CASTLE GATE MINE

ID NO. 42-00165

SCHOOLHOUSE CANYON REFUSE PILE

ID NO. 1211-UT-09-00165-01

1995 ANNUAL REPORT

REGISTERED PROFESSIONAL ENGINEER
DAN W. GUY
No. 154168
3/1/96
STATE OF UTAH

March 1, 1996

Schoolhouse Canyon Refuse Pile

1995 Annual Report

General:

The Schoolhouse Canyon Refuse Pile is presently receiving refuse from the Willow Creek Pile. This pile is being moved to accommodate facility construction for the new Willow Creek Mine.

Compaction tests of the deposited refuse are conducted on a regular basis. Copies of all tests results to date are included in Appendix A of this report. The pile is also graded regularly in lifts of 12" to 24".

Once the moving of the Willow Creek Pile is completed, the Schoolhouse Canyon Pile will be final graded and all drainage structures will be rechecked to ensure proper operation.

The refuse pile was inspected and certified at least quarterly during 1995, as required. Copies of all inspection reports are included in Appendix A of this report.

All inspections were performed by Dan W. Guy, a qualified, registered professional engineer in the State of Utah, No. 154168.

Reporting Requirements:

In accordance with the requirements of 30 CFR 77.215-2, the following information is provided:

(1) A topographic map of the present extent of the active portion of the refuse pile at a scale of 1"=50' is included as Plate 1 of this report;

(2) The refuse pile is not burning, nor does it exhibit any evidence of past burning;

(3) Cross-sections of the active portion of the refuse pile are included as Plate 1 of this report;

(4) The active portion of the pile appears free of extraneous material and is not impounding water;

(5) No additional information pertaining to the stability of the pile has been requested by the District Manager.

March 1, 1996

Certification:

In accordance with the requirements of 30 CFR 77.215-3, and based on results of required inspections, the following certification statement is herein provided:

"I hereby certify that, based on my inspections and review of the testing results provided to me, the Schoolhouse Canyon Refuse Pile is being constructed in accordance with current, prudent engineering practices to minimize the probability of impounding water and failure of such magnitude as to endanger the lives of miners."

REGISTERED PROFESSIONAL ENGINEER
DAN W. GUY
No. 154168
3/1/96
STATE OF UTAH

Dan W. Guy
Registered Professional Engineer
State of Utah No. 154168

APPENDIX A

REFUSE PILE INSPECTIONS

AND

COMPACTION TEST RESULTS

QUARTERLY INSPECTION REPORT

School House Canyon Refuse Disposal Site

AMAX Coal Company
c/o Castle Gate Mine
Cyprus Plateau Mining Co.
Price, Utah 84501

Preparation Plant - MSHA ID #4201517
Refuse Pile - MSHA ID #1211-UT-09-00-165-01
Permit Number - ACT/007/004

Date: 12/10/95

Approximate Top Elevation: 6443

Terrace No. 3-4

Slope of Face: Approximately 2:1

Removal of Organic Matter: No Removal Necessary.

Distribution and Mixing of Materials: Dumping of Willow Creek Pile continuing. Distribution / Mixing appear good.

Overall Stability and Appearance: Pile well graded and compacted. Some slopes and ditches remain to be graded.

Average In-Place Density: 89.8 pcf (wet)

Average Rate of Compaction: 94.9 %

Number of Tests Performed: 7

PIEZOMETER LEVELS:

1st Terrace

North _____ Middle Dry South _____

2nd Terrace

North _____ Middle Dry South _____

Dan W. Guy, P.E.
Inspector

REGISTERED PROFESSIONAL ENGINEER
DAN W. GUY
No. 194188
12/10/95
STATE OF UTAH

QUARTERLY INSPECTION REPORT

School House Canyon Refuse Disposal Site

AMAX Coal Company
c/o Castle Gate Mine
Cyprus Plateau Mining Co.
Price, Utah 84501

Preparation Plant - MSHA ID #4201517
Refuse Pile - MSHA ID #1211-UT-09-00-165-01
Permit Number - ACT/007/004

Date: 09/27/95 *Approximate Top Elevation:* 6416

Terrace No. 3 *Slope of Face:* Approximately 2:1 50%

Removal of Organic Matter: No Removal Necessary.

Distribution and Mixing of Materials: Nielson Construction dumping on upper end of pile. (Willow Creek Pile) - 15 loads at time of inspection.

Overall Stability and Appearance: O.K. - Minor rills near drainages. Ditches & upper diversion functioning. Pond dry.

Average In-Place Density: No Change

Average Rate of Compaction: No Change

Number of Tests Performed: No Change

PIEZOMETER LEVELS:

1st Terrace

North _____ *Middle* Dry *South* _____

2nd Terrace

North _____ *Middle* Dry *South* _____

Dan W. Guy, P.E.
Inspector

REGISTERED PROFESSIONAL ENGINEER
DAN W. GUY
No. 154168
9/27/95
STATE OF UTAH
Engineer

QUARTERLY INSPECTION REPORT

School House Canyon Refuse Disposal Site

AMAX Coal Company
c/o Castle Gate Mine
Cyprus Plateau Mining Co.
Price, Utah 84501

Preparation Plant - MSHA ID #4201517
Refuse Pile - MSHA ID #1211-UT-09-00-165-01
Permit Number - ACT/007/004

Date: 06/30/95 *Approximate Top Elevation:* 6416

Terrace No. 3 *Slope of Face:* Approximately 2:1 50%

Removal of Organic Matter: No Removal Necessary.

Distribution and Mixing of Materials: No change since last inspection.

Overall Stability and Appearance: O.K. - Minor rills near drainages. Ditches & upper diversion functioning. Water in pond below.

Average In-Place Density: No Change

Average Rate of Compaction: No Change

Number of Tests Performed: No Change

PIEZOMETER LEVELS:

1st Terrace

North _____ *Middle* Dry *South* _____

2nd Terrace

North _____ *Middle* Dry *South* _____

Dan W. Guy, P.E.
Inspector

REGISTERED PROFESSIONAL ENGINEER
DAN W. GUY
No. 154166
STATE OF UTAH

Engineer

QUARTERLY INSPECTION REPORT

School House Canyon Refuse Disposal Site

AMAX Coal Company
Castle Gate Mine
P.O. Box 449
Helper, UT 84526

Preparation Plant - MSHA ID #42-01517
Refuse Pile - MSHA ID #42-1211-UT-9-0027

Date: 3/29/95

Approximate Top Elevation: 6416

Terrace No. 3

Slope of Face: APPROX. 2:1 50 %

Removal of Organic Matter: NONE EVIDENT - NO REMOVAL NECESSARY.

