APPENDIX A

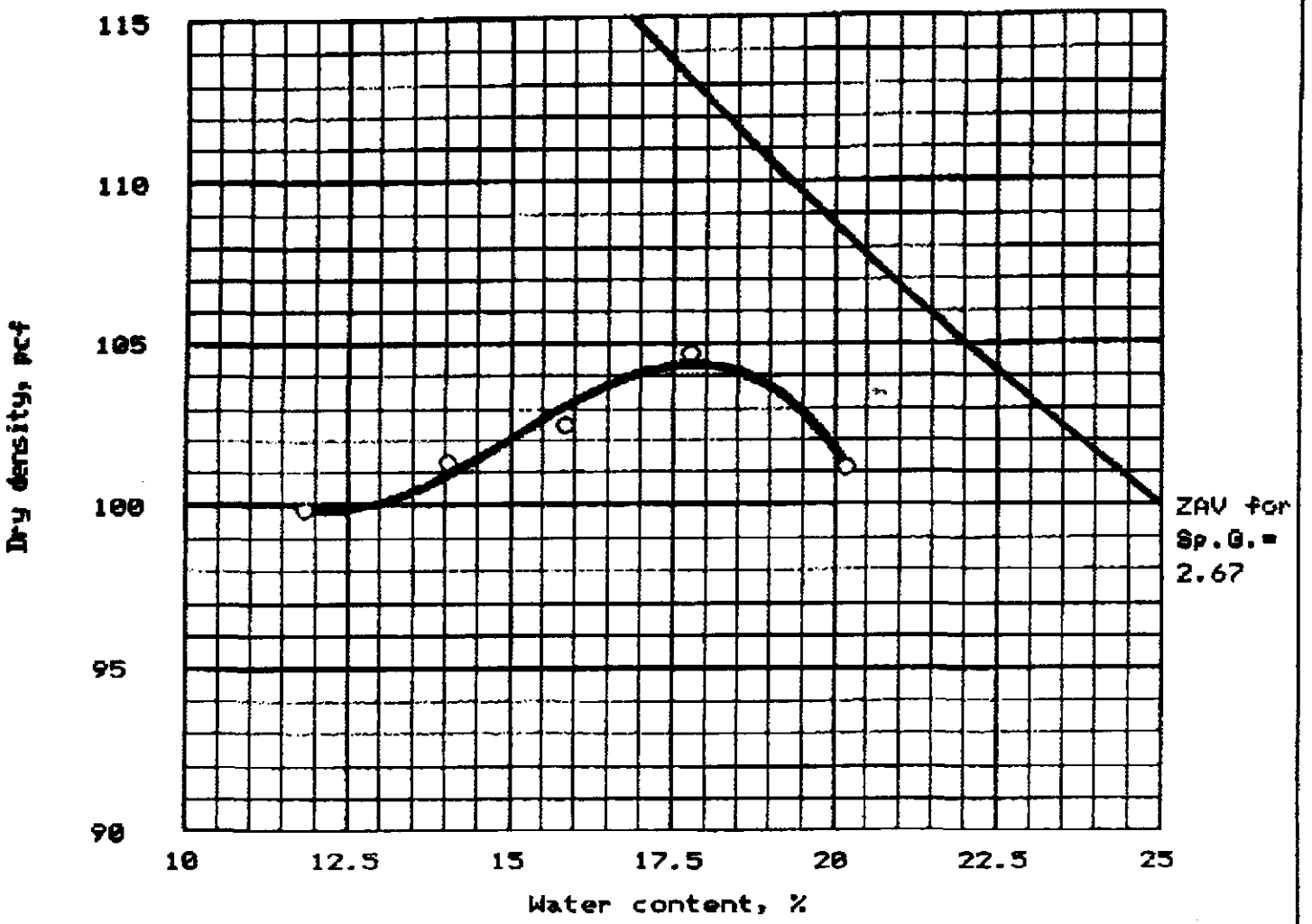
CLOSURE CERTIFICATION

THIS SPACE RESERVED FOR
ENGINEERS CERTIFICATION OF
CONSTRUCTION ACTIVITIES.

APPENDIX B

GEOTECHNICAL TESTING RESULTS

PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698-78, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	ML	11.7 %		30	7	%	%

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 17.8 % Maximum dry density = 104.4 pcf	TAN SILTY LOESS

Contractor: INTERNATIONAL TECHNOLOGY CORP
Project: VICKSBURG CHEMICAL CORP.
Location: BORROW AREA -STRUCT. FILL
SAMPLE A
Project no.: 9544.5 Date: 04-27-89

Remarks:

TECH: CARLSON

PROCTOR TEST REPORT
WARREN COUNTY ENGINEERING SERVICES

Fig. No. _____

WARREN ENGINEERING SERVICES, INC.

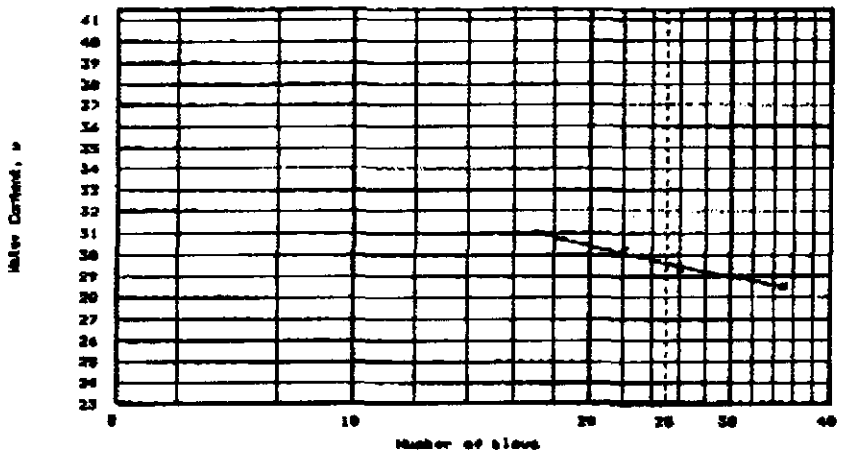
2 OPENWOOD PLAZA - 1104 OPENWOOD STREET
VICKSBURG, MS 39180
PHONE 636-7842

LIQUID AND PLASTIC LIMIT TESTS
MOISTURE CONTENTS

Project: VICKSBURG CHEMICAL CO.
Client: INTERNATIONAL TECHNOLOGY CORP.
Boring No.: BORROW AREA Sample No.: A

Date: APR 25, 89
Lab No: 9544.1
Depth: N/A

	LIQUID LIMIT				PLASTIC LIMIT		
Run No.	1	2	3	4	5	6	7
Tare No.	200	201	202	203	204	205	
Weight in grams: Tare plus wet soil	29.12	29.04	27.97	28.62	31.47	30.64	
Tare plus dry soil	25.94	25.95	25.14	25.71	28.56	27.87	
Water w_w	3.18	3.09	2.83	2.91	2.91	2.77	
Tare	15.68	15.71	15.52	15.49	15.73	15.62	
Dry Soil w_s	10.26	10.24	9.62	10.22	12.83	12.25	
Water content w	31.00	30.20	29.40	28.50	22.70	22.60	
Number of blows	17	22	26	35			



LL: 30

PL: 23

PI: 7

USCS Classification:
ML

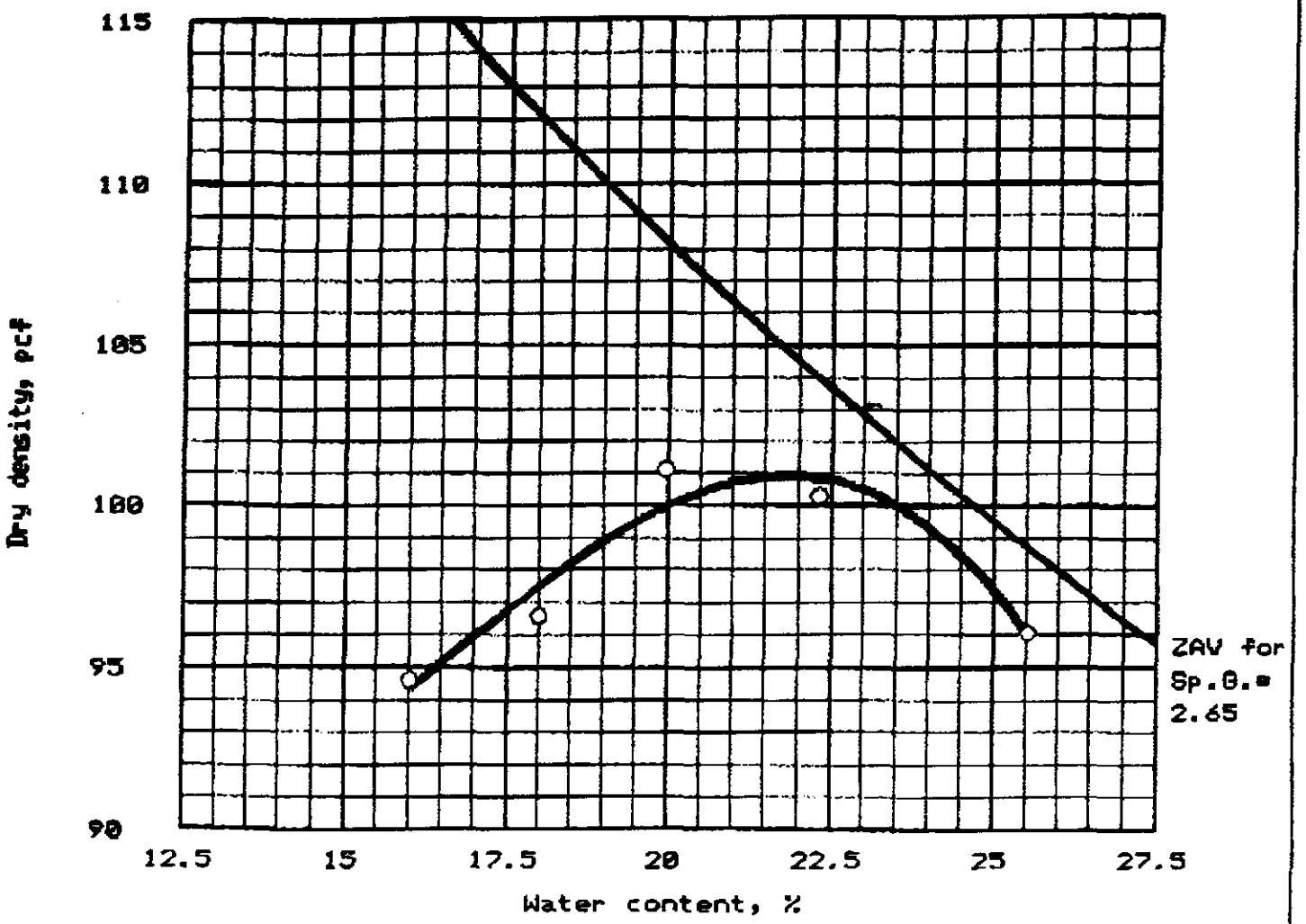
MOISTURE CONTENTS

	1	2	3	4	5	6	7
Run No.							
Tare No.							
Weight in grams: Tare plus wet soil							
Tare plus dry soil							
Water w_w							
Tare							
Dry Soil w_s							
Water content w							
Sample No./Depth							

Remarks: TAN SILTY LOESS

Technician: [illegible] Computed by: [illegible] Checked by:

PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698-78, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	CL	10.5 %		49	31	0.0 %	99.9 %

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 21.9 % Maximum dry density = 100.9 pcf	BROWN CLAY

Contractor: INTERNATIONAL TECHNOLOGY CORP
Project: VICKSBURG CHEMICAL CORP.
Location: SAMPLE B - MILLERS PIT HWY 80

Project no.: 9544.4 Date: 04-27-89

Remarks:

PROCTOR TEST REPORT

WARREN COUNTY ENGINEERING SERVICES

Fig. No. _____

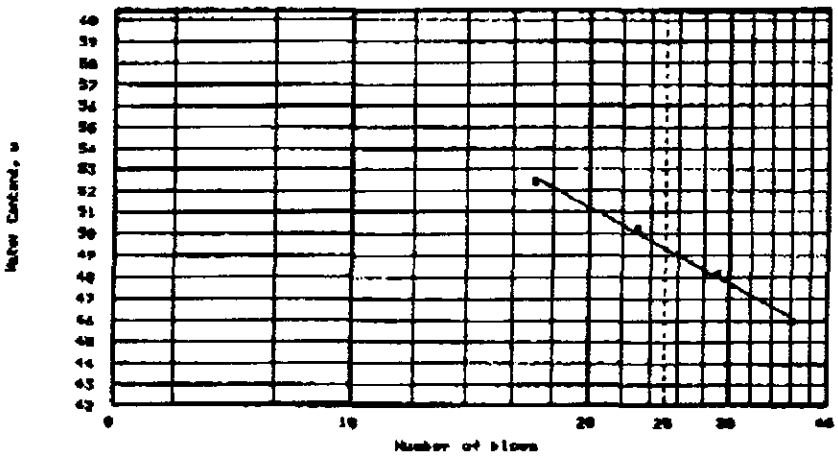
WARREN ENGINEERING SERVICES, INC.
2 OPENWOOD PLAZA - 1104 OPENWOOD STREET
VICKSBURG, MS 39180
PHONE 636-7842

LIQUID AND PLASTIC LIMIT TESTS
MOISTURE CONTENTS

Project: VICKSBURG CHEMICAL CO.
Client: INTERNATIONAL TECHNOLOGY CORP.
Boring No.: MILLERS PIT Sample No.: B

Date: APR. 25, 89
Lab No: 89-544.2
Depth: N/A

	LIQUID LIMIT				PLASTIC LIMIT		
Run No.	1	2	3	4	5	6	7
Tare No.	206	207	208	209	210	211	
Weight in grams: Tare plus wet soil	27.13	27.33	27.34	27.82	30.75	29.39	
Tare plus dry soil	23.14	23.40	23.50	23.99	28.46	27.25	
Water W_w	3.99	3.93	3.84	3.83	2.29	2.14	
Tare	15.54	15.59	15.53	15.66	15.59	15.55	
Dry Soil W_s	7.60	7.81	7.97	8.33	12.87	11.70	
Water content w	52.50	50.30	48.20	46.00	17.80	18.30	
Number of blows	17	23	29	36			



LL: 49

PL: 18

PI: 31

USCS Classification: CL

MOISTURE CONTENTS

Run No.	1	2	3	4	5	6	7
Tare No.							
Weight in grams: Tare plus wet soil							
Tare plus dry soil							
Water W_w							
Tare							
Dry Soil W_s							
Water content w							
Sample No./Depth							

Remarks: BROWN CLAY

Technician: BOBB Computed by: BINGHAM Checked by:

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 1

Date: 04-25-89
Project No.: 9544.3
Project: VICKSBURG CHEMICAL CO.

Sample Data

Location of Sample: MILLERS PIT HWY 80 (SAMPLE B)
Sample Description: BROWN CLAY
USCS Class: CI
AASHTO Class:
Liquid limit: 49
Plasticity index: 31

Notes

Remarks: INTERNATIONAL TECHNOLOGY CORP.

Fig. No.: 1

Mechanical Analysis Data

	Initial	After wash
Dry sample and tare=	207.50	0.20
Tare =	0.00	0.00
Dry sample weight =	207.50	0.20

Minus #200 from wash= 99.9 %

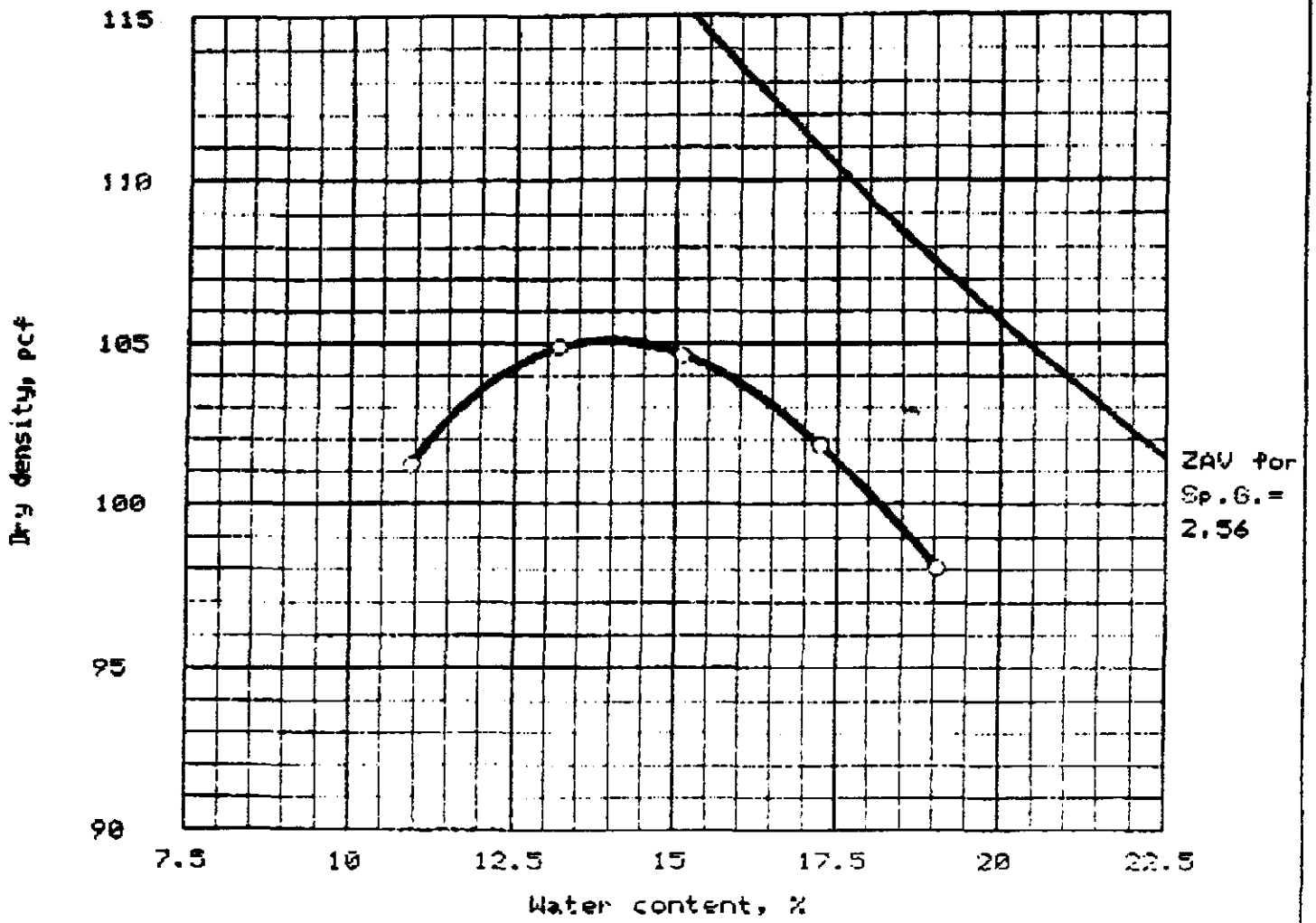
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
# 200	0.20	99.9

Fractional Components

% + 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 0.0

PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698-78, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	CL	28.1 %		35	11	%	%

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 14.0 % Maximum dry density = 105.1 pcf	LIGHT BROWN SILTY CLAY

Contractor: I.T. COPRORATION
Project: VICKSBURG CHEMICAL
Location: E. SIDE SWCA BOTTOM

Project no.: 9555.1 Date: MAY 31, 1989

Remarks:

Sample C

TECH: DOSS

PROCTOR TEST REPORT

WARREN COUNTY ENGINEERING SERVICES

Fig. No. _____

DATE: 5/31/89 TECHNICIAN: E. DOSS
PROJECT NO.: 9555.1 CONTRACTOR/CLIENT: IT CORPORATION
PROJECT: VICKSBURG CHEMICAL

SOURCE OF SAMPLE: EAST SIDE SWCA BOTTOM SAMPLE C
DEPTH/ELEV:

REMARKS:

MATERIAL DESCRIPTION: LIGHT BROWN SILTY CLAY -

USCS: AASHTO: SPECIFIC GRAVITY: (ACT/EST)

NATURAL MOISTURE: 28.1 %

TARE NO. 152 WT. WET= 154.75 WT. DRY= 129.29 WT. TARE= 38.60

LIQUID LIMIT= 35 PLASTIC LIMIT= 24 % > # 4= % < # 200=

TYPE OF TEST: X STANDARD MODIFIED METHOD: (A) B C D

TRIAL NO.	1		2		3	
MOISTURE TRIAL	1	2	1	2	1	2
WT. COMPACTED	6233		6330		6356	
WT. MOLD	4535		4535		4535	
TARE NO.	155	110	135	139	117	132
WT. WET	135.70	128.65	127.83	122.70	133.87	124.57
WT. DRY	126.18	119.69	117.31	112.99	121.26	113.84
TARE	38.46	38.47	38.20	38.57	37.85	38.09

TRIAL NO.	4		5		6	
MOISTURE TRIAL	1	2	1	2	1	2
WT. COMPACTED	6340		6300			
WT. MOLD	4535		4535			
TARE NO.	107	113	147	118		
WT. WET	131.85	130.26	135.47	129.36		
WT. DRY	118.13	116.70	120.08	114.69		
TARE	38.92	37.70	38.86	37.87		

WARREN ENGINEERING SERVICES, INC.

