (%)	HYDRAULIC CONDUCTIVITY FHFW (ASTM D 5084) ☐ CHRW (ASTM D 2434) ☐ TUBE SAMPLE ☐ REMOLDED SAMPLE ☐ γ_d = ____ % γ_{dmax}; W = W_{opt} ____ (%) γ_d = ____ (pcf); W = ____ (%): DRY UNIT WT. (pcf)	MOIST. CONT. (%)	K (cm/sec) at σ'_c = ____ (psi) i = ____
		✓				✓	✓	✓	✓	✓		✓	✓			

DEADLINE																

REMARKS:

PERFORMANCE TEST ☐

CONFORMANCE TEST ☐

MAXIM ECHNOLOGIES INC

Maxim Technologies, Inc.
1850 Interstate 10 South • P.O. Box 5296
Beaumont, Texas 77726
Telephone: (409) 842-0414
FAX: (409) 842-3949

REPORT OF MOISTURE-DENSITY RELATIONS

CLIENT: GEOSYNTEC CONSULTANTS
P.O. BOX 457
BRIDGE CITY, TX 77611

PROJECT NO.: 1503702970
REPORT NO.: 26730
DATE OF SERVICE: 6/10/97
AUTHORIZATION: Bill
REPORT DATE: 6/13/97

PROJECT: Bailey Superfund Site
Hwy. 87, Bridge City, TX
Project #97C-115

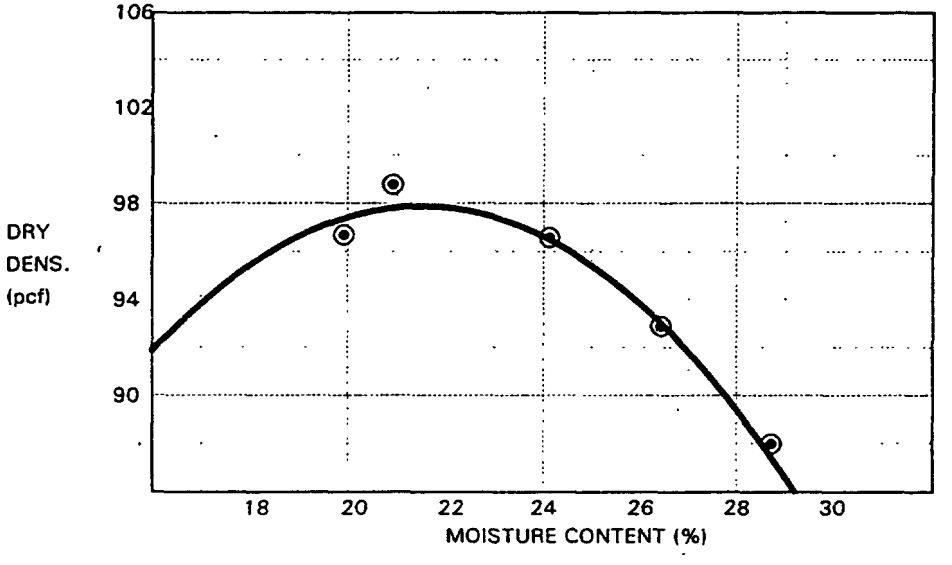
SERVICES: Obtain sample of material used for construction, prepare samples and perform moisture-density relations test to establish the maximum density and optimum moisture of the material.

PROJECT DATA

CONTRACTOR: GEOSYNTEC CONSULTANTS
DATE SAMPLED: 6/10/97
SAMPLED BY: Barry A. Uptigrove
TEST FOR: General Fill #10
SAMPLE LOCATION: From Site

TEST DATE: 6/16/97
MATERIAL: Gray-Red-Tan Yellow silty cl
CLASSIFICATION:
MATERIAL PREPARATION METHOD: Moist
RAMMER TYPE: Mechanical
METHOD OF TEST: ASTM D698, Method A
ASTM D4318, Proc. A

REPORT OF TESTS



MAXIMUM DENSITY, PCF:	98.0
OPTIMUM MOISTURE (%):	21.5
LIQUID LIMIT:	64
PLASTIC LIMIT:	19
PLASTICITY INDEX:	45
% PASSING #200:	88.0

Comments: Organic Content - 1.94%

Technician: Kerry J. Jean

Report Distribution:
1) GEOSYNTEC CONSULTANTS

MAXIM TECHNOLOGIES, INC.

Jack C. Lind, P.E.
Project Manager

1006 PMN

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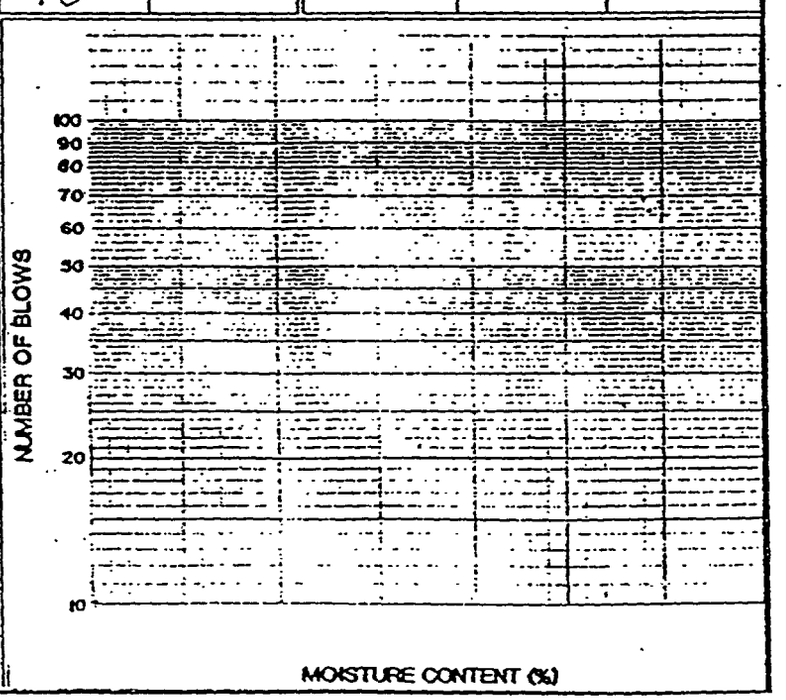
MOISTURE CONTENT/DENSITY/ATTERBERG LIMITS/% PASSING NO. 200

PROJECT NO. 1503702970	BORING NO. 26608	~~DEPTH, ft~~ GF #10	
PROJECT Geosyntec	TECH C.W.	DATE 5/12	
SOIL DESCRIPTION T & L CL			

MOISTURE CONTENT (ASTM D2216)		DENSITY (ASTM D2937)		% PASSING NO. 200 SIEVE (ASTM D1140)	
TARE NUMBER		DIAMETER, in.		TARE NUMBER	30
TARE + WET SOIL, g.		HEIGHT, in.		TARE + DRY SOIL, g.	291.4
TARE + DRY SOIL, g.		WET WEIGHT, g.		TARE, g.	135.5
TARE, g.		AREA, sq. in.		DRY WT. RETAINED, g.	40.39
WT. OF WATER, g.		VOLUME, cu. in.		INITIAL DRY WT., g.	
DRY SOIL, g.		WET UNIT WT, lb. cu. ft.		PERCENT RETAINED	25.9
MOISTURE CONTENT, %		DRY UNIT WT., lb. cu. ft.		PERCENT PASSING	74.1

	LIQUID LIMIT (ASTM D4318)				PLASTIC LIMIT (D4318)		
TARE NUMBER	101	103	108		~~108~~	109	
TARE + WET SOIL, g.	47.08	43.32	44.98			27.54	
TARE + DRY SOIL, g.	38.02	35.05	35.98			25.98	
TARE, g.	15.34	15.42	15.60		~~15.44~~	15.37	
WT. OF WATER, g.							
DRY SOIL, g.							
MOISTURE CONTENT, %							
NUMBER OF BLOWS	35	25	15				

SUMMARY OF RESULTS	
MOISTURE CONTENT, %	
DRY DENSITY, pcf	
LIQUID LIMIT	42
PLASTIC LIMIT	15
PLASTICITY INDEX	27
% PASS. 200 SIEVE	
COMP. STRENGTH, tsf	
FAILURE STRAIN, %	
CONF. PRESSURE, psi	
FAILURE TYPE	
COMMENTS	



GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

LABORATORY DETERMINATION OF MOISTURE CONTENT OF SOIL

PROJECT: BAILEY SUPERFUND SITE
LOCATION: ORANGE COUNTY, TEXAS PROJECT NO: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION DATE: 30 day MAY month 1997 year
SOURCE: CIRCLES, BRIDGE CITY MATERIAL TYPE: GENERAL FILL SAMPLE NO.: GF-10 QA ID: WTAI

GF-10: MATERIAL OBTAINED FROM / AT TIME OF TRUCK OFFLOADING AT EAST END OF NORTH DIKE AREA.

OVEN METHOD (ASTM D 2216)

RECOMMENDED MASS OF MOIST SAMPLE WEIGHT

100% PASING THE NO. 10 (2-mm) SIEVE	20 grams
100% PASSING THE NO. 4 (4.75-mm) SIEVE	100 grams
100% PASSING THE NO. 3/8-in. (9.5-mm) SIEVE	500 grams
100% PASSING THE NO. 3/4-in. (19-mm) SIEVE	2.5 kilograms

GF-10 SAMPLE: AS-RECEIVED MOISTURE CONTENT

	TARE NO.	S-1				
A	WT. OF TARE, grams	8.40				
B	WT. OF WET SOIL & TARE, grams	456.49				
C	WT. OF DRY SOIL & TARE, grams	357.00				
D	WT. OF WATER = B-C	99.49				
E	WT. OF DRY SOIL = C-A	348.60				
F	MOISTURE CONTENT = (D/E) X 100	28.54				

MICROWAVE METHOD (ASTM D 4643)

RECOMMENDED MASS OF MOIST SAMPLE WEIGHT

90% PASSING THE NO. 10 (2-mm) SIEVE	100 TO 200 grams
90% PASSING THE NO. 4 (4.75-mm) SIEVE	200 TO 500 grams
90% PASSING THE 3/4-in. (19-mm) SIEVE	500 TO 1000 grams

INITIAL SETTING TO BE AT 3.0 MINUTES, CONTINUE DRYING SAMPLE AT 1.0 MINUTE SETTING UNTIL MOISTURE CONTENT VARIATION BETWEEN SETTINGS IS LESS THAN 0.1%

	TARE NO.					
A	WT. OF TARE					
B	WT. OF WET SOIL & TARE					
C	WT. OF DRY SOIL & TARE					
D	WT. OF WATER = B-C					
E	WT. OF DRY SOIL = C-A					
F	MOISTURE CONTENT = (D/E) X 100					

GEOSYNTEC CONSULTANTS

GEOMECHANICS AND ENVIROMENTAL LABORATORY

LABORATORY TEST REQUEST

(FOR INTERNAL USE ONLY)

PROJECT: Bailey Superfund Site

LOCATION: on site material from pit. PROJECT NO.: GE 3913 TASK NO.: 612

DESCRIPTION: Being Used For Protective Cover on North Dike. DATE: 6 day 17 month 97 year

SOURCE: Circle S/Bridge City. MAT. VISUAL DESC.: Gray-Tan-Redish Silty Clay. APPLICATION: Protective Cover

SITE SAMPLE ID: PC#2

SHIPPER: REQUESTED BY: B. Nagel DATE: 6/16/97 GEL SAMPLE NO.:

TASK	AS RECEIVED MOISTURE CONTEST ☐ ASTM D 2216 (%)	PERCENT PASSING NO. 200 ☐ ASTM D 1140 (%)	SPECIFIC GRAVITY ☐ ASTM D 854	GRAIN SIZE ASTM D 422: SIEVE ☐	GRAIN SIZE ASTM D 422: HYDROMETER ☐	ATTEBERG LIMITS ASTM D 4318: LL ☐ (%)	ATTEBERG LIMITS ASTM D 4318: PL ☐ (%)	ATTEBERG LIMITS ASTM D 4318: PI ☐	SOIL CLASSIFICATION ASTM D 2487	LOI Organic Content ☐ ASTM ~~C-311~~ (%)	CARBO CONT. ☐ ASTM D3042 (%)	COMPACTION ASTM D 698 ☒ ASTM D 1557 ☐ A B C: MAX DRY UNIT WT. (pcf)	COMPACTION: OPT. MOIST. CONT. (%)	HYDRAULIC CONDUCTIVITY FHFW (ASTM D 5084) ☐ CHRW (ASTM D 2434) ☐ TUBE SAMPLE ☐ REMOLDED SAMPLE ☐ γ_d = ___ % γ_{dmax}; W=W_{opt} ___ (%) γ_d = ___ (pcf); W= ___ (%): DRY UNIT WT. (pcf)	MOIST. CONT. (%)	K (cm/sec) at σ'_c = ___ (psi) i= ___
		✓				✓	✓	✓	✓	✓		✓	✓			

DEADLINE															

REMARKS: PERFORMANCE TEST ☐ CONFORMANCE TEST ☐

MAXIM
ECHNOLOGIES INC

Maxim Technologies, Inc.
1850 Interstate 10 South • P.O. Box 5296
Beaumont, Texas 77726
Telephone: (409) 842-0414
FAX: (409) 842-3949

REPORT OF MOISTURE-DENSITY RELATIONS

CLIENT: GEOSYNTEC CONSULTANTS
P.O. BOX 457
BRIDGE CITY, TX 77611

PROJECT NO.: 1503702970
REPORT NO.: 26752
DATE OF SERVICE: 6/16/97
AUTHORIZATION: Bill
REPORT DATE: 6/20/97

PROJECT: Bailey Superfund Site
Hwy. 87, Bridge City, TX
Project #97C-115

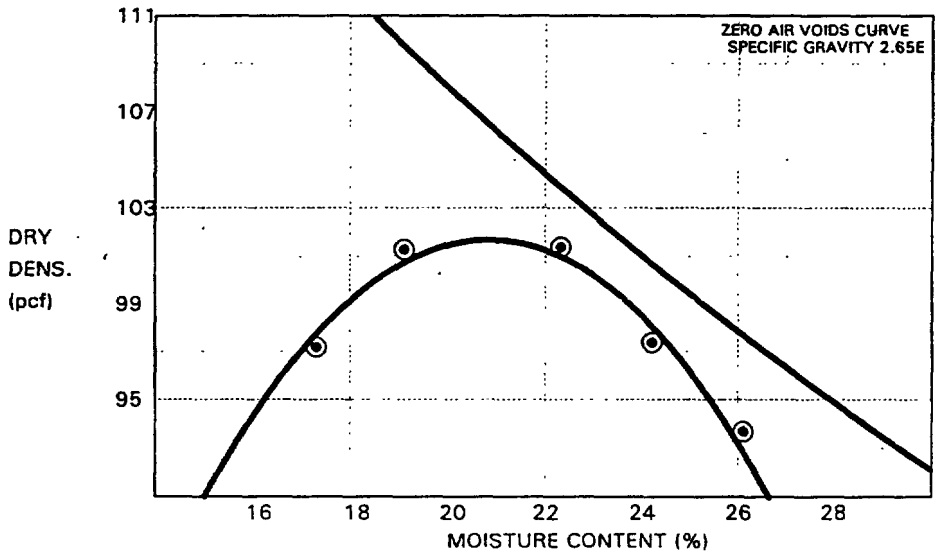
SERVICES: Obtain sample of material used for construction, prepare samples and perform moisture-density relations test to establish the maximum density and optimum moisture of the material.

PROJECT DATA

CONTRACTOR: Geosyntec
DATE SAMPLED: 6/17/97
SAMPLED BY: Barry A. Uptigrove
TEST FOR: Protective Cover Mtl - PC-2
SAMPLE LOCATION: On site material from Circle S Pit

TEST DATE: 6/20/97
MATERIAL: Gray, Tan & Reddis Silty Clay
CLASSIFICATION:
MATERIAL PREPARATION METHOD: Moist
RAMMER TYPE: Mechanical
METHOD OF TEST: ASTM D698, Method A
ASTM D4318, Proc. A

REPORT OF TESTS



MAXIMUM DENSITY, PCF: 101.5

OPTIMUM MOISTURE (%): 21.0

LIQUID LIMIT: 62
PLASTIC LIMIT: 16
PLASTICITY INDEX: 46
% PASSING #200: 96.0

E = Estimated Value

Comments: Organic Content - 1.85%

Technician: Kerry J. Jean

ort Distribution:
GEOSYNTEC CONSULTANTS

MAXIM TECHNOLOGIES, INC.

Jack C. Lind, P.E.
Project Manager

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GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

LABORATORY TEST SUMMARY

PROJECT: BAILEY SITE SETTLORS COMMITTEE
LOCATION: ORANGE COUNTY, TEXAS — PROJECT NO.: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION — DATE: ____ day ____ month 1997 year
SOURCE: OHM Submittals - — MATERIAL TYPE: ____ QA ID: ____

NOTE: Separate forms are required for each material type and source. All samples must have a site sample number and be recorded on the soil sample log.

SAMPLE DATE	T&N ~~SITE~~ SAMPLE NO.	GEL SAMPLE NO.	SAMPLE MOISTURE CONTENT ASTM D 2216 (%)	GRAIN SIZE: PASSING NO. 200 SIEVE ASTM D 1140 (%)	GRAIN SIZE ASTM D 422: SIEVE	GRAIN SIZE ASTM D 422: HYDR.	ATTERBURG LIMITS ASTM D 4318: LL (%)	PL (%)	PI	SOIL CLASSIFICATION ASTM D 2487	LOI Organic Content ASTM ~~G311~~ 2974 (%)	CARBO CONT. ASTM D3042 (%)	COMPACTION ASTM D 698 (or) ASTM D 1557: MAX. DRY UNIT WT. (pcf)	OPT. MOIST. CONT. (%)	PERMEABILITY ASTM D 2434(1) (or) ASTM D 5084(2): DRY UNIT WT. (pcf)	MOIST. CONT. ASTM D 2216 (%)	HYDRAULIC COND'VITY (cm/sec)	PASS/FAIL	ACUMUL. QUANT. PLACED (APPROX) (yd³)
'27/96	P#1	Prot.Cov.	7.6	71			24	19	5	Redwine, 0'-1' CL/ML	6.1		109.3	18.1					
27/96	P#2	G.Fill	6.8	78			48	22	26	Redwine, 2'-4', CL	4.5		106.8	18.9					
27/96	P#3	G.Fill	7.5	54			26	18	8	Redwine, 4'-6', CL/ML	5.9		110.4	16.6					
/18/97	P#4	GF	24	77			61	29	32	Redwine, Round Bunch CH	0.9		100.5	23.2					
'18	P#5	GF	21	83			45	22	23	Redwine - Bridge City	0.7		104.8	19.4					
'3	P#6	GF	20	72			49	23	26	Redwine - R.B.	0.5		105.9	19.2					GF-7
/14	P#7	GF	20	84			60	26	34	Circle "S" - CH	1.5		103.6	20.9					
/22	P#8	Prot.Cov.	21	55			29	18	11	Circle "S" - CL	2.3		112.5	15.4					
25/96	(P#1)	GF		87			52	25	27	Circle "S" - Composite CH	--		103.0	20.6	E. Dike	Temp. Cover	/Tan/Gray SL CL		GF-8
8/96	(P#2)	GF	--	89			56	25	31	Circle "S" - In-place CH			101.9	21.4	" "	" "	/DK TN/GR CL		

COMMENTS: ____

NOTES: (1) HYDRAULIC CONDUCTIVITY DETERMINED AT A HYDRAULIC GRADIENT OF ____.
(2) HYDRAULIC CONDUCTIVITY DETERMINED AT AN EFFECTIVE CONFINING STRESS OF ____.

©GEOSYNTEC CONSULTANTS FILE NO. 2-22-LTS

SHEET NO ____ OF ____

GEOSYNTEC CONSULTANTS

B S S C
BAILEY SITE SETTLORS COMMITTEE

LABORATORY TEST SUMMARY

PROJECT: BAILEY SITE SETTLORS COMMITTEE
LOCATION: ORANGE COUNTY, TEXAS — PROJECT NO.: GE3913 TASK NO.: 610
DESCRIPTION: REVISED FINAL REMEDIATION — DATE: ____ day ____ month 1997 year
SOURCE: OHM Submittals — MATERIAL TYPE: ____ QA ID: ____

NOTE: Separate forms are required for each material type and source. All samples must have a site sample number and be recorded on the soil sample log.

SITE SAMPLE NO.	GEL SAMPLE NO.	SAMPLE MOISTURE CONTENT ASTM D 2216 (%)	GRAIN SIZE: PASSING NO. 200 SIEVE ASTM D 1140 (%)	GRAIN SIZE: ASTM D 422 SIEVE	GRAIN SIZE: ASTM D 422 HYDR.	ATTERBURG LIMITS ASTM D 4318: LL (%)	ATTERBURG LIMITS: PL (%)	ATTERBURG LIMITS: PI	SOIL CLASSIFICATION ASTM D 2487	~~LOI~~ Organic Content ASTM C311 (%)	CARBO CONT. ASTM D3042 (%)	COMPACTION ASTM D 698 (or) ASTM D 1557: MAX. DRY UNIT WT. (pcf)	COMPACTION: OPT. MOIST. CONT. (%)	PERMEABILITY ASTM D 2434(1) (or) ASTM D 5084(2): DRY UNIT WT. (pcf)	PERMEABILITY: MOIST. CONT. ASTM D 2216 (%)	PERMEABILITY: HYDRAULIC COND'VITY (cm/sec)	PASS/FAIL	ACUMUL. QUANT. PLACED (APPROX) (yd³)
4/96 (pt 3)	GF		73			54	25	29	Circle "S" - In-Place CH			107.3	18.8	E. Dike Temp Cover / BK TN & Gray CL				

COMMENTS: ____

NOTES: (1) HYDRAULIC CONDUCTIVITY DETERMINED AT A HYDRAULIC GRADIENT OF ____.
(2) HYDRAULIC CONDUCTIVITY DETERMINED AT AN EFFECTIVE CONFINING STRESS OF ____.

COMMON SENSE ENGINEERING
T&N LABORATORIES, INC.
1983
RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: (409) 722-6961

RECEIVED JAN 1 4 1997

Rec. 17 Feb97 JC

MOISTURE DENSITY RELATIONSHIP REPORT

T&N93 - 18C

CLIENT:
OHM - REMEDIATION CORP.
C/O MR. SID RICHARD
225 WEST AIR - TX. BLVD.
HOUSTON, TEXAS 77090

PROJECT/LOCATION:
FINAL PHASE OF REMEDIAL CONSTR.
@ BAILEY SUPERFUND SITE
ORANGE COUNTY, TEXAS
LP. # 51306

CLIENT NO. :96141
LAB NO. :2782 - 1

REPORT DATE : 12/10/96 SAMPLE DATE 11/27/96

1) ITEM / DESCRIPTION : 2.09 - Q/C TESTING FOR SOILS SAMPLE P # 1

2) TESTS / SAMPLE LOCATION : REDWINE (0' - 1 FT.) BORROW SOURCE General Fill or Protective Cover? ✓

3) CONTRACTOR : OHM REMEDIATION CORP.