Distribution and Mixing of Materials: NO CHANGE SINCE LAST INSPECTION. MATERIAL ADDED IN 1994 BY A.M.R.P. PROJECT HAS BEEN SURVEYED AND MAPPED.

Overall Stability and Appearance: O.K. - MINOR RILLS FROM SNOWMELT, BUT NO MOVEMENT OF MATERIAL. DITCHES AND UPPER DIVERSION OPEN AND FUNCTIONAL. A.M.R.P. SILT FENCE DOWN.

Average In-Place Density	Average Rate of Compaction	Number of Tests Performed
NO CHANGE	NO CHANGE	NO CHANGE

Piezometer Levels

1st Terrace
North _____ Middle DRY South _____

2nd Terrace
North _____ Middle DRY

DAN W. GUY
Inspector

Engineer

REGISTERED PROFESSIONAL ENGINEER
DAN W. GUY
No. 164168
3/29/95
STATE OF UTAH

cg004

04/02/92

Post-it Fax Note 7672

No. of Pages 2 | Today's Date 12/20 | Time 2:20 pm

To Johnny Pappas
Company Cyprus Plateau
Location

From Julee Noyes
Company CEntry
Location | Dept. Charge

Fax # 637-2247 | Telephone # 637-2875 | Fax # 472-8318 | Telephone # 472-8318

Comments

Original Destination: ☐ Destroy ☐ Return ☐ Call for pickup

I mailed the other information - hope you have received it. These are the compaction tests I got this afternoon. Julee

JOHANSEN & TUTTLE ENG.

NUCLEAR RELATIVE COMPACTION
TEST DATA

PROJECT : Castle Gate Coal Refuse Pile DATE : 12-19-95

LOCATION : TESTED BY : [illegible]

DENSITY/MOISTURE STANDARDS : 2851 / 719

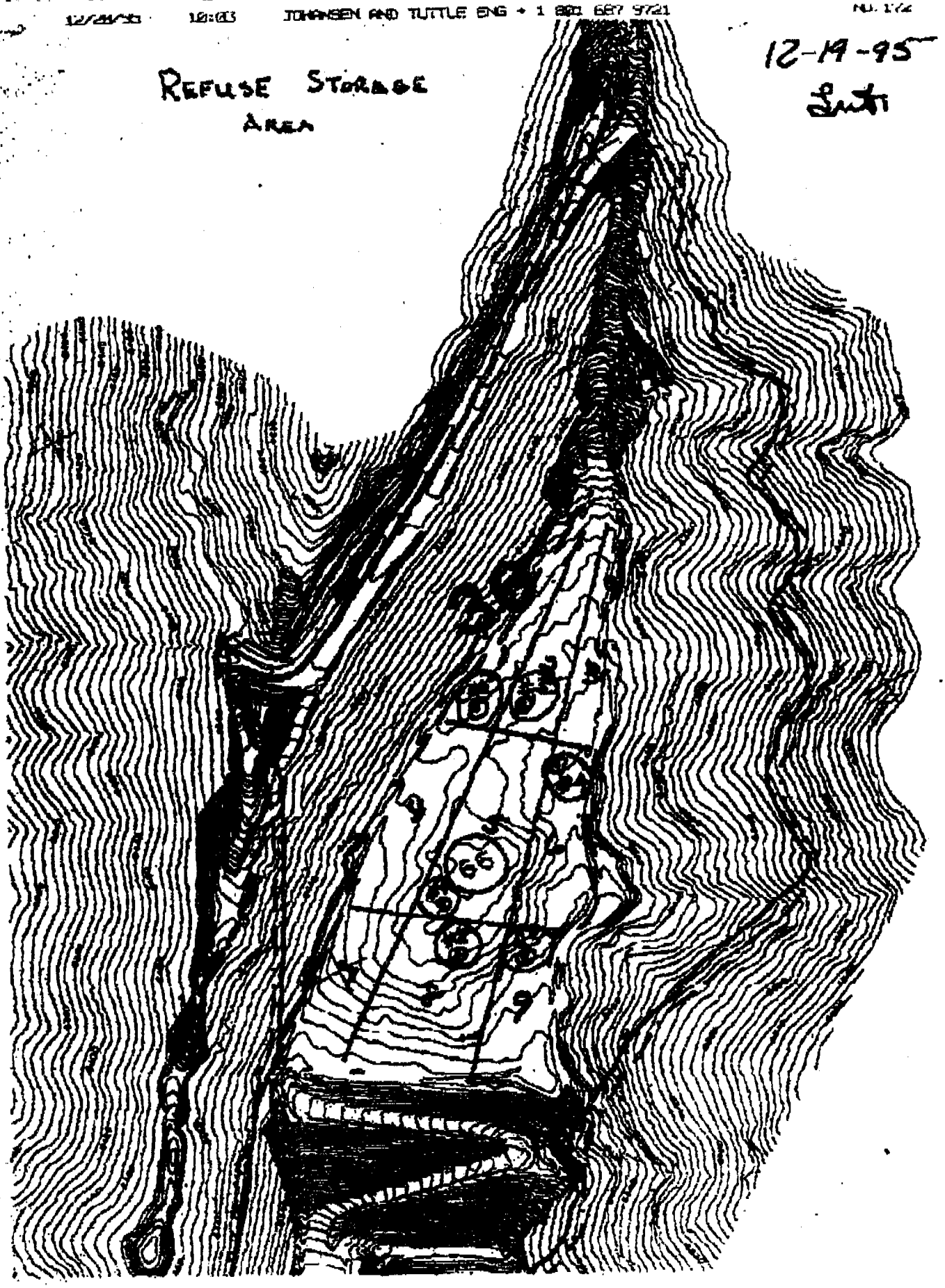
TEST NUMBER	1	2	3	4	5	6				
STATION	Grid System Attached									
OFFSET										
ELEVATION										
MODE & DEPTH	12"	—	—	—	—	—				
WET DENSITY	86.1	87.8	87.4	87.6	87.3	87.9				
DRY DENSITY	61.1	63.6	62.8	61.8	60.9	61.3				
MAX. DRY DENSITY	67.5	—	—	—	—	—				
OPTIMUM MOISTURE	23.5	—	—	—	—	—				
% MOISTURE	40.8	38.0	39.2	41.8	43.3	44.0				
% COMPACTION	90.6	94.2	93.0	91.5	90.3	90.8				

REMARKS :

Post-it Fax Note 7671 | Date 12/20 | Pages 2
To Harley Tonn | From Lynn Tuttle
Co./Dept. | Co.
Phone # | Phone #
Fax # | Fax #

12-19-95
Smith

REFUSE STORAGE
AREA



JOHANSEN & TUTTLE ENG.