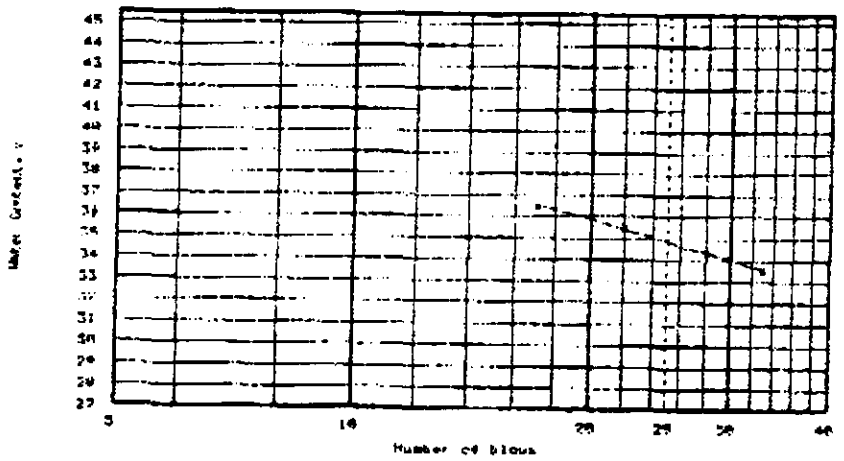
2 OPENWOOD PLAZA - 1104 OPENWOOD STREET
VICKSBURG, MS 39180
PHONE 636-7842

LIQUID AND PLASTIC LIMIT TESTS
MOISTURE CONTENTS

Project: VICKSBURG CHEMICAL
Client: Vicksburg Chemical
Boring No.: N/A Sample No.: C

Date: May 30, 1989
Lab No: 9555.2
Depth: N/A

	LIQUID LIMIT				PLASTIC LIMIT		
Pan No.	1	2	3	4	5	6	7
Tare No.	278	279	280	281	282	283	
Weights in grams: Tare plus wet soil	29.88	35.30	30.53	33.50	30.82	31.13	
Tare plus dry soil	26.18	30.30	26.81	29.12	27.90	28.23	
Water	3.70	5.00	3.72	4.38	2.92	2.90	
Tare	16.05	16.23	16.00	16.09	16.13	16.11	
Dry Soil	10.13	14.07	10.81	13.03	11.77	12.12	
Water content %	36.50	35.50	34.40	33.60	24.80	23.90	
Number of blows	17	22	28	33			



LL: 35

PL: 24

PI: 11

USCS Classification: CL

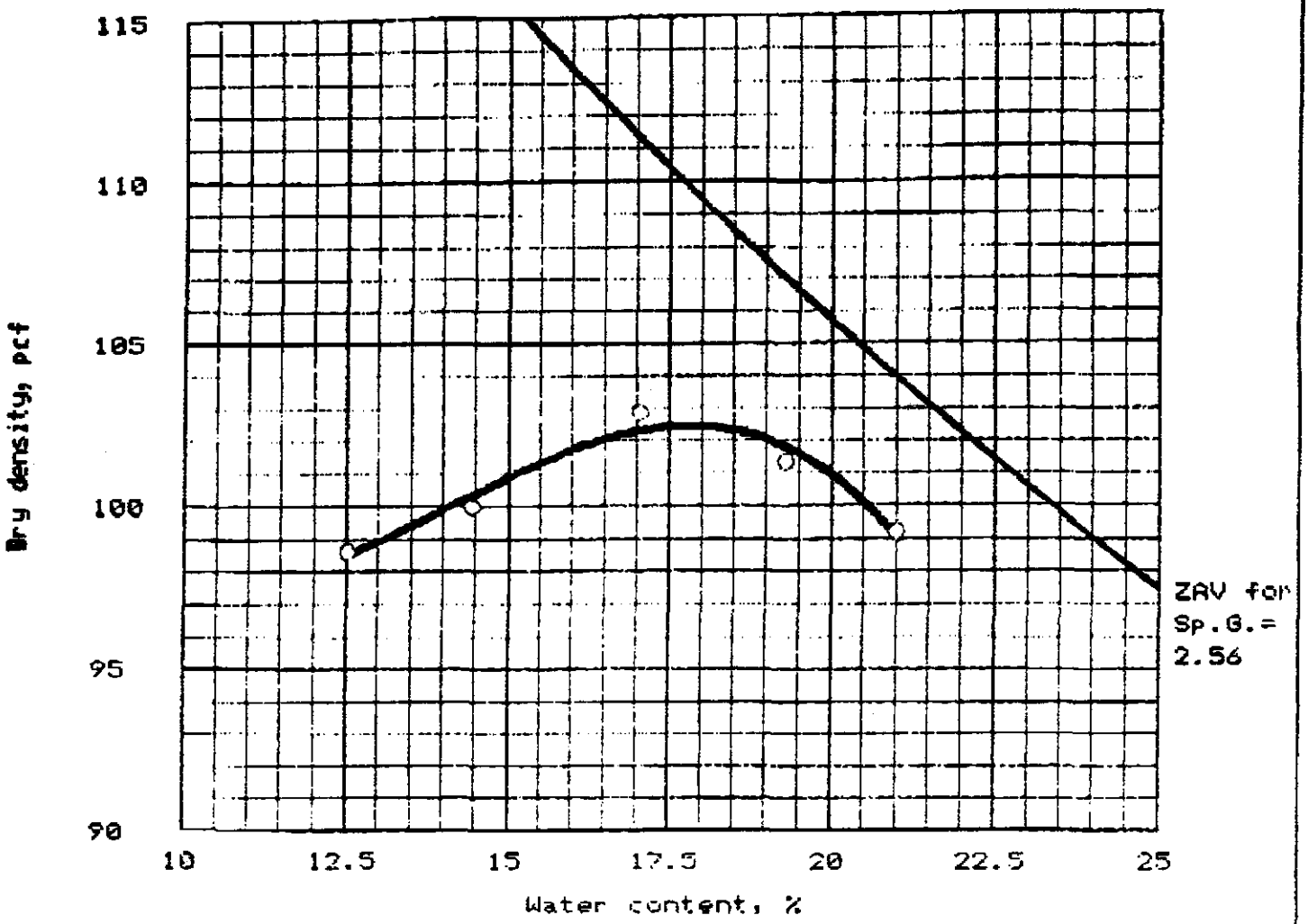
MOISTURE CONTENTS

	1	2	3	4	5	6	7
Pan No.							
Tare No.							
Weights in grams: Tare plus wet soil							
Tare plus dry soil							
Water							
Tare							
Dry Soil							
Water content %							
Sample No.-Depth							

Remarks: Light brown silty clay
East side SWCA bottom

Technician: Bass Computed by: Billiman Checked By:

PROCTOR TEST REPORT



"Standard" Proctor, ASTM , Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	CL	32.0 %		37	14	%	%

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 17.8 % Maximum dry density = 102.4 pcf	BROWN SILTY CLAY

Contractor: I.T. COPRORATION
Project: VICKSBURG CHEMICAL
Location: W. SIDE SWCA BOTTOM

Project no.: 9555.3 Date: MAY 31, 1989

Remarks:
Sample D

TECH: DOSS

PROCTOR TEST REPORT
WARREN COUNTY ENGINEERING SERVICES

Fig. No. ____

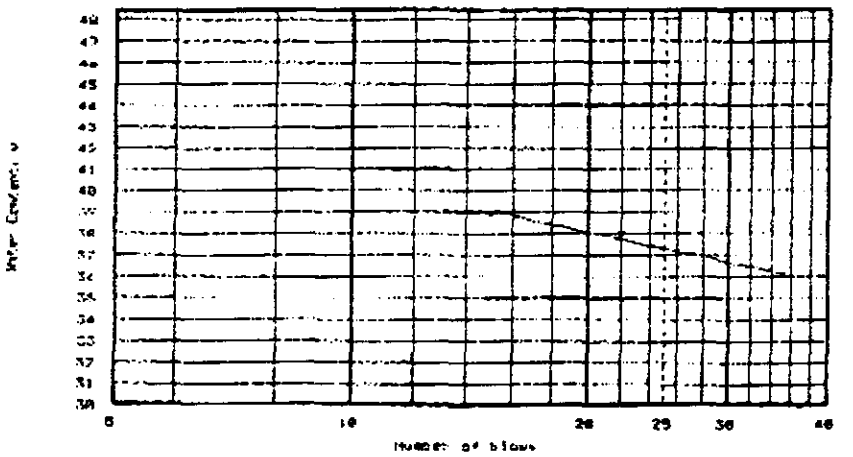
WARREN ENGINEERING SERVICES, INC.
2 OPENWOOD PLAZA - 1104 OPENWOOD STREET
VICKSBURG, MS 39180
PHONE 636-7842

LIQUID AND PLASTIC LIMIT TESTS
MOISTURE CONTENTS

Project: VICKSBURG CHEMICAL
Client: VICKSBURG CHEMICAL
Boring No.: N/A Sample No.: D

Date: MAY 30, 1989
Lab No: 9555.4
Depth: N/A

	LIQUID LIMIT				PLASTIC LIMIT		
Run No.	1	2	3	4	5	6	7
Tare No.	290	291	292	293	294	295	
Tare plus wet soil (Weight in grams)	30.02	30.88	29.71	29.98	31.65	30.18	
Tare plus dry soil (Weight in grams)	26.13	26.86	26.04	26.31	28.81	27.59	
Water (Weight in grams)	3.89	4.02	3.67	3.67	2.84	2.59	
Tare (Weight in grams)	16.14	16.27	16.12	16.13	16.14	16.11	
Dry Soil (Weight in grams)	9.99	10.59	9.92	10.18	12.67	11.48	
Water content %	38.90	38.00	37.00	36.10	22.40	22.60	
Number of blows	15	22	27	35			



LL: 37

PL: 23

PI: 14

USCS Classification: CL

MOISTURE CONTENTS

Run No.	1	2	3	4	5	6	7
Tare No.							
Tare plus wet soil (Weight in grams)							
Tare plus dry soil (Weight in grams)							
Water (Weight in grams)							
Tare (Weight in grams)							
Dry Soil (Weight in grams)							
Water content %							
Sample No./Depth							

Remarks: BROWN SILTY CLAY
WEST SIDE SWCA BOTTOM

Technician: DOWS Computed by: BINGHAM Checked by:

DATE: 5/31/89 TECHNICIAN: E. DOSS
PROJECT NO.: 9555.3 CONTRACTOR/CLIENT:
PROJECT: VICKSBURG CHEMICAL

SOURCE OF SAMPLE: WEST SIDE SWCA BOTTOM SAMPLE D
DEPTH/ELEV:

REMARKS:

MATERIAL DESCRIPTION: BROWN SILTY-CLAY

USCS: AASHTO: SPECIFIC GRAVITY: (ACT/EST)

NATURAL MOISTURE: 32.0 %

TARE NO. 114 WT. WET= 185.84 WT. DRY= 149.98 WT. TARE= 37.87

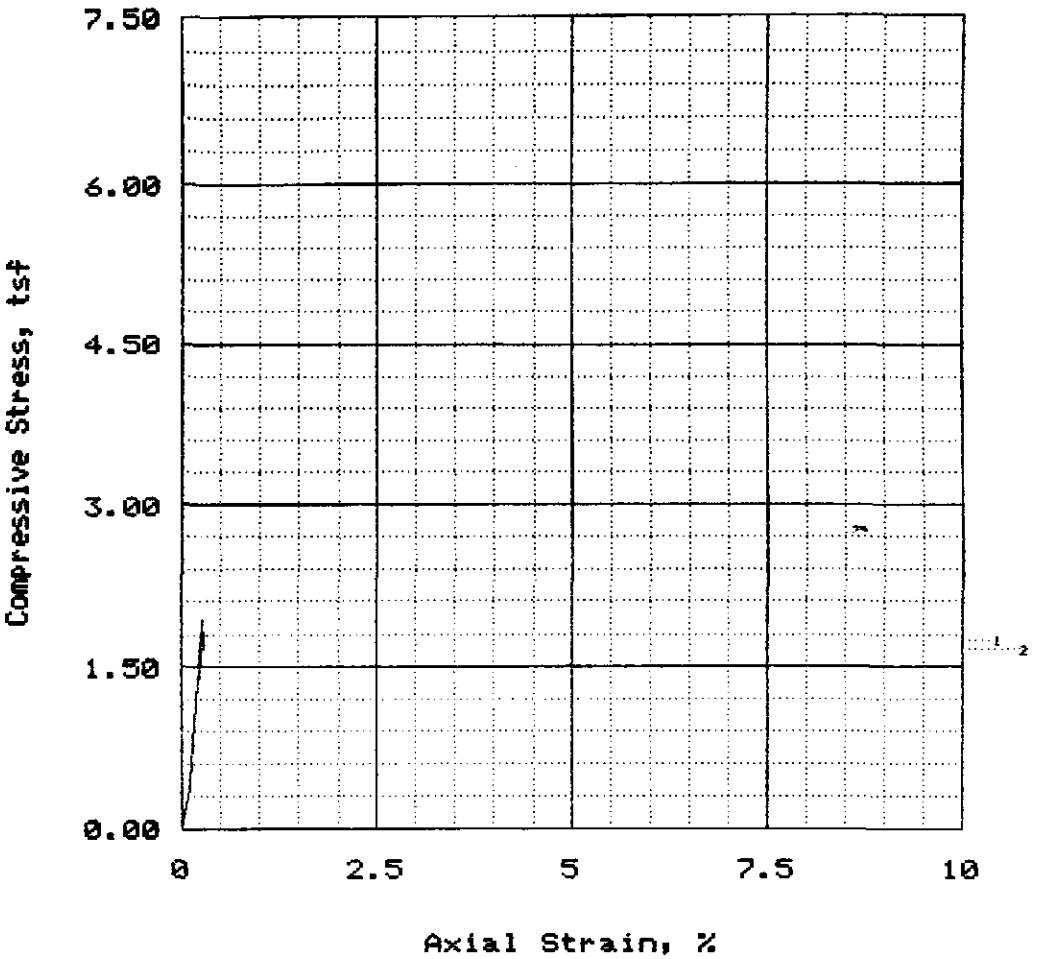
LIQUID LIMIT= 37 PLASTIC LIMIT= 23 % > # 4= % < # 200=

TYPE OF TEST: ✓ STANDARD MODIFIED METHOD: (A) B C D

TRIAL NO.	1		2		3	
MOISTURE TRIAL	1	2	1	2	1	2
WT. COMPACTED	6213		6265		6355	
WT. MOLD	4535		4535		4535	
TARE NO.	118	149	129	158	121	108
WT. WET	168.69	173.16	186.97	181.20	164.89	189.47
WT. DRY	154.15	158.23	168.12	163.17	146.34	167.39
TARE	38.02	39.03	38.00	38.03	37.45	37.94

TRIAL NO.	4		5		6	
MOISTURE TRIAL	1	2	1	2	1	2
WT. COMPACTED	6363		6350			
WT. MOLD	4535		4535			
TARE NO.	156	157	109	106		
WT. WET	179.26	188.00	171.24	177.37		
WT. DRY	156.48	163.82	148.10	153.12		
TARE	38.46	38.46	38.15	37.32		

UNCONFINED COMPRESSION TEST



Sample number:	1	2		
Unconfined strength, tsf	1.89	1.93		
Undrained shear strength, tsf	0.94	0.97		
Rate of strain, %/min				
Water content, %	18.6	18.7		
Void ratio	0.6767	0.7007		
Saturation, %	71.4	69.5		
Dry density, pcf	96.8	95.4		
Specimen diameter, cm	7.26	7.26		
Specimen height, cm	11.64	11.62		

Description: Gray clayey silt w/ 15% lime

LL = 34	PL = 5	PI = 29.0	GS = 2.60	Type: Remolded

Project No.: 101.2
Date: Mar 7, 1990
Remarks:
Technician: Harper
Failure: Shear

Client: Cedar Chemical Company

Project: Disposal area

Location: Proctor sample delivered by Miller Construction

Fig No.

UNCONFINED COMPRESSION TEST

GEE & STRICKLAND, INC.

UNCONFINED COMPRESSION TEST

3-08-1991

Project Data

Project No.: 101.2 Date: Mar 7, 1990 Data file: VERTAC1
Client: Cedar Chemical Company
Project: Disposal area
Sample location: Proctor sample delivered by Miller Construction
Sample description: Gray clayey silt w/ 15% lime
Remarks: Technician: Harper Failure: Shear
Fig No.

Sample No. 1 Data

Type of sample: Remolded
Specific Gravity= 2.60 LL= 34 PL= 5 PI= 29

Sample Parameters	Before Test		
Diameter, cm	7.26		
Height, cm	11.64	Weight, grams	886.1
Moisture, %	18.6		
Dry density, pcf	96.8		
Saturation, %	71.4		
Void ratio	0.677		

Test Data

Deformation dial constant= 0.001 cm per input unit
Primary load ring constant= 0.3175 lbs. per input unit
Secondary load ring constant= 0.55 lbs. per input unit
Crossover reading for secondary load ring= 467 input units

No.	Def. Dial Units	Def. cm	Load Dial Units	Load lbs.	Strain %	Deviator Stress tsf
0	0.0	0.000	0.0	0.0	0.0	0.00
1	10.0	0.010	119.0	37.8	0.1	0.42
2	15.0	0.015	227.0	72.1	0.1	0.81
3	20.0	0.020	322.0	102.2	0.2	1.15
4	25.0	0.025	417.0	132.4	0.2	1.48
5	30.0	0.030	504.0	168.6	0.3	1.89
6	32.0	0.032	481.0	156.0	0.3	1.75

UNCONFINED COMPRESSION TEST

3-08-1991

Project Data

Project No.: 101.2 Date: Mar 7, 1990 Data file: VERTAC1
Client: Cedar Chemical Company
Project: Disposal area
Sample location: Proctor sample delivered by Miller Construction
Sample description: Gray clayey silt w/ 15% lime
Remarks: Technician: Harper Failure: Shear
Fig No.