4) AUTHORIZATION : LP # 51306 - 11/22/96

PROCEDURE	TESTING	GF	RESULTS	F
1) ASTM - D698	MAXIMUM DRY DENSITY		109.3 PCF	
2) ASTM - D698	OPTIMUM MOISTURE CONTENT		18.1 %	
3) ASTM - D4318	LIQUID LIMIT		24 ✓	
4) ASTM - D4318	PLASTICITY INDEX		5 ✓ low Mix	
5) ASTM - D422	PASSING NO. 200 SIEVE		71 % ✓	
6) ASTM - D422	PASSING NO. 40 SIEVE		98 % ✓	
7) ASTM - D422	PASSING NO. 4		100 % ✓	
8) ASTM - D2974	ORGANIC CONTENT	<5%	6.11 % ✓	
9) ASTM - D2216	PIT MOISTURE CONTENT		7.6 %	
10) ASTM - D2487	SOIL CLASSIFICATION	✓	CL / ML ✓	
11) REMARKS :	MOISTURE / DENSITY CURVE ATTACHED. P # 1			

COPIES :
2 - CLIENT
1 - T&N FILE # 96141
DAS

T&N LABORATORIES, INC.

BY: Tom A. Farmer

T & N Laboratories, Inc.

JEFF. COUNTY AIRPORT

MOISTURE DENSITY RELATIONSHIP CURVE

T: OHM -REMEDIATION CORP.
C/O MR. SID RICHARD
225 WEST AIR-TX. BLVD.
HOUSTON, TEXAS 77090

PROJECT/LOCATION:

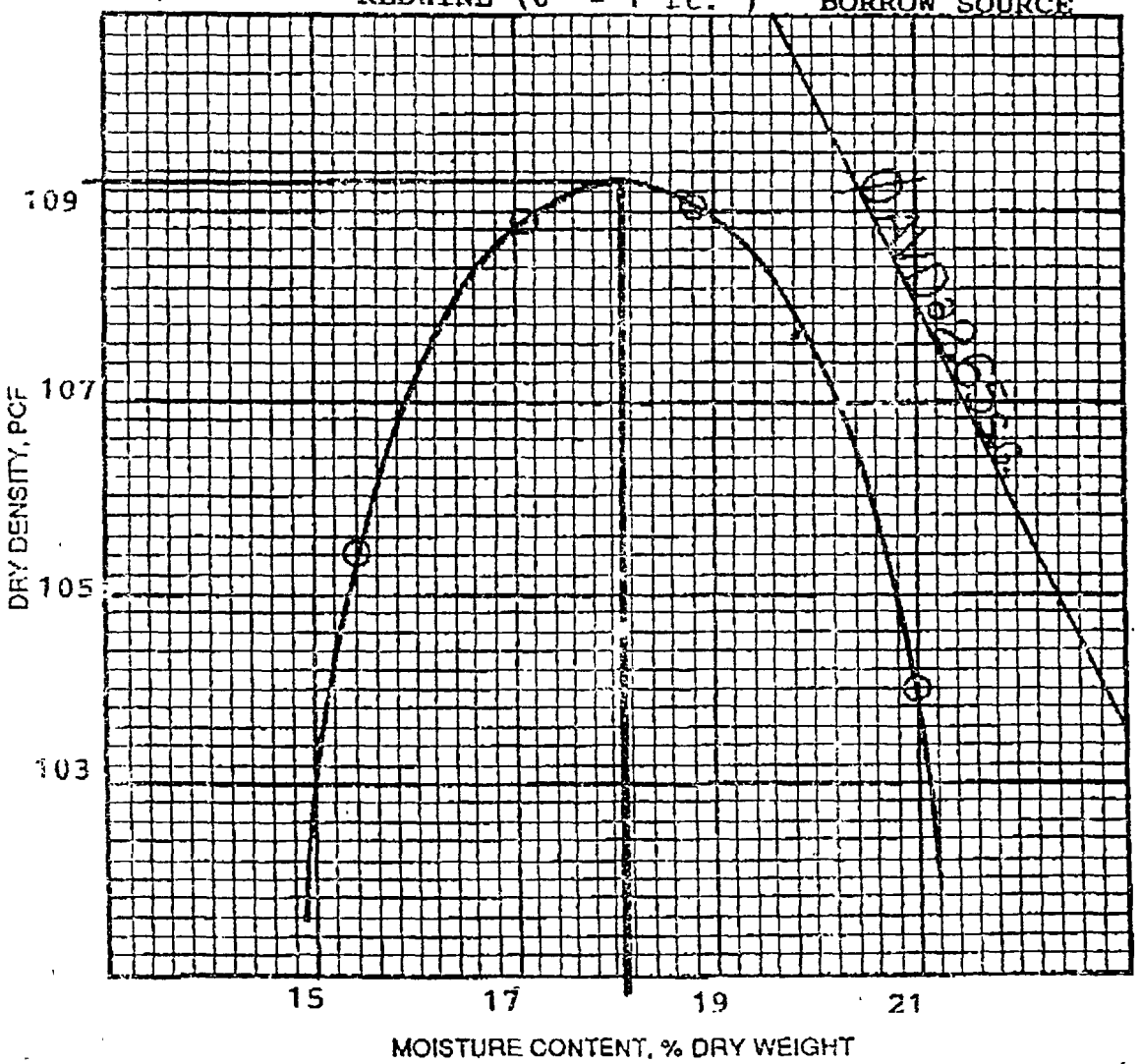
FINAL PHASE OF REMEDIAL CONSTR.
AT BAILEY SUPERFUND SITE
ORANGE COUNTY, TEXAS
LP # 51306

RT DATE: 12/10/96

CLIENT NO.: 96141 / 2782-1

Item/Description: 2.09 - Q/C TESTING FOR SOILS SAMPLE P #1

Sample Source: REDWINE (0' - 1 ft.) BORROW SOURCE



Method of Test: ASTM - D698

Test Results:
Maximum Dry Density: 109.3 lbs/ft³
Optimum Moisture Content: 18.1 %

Atterberg Limits:
Liquid Limit: 24 , Plastic Limit: 19 , PI: 5

COMMON SENSE ENGINEERING
T&N LABORATORIES, INC.
1983
RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409). 727-6291 / FAX: (409) 722-6961

Rec. 17Feb97 JC

MOISTURE DENSITY RELATIONSHIP REPORT

T&N93 - 18C

CLIENT:
OHM - REMEDIATION CORP.
C/O MR. SID RICHARD
225 WEST AIR - TX. BLVD.
HOUSTON, TEXAS 77090

PROJECT/LOCATION:
FINAL PHASE OF REMEDIAL CONSTR.
@ BAILEY SUPERFUND SITE
ORANGE COUNTY, TEXAS
LP. # 51306

CLIENT NO. :96141
LAB NO. :2782 - 2

REPORT DATE : 12/10/96 SAMPLE DATE : 11/27/96

1) ITEM / DESCRIPTION : 2.09 - Q/C TESTING FOR SOILS SAMPLE P # 2

2) TESTS / SAMPLE LOCATION : REDWINE (2' - 4 FT.) BORROW SOURCE

INITIAL SUBMITTAL MATERIAL JC

3) CONTRACTOR : OHM REMEDIATION CORP.

AUTHORIZATION : LP # 51306 - 11/22/96

6F

PROCEDURE	TESTING	RESULTS
1) ASTM - D698	MAXIMUM DRY DENSITY	106.8 PCF
2) ASTM - D698	OPTIMUM MOISTURE CONTENT	18.9 %
3) ASTM - D4318	LIQUID LIMIT	48 ✓
4) ASTM - D4318	PLASTICITY INDEX	26 ✓
5) ASTM - D422	PASSING NO. 200 SIEVE	78% ✓
6) ASTM - D422	PASSING NO. 40 SIEVE	99% ✓
7) ASTM - D422	PASSING NO. 4	100% ✓
8) ASTM - D2974	ORGANIC CONTENT	4.5 % Max 5%
9) ASTM - D2216	PIT MOISTURE CONTENT	6.8 %
10) ASTM - D2487	SOIL CLASSIFICATION	CL ✓

REMARKS : MOISTURE / DENSITY CURVE ATTACHED. P # 2

COPIES:
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DAS

T&N LABORATORIES, INC.

BY: Tom A. Farner

T & N *Laboratories, Inc.*

JEFF. COUNTY AIRPORT

MOISTURE DENSITY RELATIONSHIP CURVE

OHM REMEDIATION CORP.
C/O MR. SID RICHARD
225 WEST AIR-TEX. BLVD.
HOUSTON, TEXAS 77090

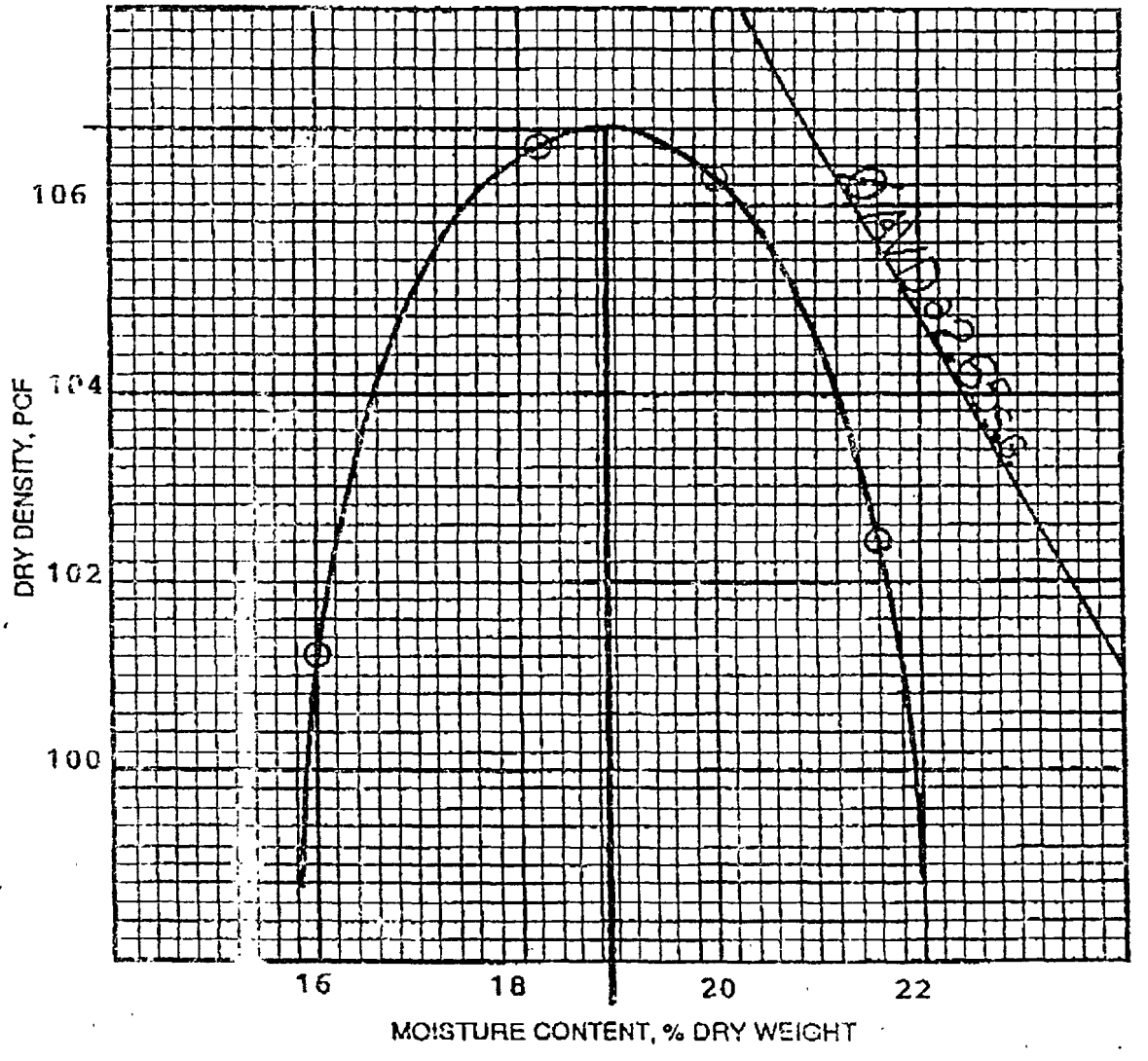
PROJECT/LOCATION:
FINAL PHASE OF REMEDIAL CONSTR.
AT BAILEY SUPERFUND SITE
ORANGE COUNTY, TEXAS
LP. # 51306

DATE: 12/10/96

CLIENT NO.: 96141 / 2782-2

Item/Description: 2.09 Q/C TESTING FOR SOILS SAMPLE P # 2

Sample Source: REDWINE (2'-4 FT.) BORROW SOURCE



Method of Test: ASTM - D698

Test Results:
Maximum Dry Density: 106.8 lbs/ft³
Optimum Moisture Content: 18.9 %

Atterberg Limits:
Liquid Limit: 48 , Plastic Limit: 22 , PI: 26

COMMON SENSE ENGINEERING
T&N LABORATORIES, INC.
1983
RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: (409) 722-6961

Rec 17 Feb 97
JNC

MOISTURE DENSITY RELATIONSHIP REPORT

T&N93 - 18C

CLIENT:
OHM - REMEDIATION CORP.
C/O MR. SID RICHARD
225 WEST AIR - TX. BLVD.
HOUSTON, TEXAS 77090

PROJECT/LOCATION:
FINAL PHASE OF REMEDIAL CONSTR.
@ BAILEY SUPERFUND SITE
ORANGE COUNTY, TEXAS
LP. # 51306

CLIENT NO. : 96141
LAB NO. : 2782 - 3

REPORT DATE : 12/10/96 SAMPLE DATE : 11/27/96

1) ITEM / DESCRIPTION : 2.09 - Q/C TESTING FOR SOILS SAMPLE P # 3

2) TESTS / SAMPLE LOCATION : REDWINE (4' - 6 FT.) BORROW SOURCE

3) CONTRACTOR : OHM REMEDIATION CORP.