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT : Castle Gate Coal Refuse Pile DATE : 12-7-95

LOCATION : Grid System attatched TESTED BY : [illegible]

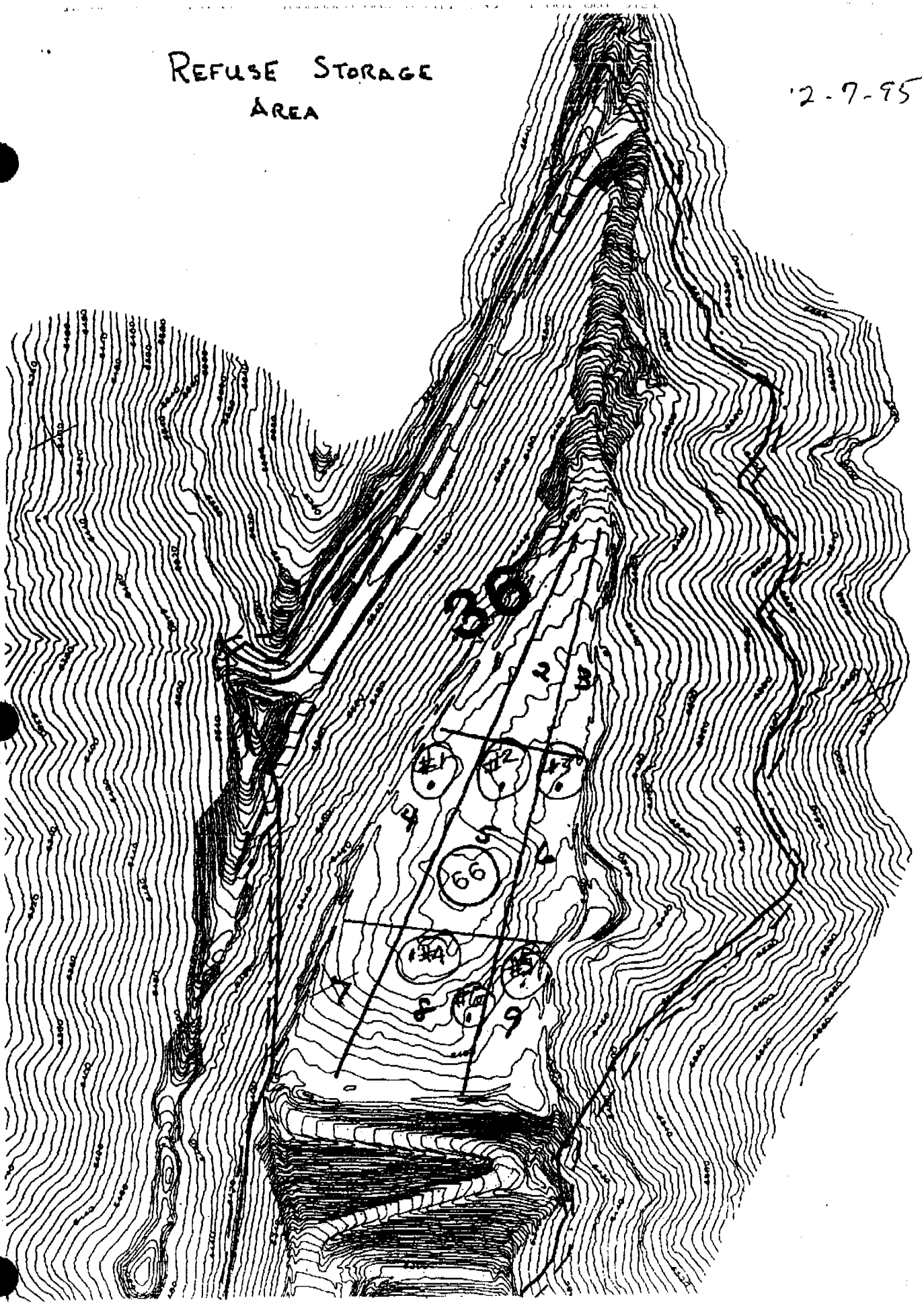
DENSITY/MOISTURE STANDARDS : 2893 / 727

TEST NUMBER	1	2	3	4	5	6				
STATION										
OFFSET	Grid System Attached									
ELEVATION										
MODE & DEPTH	12"	—	—	—	—	—				
WET DENSITY	88.2	90.4	87.8	87.2	91.2	89.2				
DRY DENSITY	64.2	63.7	64.0	63.6	64.5	63.9				
MAX. DRY DENSITY	68.3	—	—	—	—	—				
OPTIMUM MOISTURE	22.5	—	—	—	—	—				
% MOISTURE	36.6	42.0	40.3	37.7	41.6	39.5				
% COMPACTION	93.99	93.26	93.70	93.12	94.44	93.56				

REMARKS;

REFUSE STORAGE AREA

2-7-95



CASTLEG4.XLS

JOHANSEN & TUTTLE ENG. INC.
MOISTURE / DENSITY RELATIONSHIPS

PROJECT NAME CASTLE GATE

METHOD ASTM-698*

TEST # 4
DATE SAMPLED 12/7/95
DATE TESTED 12/7/95 **BY** LWT

TEST	1	2	3
WATER ADDED	2%	2%	2%
CYL. & SOIL WT.	12.12	12.29	12.1
CYL. WT.	9.45	9.45	9.45
WET SOIL WT.	2.67	2.78	2.65
WET DENSITY	80.10	83.40	79.50

CONTAINER #	1	2	3
CONT. & WET SOIL	157.2	171.1	165.2
CONT. & DRY SOIL	136	145.3	138.7
WATER WT.	21.2	25.8	26.5
CONT. & DRY SOIL	136	145.3	138.7
CONT. WT.	33.7	30.9	31.9
DRY SOIL WT.	102.3	114.4	106.8
MOISTURE CONTENT	20.7%	22.6%	24.8%
DRY DENSITY	66.4%	68.1%	63.7%

Post-It™ Fax Note 7671	Date 12-8 # of pages ▸ 5
To Harley Toon	From Lynn Tuttle
Co./Dept. Nielsons	Co. J&T Eng.
Phone #	Phone #

Post-It™ Fax Note 7671	Date 12-12-95 # of pages ▸ 1
To ART HARMES	From HARLEY
Co./Dept. CENTRY	Co. NIELSON CONSTR
Phone #	Phone # 687-2494
Fax # 472-8318	Fax #