Sample No. 2 Data

Type of sample: Remolded
Specific Gravity= 2.60 LL= 34 PL= 5 PI= 29

Sample Parameters	Before Test		
Diameter, cm	7.26		
Height, cm	11.62	Weight, grams	673.2
Moisture, %	18.7		
Dry density, pcf	95.4		
Saturation, %	69.5		
Void ratio	0.701		

Test Data

Deformation dial constant= 0.001 cm per input unit
Primary load ring constant= 0.3175 lbs. per input unit
Secondary load ring constant= 0.55 lbs. per input unit
Crossover reading for secondary load ring= 467 input units

No.	Def. Dial Units	Def. cm	Load Dial Units	Load lbs.	Strain %	Deviator Stress tsf
0	0.0	0.000	0.0	0.0	0.0	0.00
1	10.0	0.010	117.0	37.1	0.1	0.42
2	15.0	0.015	221.0	70.2	0.1	0.79
3	20.0	0.020	327.0	103.8	0.2	1.16
4	25.0	0.025	404.0	128.3	0.2	1.44
5	30.0	0.030	511.0	172.5	0.3	1.93
6	33.0	0.033	467.0	148.3	0.3	1.66

GEE & STRICKLAND, INC.

RECEIVED OCT 3 0 1990

LOUIS J. CAPOZZOLI & ASSOCIATES, INC. Geotechnical Engineers

Dr. Louis J. Capozzoli, P.E.
Charles W. Hair, III, P.E.
James M. Aronstein, Jr., P.E.
Randal D. Sanders, P.E.
Charles L. Eustis, P.E.

DATE	OUR JOB NO.
10/29/90	87-139

ATTENTION: Mr. Laique Haider

RE: Project No. 435425
P. O. No. 054190
Samples P5273 & P5274
Cedar Chemical Company

TO

I. T. Corporation
1150 LeBlanc Road
Port Allen, Louisiana 70767

GENTLEMEN:

WE ARE SENDING YOU [X] Attached [ ] Under separate cover via _____ the following items:

[ ] Engineering Reports [ ] Prints [ ] Calculations [ ] Boring Logs [ ] Specifications
[ ] Field Reports [X] Laboratory Analyses [ ] Density Tests [ ] _____

DATE	NO. COPIES	DWG. NO.	DESCRIPTION
29 Oct	1	Figure 1	Standard Proctor Compaction Test Results
29 Oct	1	Figure 2	Standard Proctor Compaction Test Results
29 Oct	3	---	Statement

THESE ARE TRANSMITTED as checked below:

[ ] For your use [ ] For approval [X] As requested
[ ] For review and comment [ ] _____

REMARKS _____

TO _____

SIGNED: Mr. Michael J. Kohn

If enclosures are not as noted, kindly notify us at once.

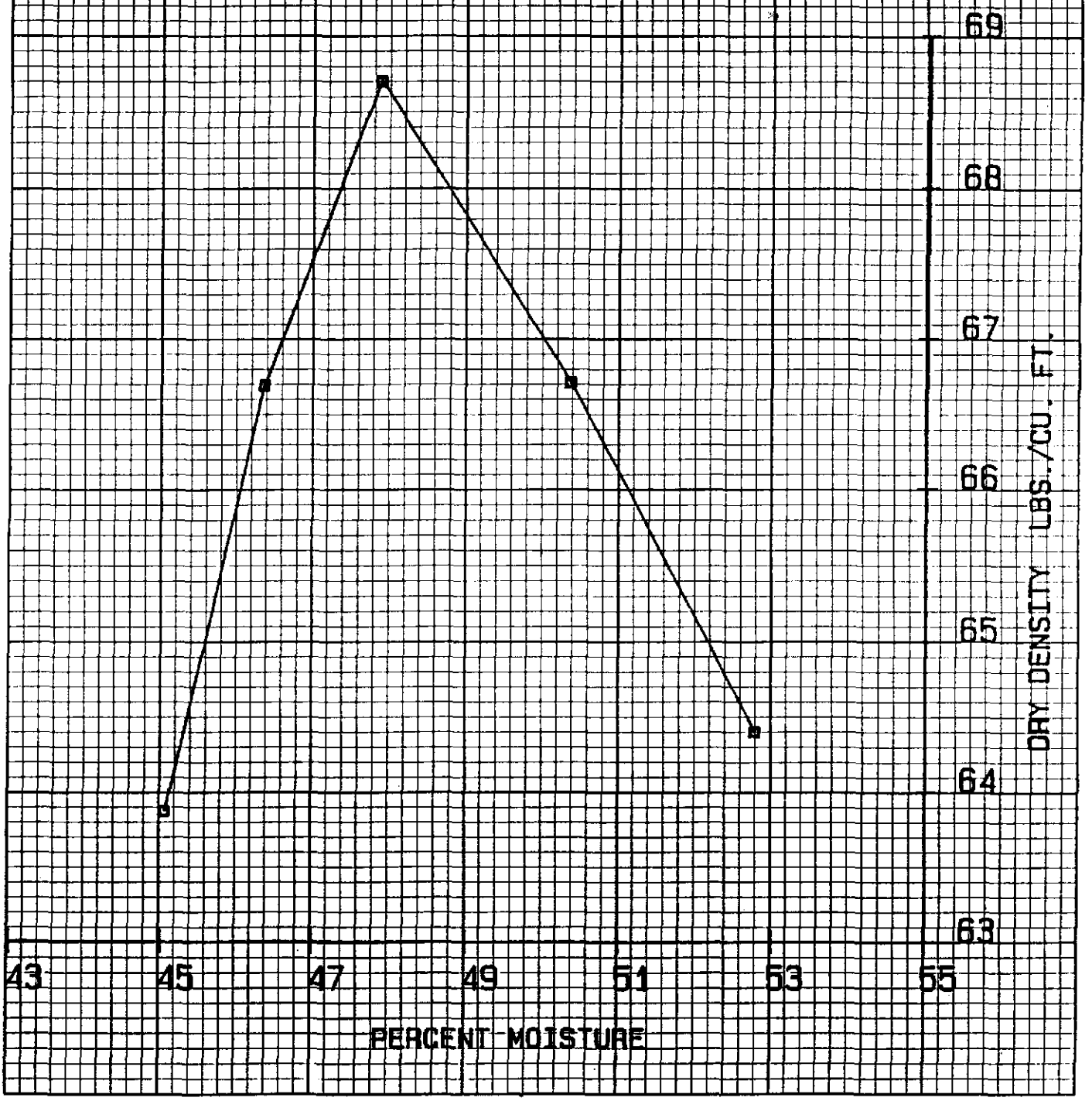
10555 AIRLINE HIGHWAY, BATON ROUGE, LOUISIANA 70816, TELEPHONE (504) 293-2460

250CT90 FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 87-139

TYPE MATERIAL - SAMPLE P5273

MAX. DRY DENSITY - 68.7 LBS./CU. FT.
OPTIMUM MOISTURE - 47.8 PERCENT

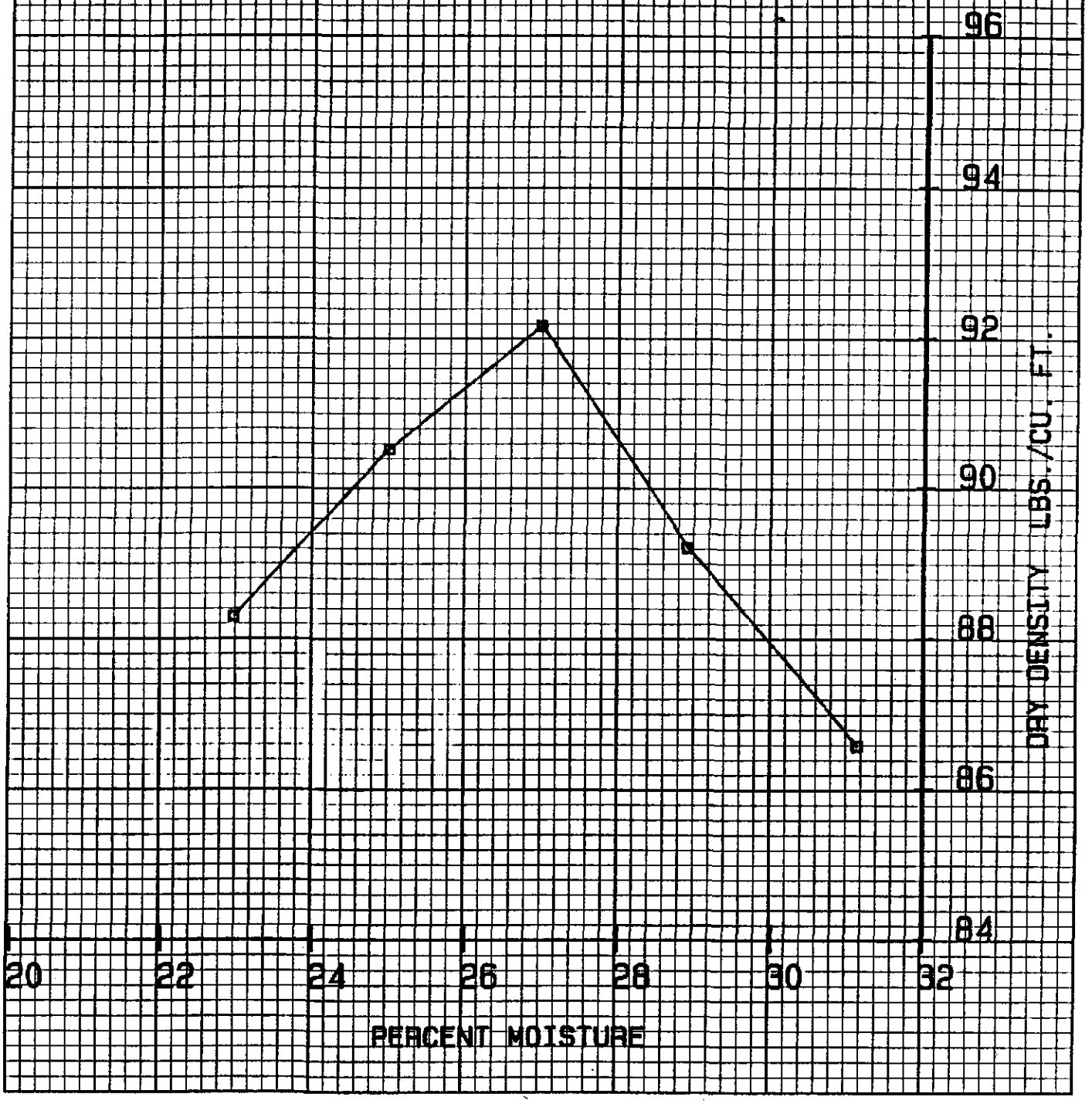


250CT90 FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 87-139

TYPE MATERIAL - SAMPLE P5274

MAX. DRY DENSITY - 92.2 LBS./CU. FT.
OPTIMUM MOISTURE - 27.0 PERCENT



RECEIVED NOV 0 7 1990

LOUIS J. CAPOZZOLI & ASSOCIATES, INC. Geotechnical Engineers

Dr. Louis J. Capozzoli, P.E.
Charles W. Hair, III, P.E.
James M. Aronstein, Jr., P.E.
Randal D. Sanders, P.E.
Charles L. Eustis, P.E.

DATE	OUR JOB NO.
6 November 1990	87-139

ATTENTION Mr. Hewitt Beauvais

RE Project No. 435425
P. O. No. 435425
Sample No. P5275
Cedar Chemical Company

TO

I. T. Corporation
1150 LeBlanc Road
Port Allen, Louisiana 70767

GENTLEMEN:

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

☐ Engineering Reports ☐ Prints ☐ Calculations ☐ Boring Logs ☐ Specifications
☐ Field Reports ☒ Laboratory Analyses ☐ Density Tests ☐ _____

DATE	NO. COPIES	DWG. NO.	DESCRIPTION
6 Nov	1	Figure 1	Standard Proctor Compaction Test result
6 Nov	3		Statement
1990			

THESE ARE TRANSMITTED as checked below:

☐ For your use ☐ For approval ☒ As requested
☐ For review and comment ☐ _____

REMARKS _____

Y TO _____

SIGNED: Michael J. Kohn

If enclosures are not as noted, kindly notify us at once.

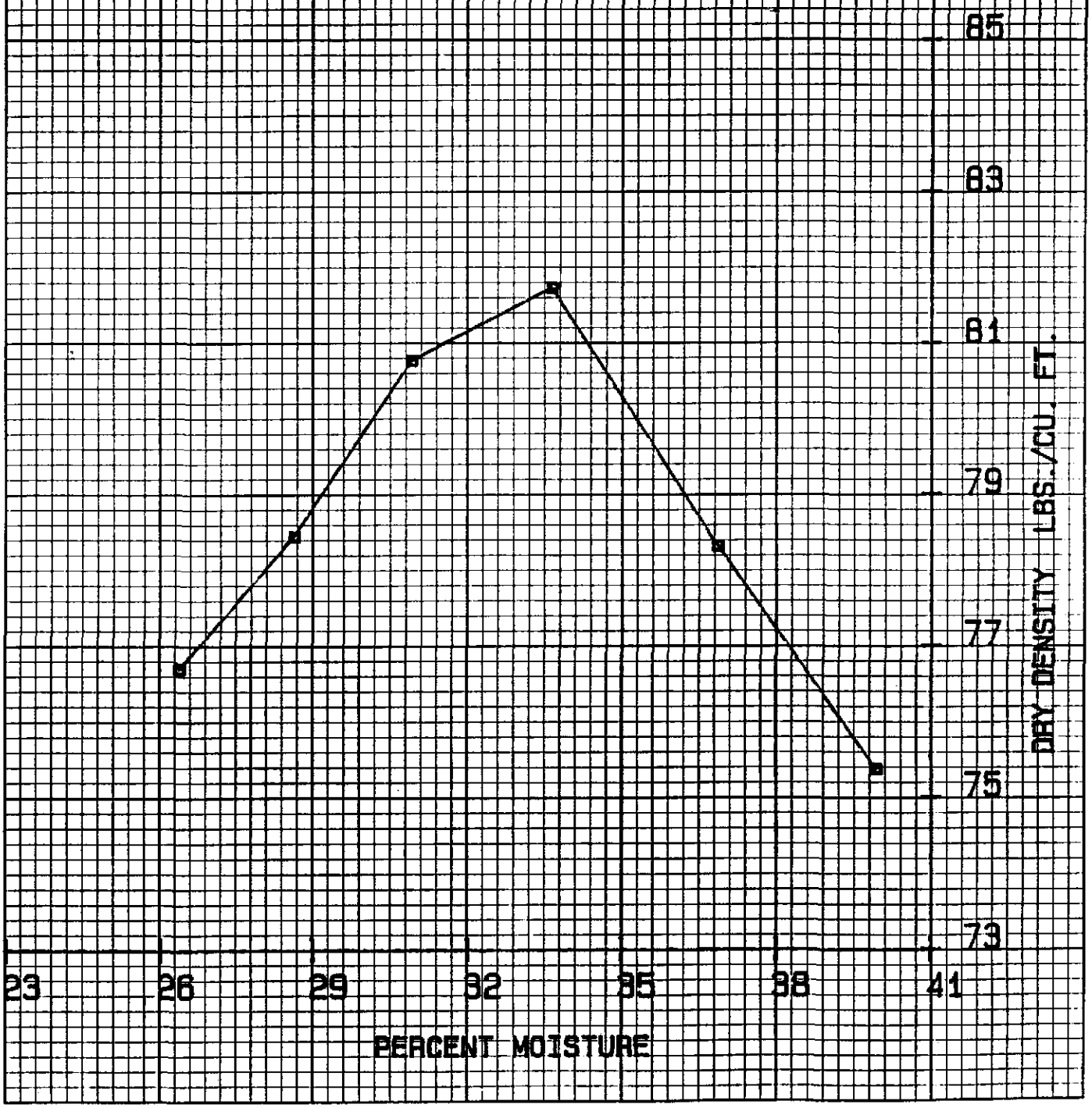
10555 AIRLINE HIGHWAY, BATON ROUGE, LOUISIANA 70816, TELEPHONE (504) 293-2460

02-NOV-90 FIGURE. 1

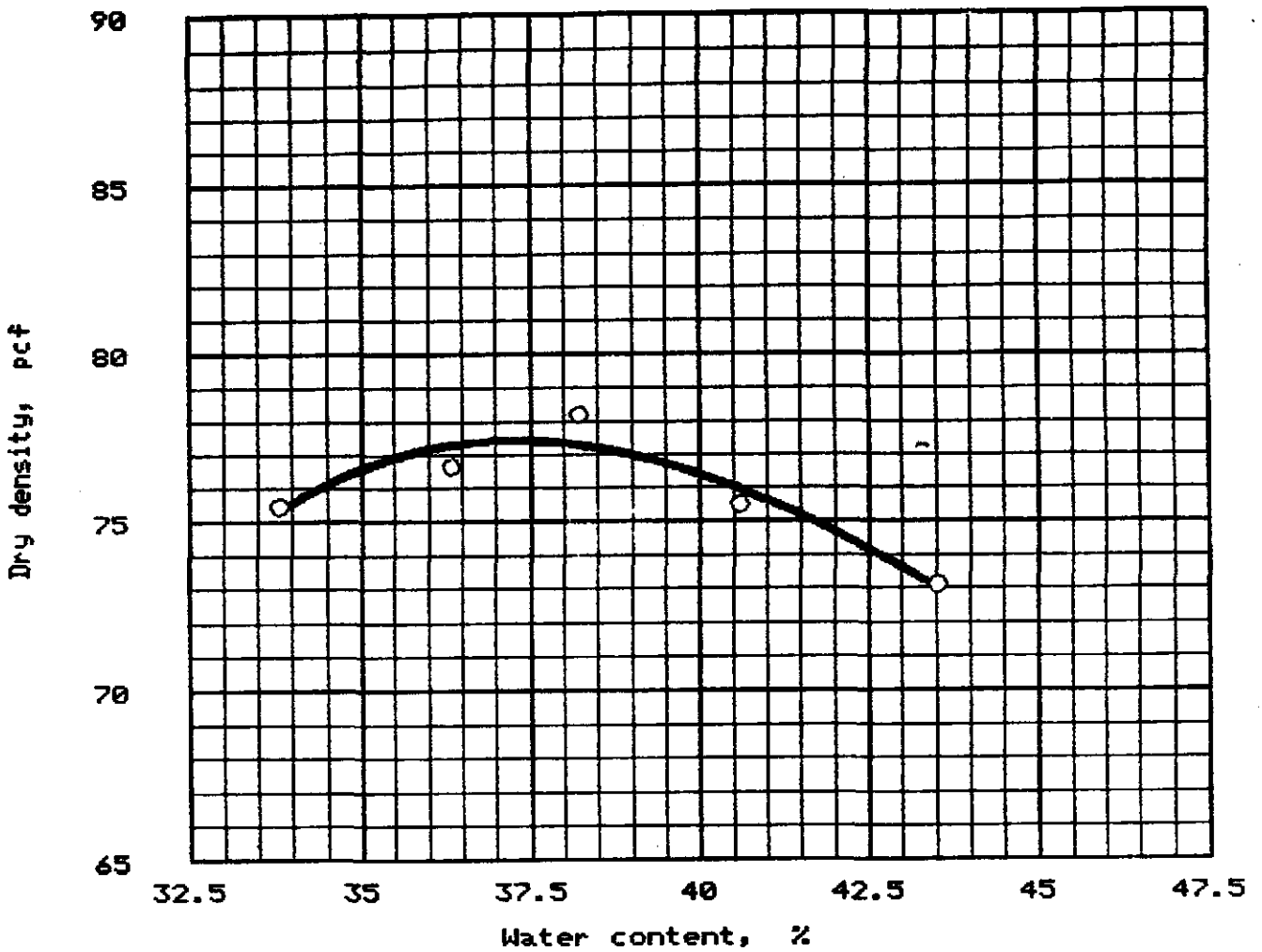
STANDARD PROCTOR COMPACTION TEST
FILE NO. 87-139

TYPE MATERIAL - SAMPLE P5275 (SLUDGE)

MAX. DRY DENSITY - 81.7 LBS./CU. FT.
OPTIMUM MOISTURE - 33.6 PERCENT



PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	44.7 %		56	44		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 37.3 % Maximum dry density = 77.4 pcf	Brown silty clay w/ lime

Contractor: Lewis Miller Construction

Project: Cedar Chemical Ponds

Location: On site material
SAMPLE # P5276

Project No.: 0187.2 Date: Nov 20, 1990

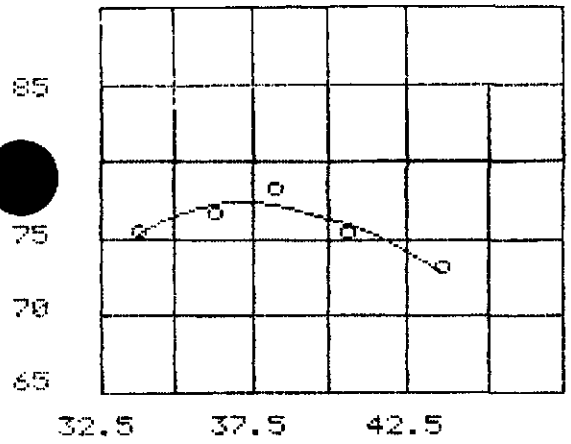
Remarks:

Technician: Doss

PROCTOR TEST REPORT

GEE & STRICKLAND, INC.