AUTHORIZATION : LP # 51306 - 11/22/96

	PROCEDURE	TESTING	RESULTS
1)	ASTM - D698	MAXIMUM DRY DENSITY	110.4 PCF ✓
2)	ASTM - D698	OPTIMUM MOISTURE CONTENT	16.6 % ✓
3)	ASTM - D4318	LIQUID LIMIT	26 ✓
4)	ASTM - D4318	PLASTICITY INDEX	8 ✓
5)	ASTM - D422	PASSING NO. 200 SIEVE	54 % ✓
6)	ASTM - D422	PASSING NO. 40 SIEVE	96 % ✓
7)	ASTM - D422	PASSING NO. 4	100 % ✓
8)	ASTM - D2974	ORGANIC CONTENT	5.86 % Max 5%
9)	ASTM - D2216	PIT MOISTURE CONTENT	7.5 % ✓
10)	ASTM - D2487	SOIL CLASSIFICATION	CL / ML ✓

) REMARKS : MOISTURE / DENSITY CURVE ATTACHED. P # 3

COPIES:
2 - CLIENT
1 - T&N FILE 7 96141
DAS

T&N LABORATORIES, INC.

BY: Tom A. Garmer

T & N *Laboratories, Inc.*

JEFF. COUNTY AIRPORT

MOISTURE DENSITY RELATIONSHIP CURVE

NT: OHM - REMEDIATION CORP.
C/O MR. SID RICHARD
225 WEST AIR-TX. BLVD.
HOUSTON, TEXAS 77090

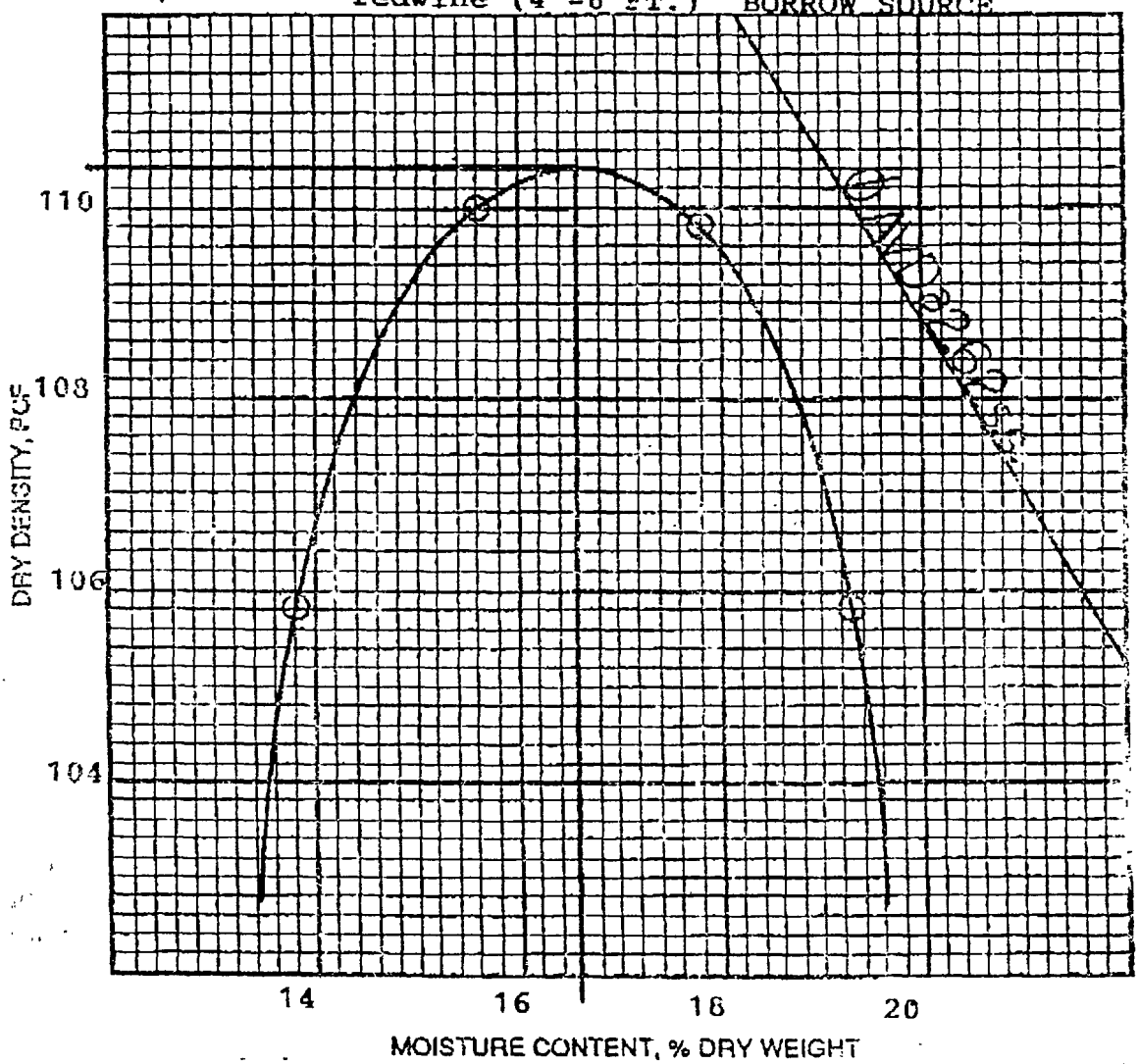
PROJECT/LOCATION:
FINAL PHASE OF REMEDIAL CONSTR
AT BAILEY SUPERFUND SITE
ORANGE COUNTY, TEXAS
LP # 51306

ORT DATE: 12/10/96

CLIENT NO.: 96141 / 2782-3

Item/Description: 2.09 - Q/C TESTING FOR SOILS SAMPLE P # 3

Sample Source: redwine (4'-6 FT.) BORROW SOURCE



Method of Test: ASTM - D698

Test Results:
Maximum Dry Density: 110.4 lbs/ft³
Optimum Moisture Content: 16.6 %

Atterberg Limits:
Liquid Limit: 26 , Plastic Limit: 18 , PI: 8

Rec. 6/3/97

COMMON SENSE ENGINEERING

T&N LABORATORIES, INC.

1983

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: (409) 722-6961

T&N93 - 18C

MOISTURE DENSITY RELATIONSHIP REPORT

CLIENT:
OHM - REMEDIATION CORP.
C/O MR. SID RICHARD
7201 LAKE ARTHUR DRIVE, # 216
PORT ARTHUR, TEXAS 77642

PROJECT/LOCATION:
FINAL PHASE OF REMEDIAL CONSTR.
@ BAILEY SUPERFUND SITE
ORANGE COUNTY, TEXAS
LP. # 73073

CLIENT NO. : *96141*
REPORT DATE : 02/24/97 *SAMPLE DATE : 02/18/97* *LAB NO. :* *408*

1) *ITEM / DESCRIPTION :* *2.09 - Q/C TESTING FOR SOILS SAMPLE P # 4*
2) *TESTS / SAMPLE LOCATION :* *REDWINE (ROUND BUNCH PIT) BORROW SOURCE*
3) *CONTRACTOR :* *OHM REMEDIATION CORP.*
4) *AUTHORIZATION :* *LP # 73073 - 02/25/97*

PROCEDURE	TESTING	RESULTS
ASTM - D698	MAXIMUM DRY DENSITY	100.5 PCF
2) ASTM - D698	OPTIMUM MOISTURE CONTENT	23.2 %
3) ASTM - D4318	LIQUID LIMIT	61
4) ASTM - D4318	PLASTICITY INDEX	32
5) ASTM - D422	PASSING NO . 200 SIEVE	77 %
6) ASTM - D422	PASSING NO . 40 SIEVE	98 %
7) ASTM - D422	PASSING NO . 4	100 %
8) ASTM - D2974	ORGANIC CONTENT	0.91 %
9) ASTM - D2216	PIT MOISTURE CONTENT	24.4 %
10) ASTM - D2487	SOIL CLASSIFICATION	CH
11) REMARKS :	MOISTURE / DENSITY CURVE ATTACHED . P # 4	

COPIES :
2 - CLIENT
T&N FILE # 96141
AS

T&N LABORATORIES, INC.