PROCTOR FOR 12-8-95

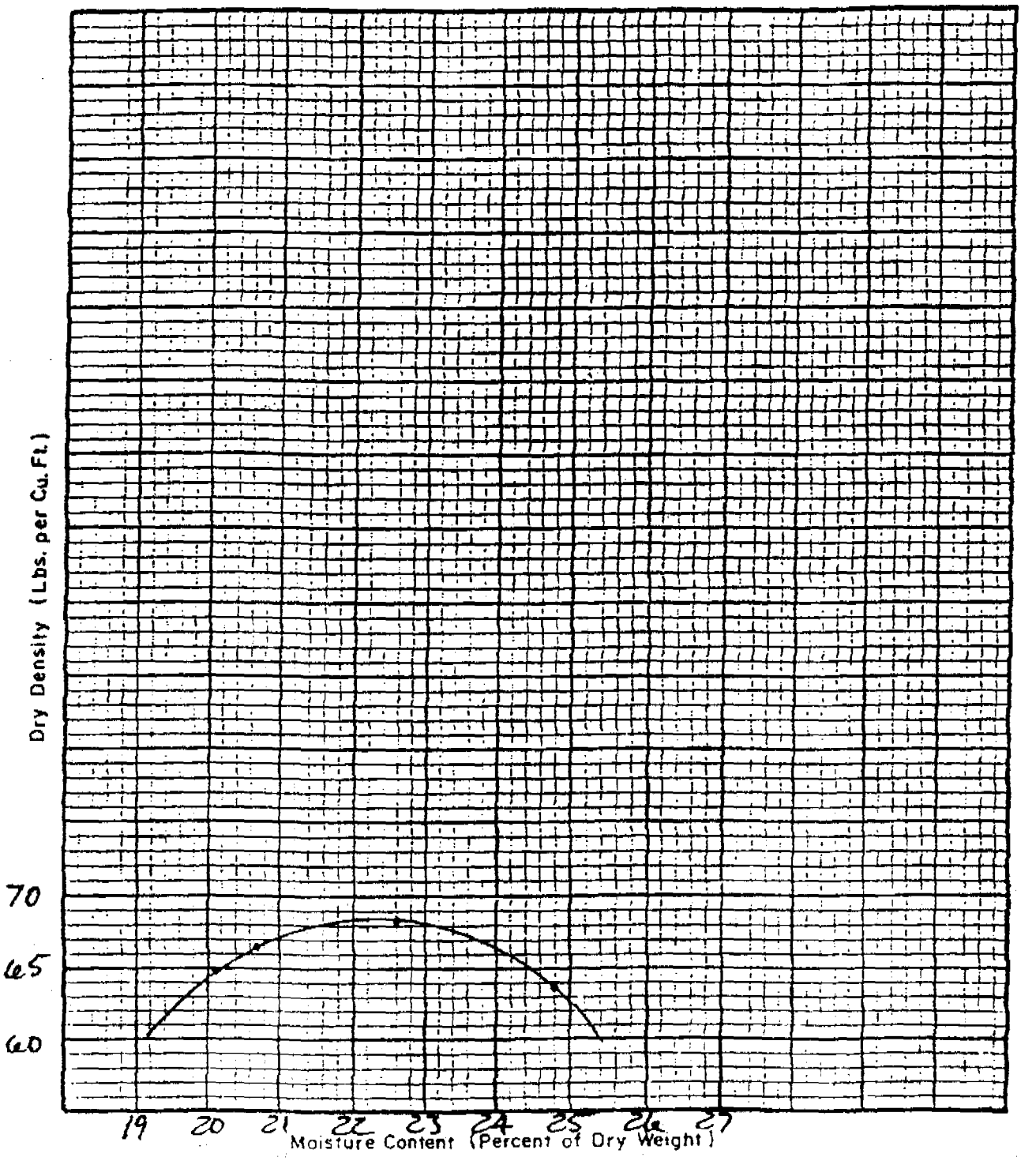
MOISTURE - DENSITY GRAPH

PROJECT NAME Castle Gate Coal Refuse Pile TEST NO. 4

PROJECT NO. _____ DATE SAMPLED 12-7-95

METHOD OF COMPACTION ASTM-698 DATE TESTED 12-7-95

MAX. DRY DENSITY 68.3 LBS/FT.^{3} OPTIMUM MOISTURE 22.5 %



JOHANSEN & TUTTLE ENG.

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT : Castle Gate Coal Refuse Pile DATE : 12-5-95

LOCATION : TESTED BY : [illegible]

DENSITY/MOISTURE STANDARDS : 2957 1748

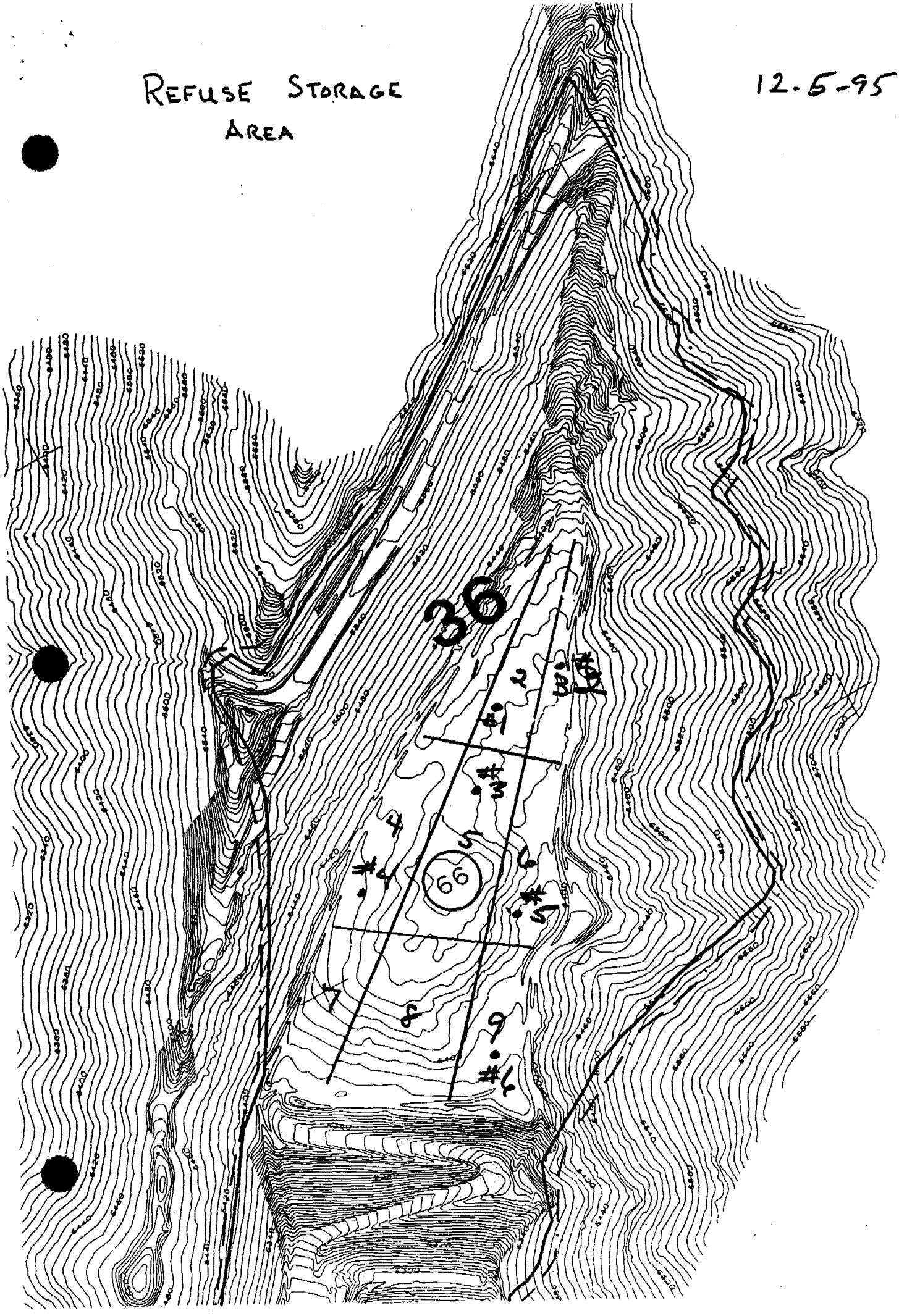
TEST NUMBER	1	2	3	4	5	6				
STATION	Grid system on Back									
OFFSET										
ELEVATION										
MODE & DEPTH	12"	12"	12"	12"	12"	12"				
WET DENSITY	89.8	87.7	90.4	90.1	89.8	90.4				
DRY DENSITY	65.0	64.2	67.3	68.0	64.0	63.7				
MAX. DRY DENSITY	69.5	—	—	—	—	—				
OPTIMUM MOISTURE	22.5	—	—	—	—	—				
% MOISTURE	35.3	36.6	34.2	32.5	40.3	42.0				
% COMPACTION	93.5	92.4	96.8	97.8	92.1	91.7				