Figure No._____



Project No.: 0187.2
Project: Cedar Chemical Ponds

POINT NO.	1	2	3	4	5
WM + WS	6057.0	6110.0	6164.0	6135.0	6117.0
WM	4530.0	4530.0	4530.0	4530.0	4530.0
WW+T #1	154.42	170.50	165.76	164.97	154.70
WD+T #1	125.00	135.21	130.59	129.18	119.38
WT #1	38.06	38.15	38.33	37.87	38.13
MOIST #1	33.8	36.4	38.1	40.7	43.5
WW+T #2	179.51	163.40	176.85	167.56	148.59
WD+T #2	143.78	129.96	138.40	130.26	115.03
WT #2	38.00	37.85	38.04	38.03	38.03
MOIST #2	33.8	36.3	38.3	40.4	43.6
MOISTURE	33.8	36.3	38.2	40.6	43.5
DRY DEN	75.5	76.7	78.2	75.5	73.1

Max dry den= 77.4 pcf Opt moisture= 37.3 %

LOUIS J. CAPOZZOLI & ASSOCIATES, INC. Geotechnical Engineers

Dr. Louis J. Capozzoli, P.E.
Charles W. Hair, III, P.E.
James M. Aronstein, Jr., P.E.
Randal D. Sanders, P.E.
Charles L. Eustis, P.E.

DATE 30 January 1991	OUR JOB NO. 87-139
ATTENTION Mr. Stan Campbell	
RE: Project No. 435425	
P.O. No. N/A	
Sample No. P5276	
Cedar Chemical Company	

TO

I. T. Corporation

1150 LeBlanc Road

Port Allen, Louisiana 70767

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☐ Engineering Reports ☐ Prints ☐ Calculations ☐ Boring Logs ☐ Specifications

☐ Field Reports ☒ Laboratory Analyses ☐ Density Tests ☐ _____

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30 Jan	1	Table 1	Laboratory Data
30 Jan	3	---	Statement
1991			

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REMARKS _____

C[illegible] TO _____

SIGNED: Michael J. Kohn

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10555 AIRLINE HIGHWAY, BATON ROUGE, LOUISIANA 70816, TELEPHONE (504) 293-2460

I.T. PROJ. NO. 435425 LABORATORY DATA TABLE 1 FILE NO.: 87-139 TANGENT ALPHA = SINE PHI

SAMPLE NO.	DEPTH FEET	MOIST %	DEN-PCF WET	DEN-PCF DRY	ATTERBERG LIMITS LL	PL	PI	TSF	COMPRESSION TEST % STRAIN	PRESSURE-KSF START	FAIL	TYPE FAILURE	OTHER	ALPHA
P5276		33	111.4	83.8				0.30	10	0.43		YIELD	QU	.22

LOUIS J. CAPOZZOLI & ASSOCIATES, INC. Geotechnical Engineers

Dr. Louis J. Capozzoli, P.E.
Charles W. Hair, III, P.E.
James M. Aronstein, Jr., P.E.
Randal D. Sanders, P.E.
Charles L. Eustis, P.E.

DATE 13 March 1991	OUR JOB NO. 91-15
ATTENTION Mr. Laique Haider	
RE Project No. 435425	
P.O. No. 014028	
Samples P5280 & P5281	
Cedar Chemical Company	

TO

I. T. Corporation

1150 LeBlanc Road

Port Allen, Louisiana 70767

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[ ] Field Reports [X] Laboratory Analyses [ ] Density Tests [ ] _____

DATE	NO. COPIES	DWG. NO.	DESCRIPTION
13 Mar	1	Figure 1	Standard Proctor Compaction Test Results
13 Mar	1	Figure 2	Standard Proctor Compaction Test Results
13 Mar	3		Statement
1991			

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SIGNED: Michael J. Kohn

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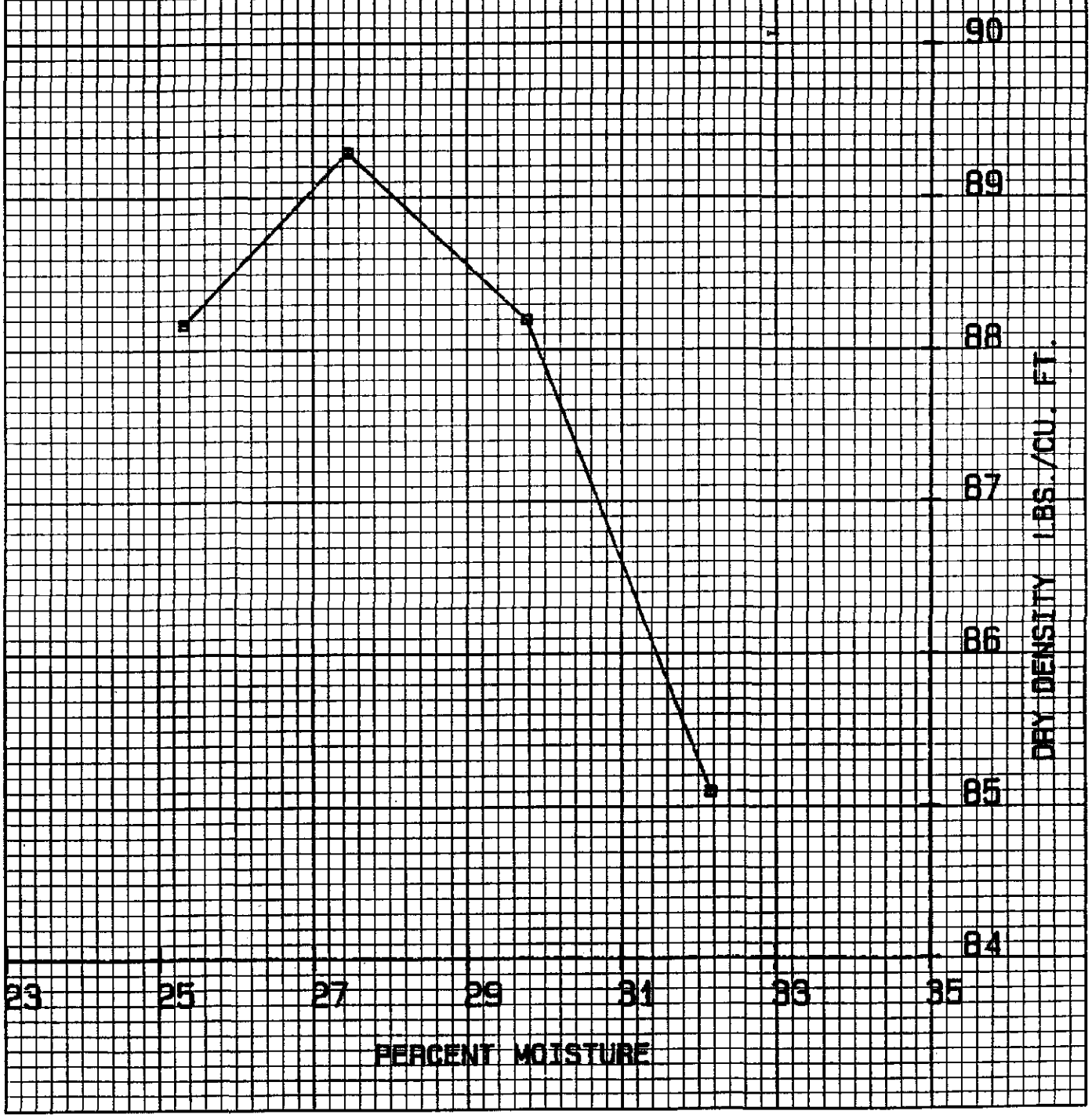
12MAR91

FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5280

MAX. DRY DENSITY - 89.3 LBS./CU. FT.
OPTIMUM MOISTURE - 27.4 PERCENT

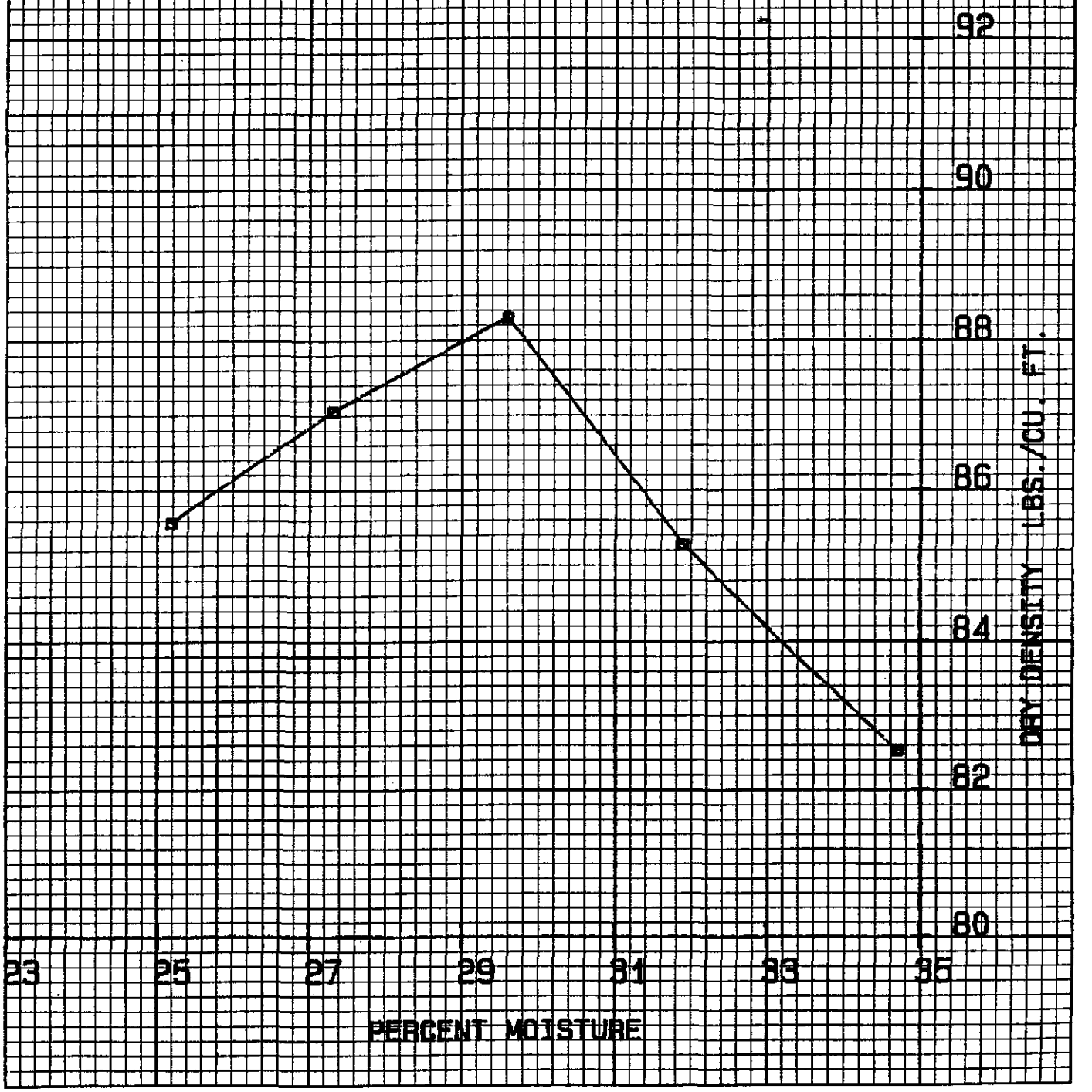


12MAR91 FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5281

MAX. DRY DENSITY - 88.3 LBS./CU. FT.
OPTIMUM MOISTURE - 29.6 PERCENT



LOUIS J. CAPOZZOLI & ASSOCIATES, INC. Geotechnical Engineers

Dr. Louis J. Capozzoli, PE.
Charles W. Hale, III, PE.
James M. Arvanitis, Jr., PE.
Ronald D. Sanders, PE.
Charles L. Smith, PE.

DATE: 22 MAR 91

TO FAX NO.: (504) 339-1600

NUMBER OF PAGES: 3 (INCLUDES TRANSMITTAL SHEET)

TO: MR. LAIQUE HAIDER

COMPANY: I.T. CORP

FROM: Michael J. Kohn

LJC&A FILE NO.:

SUBJECT: Project No. 435-425
CEDAR CHEMICAL CO.
STANDARD PROCTOR & SIEVE ANALYSIS RESULTS

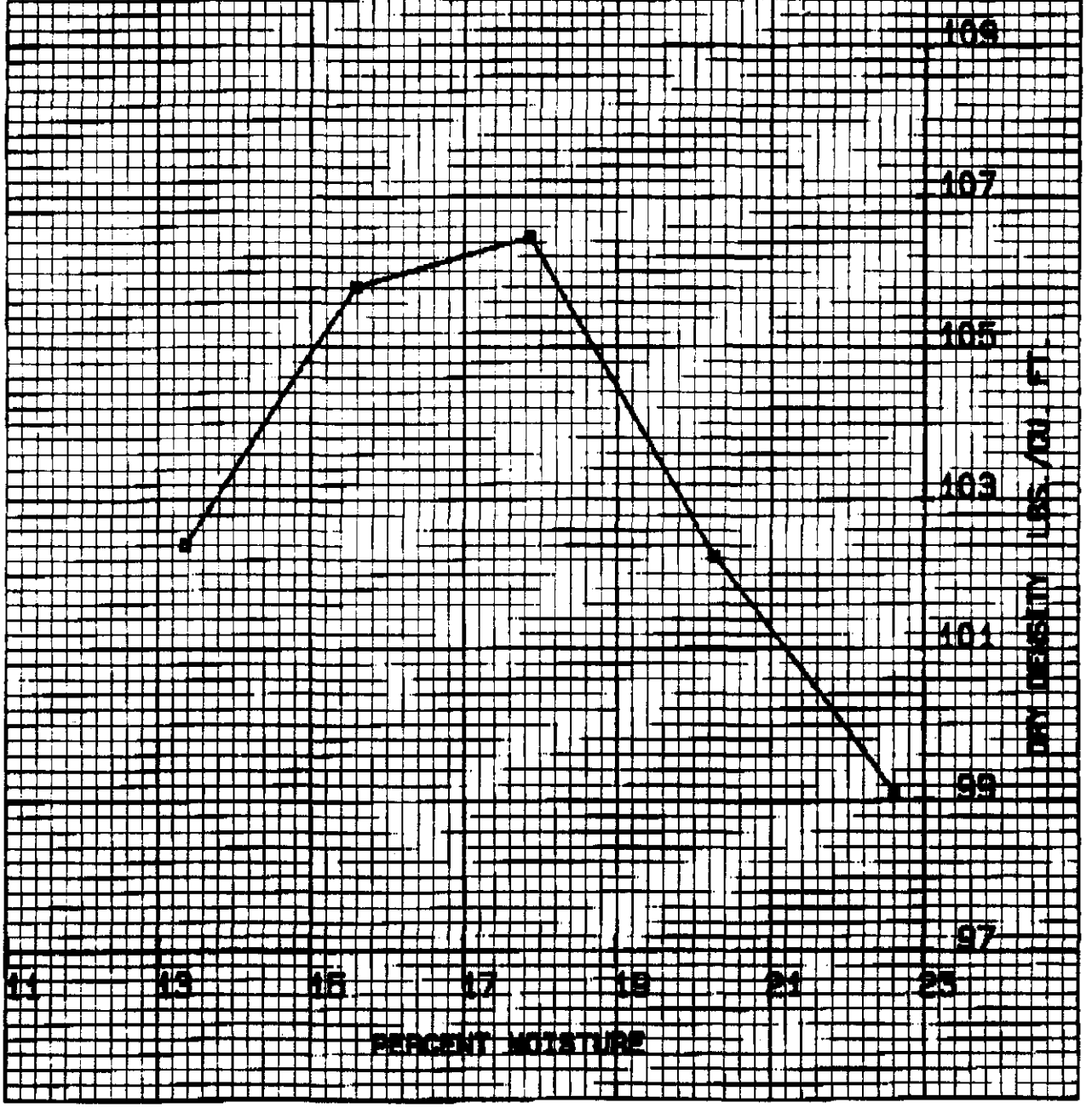
FAX # 293-2463
10355 AIRLINE HIGHWAY, BATON ROUGE, LOUISIANA 70816, TELEPHONE (504) 293-2460

FIGURE 3

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5282

MAX. DRY DENSITY - 108.5 LBS./CU. FT.
OPTIMUM MOISTURE - 17.9 PERCENT



FILE NO. 91-015 FIGURE NO. 3

TYPE MATERIAL: SAMPLE P5282 LL: 0 PL: 0 PI: 0

X	Y	% PASSING #200 SIEVE
13.36	102.42	99.5
15.58	105.83	
17.86	106.47	
20.27	102.25	
22.62	99.10	

MAR-22-'91 FRI 09:54 ID:CAPOZZOLI & ASSOC. TEL NO:504 293 2463 #297 P03

RECEIVED MAR 2 8 1991

LOUIS J. CAPOZZOLI & ASSOCIATES, INC. Geotechnical Engineers

Dr. Louis J. Capozzoli, P.E.
Charles W. Hair, III, P.E.
James M. Aronstein, Jr., P.E.
Randal D. Sanders, P.E.
Charles L. Eustis, P.E.

DATE	OUR JOB NO.
26 March 1991	91-15

ATTENTION Mr. Laique Haider

RE: Project No. 435425
P. O. No. 014028
Sample No. P5282
Cedar Chemical Company

TO

I. T. Corporation
1150 LeBlanc Road
Port Allen, Louisiana 70767

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[ ] Field Reports [x] Laboratory Analyses [ ] Density Tests [ ] _____

DATE	NO. COPIES	DWG. NO.	DESCRIPTION
26 Mar	1	Fig. 3	Standard Proctor Compaction Test Results
26 Mar	1	Table 1	Data Table
26 Mar	3	---	Statement

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[ ] For review and comment [ ] _____

REMARKS Results transmitted via fax on 22 March 1991.