BY: Tom A. Farmer

T & N *Laboratories, Inc.*

JEFF. COUNTY AIRPORT

MOISTURE DENSITY RELATIONSHIP CURVE

.IENT: OHM - REMEDIATION CORP.
C/O MR. SID RICHARD
7201 LAKE ARTHUR DRIVE, # 216
PORT ARTHUR, TEXAS 77642

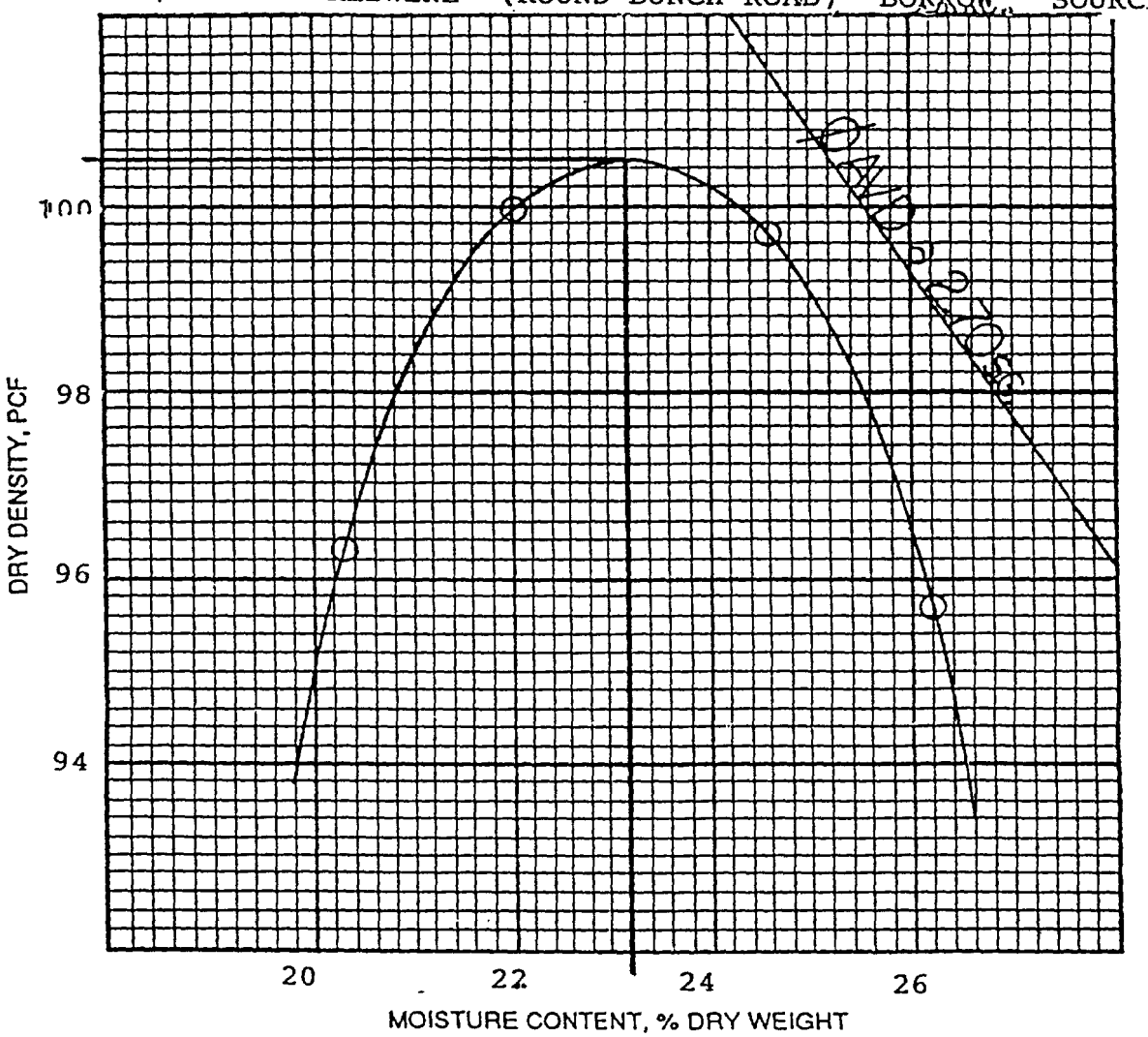
PROJECT/LOCATION:
FINAL PHASE OF REMEDIAL CONSTR.
@ BAILEY SUPERFUND SITE
ORANGE COUNTY, TEXAS

EPORT DATE: 02/24/97

CLIENT NO.: 96141 / 408

Item/Description: 2.09 - Q/C TESTING FOR SOILS SAMPLE P # 4

Sample Source: REDWINE (ROUND BUNCH ROAD) BORROW SOURCE



Method of Test: ASTM - D698

Test Results:
Maximum Dry Density: 100.5 lbs/ft³
Optimum Moisture Content: 23.2 %

Atterberg Limits:
Liquid Limit: 61 , Plastic Limit: 29 , PI: 32

No.
Rec. 6/3/97

COMMON SENSE ENGINEERING

T&N LABORATORIES, INC.

1983

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: (409) 722-6961

T&N93 - 18C

MOISTURE DENSITY RELATIONSHIP REPORT

CLIENT:
OHM - REMEDIATION CORP.
C/O MR. SID RICHARD
7201 LAKE ARTHUR DRIVE, # 216
PORT ARTHUR, TEXAS 77642

PROJECT/LOCATION:
FINAL PHASE OF REMEDIAL CONSTR.
@ BAILEY SUPERFUND SITE
ORANGE COUNTY, TEXAS
LP. # 73073

CLIENT NO. : *96141*
REPORT DATE : 02/21/97 *SAMPLE DATE : 02/18/97* *LAB NO. :* *408 - 1*

1) *ITEM / DESCRIPTION :* *2. 09 - Q/C TESTING FOR SOILS SAMPLE P # 5*
2) *TESTS / SAMPLE LOCATION :* *REDWINE (BRIDGE CITY PIT) BORROW SOURCE #*
3) *CONTRACTOR :* *OHM REMEDIATION CORP.*
4) *AUTHORIZATION :* *LP # 73073 - 02/25/97*

PROCEDURE	TESTING	RESULTS
ASTM - D698	MAXIMUM DRY DENSITY	104.8 PCF
2) ASTM - D698	OPTIMUM MOISTURE CONTENT	19.4 %
3) ASTM - D4318	LIQUID LIMIT	45
4) ASTM - D4318	PLASTICITY INDEX	23
5) ASTM - D422	PASSING NO . 200 SIEVE	83 %
6) ASTM - D422	PASSING NO . 40 SIEVE	99 %
7) ASTM - D422	PASSING NO . 4	100 %
8) ASTM - D2974	ORGANIC CONTENT	0.74 %
9) ASTM - D2216	PIT MOISTURE CONTENT	20.8 %
10) ASTM - D2487	SOIL CLASSIFICATION	CL
11) REMARKS :	MOISTURE / DENSITY CURVE ATTACHED . P # 5	

COPIES :
- CLIENT
- T&N FILE # 96141
DAS

T&N LABORATORIES, INC.

BY: Tom A. Farmer

T & N *Laboratories, Inc.*

JEFF. COUNTY AIRPORT

MOISTURE DENSITY RELATIONSHIP CURVE

ENT: OHM - REMEDIATION CORP.
C/O MR. SID RICHARD
7201 LAKE ARTHUR DRIVE, # 216
PORT ARTHUR, TEXAS 77642

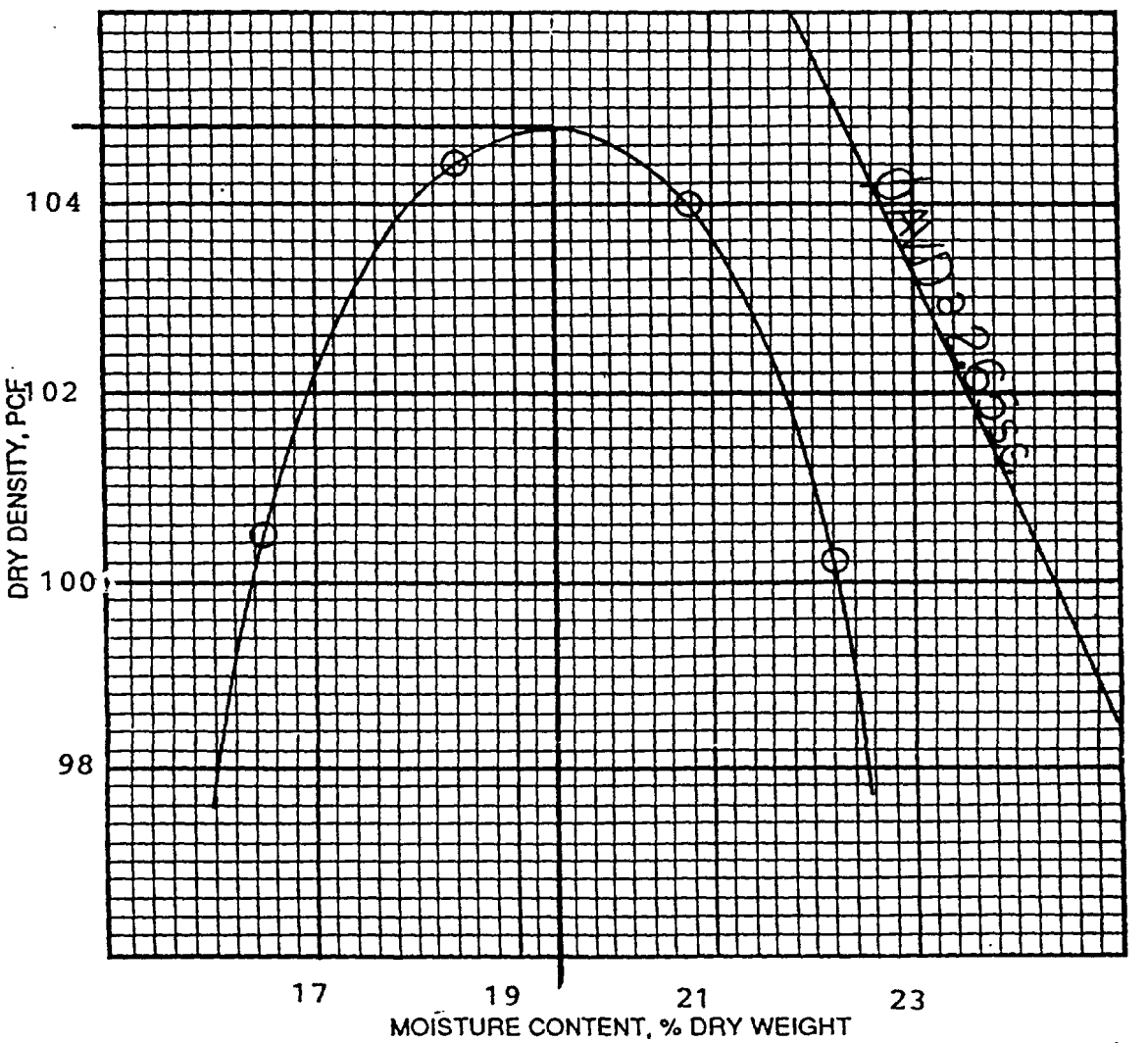
PROJECT/LOCATION:
FINAL PHASE OF REMEDIAL CONSTR.
@ BAILEY SUPERFUND SITE
ORANGE COUNTY, TEXAS

:PORT DATE: 02/21/97

CLIENT NO.: 96141 / 408-1

Item/Description: 2.09- Q/C TESTING FOR SOILS SAMPLE P # 5

Sample Source: REDWINE (BRIDGE CITY PIT) BORROW SOURCE



Method of Test: ASTM - D698

Test Results:
Maximum Dry Density: 104.8 lbs/ft³
Optimum Moisture Content: 19.4 %

Atterberg Limits:
Liquid Limit: 45 , Plastic Limit: 22 , PI: 23

PARSONS ENGINEERING SCIENCE, INC.

9906 Gulf Freeway, Suite 100 • Houston, Texas 77034 • (713) 943-5432 • Fax: (713) 943-5427

May 8, 1997

Via Hand Delivery at the Site

Mr. Gary Foster
Project Manager
OHM Remediation Services
5335 Triangle Parkway
Norcross, GA 30092

Re: Bailey Superfund Site - Submittal Nos. 44-01, 52-01, & 52-02

Dear Mr. Foster:

We have reviewed Submittal Nos. 44-01, 52-01, & 52-02 which were submitted on May 1, 1997. The materials submitted meet the requirements of the project specifications and are acceptable for use. The protective cover submittal (52-01) is being returned to you with Exceptions as Noted.

We have the following exception:

- The subcontractor who will be performing the revegetation should be consulted to determine if the proposed material is suitable to support the intended vegetative material (Bermuda Grass) or if any conditioning is required.

If you have any questions, please call me at (409) 735-2391.

Sincerely,

PARSONS ENGINEERING SCIENCE, INC.

Mark Murphy

Mark Murphy
Construction Manager

Enclosure

cc: P. Steerman
D. Baker
J. Travers
N. Davies
J. Brewer
S. Richard
file

M E M O R A N D U M

TO: Mark Murphy/Parsons ES

COPY: Neil Davies
File

FROM: James Brewer

DATE: 4 May 1997

SUBJECT: Review of Borrow Source Test Results
Bailey Superfund Site
Orange County, Texas

GeoSyntec has reviewed OHM's submittal dated 1 May 1997 on the borrow source test results for the general fill and protective cover soil. This review was performed to determine whether the submittal met the requirements of Section 02200: Earthwork of the Construction Specifications. One material (Submittal No. 44-01) was for general fill from the Redwine-Round Bunch Rd. Pit, the second (Submittal No. 52-01) was for general fill from the Circle S-Jap Lane Pit, and the third (Submittal No. 52-02) was for protective cover soil from the Circle S - Jap Lane Pit Our review determined that the three materials tested meet the requirements of the project specification and are acceptable for use.

One issue should be brought to the attention of OHM. The subcontractor who will be performing the revegetation for the Bailey site should be consulted to determine if the proposed material is suitable to support the intended vegetative material (Bermuda grass) or if any conditioning may be required This review by the vegetation subcontractor should be performed prior to placement of the protective cover material.