REMARKS;

Post-it® Fax Note 7671	Date 12/5 # of pages ▸ 4
To Harley	From Lynn Tuttle
Co./Dept. Nielsons	Co. J&T
Phone #	Phone #
Fax #	Fax #

REFUSE STORAGE AREA

12-5-95



JOHANSEN & TUTTLE ENG. INC.
MOISTURE / DENSITY RELATIONSHIPS

PROJECT NAME CASTLE GATE

METHOD ASTM-698"

TEST # 3
DATE SAMPLED 12/5/95
DATE TESTED 12/5/95 **BY** LWT

TEST	1	2	3
WATER ADDED	2%	2%	2%
CYL. & SOIL WT.	12.19	12.28	12.26
CYL. WT.	9.45	9.45	9.45
WET SOIL WT.	2.74	2.83	2.81
WET DENSITY	82.20	84.90	84.30

CONTAINER #	1	2	3
CONT. & WET SOIL	171.5	167.4	170.5
CONT. & DRY SOIL	144	142.4	143.5
WATER WT.	27.5	25	27
CONT. & DRY SOIL	165.9	142.4	143.5
CONT. WT.	31.9	32.8	33.4
DRY SOIL WT.	134	109.6	110.1
MOISTURE CONTENT	20.5%	22.8%	24.5%
DRY DENSITY	68.2%	69.1%	67.7%