TO _____

SIGNED: Michael J. Kohn

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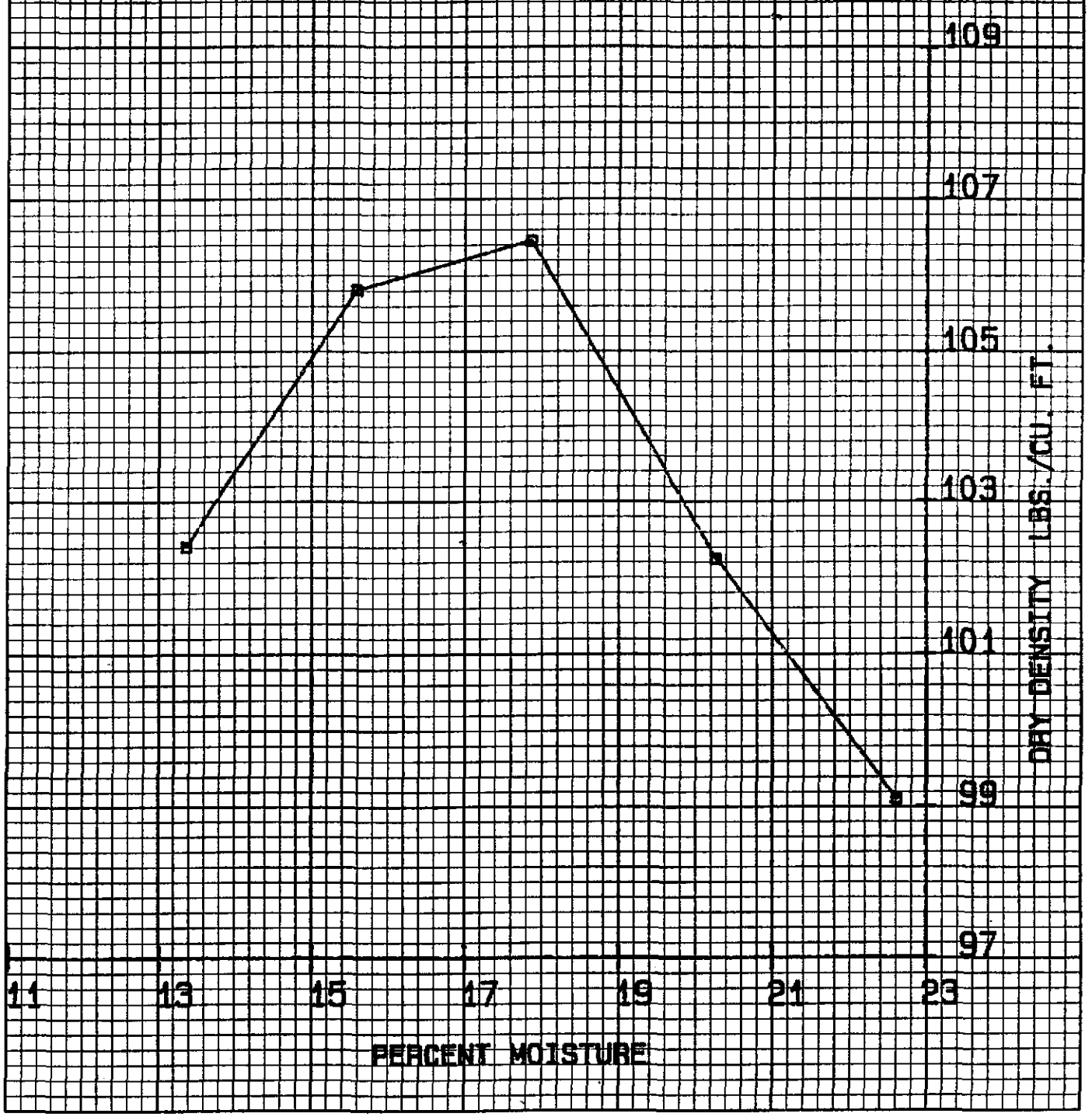
10555 AIRLINE HIGHWAY, BATON ROUGE, LOUISIANA 70816, TELEPHONE (504) 293-2460

21MAR91 FIGURE 3

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5282

MAX. DRY DENSITY - 106.5 LBS./CU. FT.
OPTIMUM MOISTURE - 17.9 PERCENT



FILE NO. 71-013 FIGURE NO. 3

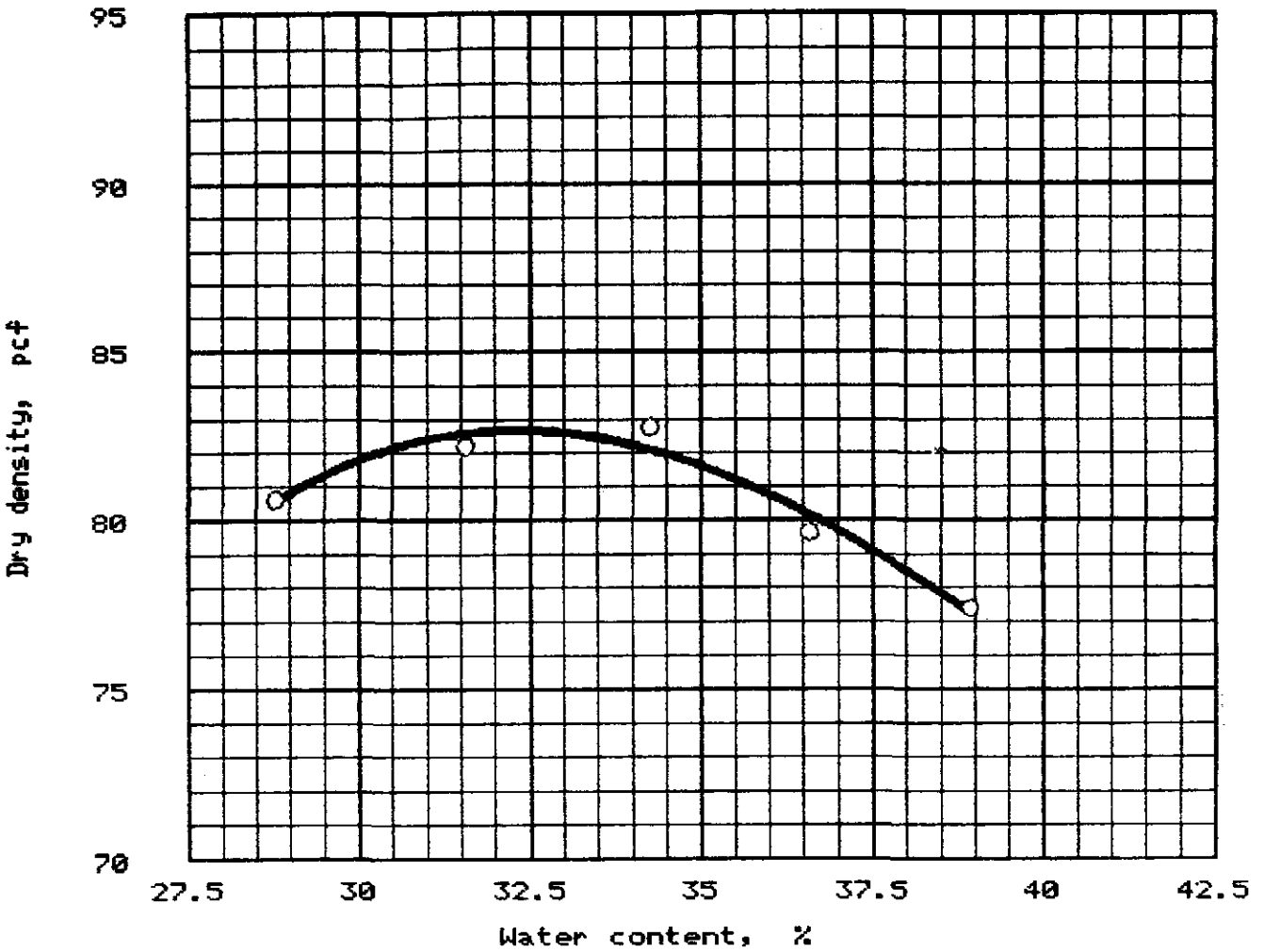
DATA TABLE 1

TYPE MATERIAL: SAMPLE P5282

LL: Ø PL: Ø PI: Ø

X	Y	% PASSING #200 SIEVE
13.36	102.42	99.5
15.58	105.83	
17.86	106.47	
20.27	102.25	
22.62	99.10	

PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

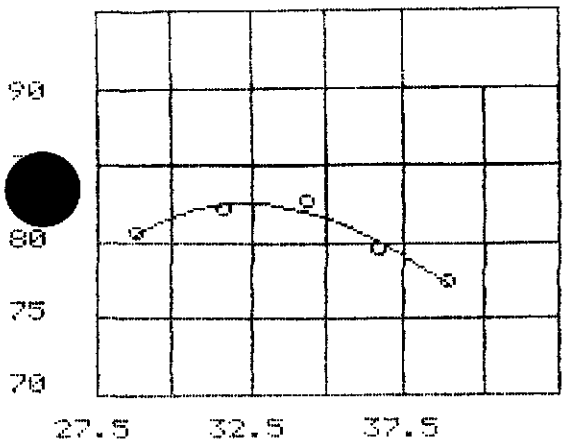
Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____



Project No.: 0101.5
Project: Cedar Chemical Waste Pond

POINT NO.	1	2	3	4	5
WM + WS	6100.0	6165.0	6210.0	6175.0	6156.0
WM	4530.0	4530.0	4530.0	4530.0	4530.0
WW+T #1	172.07	185.20	189.56	180.35	177.03
WD+T #1	142.22	150.11	151.20	142.13	138.10
WT #1	38.43	38.41	38.99	37.84	38.01
MOIST #1	28.8	31.4	34.2	36.6	38.9
WW+T #2	184.25	183.37	188.20	181.74	193.37
WD+T #2	151.56	148.70	149.73	143.23	149.96
WT #2	38.00	39.31	37.67	37.81	38.49
MOIST #2	28.8	31.7	34.3	36.5	38.9
MOISTURE	28.8	31.6	34.3	36.6	38.9
DRY DEN	80.6	82.2	82.8	79.7	77.4

Max dry den= 82.7 pcf Opt moisture= 32.3 %

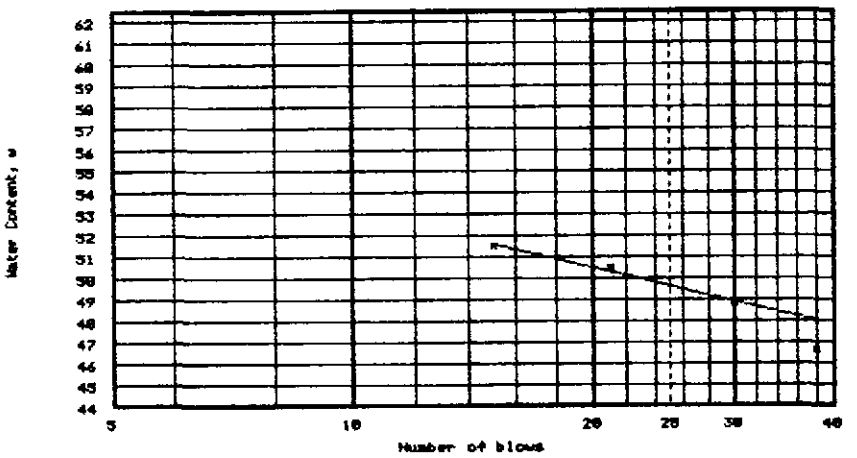
1 OPENWOOD PLAZA - 1104 OPENWOOD STREET
VICKSBURG, MS 39180
PHONE (601)636-7831

LIQUID AND PLASTIC LIMIT TESTS
MOISTURE CONTENTS

Project: Cedar Chemical
Client: IT Corporation
Boring No.: n/a Sample No.: n/a

Date: July 12, 1991
Lab No: 1101.5
Depth: n/a

		LIQUID LIMIT				PLASTIC LIMIT		
Run No.		1	2	3	4	5	6	7
Tare No.		200	201	202	203	204	205	
Weight in grams	Tare plus wet soil	27.62	27.75	27.93	27.70	27.34	27.41	
	Tare plus dry soil	23.55	23.70	23.85	23.81	24.23	24.20	
	Water W_w	4.07	4.05	4.08	3.89	3.11	3.21	
	Tare	15.64	15.68	15.49	15.46	15.69	15.57	
	Dry Soil W_s	7.91	8.02	8.36	8.35	8.54	8.63	
Water content w		51.50	50.50	48.80	46.60	36.40	37.20	
Number of blows		15	21	30	38			



LL: 50

PL: 37

PI: 13

USCS Classification:
ML

MOISTURE CONTENTS

		1	2	3	4	5	6	7
Run No.								
Tare No.								
Weight in grams	Tare plus wet soil							
	Tare plus dry soil							
	Water W_w							
	Tare							
	Dry Soil W_s							
Water content w								
Sample No./Depth								

Remarks: Brown silty clay w/ chemicals
Contractor: Lewis Miller

Technician: Dose Computed by: Geo Checked by:

GEE & STRICKLAND, INC.
2 OPENWOOD PLAZA - 1104 OPENWOOD STREET
VICKSBURG, MS 39180
PHONE 636-7831

LIQUID AND PLASTIC LIMIT TESTS

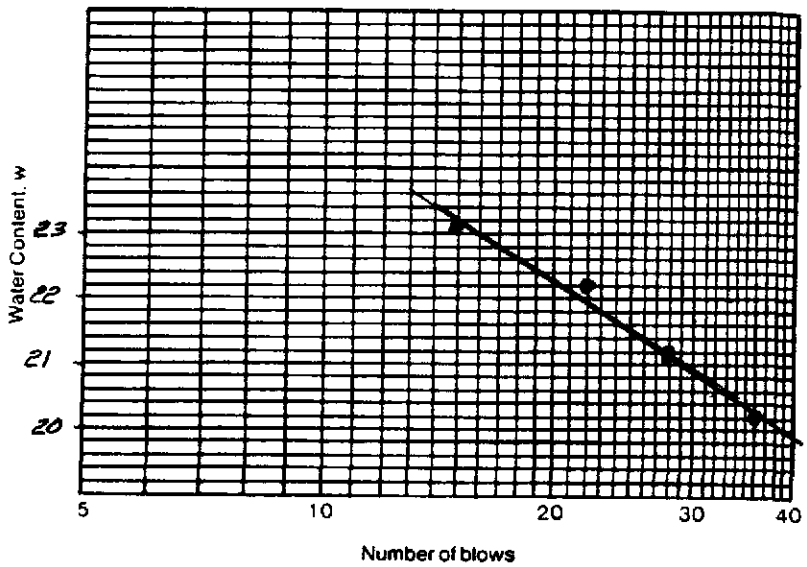
MOISTURE CONTENTS

Date Aug. 5, 1990

Project CEDAR CHEMICAL Co. #610 LIMESTONE

~~Boring No.~~ BROUGHT IN BY CONTRACTOR Sample No. P5308

LIQUID LIMIT						PLASTIC LIMIT	
Run No.		1	2	3	4	5	6
Tare No.		200	201	202	203	204	205
Weight in grams: Tare plus wet soil		26.29	28.08	27.00	27.62	27.20	27.52
Tare plus dry soil		24.29	25.83	24.99	25.58	25.44	25.69
Water	W_W	2.00	2.25	2.01	2.04	1.76	1.83
Tare		15.64	15.68	15.49	15.46	15.69	15.57
Dry Soil	W_S	8.65	10.15	9.50	10.12	9.75	10.12
Water Content	w	23.1	22.2	21.2	20.2	18.1	18.1
Number of blows		15	22	28	36		



LL 22

PL 18

PI 4

Symbol from plasticity chart ML

MOISTURE CONTENT

Run No.		1	2	3	4	5	6
Tare No.							
Weight in grams: Tare plus wet soil							
Tare plus dry soil							
Water	W_W						
Tare							
Dry Soil	W_S						
Water content	w						
Sample No. · Depth							

Remarks -40 MATERIAL FROM #610 LIMESTONE

Technician E. [illegible] Computed by _____ Checked by _____

SOUTHERN ___ VICKSBURG

GEE & STRICKLAND, INC.

Consulting Engineers & Surveyors
Materials Testing

2 OPENWOOD PLAZA 1104 OPENWOOD STREET
VICKSBURG, MISSISSIPPI 39180
601-636-7831

PROJECT: CEDAR CHEMICAL Co.

Date AUGUST 5, 1991

Lab No.

Source of Sample: #610 LIMESTONE, PS308
BROUGHT IN BY CONTRACTOR

Contractor BILLY FREY / BLAINE JOHNSON

Before Test Weight: 3414

Reported To:

Test By: E. Ross 257.6 BEFORE WASHED

Sieve Size	Size of Opening	Ret.	Pass.	Specs.	Sieve Size	Size of Opening	Ret.	Pass.	Specs.
2"	2.000"				3/8"*	0.375"			
1 1/2"*	1.500"	0	100	100	No. 4*	0.187"			
1"	1.060"	0	100		No. 8*	0.0937"			
3/4"*	0.750"	58	98	50-100	No. 10*	0.0787	259	18	
1/2"	0.500"	955	72		No. 16*	0.0469"	89.1	13	
3/8"*	0.375"	1415	59		No. 30*	0.0232"	143.1	9	
No. 4*	0.187"	2197	36	25-65	No. 40*	0.0165"	161.7	8	10-32
No. 8*	0.0937"	2727	20		No. 50*	0.0117"	173.2	7	
No. 16*	0.0469"				No. 60*	0.0098"	178.8	6	
F. M.					No. 100*	0.0059"	191.6	5	
Spg.					No. 200*	0.0029"	200.0	4	3-12
Wt.					PAN				
S. Vol.									
Voids									

CONCRETE MIX DESIGN DATA

Required Stgth. _____ Slump. In. _____ Admix. _____

Cement Factor _____ W/C Ratio _____ S/G Ratio _____

S. S. D. Mix Sk. Yd By Wt.		Field Mix	Absolute Volume Mix Cu. Yd.
Cement			
F. A.			
C. A.			
Water			
Air			
Total			

Lab. Cyl. _____

Note _____

GEE & STRICKLAND, INC.

CONCRETE AGG REPORT

RECEIVED SEP 0 5 1991

LOUIS J. CAPOZZOLI & ASSOCIATES, INC. Geotechnical Engineers

Dr. Louis J. Capozzoli, P.E.
Charles W. Hair, III, P.E.
James M. Aronstein, Jr., P.E.
Randal D. Sanders, P.E.
Charles L. Eustis, P.E.

DATE 3 September 91	OUR JOB NO. 91-15
ATTENTION Mr. Blaine Johnson	
RE Project No. 435425	
P. O. No. T-045600	
Cedar Chemical Co.	

TO

I.T. Corporation
1150 LeBlanc Road
Port Allen, Louisiana 70767

GENTLEMEN:

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☐ Engineering Reports ☐ Prints ☐ Calculations ☐ Boring Logs ☐ Specifications
☐ Field Reports ☒ Laboratory Analyses ☐ Density Tests ☐ _____

DATE	NO. COPIES	DWG. NO.	DESCRIPTION
3 Sept	1	Figure 1	Standard Proctor Compaction Test Results
3 Sept	1	Figure 2	Standard Proctor Compaction Test Results
3 Sept	1	Figure 3	Standard Proctor Compaction Test Results
3 [illegible]t	1	Table 1	Falling Head Permeability Test Results
3 [illegible]pt	1	Table 2	Laboratory Data (Compaction Test)
3 Sept	1	Table 3	Laboratory Data (Misc. Testing)
31 Aug	3	--	Invoice
1991			

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REMARKS _____

TO _____

SIGNED: Michael J. Kohn

If enclosures are not as noted, kindly notify us at once.