OHM Remediation Services Corp.
A Subsidiary of OHM Corporation

LETTER OF TRANSMITTAL

Form 0017
Facilities Maintenance
Rev. 10/89

TO: PARSONS ES

FROM: OHM

DATE 01 MAY 97 JOB NO 19432

ATTENTION MARK MURPHY

RE. MOISTURE DENSITY RELATIONSHIP REPORTS FROM T&N SPEC/REF 02200-1.04

GENTLEMEN:

WE ARE SENDING YOU ☑ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1 ORIG 6 COPIES	10 APR 97	44-01	REDWINE (ROUND BUNCH RD PIT - SAMPLED 4/3/97
1 ORIG 6 COPIES	17 APR 97	52-01	CIRCLE S (JAP LANE PIT) - SAMPLED 4/14/97
1 ORIG 6 COPIES	25 APR 97	52-02	CIRCLE S (JAP LANE PIT) - SAMPLED 4/22/97

RECEIVED - 1 1997

THESE ARE TRANSMITTED as checked below:

☑ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☑ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ _____

REMARKS 52-01 IS CLAY FOR BACKFILL
52-02 IS FOR THE SOIL WE WANT TO USE FOR PROTECTIVE SOIL.

COPY TO _____

SIGNED Blake Riggs

COMMON SENSE ENGINEERING

T&N LABORATORIES, INC.

1983

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: (409) 722-6961

T&N93-18

MOISTURE DENSITY RELATIONSHIP REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. SID RICHARD
7201 LAKE ARTHUR DRIVE, #216
PORT ARTHUR, TX 77642

PROJECT TITLE:
FINAL PHASE OF REMEDIAL CONSTR.
AT BAILEY SUPERFUND SITE IN
ORANGE COUNTY, TEXAS
P.O. #LP-73073

CLIENT NO.: 96141
REPORT DATE: 04/10/97 SAMPLE DATE: 04/03/97 LAB NO.: 790

1) ITEM/DESCRIPTION: 2.09 - Q/C TESTING FOR SOILS SAMPLE P #6

2) TESTS/SAMPLE LOCATION: REDWINE (ROUND BUNCH RD. PIT) BORROW SOURCE - General Fill

3) CONTRACTOR: OHM REMEDIATION CORP.

4) AUTHORIZATION: LP #73073

ROCEDURE	TESTING	RESULTS
1) ASTM - D698	MAXIMUM DRY DENSITY	105.9 PCF
2) ASTM - D698	OPTIMUM MOISTURE CONTENT	19.2 %
3) ASTM - D4318	LIQUID LIMIT	49 ✓
4) ASTM - D4318	PLASTICITY INDEX	26 ✓
5) ASTM - D422	PASSING NO. 200 SIEVE	72 % ✓
6) ASTM - C422	PASSING NO. 40 SIEVE	99 %
7) ASTM - D422	PASSING NO. 4 SIEVE	100 %
8) ASTM - D2974	ORGANIC CONTENT	0.47 % ✓
9) ASTM - D2216	PIT MOISTURE CONTENT	19.7 % ✓
10) ASTM - D2487	SOIL CLASSIFICATION	CL ✓
11) REMARKS:	MOISTURE/DENSITY CURVE ATTACHED - P #6	

OK. JB 5-4-97

-C- 2 - CLIENT
1 - T&N FILE #96141

T&N LABORATORIES, INC.

BY [signature]
EXT ## EXT 1998

PDK

T & N Laboratories, Inc.
JEFF. COUNTY AIRPORT

MOISTURE DENSITY RELATIONSHIP CURVE

.IENT:
IM REMEDIATION CORP.
'o Mr. Sid Richard
:01 Lake Arthur Drive, #216
›rt Arthur, TX 77642

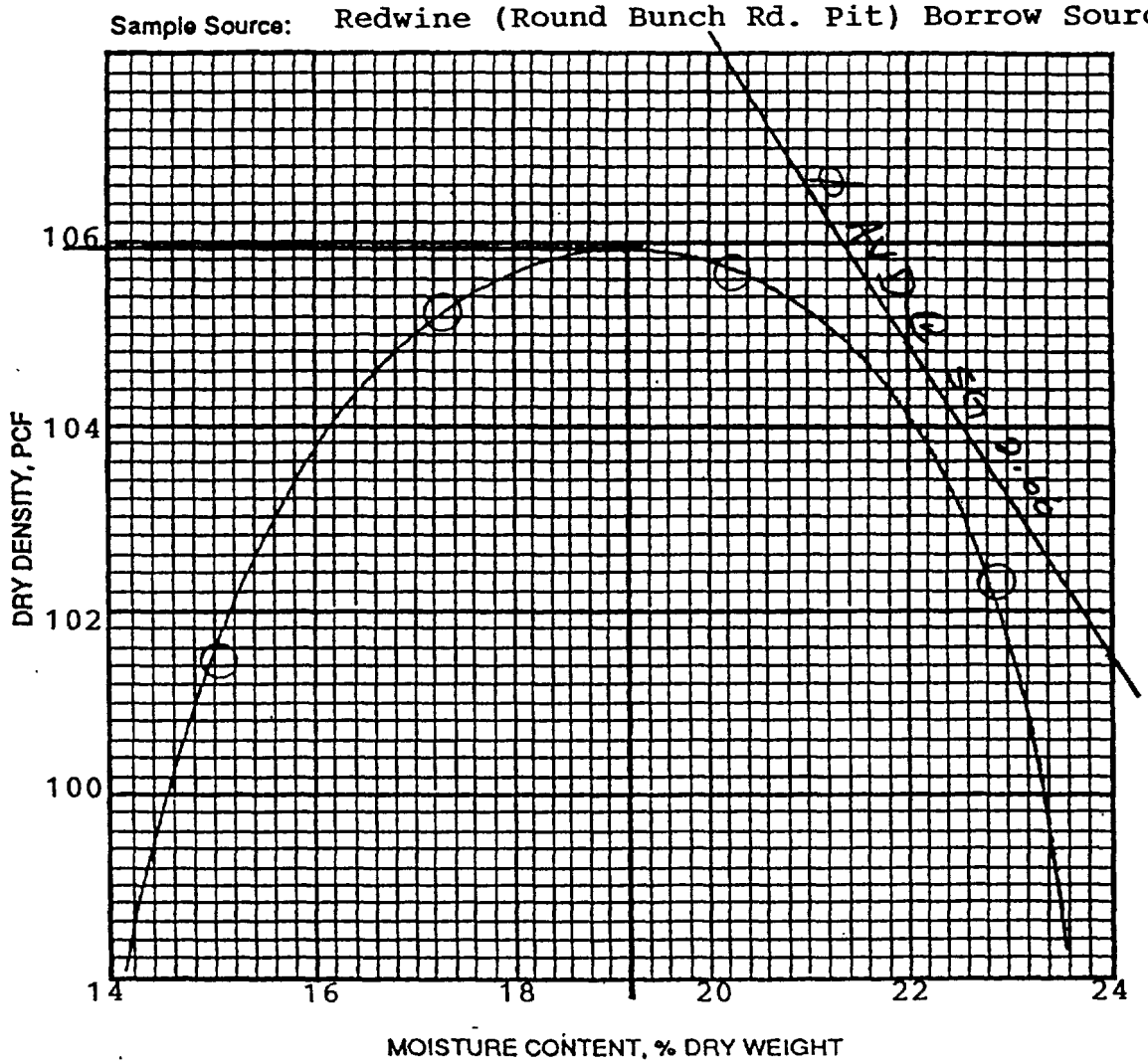
PROJECT/LOCATION:
FINAL PHASEOF REMEIDIAL CONSTR.
AT BAILEY SUPERFUND SITE IN
ORANGE COUNTY, TEXAS
P.O. #LP-73073

:PORT DATE: 04/10/97

CLIENT NO.: 96141 - 790

Item/Description: 2.09 - Q/C Testing for Soils Sample - P #6

Sample Source: Redwine (Round Bunch Rd. Pit) Borrow Source



Method of Test: **ASTM - D698**

Test Results:
Maximum Dry Density: 105.9 lbs/ft³
Optimum Moisture Content: 19.2%

Atterberg Limits:
Liquid Limit: 49 , Plastic Limit: 23 , PI: 26

COMMON SENSE ENGINEERING

T&N LABORATORIES, INC.

1983

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: (409) 722-6961

T&N93-18

MOISTURE DENSITY RELATIONSHIP REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. SID RICHARD
7201 LAKE ARTHUR DRIVE, #216
PORT ARTHUR, TX 77642

PROJECT TITLE:
FINAL PHASE OF REMEDIAL CONSTR.
AT BAILEY SUPERFUND SITE IN
ORANGE COUNTY, TEXAS
P.O. #LP-73073

REPORT DATE: 04/17/97 **SAMPLE DATE:** 04/14/97 **CLIENT NO.:** 96141 **LAB NO.:** 873

1) ITEM/DESCRIPTION: 2.09 - Q/C TESTING FOR SOILS SAMPLE P #7

2) TESTS/SAMPLE LOCATION: CIRCLE "S" BORROW ON JAP LANE, ORANGE COUNTY, TX - General Fill

3) CONTRACTOR: OHM REMEDIATION CORP.

4) AUTHORIZATION: LP #73073

ROCEDURE	TESTING	RESULTS
1) ASTM - D698	MAXIMUM DRY DENSITY	103.6 PCF
2) ASTM - D698	OPTIMUM MOISTURE CONTENT	20.9 %
3) ASTM - D4318	LIQUID LIMIT	60 ✓
4) ASTM - D4318	PLASTICITY INDEX	34 ✓
5) ASTM - D422	PASSING NO. 200 SIEVE	84 % ✓
6) ASTM - C422	PASSING NO. 40 SIEVE	99 %
7) ASTM - D422	PASSING NO. 4 SIEVE	100 %
8) ASTM - D2974	ORGANIC CONTENT	1.46 % ✓
9) ASTM - D2216	PIT MOISTURE CONTENT	20.2 %
10) ASTM - D2487	SOIL CLASSIFICATION	CH - OK to use as General Fill
11) REMARKS:	MOISTURE/DENSITY CURVE ATTACHED - P #7	

J. Brewer 5-4-97

CC: 2 - CLIENT
1 - T&N FILE #96141

PDK

T&N LABORATORIES, INC.