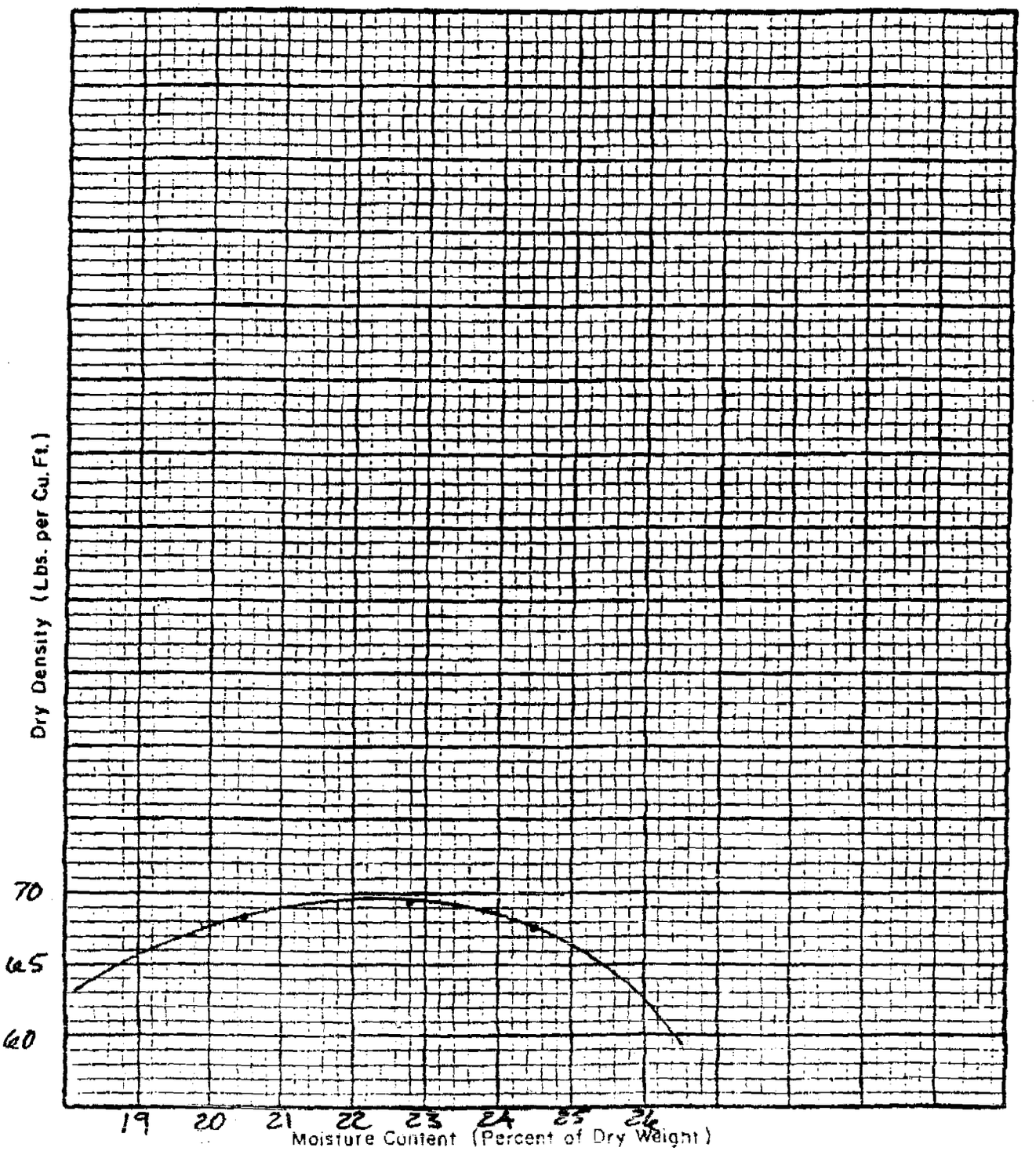
MOISTURE - DENSITY GRAPH

PROJECT NAME Castle Gate Coal Refuse Pile TEST NO. 3

PROJECT NO. _____ DATE SAMPLED 12-5-95

METHOD OF COMPACTION ASTM-698 DATE TESTED 12-5-95

MAX. DRY DENSITY 69.5 LBS/FT.^{3} OPTUMUM MOISTURE 22.5 %



JOHANSEN & TUTTLE ENG.

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT : Castle Gate Coal Refuse Pile DATE : 11-30-95

LOCATION : TESTED BY : [illegible]

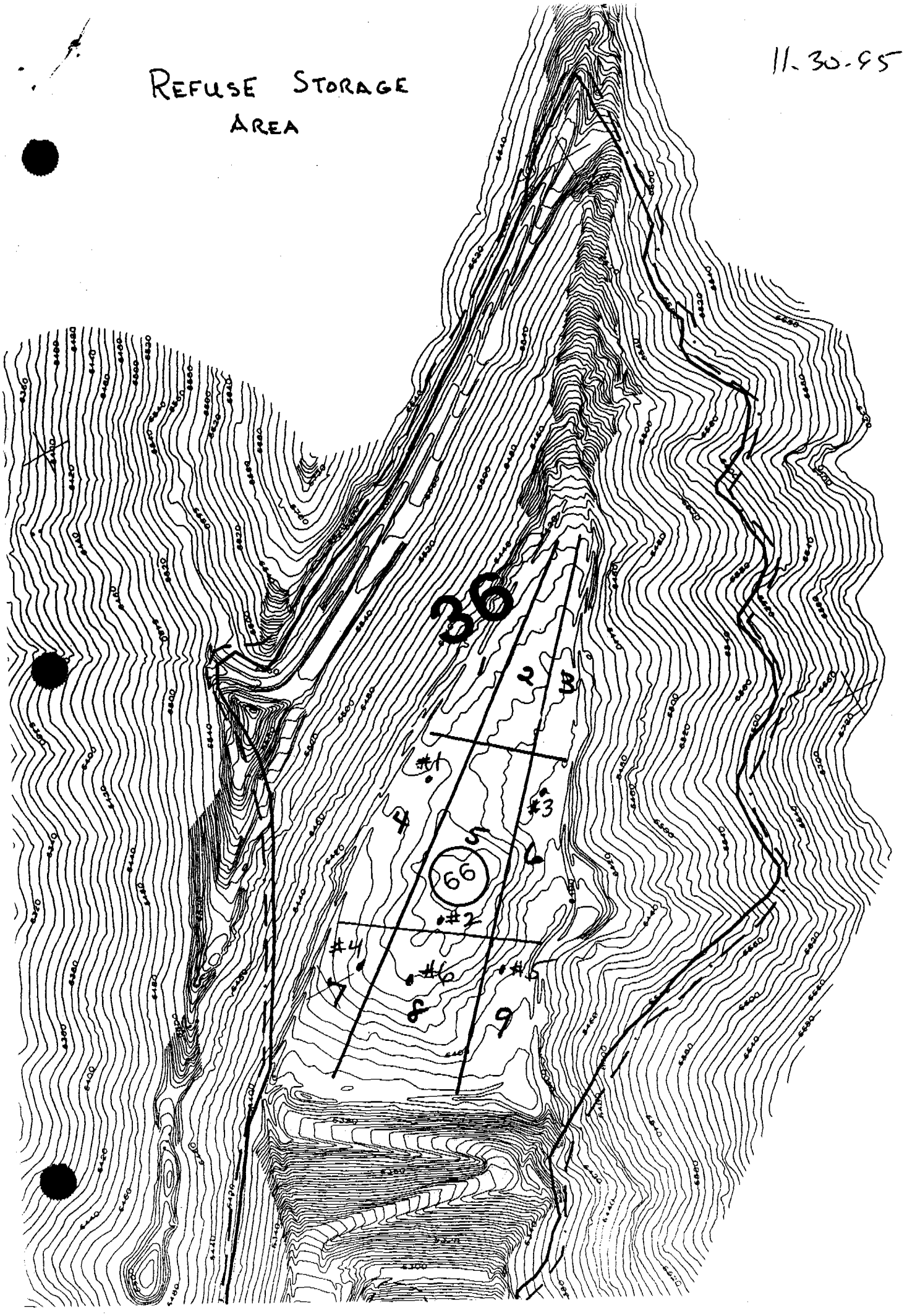
DENSITY/MOISTURE STANDARDS : 2898 / 710

TEST NUMBER	1	2	3	4	5	6				
STATION										
OFFSET										
ELEVATION										
MODE & DEPTH	12"	—	—	—	—	—				
WET DENSITY	87.2	87.2	87.6	92.1	89.6	89.2				
DRY DENSITY	63.6	63.7	64.1	70.5	66.8	67.1				
MAX. DRY DENSITY	70.7	—	—	—	—	—				
OPTIMUM MOISTURE	24.5	—	—	—	—	—				
% MOISTURE	37.7	36.9	36.7	30.6	34.1	33.0				
% COMPACTION	90.1	90.1	90.7	99.8	94.6	94.9				

REMARKS: Grid system of stationing on reverse side

11-30-95

REFUSE STORAGE AREA



JOHANSEN & TUTTLE ENG.