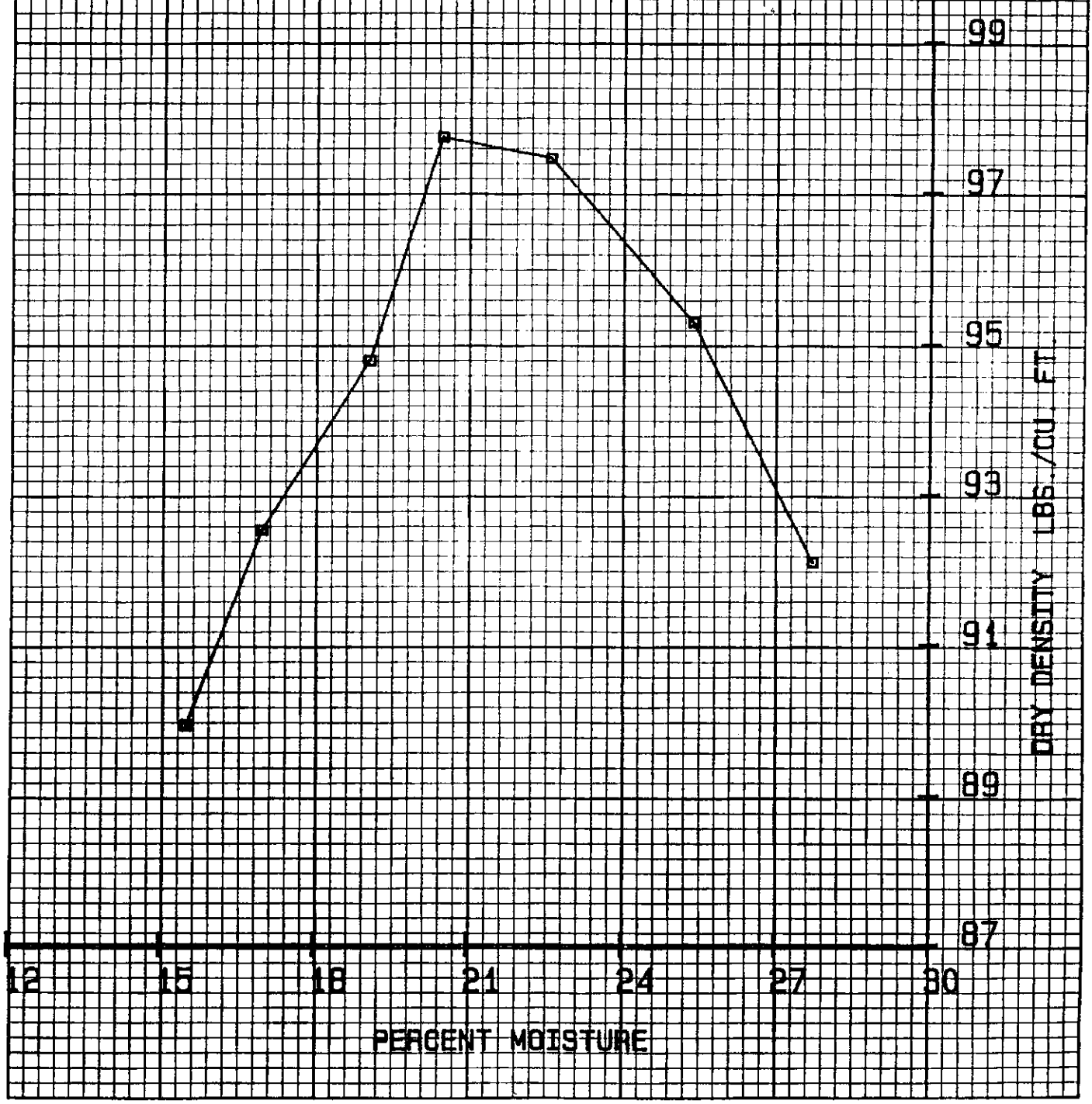
10555 AIRLINE HIGHWAY, BATON ROUGE, LOUISIANA 70816, TELEPHONE (504) 293-2460

27-AUG-91 FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5309 (CH)

LL - 69 MAX. DRY DENSITY - 97.7 LBS./CU. FT.
PL - 28 OPTIMUM MOISTURE - 20.5 PERCENT
PI - 41



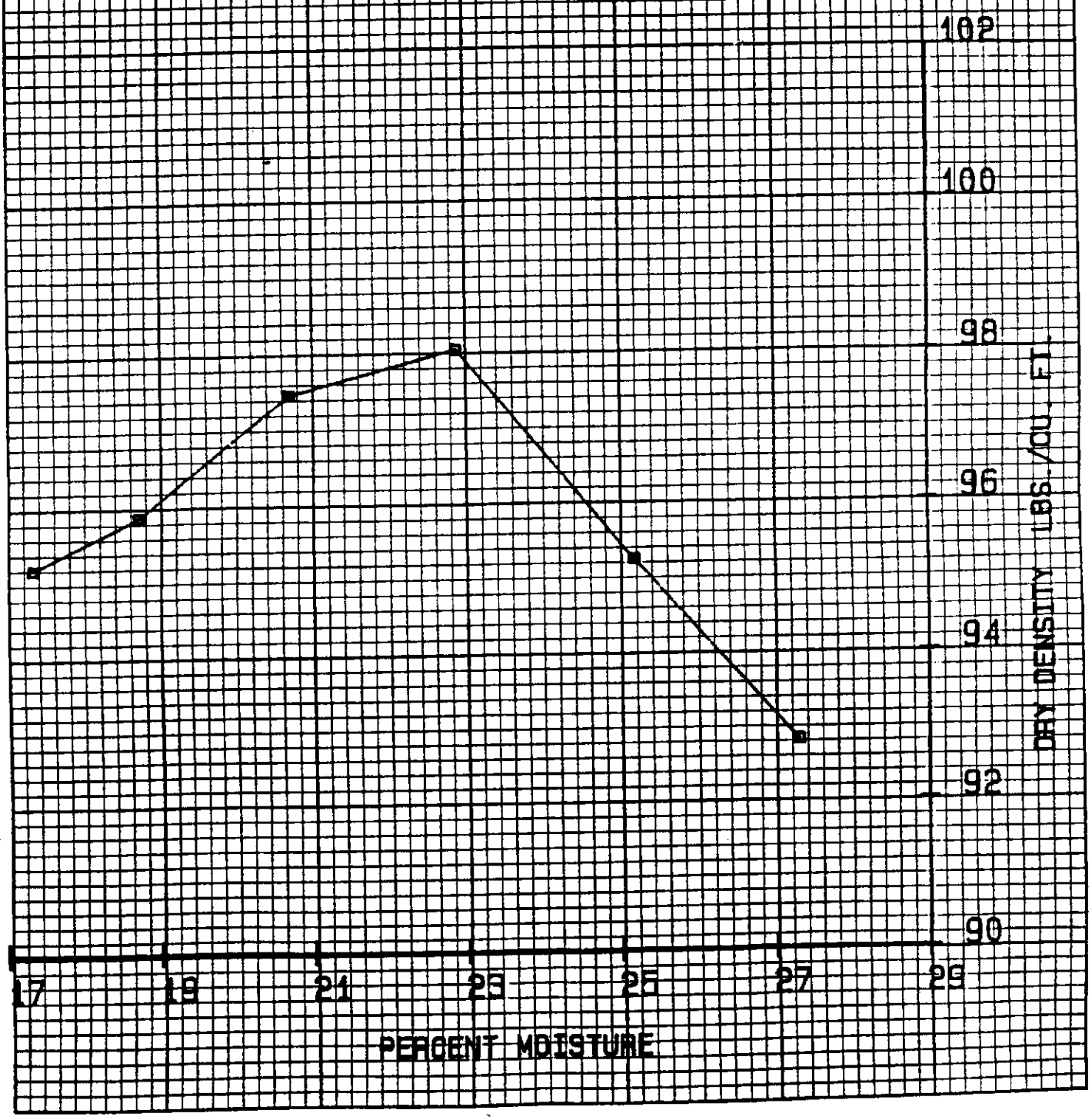
27-AUG-91

FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5310 (CH)

LL - 54 MAX. DRY DENSITY - 98.0 LBS./CU. FT.
PL - 24 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 30

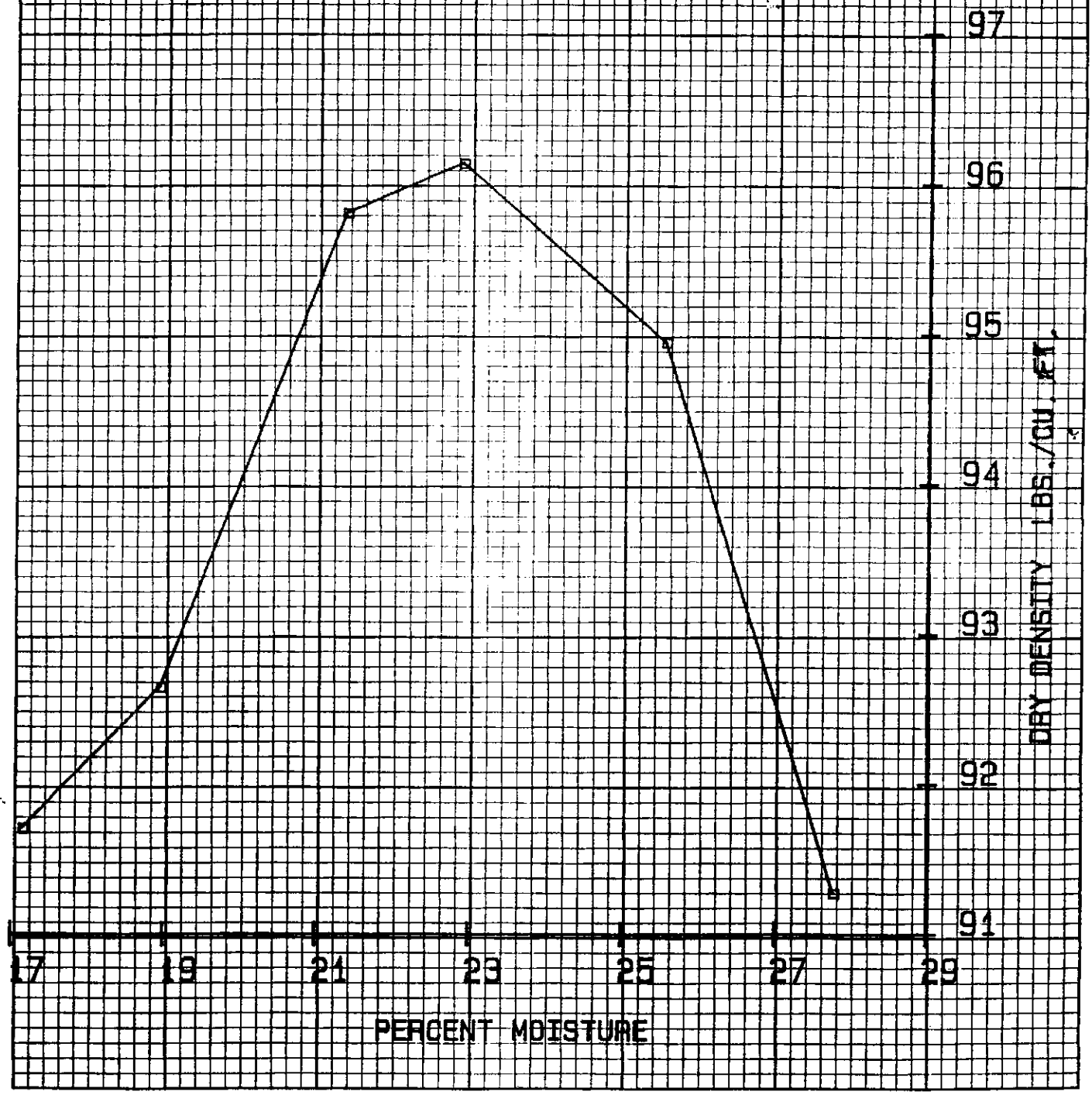


28-AUG-91 FIGURE 3

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5311 (CH)

LL - 63 MAX. DRY DENSITY - 96.1 LBS./CU. FT.
PL - 26 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 37



ATTERBERG LIMITS DATA

SAMPLE NO.	TEST NO.	LIQUID	PLASTIC	PLASTIC INDEX	UNIFIED SOIL CLASSIFICATION	SPECIFIC GRAVITY
P5309	1	70	29	41	CH	2.50
P5309	2	69	27	42	CH	
P5309	3	68	32	36	CH	
P5309	4	71	28	43	CH	
P5309	5	68	24	44	CH	
P5310	1	56	26	30	CH	2.50
P5310	2	50	26	24	CH	
P5310	3	51	21	30	CH	
P5310	4	57	23	34	CH	
P5310	5	56	26	30	CH	
P5311	1	60	29	31	CH	2.47
P5311	2	59	24	35	CH	
P5311	3	63	26	37	CH	
P5311	4	66	26	40	CH	
P5311	5	65	23	42	CH	

NOTE: ATTERBERG LIMITS DETERMINATIONS WERE CONDUCTED ON RANDOM PORTIONS OF BULK SAMPLES. ATTERBERG LIMITS RESULTS SHOWN ON STANDARD PROCTOR COMPACTION CURVES ARE THE AVERAGE RESULTS OF 5 INDIVIDUAL DETERMINATIONS.

I. T. Project No. 435425 LABORATORY DATA TABLE 2 FILE NO.: 91-015

SAMPLE NO.	DEPTH FEET	MOIST %	DEN-PCF WET	DEN-PCF DRY	ATTERBERG LIMITS LL	PL	PI	TSF	COMPRESSION TEST % STRAIN	PRESSURE-KSF START	FAIL	TYPE FAILURE	OTHER
P5309	90.0- 95.0	23	113.1	91.8				2.28	7			MULTIPLE SHEAR	
P5310	90.0- 95.0	24	112.7	90.6				1.45	7			MULTIPLE SHEAR	

FILE NO. 91-015 I. T. PROJECT NO. 435425 Table 1

FALLING HEAD PERMEABILITY

COMPOSITE SAMP NO	% > OPT.	PERCENT MOISTURE	DRY DEN.PCF	ATTERBERG LIMITS LL	PL	PI	PERMEABILITY CM/SEC
1	.0	23.1	91.3				0.957E-08
2	2.0	25.1	90.6				0.687E-08
3	4.0	27.1	90.5				0.787E-08

LOUIS J. CAPOZZOLI & ASSOCIATES, INC. Geotechnical Engineers

Dr. Louis J. Capozzoli, P.E.
Charles W. Hair, III, P.E.
James M. Aronstein, Jr., P.E.
Randal D. Sanders, P.E.
Charles L. Eustis, P.E.

DATE 30 October 1991	OUR JOB NO. 91-15
ATTENTION Mr. Blaine Johnson	
RE Project No. 435425	
P. O. No. 939008	
Cedar Chemical Company	

TO

I.T. Corporation
1150 LeBlanc Road
Port Allen, Louisiana 70767

GENTLEMEN:

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

☐ Engineering Reports ☐ Prints ☐ Calculations ☐ Boring Logs ☐ Specifications
☐ Field Reports ☒ Laboratory Analyses ☐ Density Tests ☐ _____

DATE	NO. COPIES	DWG. NO.	DESCRIPTION
30 OCT	1 ea	Table 1	Falling Head Permeability Test Results
30 OCT	1 ea	Table 2	Falling Head Permeability Test Results
30 OCT	1 ea	Table 3	Falling Head Permeability Test Results
3[illegible] 1991	3 ea		Invoice

THESE ARE TRANSMITTED as checked below:

☐ For your use ☐ For approval ☒ As requested
☐ For review and comment ☐ _____

REMARKS _____

C[illegible] TO _____

RECEIVED NOV 1 1991

SIGNED: Michael J. Kohn

If enclosures are not as noted, kindly notify us at once.

10555 AIRLINE HIGHWAY, BATON ROUGE, LOUISIANA 70816, TELEPHONE (504) 293-2460

FILE NO. 91-015 I.T. PROJECT NO. 435425 Table 1

FALLING HEAD PERMEABILITY

SAMP NO	PERCENT MOISTURE	DRY DEN.PCF	ATTERBERG LIMITS LL	PL	PI	PERMEABILITY CM/SEC
P5312	30.2	93.1				0.119E-07
P5313	32.7	92.5				0.133E-07
P5314	36.8	87.1				0.564E-08

FILE NO. 91-015 I.T. PROJECT NO. 435425 Table 2

FALLING HEAD PERMEABILITY

SAMP NO	PERCENT MOISTURE	DRY DEN.PCF	ATTERBERG LIMITS LL	PL	PI	PERMEABILITY CM/SEC
P5317	26.0	98.2				0.560E-08
P5318	30.3	93.1				0.252E-08
P5319	28.4	97.2				0.446E-08
P5320	27.3	96.6				0.592E-08

FILE NO. 91-015 I. T. PROJECT NO. 435425 Table 3

FALLING HEAD PERMEABILITY

SAMP NO	PERCENT MOISTURE	DRY DEN.PCF	ATTERBERG LIMITS LL	PL	PI	PERMEABILITY CM/SEC
P5321	26.5	96.2				0.439E-08
P5322	24.4	100.2				0.857E-08
P5323	29.9	94.9				0.689E-08

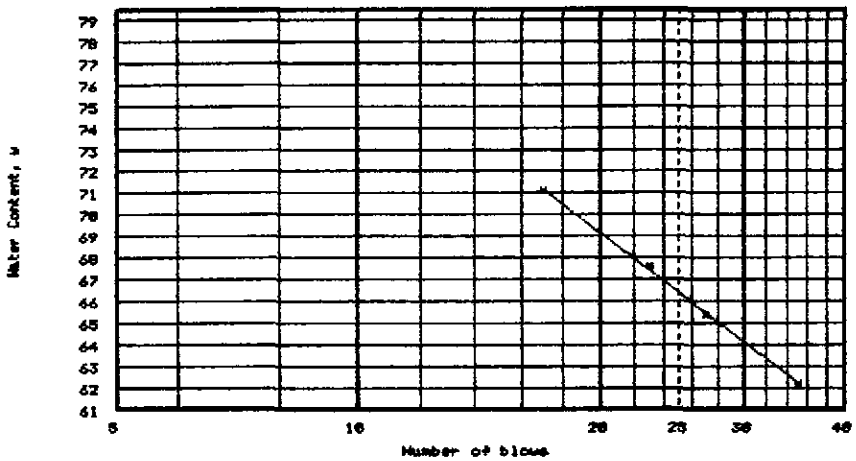
1 OPENWOOD PLAZA - 1104 OPENWOOD STREET
VICKSBURG, MS 39180
PHONE (601)636-7931

LIQUID AND PLASTIC LIMIT TESTS
MOISTURE CONTENTS

Project: Cedar Chemical Disposal Area
Client: Cedar Chemical
Boring No.: n/a Sample No.: n/a

Date: Oct 25, 1991
Lab No: 1151.9
Depth:

		LIQUID LIMIT				PLASTIC LIMIT		
Run No.		1	2	3	4	5	6	7
Tare No.		254	255	256	257	258	259	
Weight in grams	Tare plus wet soil	25.48	26.94	26.09	26.43	27.72	27.91	
	Tare plus dry soil	21.34	22.35	21.90	22.25	26.02	26.15	
	Water W_w	4.14	4.59	4.19	4.18	1.70	1.76	
	Tare	15.52	15.56	15.49	15.53	15.58	15.61	
	Dry Soil W_s	5.82	6.79	6.41	6.72	10.44	10.54	
Water content	w	71.10	67.60	65.40	62.20	16.30	16.70	
Number of blows		17	23	27	35			



LL: 66

PL: 17

PI: 49

USCS Classification:
CH

MOISTURE CONTENTS

		1	2	3	4	5	6	7
Run No.								
Tare No.								
Weight in grams	Tare plus wet soil							
	Tare plus dry soil							
	Water W_w							
	Tare							
	Dry Soil W_s							
Water content	w							
Sample No./Depth								

Remarks: Gray clay from disposal area delivered by Frey
P5316

Technician: Doss Computed by: Geo Checked by:

GEE & STRICKLAND, INC.