BY [signature]

T&N Laboratories
JEFFERSON COUNTY AIRPORT

MOISTURE DENSITY RELATIONSHIP CURVE

LIENT:
HM REMEDIATION CORP.
/o Mr. Sid Richard
201 Lake Arthur Drive, #216
ort Arthur, TX 77642

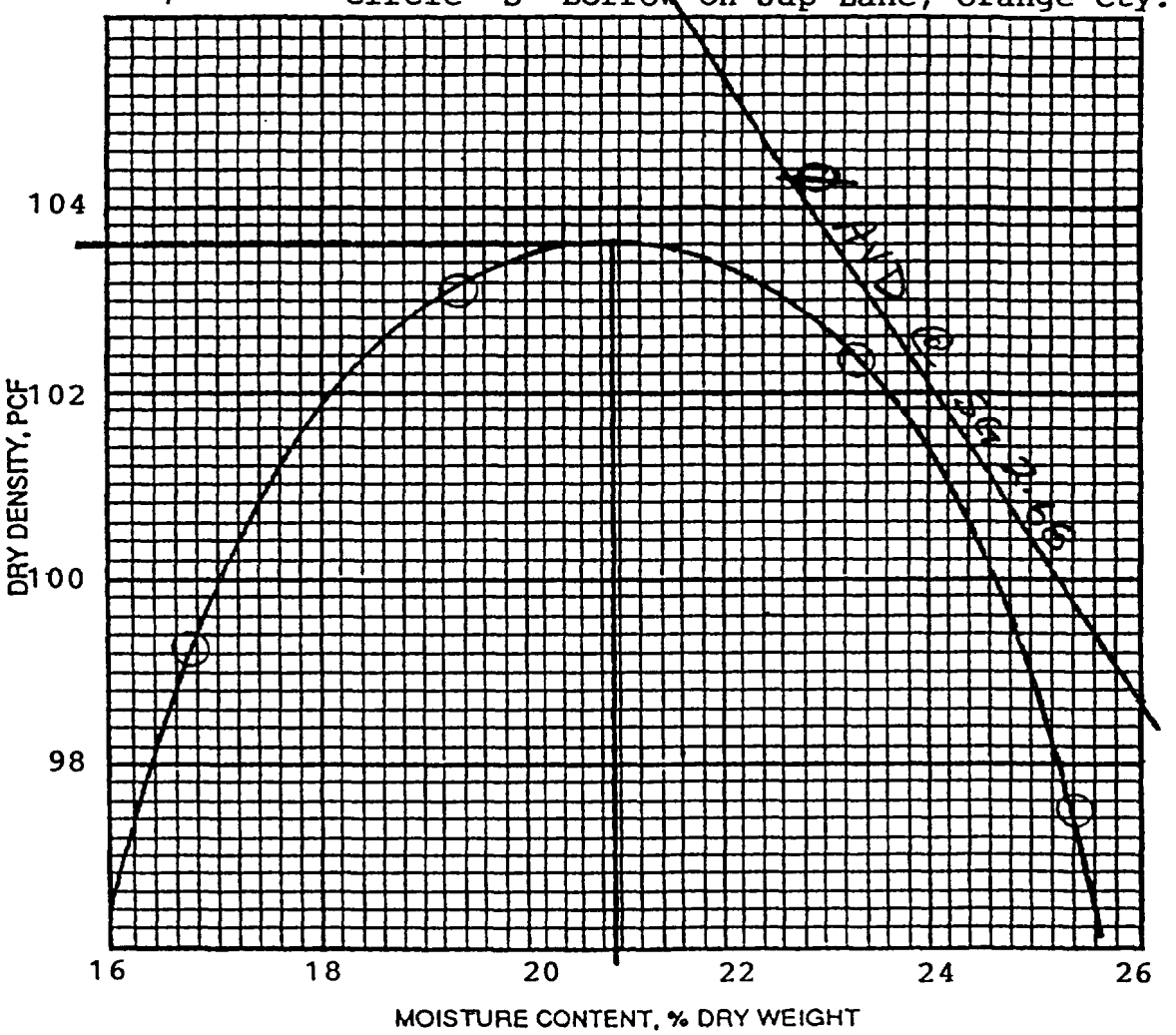
PROJECT/LOCATION:
FINAL PHASE OF REMEDIAL CONSTR.
AT BAILEY SUPERFUND SITE IN
ORANGE COUNTY, TEXAS
P.O. #LP-73073

EPORT DATE: 04/17/97

CLIENT NO.: 96141 - 873

Item/Description: 2.09 - Q/C Testing for Soils Sample - P #7

Sample Source: Circle "S" Borrow On Jap Lane, Orange Cty., TX



Method of Test: ASTM - D698

Test Results:
Maximum Dry Density: 103.6 lbs/ft³
Optimum Moisture Content: 20.9 %

Atterberg Limits:
Liquid Limit: 60 Plastic Limit: 26 PI: 34

COMMON SENSE ENGINEERING

T&N LABORATORIES, INC.

1983

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: (409) 722-6961

T&N93-18

MOISTURE DENSITY RELATIONSHIP REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. SID RICHARD
7201 LAKE ARTHUR DRIVE, #216
PORT ARTHUR, TX 77642

PROJECT TITLE:
FINAL PHASE OF REMEDIAL CONSTR.
AT BAILEY SUPERFUND SITE IN
ORANGE COUNTY, TEXAS
P.O. #LP-73073

CLIENT NO.: 96141
REPORT DATE: 04/25/97 **SAMPLE DATE:** 04/22/97 **LAB NO.:** 938

1) ITEM/DESCRIPTION: 2.09 - Q/C TESTING FOR SOILS SAMPLE P #8 TOPSOIL

2) TESTS/SAMPLE LOCATION: CIRCLE "S" BORROW ON JAP LANE, ORANGE COUNTY, TX
Protective Soil Layer.

3) CONTRACTOR: OHM REMEDIATION CORP.

4) AUTHORIZATION: LP #73073

PROCEDURE	TESTING	RESULTS
1) ASTM - D698	MAXIMUM DRY DENSITY	112.5 PCF ✓
2) ASTM - D698	OPTIMUM MOISTURE CONTENT	15.4 % ✓
3) ASTM - D4318	LIQUID LIMIT	29 ✓
4) ASTM - D4318	PLASTICITY INDEX	11 ✓
5) ASTM - D422	PASSING NO. 200 SIEVE	55 % ✓
6) ASTM - C422	PASSING NO. 40 SIEVE	? >99 %
7) ASTM - D422	PASSING NO. 4 SIEVE	100 %
8) ASTM - D2974	ORGANIC CONTENT	2.30 % ✓
9) ASTM - D2216	PIT MOISTURE CONTENT	21.0 %
10) ASTM - D2487	SOIL CLASSIFICATION	CL ✓
11) REMARKS:	MOISTURE/DENSITY CURVE ATTACHED - P #8	Verify it will support growth.

cc. J. Brewer
5-9-97

C: 2 - CLIENT
1 - T&N FILE #96141

T&N LABORATORIES, INC.

BY [signature]
EXT ... EXT 1993

PDK

T&N Laboratories

JEFFERSON COUNTY AIRPORT

MOISTURE DENSITY RELATIONSHIP CURVE

IENT:
HM REMEDIATION CORP.
/o Mr. Sid Richard
201 Lake Arthur Drive, #216
ort Arthur, TX 77642

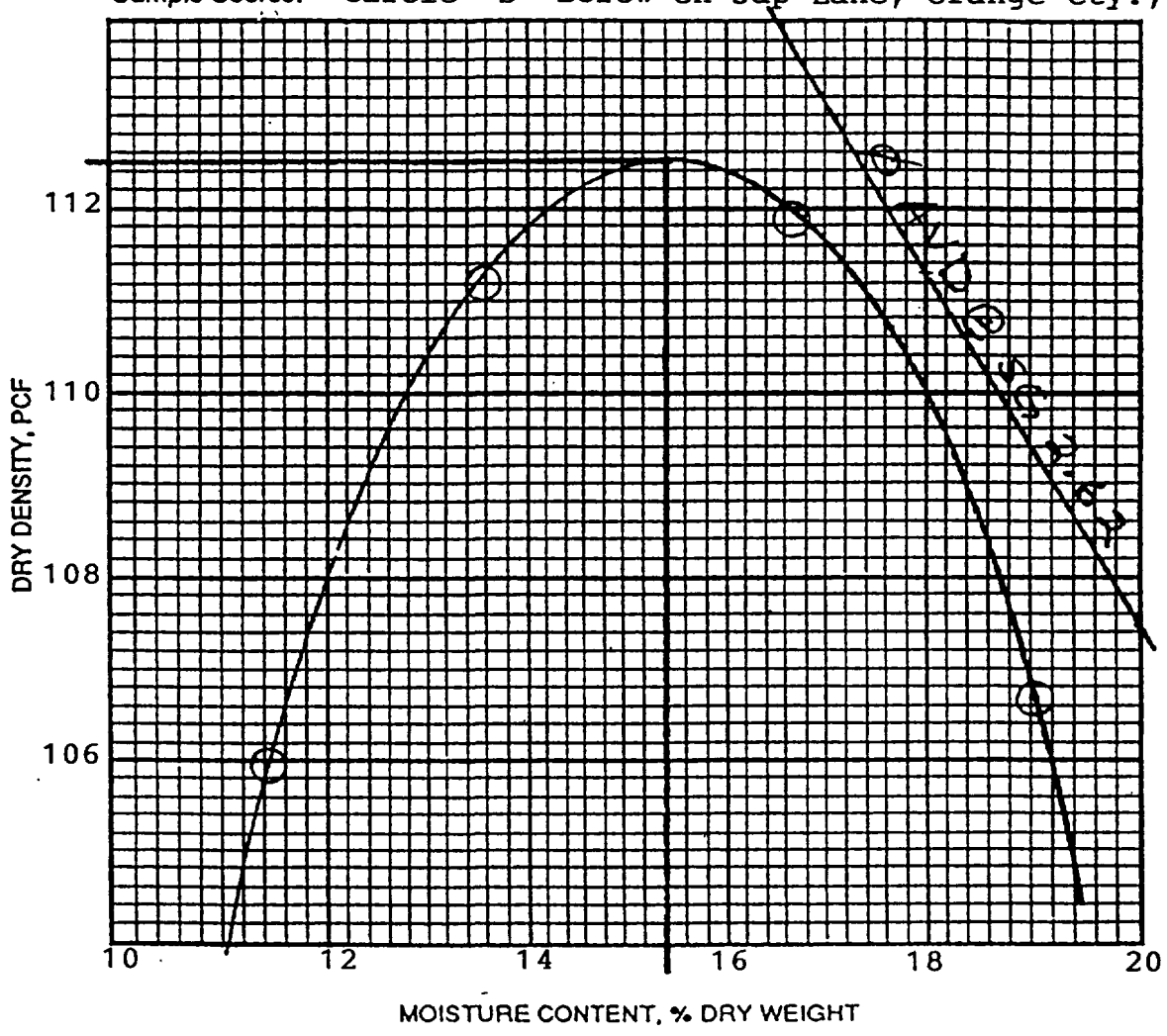
PROJECT/LOCATION:
FINAL PHASE OF REMEDIAL CONSTR.
AT BAILEY SUPERFUND SITE IN
ORANGE COUNTY, TEXAS
P.O. #LP-73073

EPORT DATE: 04/25/97

CLIENT NO.: 96141 - 938

Item/Description: 2.09 - Q/C Testing for Soils Sample - P #8

Sample Source: Circle "S" Borow on Jap Lane, Orange Cty., TX



Method of Test: ASTM - D698

Test Results:
Maximum Dry Density: 112.5 lbs/ft³
Optimum Moisture Content: 15.4 %

Atterberg Limits:
Liquid Limit: 29 Plastic Limit: 18 PI: 11

Rec. w/E
9 FEB.97
JC

COMMON SENSE ENGINEERING
T&N LABORATORIES, INC.
1983
RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: (409) 722-6961

MOISTURE DENSITY RELATIONSHIP REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT. #270
PORT ARTHUR, TEXAS 77642

PROJECT TITLE:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB #LP-49754

CLIENT NO.: 96088
REPORT DATE: 7/27/96 SAMPLE DATE: 7/25/96 LAB NO.: 1772

* RESUBMITTING TO SHOW CORRECT "ITEM/DESCRIPTION"

1) ITEM/DESCRIPTION: 1.04 - GRAY & LT.TAN SILTY CLAY, W/SAND SEAMS(P#1)

2) TESTS/SAMPLE LOCATION: COMPOSITE FROM CIRCLE "S" BORROW

3) CONTRACTOR: OHM

4) ENGINEER: OHM

PROCEDURE	TESTING	RESULTS
1) ASTM - D698	MAXIMUM DRY DENSITY	103.0 PCF
2) ASTM - D698	OPTIMUM MOISTURE CONTENT	20.6 %
3) ASTM - D4318	LIQUID LIMIT	52
4) ASTM - D4318	PLASTICITY INDEX	27
5) ASTM - D1140	PASSING NO. 200 SIEVE	87%
6) ASTM - C136	PASSING NO. 40 SIEVE	98%
7) TXDOT-107E	LINEAR SHRINKAGE, BAR	100%
8) ASTM - D2487	SOILS CLASSIFICATION	CH
9) ASTM - D2434	PERMEABILITY TEST	N/A
10) REMARKS:	ASTM D-698 PROCTOR CURVE ATTACHED (P #1)	

used 14 April 97
6F8

CC: 4 - CLIENT
1 - T&N FILE #96088

T&N LABORATORIES, INC.