Post-it® Fax Note 7671	Date 11/28	# of pages ▸ 3
To Harley	From Lynn Tuttle	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

COMPACTION
A

PROJECT : Castle Gate Coal Refuse Pile DATE : 11-28-95

LOCATION : TESTED BY : Lut

DENSITY/MOISTURE STANDARDS : 2929 / 735

TEST NUMBER	1	2	3	4	5	6	7	8	9	10
STATION										
OFFSET										
ELEVATION										
MODE & DEPTH	12"	12"	12"	12"	12"	12"	12"	12"		
WET DENSITY	90.8	91.4	88.5	89.6	92.2	89.3	89.0	89.1		
DRY DENSITY	65.4	64.5	64.4	63.8	63.7	64.4	63.9	63.7		
MAX. DRY DENSITY	70.7	—	—	—	—	—	—	—		
OPTIMUM MOISTURE	24.5	—	—	—	—	—	—	—		
% MOISTURE	38.8	41.7	37.4	41.1	46.2	45.3	39.3	41.2		
% COMPACTION	92.5	91.2	91.1	90.2	90.1	91.1	90.3	90.1		

REMARKS: Grid System of Test Stationing on Levers side.

* Note: These Tests are a Retest on Last weeks Tests

JOHANSEN & TUTTLE ENG. INC.
MOISTURE / DENSITY RELATIONSHIPS

PROJECT NAME CASTLE GATE

METHOD ASTM-698"

TEST # 3
DATE SAMPLED 11/28/95
DATE TESTED 11/28/95
BY LWT

TEST	1	2	3
WATER ADDED	2%	2%	2%
CYL & SOIL WT.	12.23	12.38	12.31
CYL WT.	9.45	9.45	9.45
WET SOIL WT.	2.78	2.93	2.86
WET DENSITY	83.40	87.90	85.80

CONTAINER #	1	2	3
CONT. & WET SOIL	170	171.43	184.8
CONT. & DRY SOIL	146.3	144.3	152.9
WATER WT.	29.7	27.13	31.9
CONT. & DRY SOIL	165.9	144.3	152.9
CONT. WT.	31.9	32.8	33.4
DRY SOIL WT.	134	111.5	119.5
MOISTURE CONTENT	22.2%	24.3%	26.7%
DRY DENSITY	68.3%	70.7%	67.7%

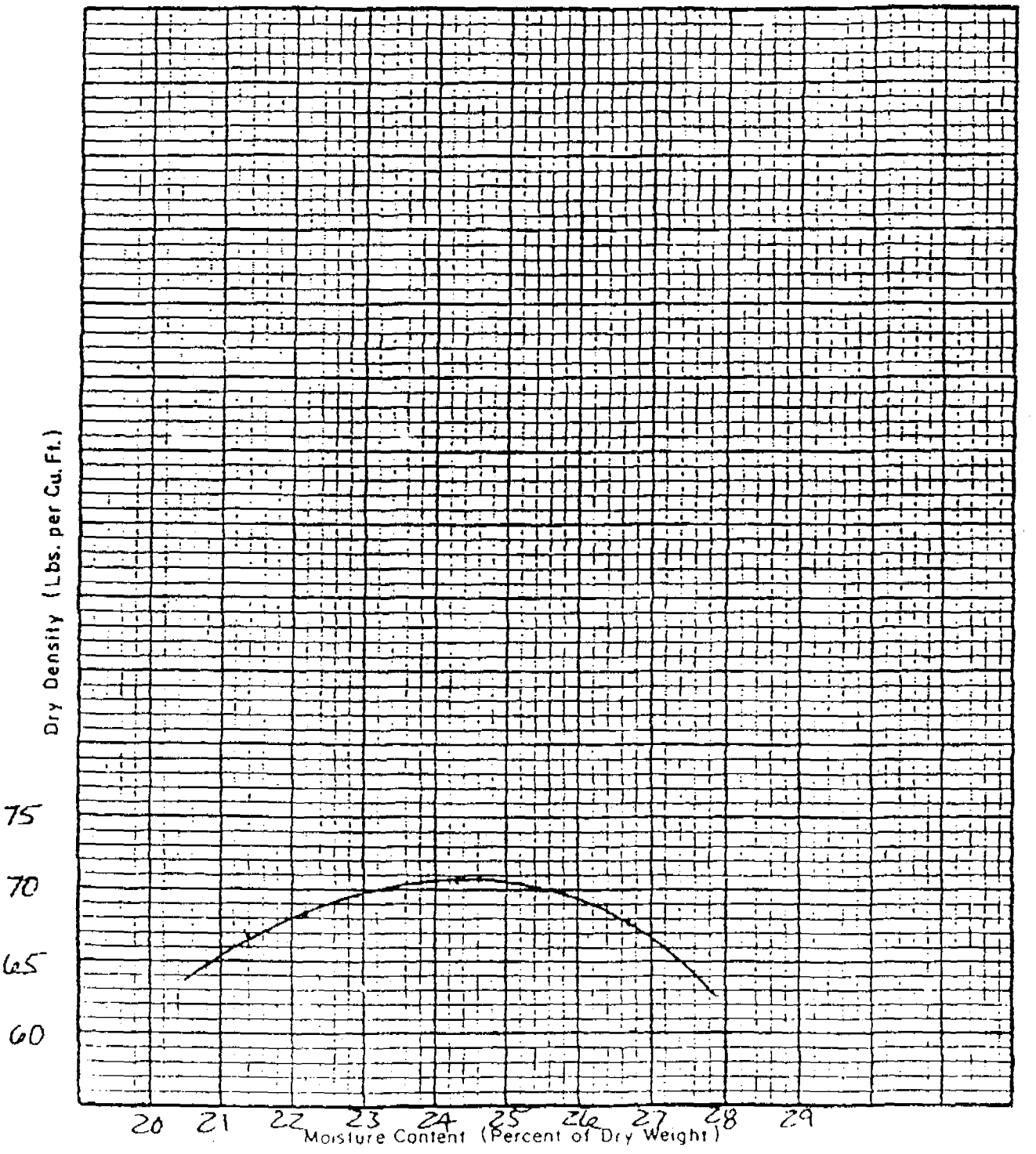
MOISTURE - DENSITY GRAPH

PROJECT NAME Castle Gate TEST NO. 2

PROJECT NO. DATE SAMPLED 11-28-95

METHOD OF COMPACTION ASTM 698 DATE TESTED 11-28-95

MAX. DRY DENSITY 70.7 LBS/FT.^{3} OPTUMUM MOISTURE 24.5 %



JOHANSEN & TUTTLE ENG.

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT : Castle Gate Coal Refuse Pile DATE : 11-3-95

LOCATION : TESTED BY : [illegible]

DENSITY/MOISTURE STANDARDS : 2569 / 635

TEST NUMBER	1	2	3	4						
STATION	15' from North Ridge [redacted]									
OFFSET	℄									
ELEVATION										
MODE & DEPTH	12"	—	—	—						
WET DENSITY	90.4	92.2	87.6	88.0						
DRY DENSITY	63.7	63.1	64.0	65.0						
MAX. DRY DENSITY	68.1	—	—	—						
OPTIMUM MOISTURE	23.0	—	—	—						
% MOISTURE	41.2	46.2	36.7	35.3						
% COMPACTION	93.5	92.7	93.9	95.4						

REMARKS;

JOHANSEN & TUTTLE ENG.