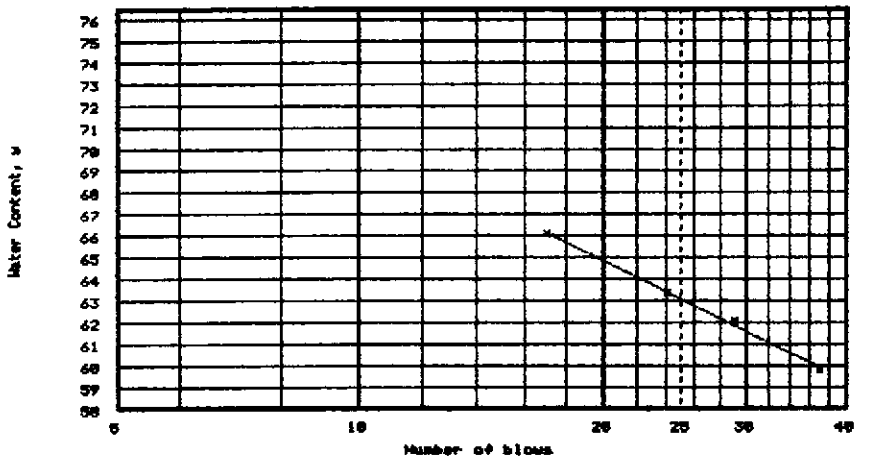
1 OPENWOOD PLAZA - 1104 OPENWOOD STREET
VICKSBURG, MS 39180
PHONE (601)636-7831

LIQUID AND PLASTIC LIMIT TESTS
MOISTURE CONTENTS

Project: Cedar Chemical Disposal Area
Client: Cedar Chemical
Boring No.: n/a Sample No.: n/a

Date: Oct 25, 1991
Lab No: 1151.8
Depth: n/a

		LIQUID LIMIT				PLASTIC LIMIT		
Run No.		1	2	3	4	5	6	7
Tare No.		248	249	250	251	252	253	
Weight in grams	Tare plus wet soil	26.47	28.18	27.38	27.14	28.53	28.05	
	Tare plus dry soil	22.18	23.25	22.82	22.78	26.69	26.29	
	Water W_w	4.29	4.93	4.56	4.36	1.84	1.76	
	Tare	15.69	15.47	15.48	15.49	15.70	15.53	
	Dry Soil W_s	6.49	7.78	7.34	7.29	10.99	10.76	
Water content w		66.10	63.40	62.10	59.80	16.70	16.40	
Number of blows		17	24	29	37			



LL: 63

PL: 17

PI: 46

USCS Classification:
CH

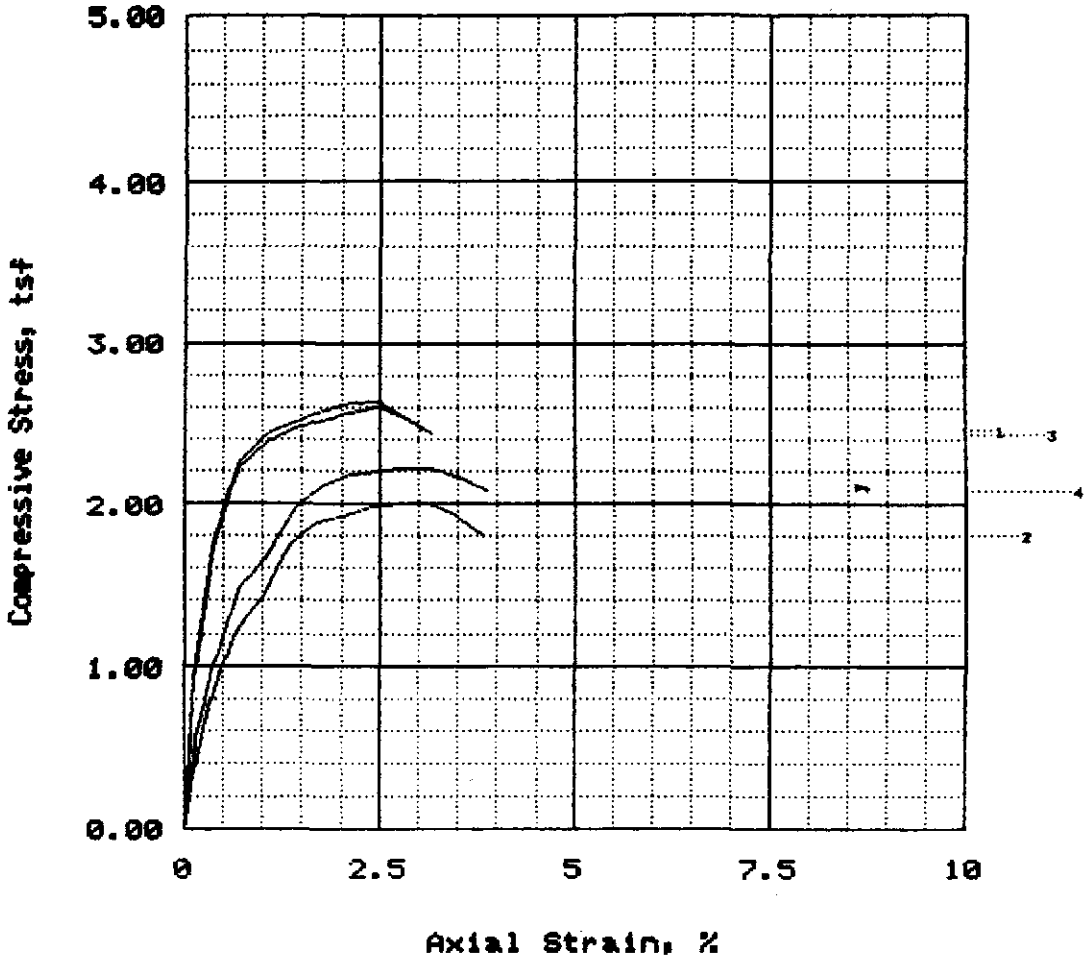
MOISTURE CONTENTS

		1	2	3	4	5	6	7
Run No.								
Tare No.								
Weight in grams	Tare plus wet soil							
	Tare plus dry soil							
	Water W_w							
	Tare							
	Dry Soil W_s							
Water content w								
Sample No./Depth								

Remarks: Gray clay from disposal area delivered by Frey
P5315

Technician: Doss Computed by: Gee Checked by:

UNCONFINED COMPRESSION TEST



Sample number:	1	2	3	4
Unconfined strength, tsf	2.63	2.01	2.60	2.22
Undrained shear strength, tsf	1.32	1.00	1.30	1.11
Rate of strain, %/min				
Water content, %	27.1	30.5	29.5	28.4
Void ratio	0.7568	0.7876	0.8564	0.8400
Saturation, %	94.8	102.7	91.3	91.2
Dry density, pcf	94.2	92.5	89.1	91.6
Specimen diameter, cm	3.56	3.55	3.54	3.56
Specimen height, cm	7.11	7.11	7.11	7.11

Description: Gray clay

LL =	PL =	PI =	GS = 2.70	Type: Undisturbed

Project No.: 1137.15
Date: Nov 5, 1991
Remarks:
Technician: Harper
Failure type: Shear (all 4)
ITT Sample No. Test 1: P5329
2: P5330, 3: P5331, 4: P5332
Fig No.

Client: Cedar Chemical Company

Project: Disposal Area SWCA CLAY CAP

Location: Test 1 & 3: Cap 1st lift
Test 2 & 4: Cap 2d lift

UNCONFINED COMPRESSION TEST

GEE & STRICKLAND, INC.

APPENDIX C

NUCLEAR DENSITY TEST RESULTS

Table of Contents

SWCA Waste Placement 1
SWCA Clay Cap 82
Impoundment B Dikes 133
Impoundment C Foundation 150
Impoundment A/Impoundment B Equalization Pipe 164
Impoundment C Dikes 170
Impoundment C Foundation 175
Impoundment A/Impoundment C Equalization Pipe 178
Impoundment B/Impoundment C Equalization Pipe 181
Impoundment C Influent Pipe 187

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 10-07-90

TESTED BY: Billy Fry

TEST NUMBER	1	2	3	4	8					
STATION	300	300	400	500						
OFFSET	150	50	50	50						
MODE & DEPTH	6"	6"	6"	6"						
COMPACTION METHOD	SH.	SH.	SH.	SH						
NUMBER OF PASSES	5	→	→	→						
LIFT THICKNESS	10"	10"	10"	10" LOOSE						
WET DENSITY (PCF)	108.2	110.4	108.5	112.6						
MOISTURE (PCF)	30.4	29.8	28.5	28.0						
DRY DENSITY (PCF)	77.8	80.6	80.0	84.6						
% MOISTURE	39.1%	37.0	35.6%	33.2%						
MAX. DRY DENSITY STD. ☑ MOD. ☐	81.70	→	→	→						
OPTIMUM MOISTURE	33.6%	→	→	→						
% RELATIVE COMPACTION	95.2%	98.7%	97.9%	103.6%						
MATERIAL DISCRIPTION	SOLID. C SEDIMENT	SOLID. C SED.	SOLID. C SED.	SOLID. C SED.						

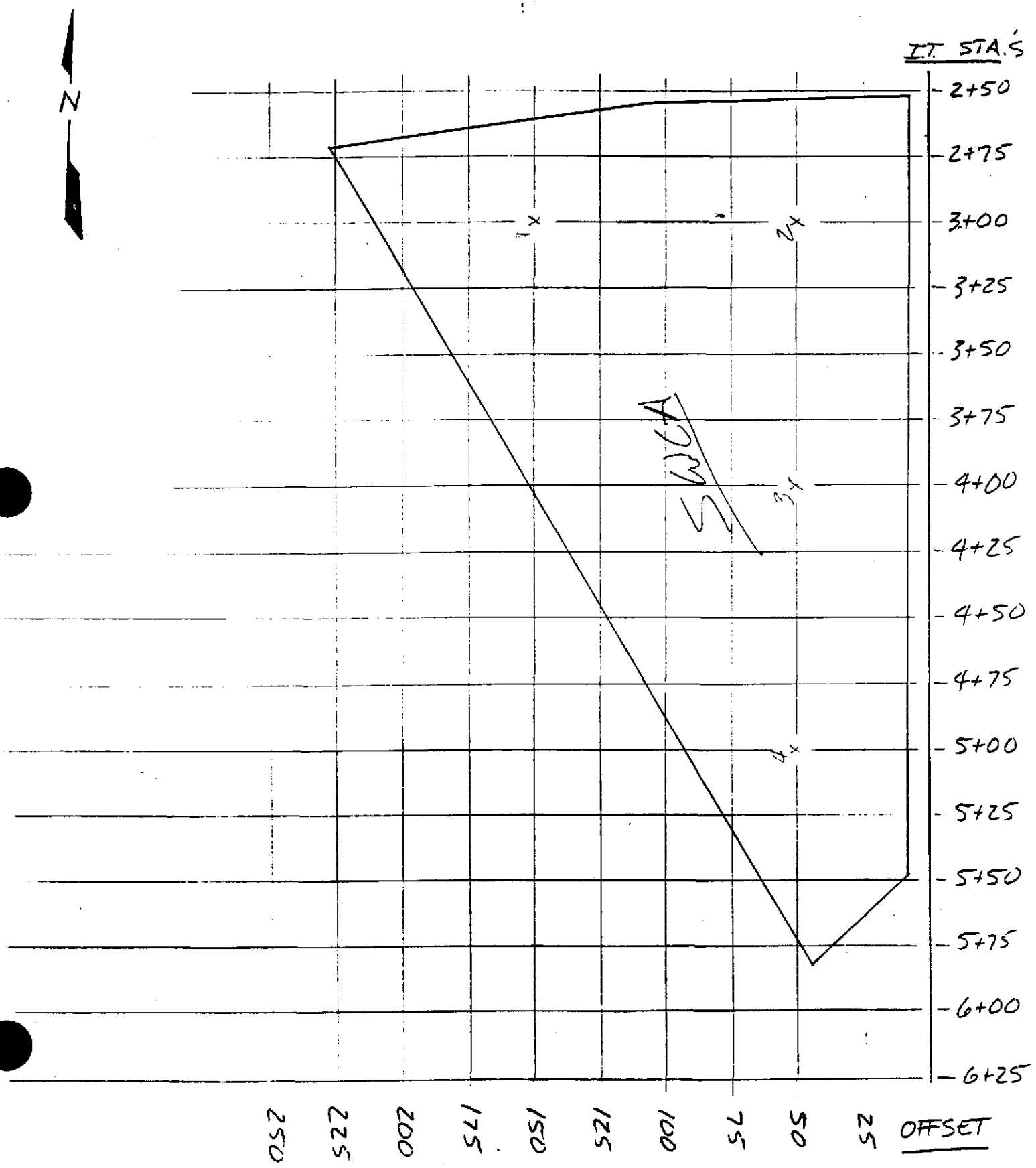
STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	12770
3299	0583	

INTERNATIONAL TECHNOLOGY CORPORATION

(2)

B.F. Date 11-07-91 Subject NUC. DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA. Proj. No. 435425



02-NOV-90

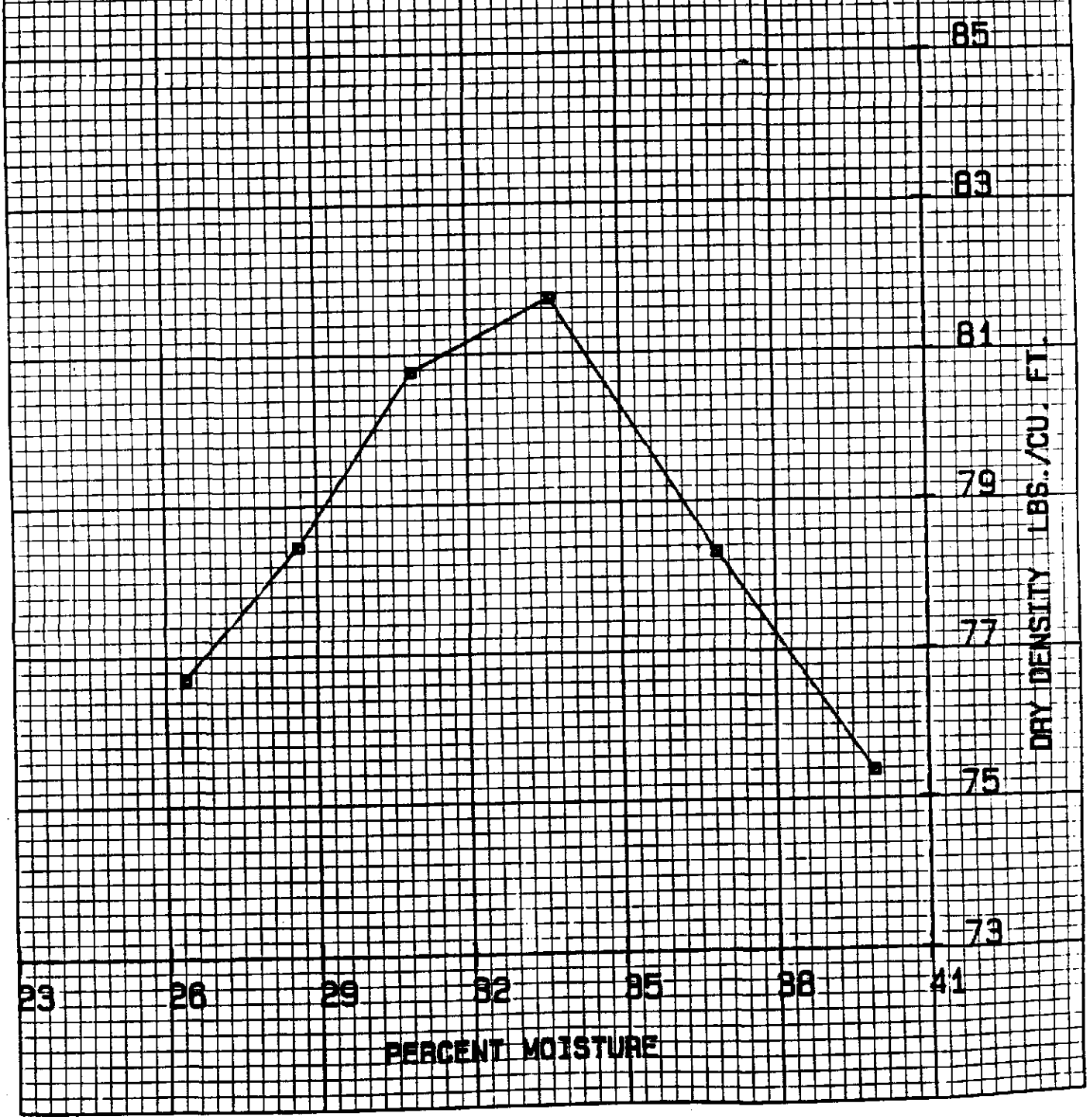
FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 87-139

TYPE MATERIAL - SAMPLE P5275 (SLUDGE)

MAX. DRY DENSITY - 81.7 LBS./CU. FT.