BY Jim A. Farmer

T & N • LABORATORES & ENGINEERING, INC.
Jeff. County Airport
Rt. 4 Box 78-B Beaumont, TX 77705

MOISTURE DENSITY RELATIONSHIP CURVE

CLIENT: OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS

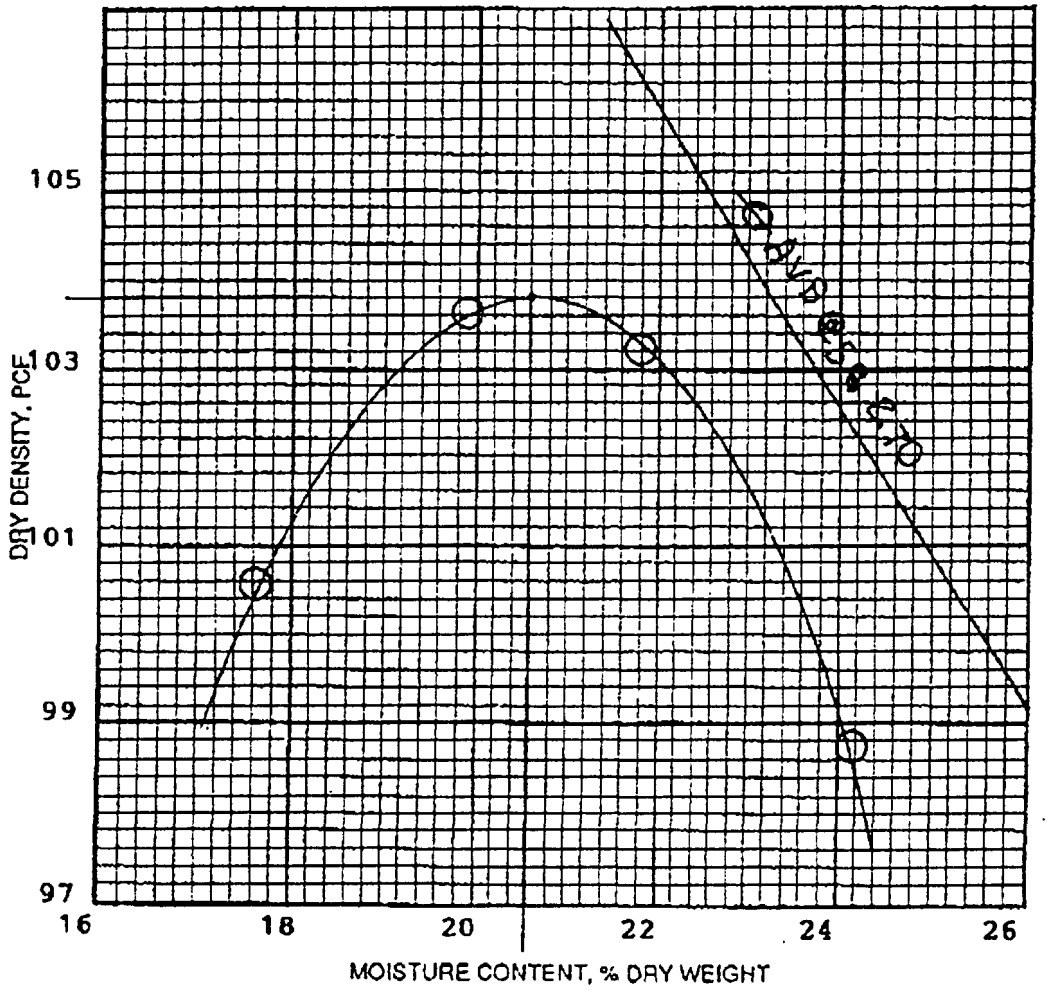
PROJECT/LOCATION:
BAILEY SUPERFUND SITE
JOB #LP-49754

REPORT DATE: 7/27/96

CLIENT NO.: 96088 / 1772

Item/Description: 1.04 BORROW-GRAY & LT.TAN SILTY CLAY, W/SAND SEAMS (P#1)

Sample Source: COMPOSITE FROM CIRCLE "S" BORROW



Method of Test: ASTM - D698

Test Results:
Maximum Dry Density: 103.8 lbs/ft³
Optimum Moisture Content: 20.6 %

Atterberg Limits:
Liquid Limit: 52 , Plastic Limit: 25 , PI: 27

Rec. 10 Apr 97 JC

COMMON SENSE ENGINEERING

T&N LABORATORIES, INC.

1983

RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: (409) 722-6961

T&N93-19

MOISTURE DENSITY RELATIONSHIP REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT. #270
PORT ARTHUR, TEXAS 77642

PROJECT TITLE:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB #LP-49764

CLIENT NO.: 96088

REPORT DATE: 8/9/96 SAMPLE DATE: 8/8/96 LAB NO.: 1953

* RESUBMITTED TO SHOW CORRECT ASTM PROCEDURES

1) ITEM/DESCRIPTION: 1.04 - TAN & GRAY SILTY CLAY - P#2

2) TESTS/SAMPLE LOCATION: JOBSITE IN-PLACE (BORROW MATERIAL) CIRCLE S

3) CONTRACTOR: OHM

4) ENGINEER: OHM

PROCEDURE	TESTING	RESULTS
1) ASTM - D698	MAXIMUM DRY DENSITY	101.9 PCF
2) ASTM - D698	OPTIMUM MOISTURE CONTENT	21.4 %
3) ASTM - D4318	LIQUID LIMIT	56
4) ASTM - D4318	PLASTICITY INDEX	31
* 5) ASTM - D422	PASSING NO. 200 SIEVE	89%
* 6) ASTM - D422	PASSING NO. 40 SIEVE	93%
* 7) ASTM - D422	PASSING NO. 4 SIEVE	100%
8) ASTM - D2487	SOILS CLASSIFICATION	CH
* 9) ASTM - D2216	MOISTURE CONTENT - OVEN	N/A

10) REMARKS: ASTM D-698 PROCTOR CURVE ATTACHED (P#2)

CC: 4 - CLIENT
1 - T&N FILE #96088

T&N LABORATORIES, INC.

BY Jim A. Farmer

Rec. W/E 9Feb.97
JC

COMMON SENSE ENGINEERING
T&N LABORATORIES, INC.
1983
RT. 4, BOX 78-B (JEFF. COUNTY AIRPORT), BEAUMONT, TEXAS 77705
PHONE: (409) 727-6291 / FAX: (409) 722-6961

T&N93-19

MOISTURE DENSITY RELATIONSHIP REPORT

CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS
7201 LAKE ARTHUR DRIVE, APT. #270
PORT ARTHUR, TEXAS 77642

PROJECT TITLE:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS
OHM JOB #LP-49754

REPORT DATE: 8/16/96 SAMPLE DATE: 8/14/96 CLIENT NO.: 96088 LAB NO.: 1991

1) ITEM/DESCRIPTION: DARK TAN & GRAY CLAY - P#3 CIRCLE S

2) TESTS/SAMPLE LOCATION: IN-PLACE- GRID #3 - 60FT. LT C/L

3) CONTRACTOR: OHM

4) ENGINEER: OHM

PROCEDURE	TESTING	RESULTS
1) ASTM - D698	MAXIMUM DRY DENSITY	107.3 PCF
2) ASTM - D698	OPTIMUM MOISTURE CONTENT	18.8 %
3) ASTM - D4318	LIQUID LIMIT	54
4) ASTM - D4318	PLASTICITY INDEX	29
5) ASTM - D422	PASSING NO. 200 SIEVE	73%
6) ASTM - D422	PASSING NO. 40 SIEVE	97%
7) ASTM - D422	PASSING NO. 4 SIEVE	100%
8) ASTM - D2487	SOILS CLASSIFICATION	CH
9) ASTM - D2216	MOISTURE CONTENT - OVEN	N/A

10)REMARKS: ASTM D-698 PROCTOR CURVE ATTACHED (P#3)

GF-6

CC: 4 - CLIENT
1 - T&N FILE #96088

T&N LABORATORIES, INC.
BY Tom A. Faemer

T & N Laboratories, Inc.
JEFF. COUNTY AIRPORT

MOISTURE DENSITY RELATIONSHIP CURVE

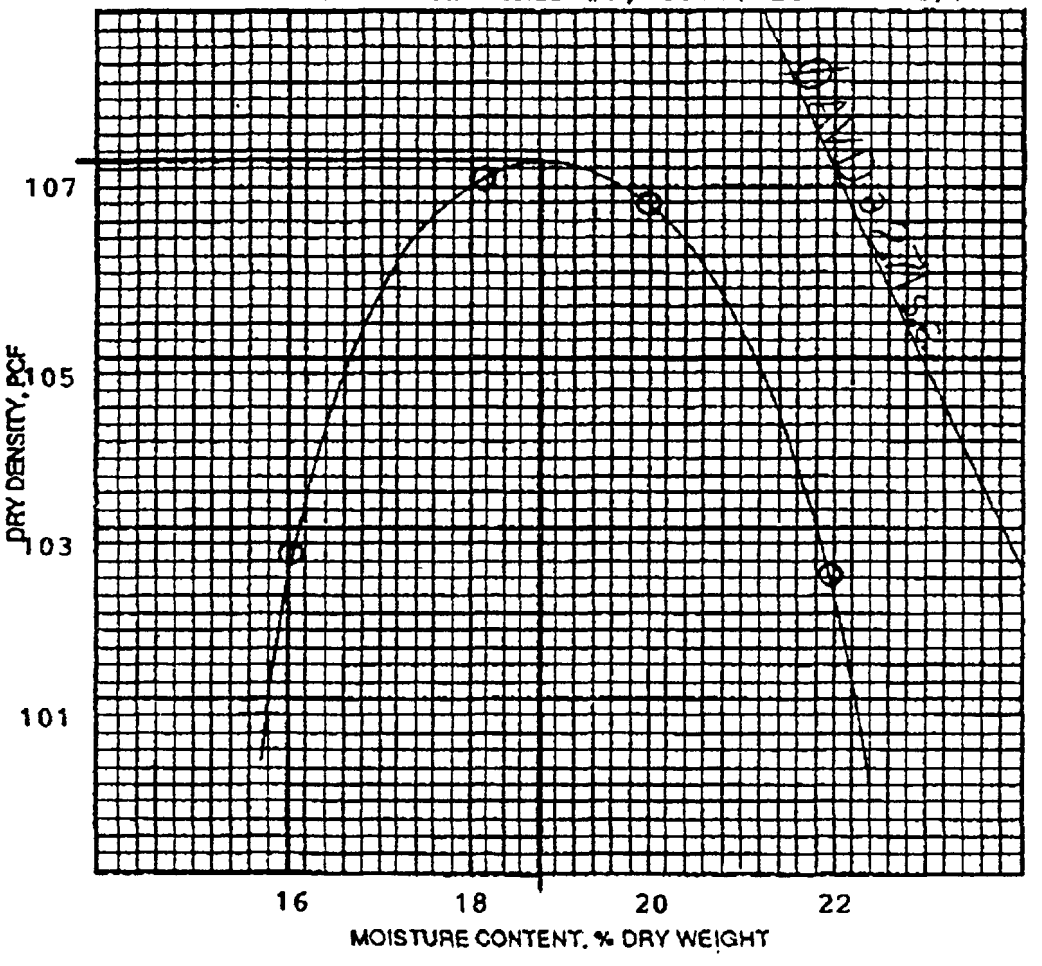
CLIENT:
OHM REMEDIATION CORP.
C/O MR. BLAKE RIGGS

PROJECT/LOCATION:
BAILEY SUPERFUND SITE
BRIDGE CITY, TEXAS

REPORT DATE: 8/16/96 **CLIENT NO.:** 96088 - 1991

Item/Description: 1.04 -DARK TAN & GRAY CLAY P#3

Sample Source: IN-PLACE- GRID #3, 60ft. left of C/L



Method of Test: ASTM - D698

Test Results:
Maximum Dry Density: 107.3 lbs/ft³
Optimum Moisture Content: 18.8 %

Atterberg Limits:
Liquid Limit: 54 Plastic Limit: 25 PI: 29