NUCLEAR RELATIVE COMPACTION
TEST DATA

PROJECT : Castle Gate Coal storage pit DATE : 10-18-95

LOCATION : TESTED BY : [illegible]

DENSITY/MOISTURE STANDARDS : 2562 / 6660

TEST NUMBER	1	2	3	4	5	6	7	8	9	10
STATION	East Edge	South East point	℄	North East point	—	North East Edge	℄			
OFFSET				150' Back	100' Back	20' on pad				
ELEVATION										
MODE & DEPTH	12"	12"	12"	12"	12"	12"	12"			
WET DENSITY	88.3	89.2	88.3	93.0	91.0	87.4	91.6			
DRY DENSITY	64.5	63.6	66.2	64.7	69.5	59.8	64.9			
MAX. DRY DENSITY	23.0	—	—	—	—	—	—	—	—	—
OPTIMUM MOISTURE	68.2	—	—	—	—	—	—	—	—	—
% MOISTURE	37.0	40.3	33.4	43.6	30.8	46.1	41.0			
% COMPACTION	94.5	93.2	97.0	94.1	102.0	87.8	95.2			

REMARKS;

Craig Johansen

JOHANSEN & TUTTLE ENG. INC.
MOISTURE / DENSITY RELATIONSHIPS

PROJECT NAME nielson cont

TEST # 2

DATE SAMPLED 10/12/95

METHOD ASTM-698"

DATE TESTED 10/13/95

BY NATHAN

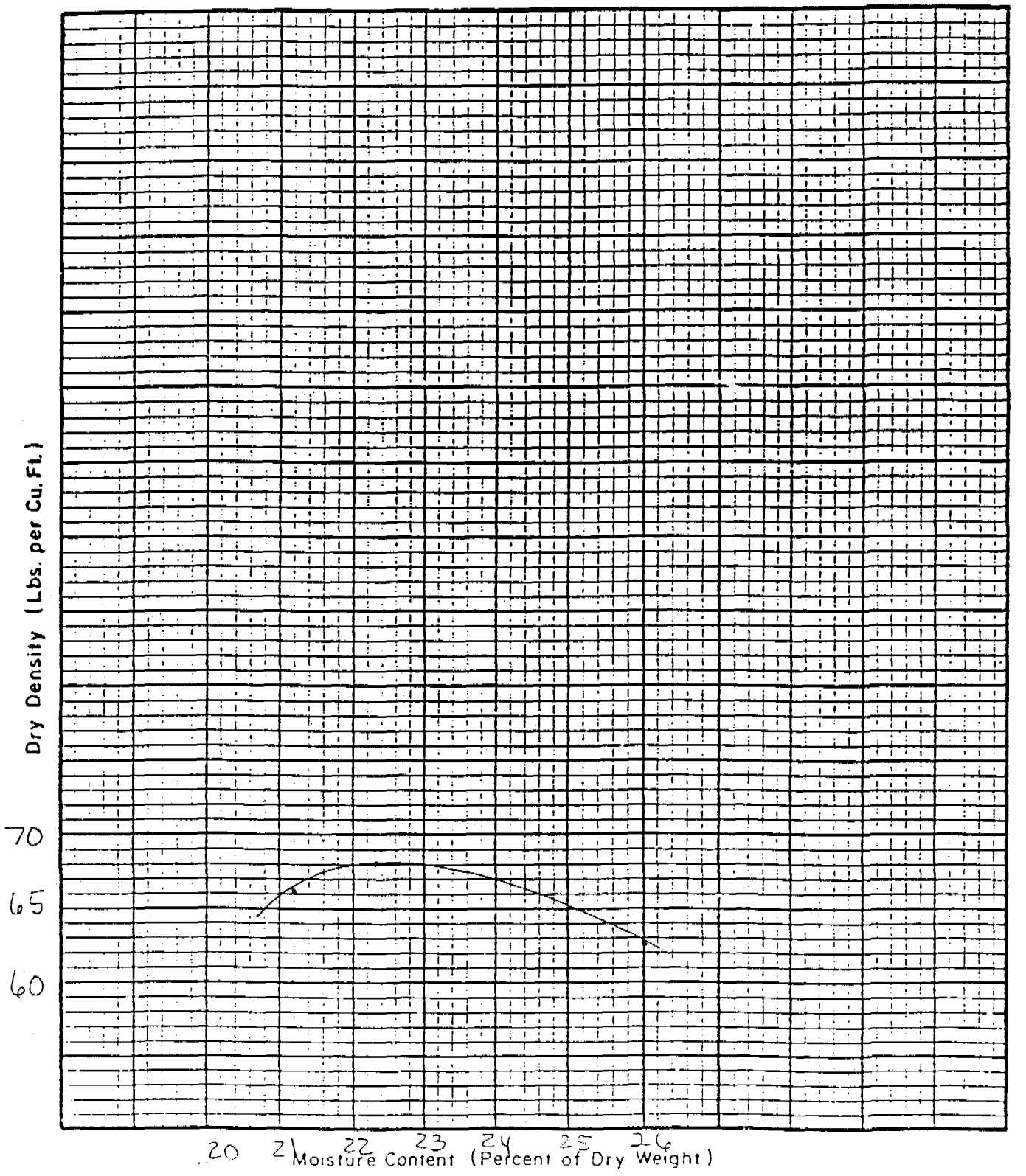
TEST	1	2	3
WATER ADDED	2%	2%	2%
CYL. & SOIL WT.	12.14	12.22	12.09
CYL. WT.	9.45	9.45	9.45
WET SOIL WT.	2.69	2.77	2.64
WET DENSITY	80.70	83.10	79.20

CONTAINER #	1	2	3
CONT. & WET SOIL	134.2	141.1	150
CONT. & DRY SOIL	116.6	121	125.6
WATER WT.	17.6	20.1	24.4
CONT. & DRY SOIL	116.6	121	125.6
CONT. WT.	33.7	30.9	31.9
DRY SOIL WT.	82.9	90.1	93.7
MOISTURE CONTENT	21.2%	22.3%	26.0%
DRY DENSITY	66.6%	67.9%	62.8%

MOISTURE - DENSITY GRAPH

PROJECT NAME Nielsons TEST NO.

PROJECT NO. DATE SAMPLED

METHOD OF COMPACTION 698-A DATE TESTED 10-13-95

MAX. DRY DENSITY 68.2 LBS/FT.^{3} OPTUMUM MOISTURE 23% %