OPTIMUM MOISTURE - 33.6 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 10-07-90

TESTED BY: Billy Fry

TEST NUMBER	5	6	7	8						
STATION	300	500	400	500						
OFFSET	150	90	75	50						
MODE & DEPTH	6"	6"	6"	6"						
COMPACTION METHOD	SH.	SH.	SH.	SH.						
NUMBER OF PASSES										
LIFT THICKNESS	10"	10"	10"	10" LOOSE						
WET DENSITY (PCF)	108.6	108.6	110.1	109.0						
MOISTURE (PCF)	28.9	30.5	29.9	30.1						
DRY DENSITY (PCF)	79.7	78.1	80.2	78.9						
% MOISTURE	36.3%	39.1%	37.3%	38.2%						
MAX.DRY DENSITY STD. ☑ MOD. ☐	81.70	→		→						
OPTIMUM MOISTURE	33.6%	→		→						
% RELATIVE COMPACTION	97.6%	95.6%	98.2%	96.6%						
MATERIAL DISCRIPTION	SOLID. SED. C	SOLID. SED. C	SOLID. SED. C	SOLID. SED. C						

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	12770
~~0595~~ 3289	0593	

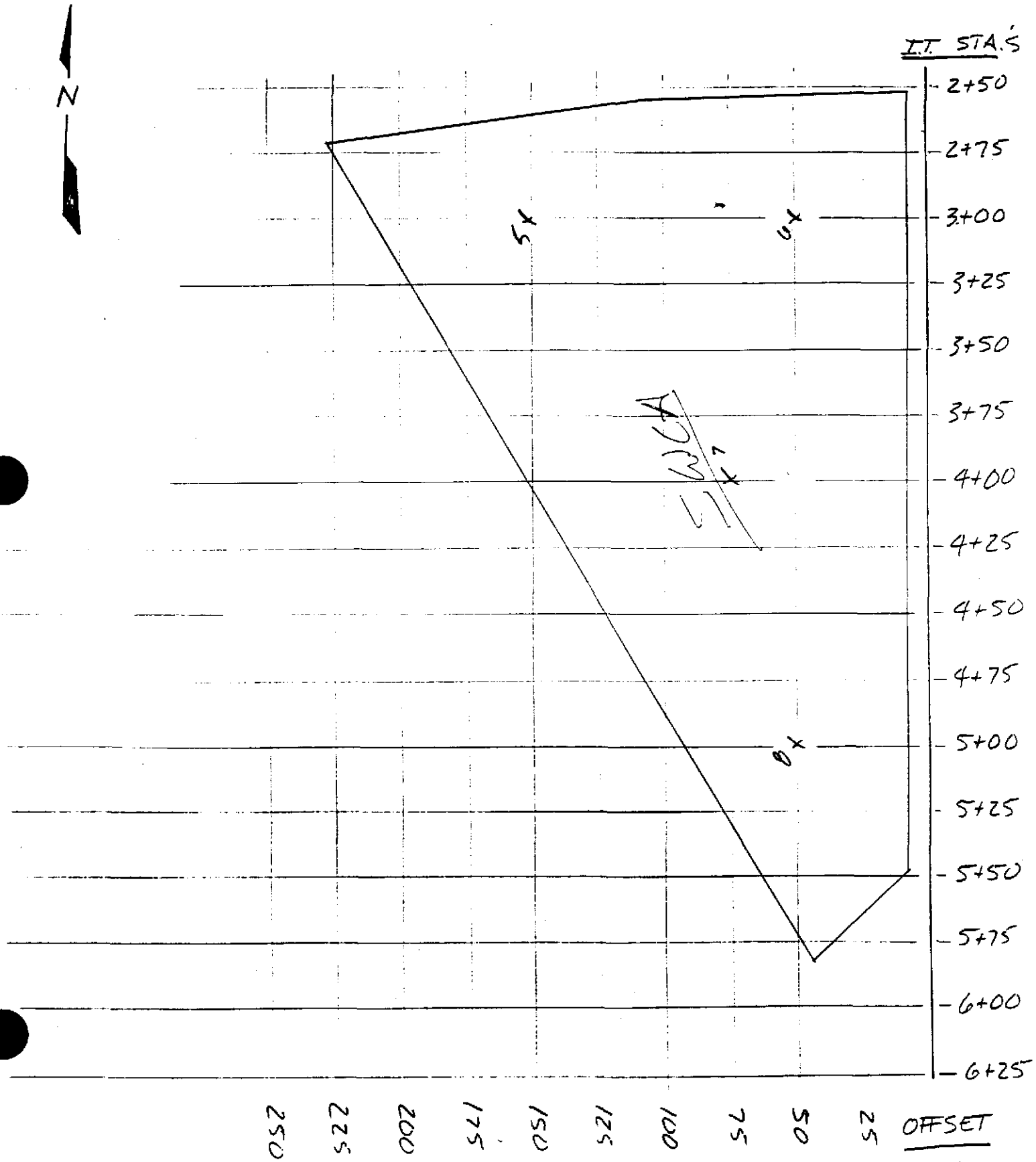
A

INTERNATIONAL TECHNOLOGY CORPORATION

(5)

BF Date 11-07-90 Subject NUC DENSITY LOCATIONS Sheet No. ____ of ____

Chkd. By ____ Date ____ SWCA Proj. No. 435425



(6)

02-NOV-90

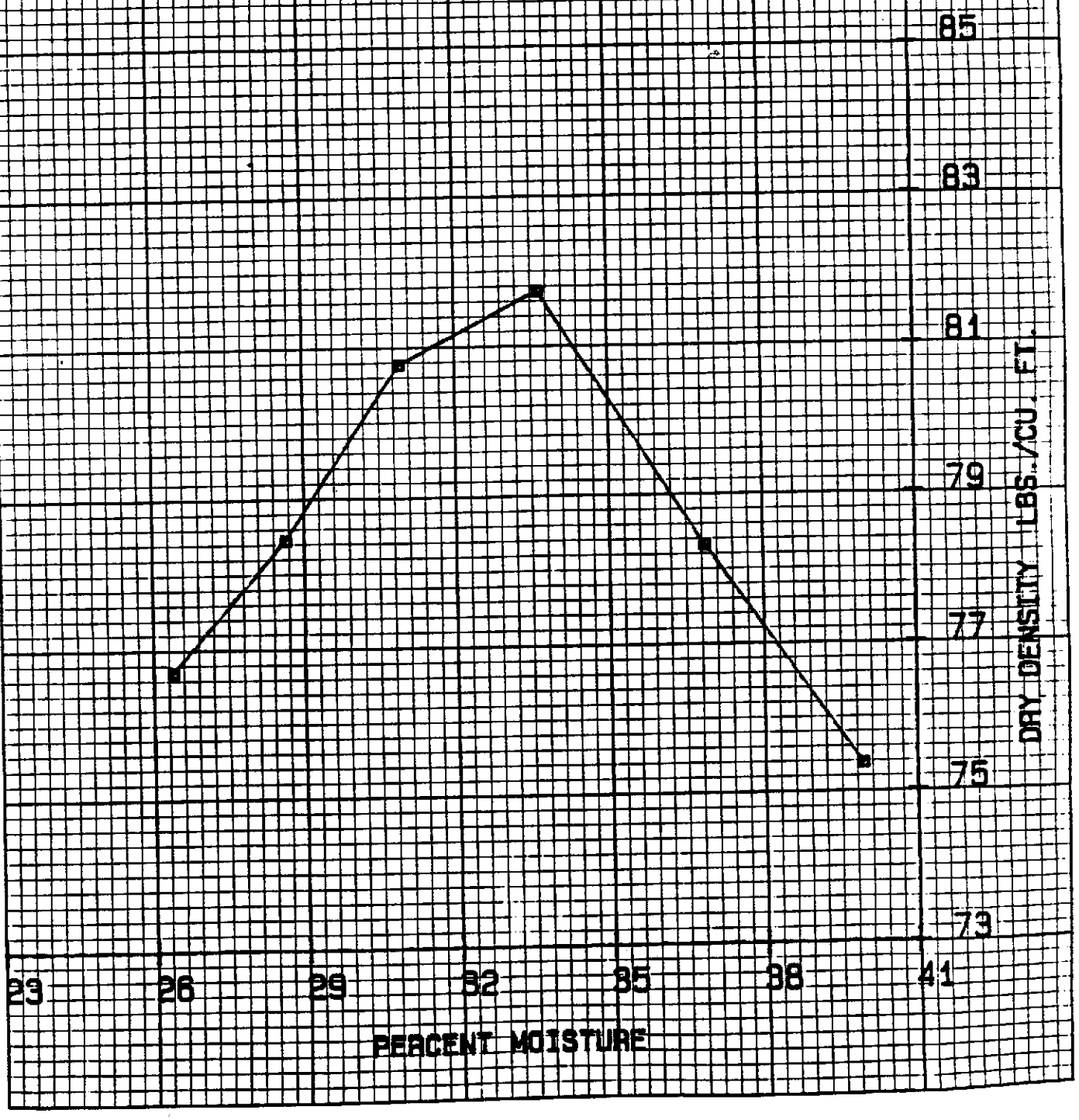
FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 87-139

TYPE MATERIAL - SAMPLE P5275 (SLUDGE)

MAX. DRY DENSITY - 81.7 LBS./CU. FT.

OPTIMUM MOISTURE - 33.6 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435426
DATE: 11-08-90

TESTED BY: Billy F

MOISTURE CORRECTION FACTOR USED OF -19

LIFT B-1

TEST NUMBER	9	10	11	12						
STATION	300	300	400	500						
OFFSET	150	50	75	50						
MODE & DEPTH	6"	6"	6"	6"						
COMPACTION METHOD	SH	SH	SH	SH						
NUMBER OF PASSES										
LIFT THICKNESS	10"	10"	10"	10" LOOSE						
WET DENSITY (PCF)	118.65	118.26	116.67	118.4						
MOISTURE (PCF)	31.15	28.7	29.1	28.0						
DRY DENSITY (PCF)	87.5	89.5	87.6	90.4						
% MOISTURE	35.6	32.1	33.2	31.0						
MAX.DRY DENSITY STD. ☑ MOD. ☐	92.2	→								
OPTIMUM MOISTURE	27.0	→								
% RELATIVE COMPACTION	94.9	97.1	95.0	98.0						
MATERIAL DISCRIPTION	SOLID. SED. B	SOLID. SED. B	SOLID SED. B	SOLID. SED. B						

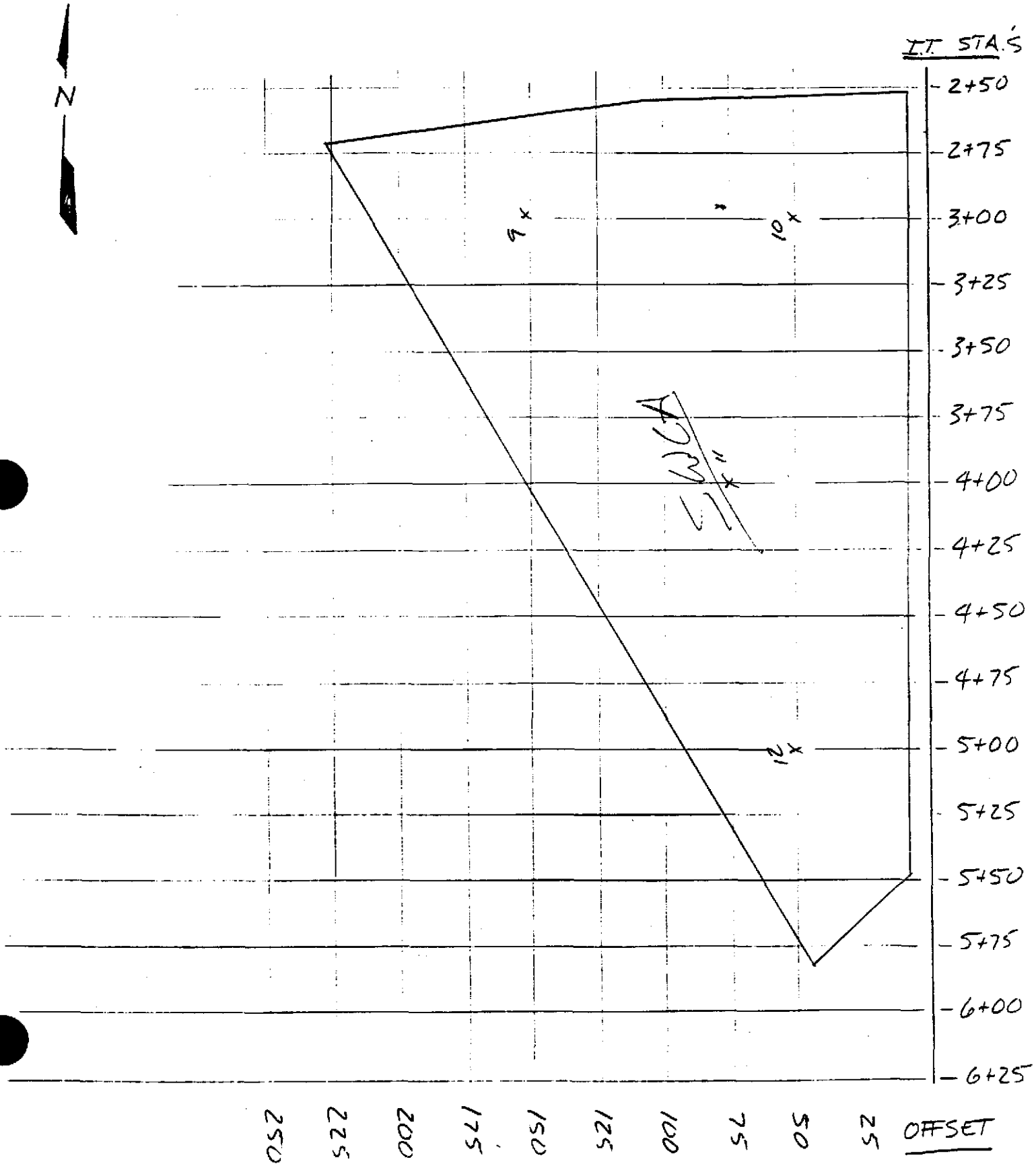
STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	12770
5288	0594	

1

INTERNATIONAL TECHNOLOGY CORPORATION

B.F. Date 11-08-90 Subject NUC DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



INTERNATIONAL TECHNOLOGY CORPORATION

By [illegible] Date 11-8-91 Subject AVG. GR. M.C. CORRECTION Sheet No. 1 of 1

Chkd. By ____ Date ____ FACTOR CALCULATION Proj. No. 935425

SAMPLES WERE TAKEN TO 10" DEPTH BELOW AVG GR. RANDOM TESTS ON SOILS & DRIED IN MICROWAVE AVG @ 5-7 min. INTERVALS.

SAMPLE #	1	2	3	4
WET SOIL + CAN	837^{6}	1113^{9}	1388^{9}	1014^{1}
WT CAN	111^{6}	112^{1}	39^{5}	39^{5}
DRY SOIL + CAN	645^{1}	851^{3}	1074^{1}	783^{0}
WET SOIL	726	1001^{8}	1349^{4}	974^{6}
DRY SOIL	533^{5}	739^{2}	1034^{6}	743^{5}
WATER	192^{5}	262^{6}	314^{8}	231^{1}
M.C. CAN	36^{1} %	35^{5} %	30^{4} %	31^{1}
M.C. GRAV	34^{0} %	30^{1} %	32^{6} %	33^{8} %
M.C. CAN - M.C. GR. =	-2.3%	-2.5%	-2.4%	-2.7%

$$\text{M.C. CORR.} = \frac{\text{AVG. M.C. CAN} - \text{M.C. GR.}}{100 + \text{AVG. M.C. GR.}} \times 100$$

$$\frac{-2.5}{100 + 35.35} \times 100 = -18.8$$

USE -19

108-10-85

INTERNATIONAL TECHNOLOGY CORPORATION

(10)

By BF Date 11-08-90 Subject VERIFY NUC. GA. Sheet No. 1 of 1

By ___ Date ___ Proj. No. 435425

OBJ.:
THIS TEST IS TO VERIFY M.C. & DENSITY OF NUC. GA. MSMTS.

PROC.:
USED DRIVE RING SAMPLER FOR MSMT. OF SAMPLE BELOW NUC. GA. TEST AREA.

NUC. TEST # = 10
NUC. DD READING = 89.5 PCF
NUC. M.C. READING = 32.1 %

CALCULATION OF DENSITY & M.C.

WT. OF DRIVE RING + WET SOIL = 1.659#
WT. OF DRIVE RING ——— .484#
WT. OF WET SOIL ——— 1.175#
WT. OF DRY SOIL ——— .892#
WT. OF WATER ——— .283#
VOL. OF DRIVE RING ——— .0101 CUFT.
WT. DRY SOIL / VOL. OF SAMPLE = 88.3 PCF
WT. WATER / WT DRY SOIL ——— 31.7 %

% DIFF. DENSITY FROM NUC. GA. TO VERIFIED SAMPLE:

$$1 - \frac{\text{DENSITY NUC. GA}}{\text{DENSITY SAMPLE}} \times 100 = 1.4\% < 3\% \text{ OK}$$

% DIFF. M.C. FROM NUC. GA. TO VERIFIED SAMPLE:

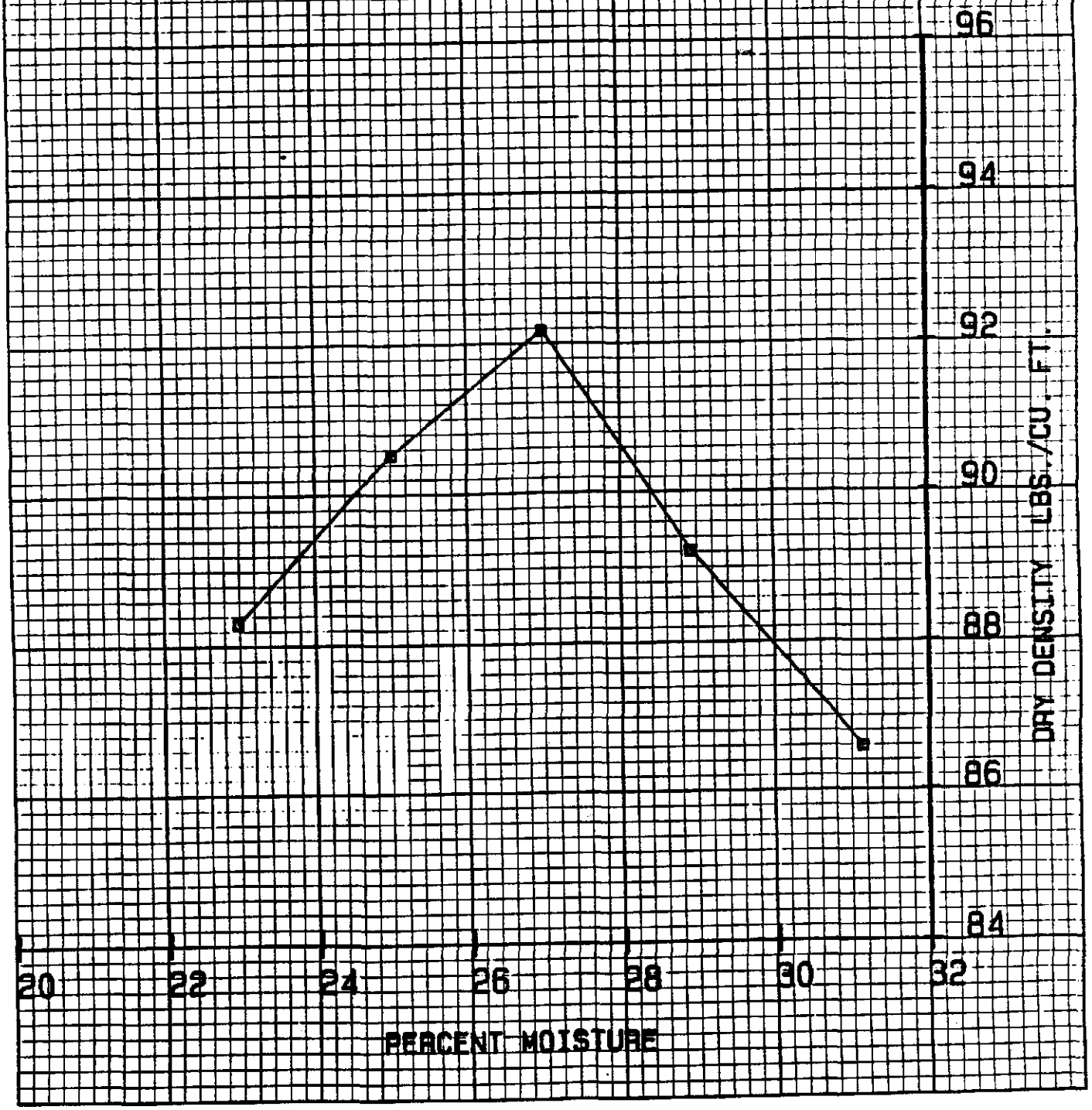
$$1 - \frac{\text{M.C. NUC. GA.}}{\text{M.C. SAMPLE}} \times 100 = 1.26\% < 2\% \text{ OK}$$

FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 87-139

TYPE MATERIAL - SAMPLE P5274

MAX. DRY DENSITY - 92.2 LBS./CU. FT.
OPTIMUM MOISTURE - 27.0 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 11-08-90

TESTED BY: [signature]
MOISTURE CORRECTION FACTOR OF -19 USED
LIFT B-2

TEST NUMBER	13	14	15	16						
STATION	300	300	400	500						
OFFSET	150	50	75	50						
MODE & DEPTH	6"	6"	6"	6"						
COMPACTION METHOD	SH	SH	SH	SH						
NUMBER OF PASSES										
LIFT THICKNESS	10"	10"	10"	10" LOOSE						
WET DENSITY (PCF)	119.3	114.5	119.8	117.0						
MOISTURE (PCF)	29.1	27.1	31.1	29.2						
DRY DENSITY (PCF)	90.3	87.4	88.7	87.9						
% MOISTURE	32.2	31.0	35.1	33.2						
MAX. DRY DENSITY STD. ☑ MOD. ☐	92.2									
OPTIMUM MOISTURE	27.0									
% RELATIVE COMPACTION	97.9	94.8	96.2	95.3						
MATERIAL DISCRIPTION	SOLID. SED. B	SOLID. SED. B	SOLID. SED. B	SOLID. SED. B						

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	12770
32892	05985	

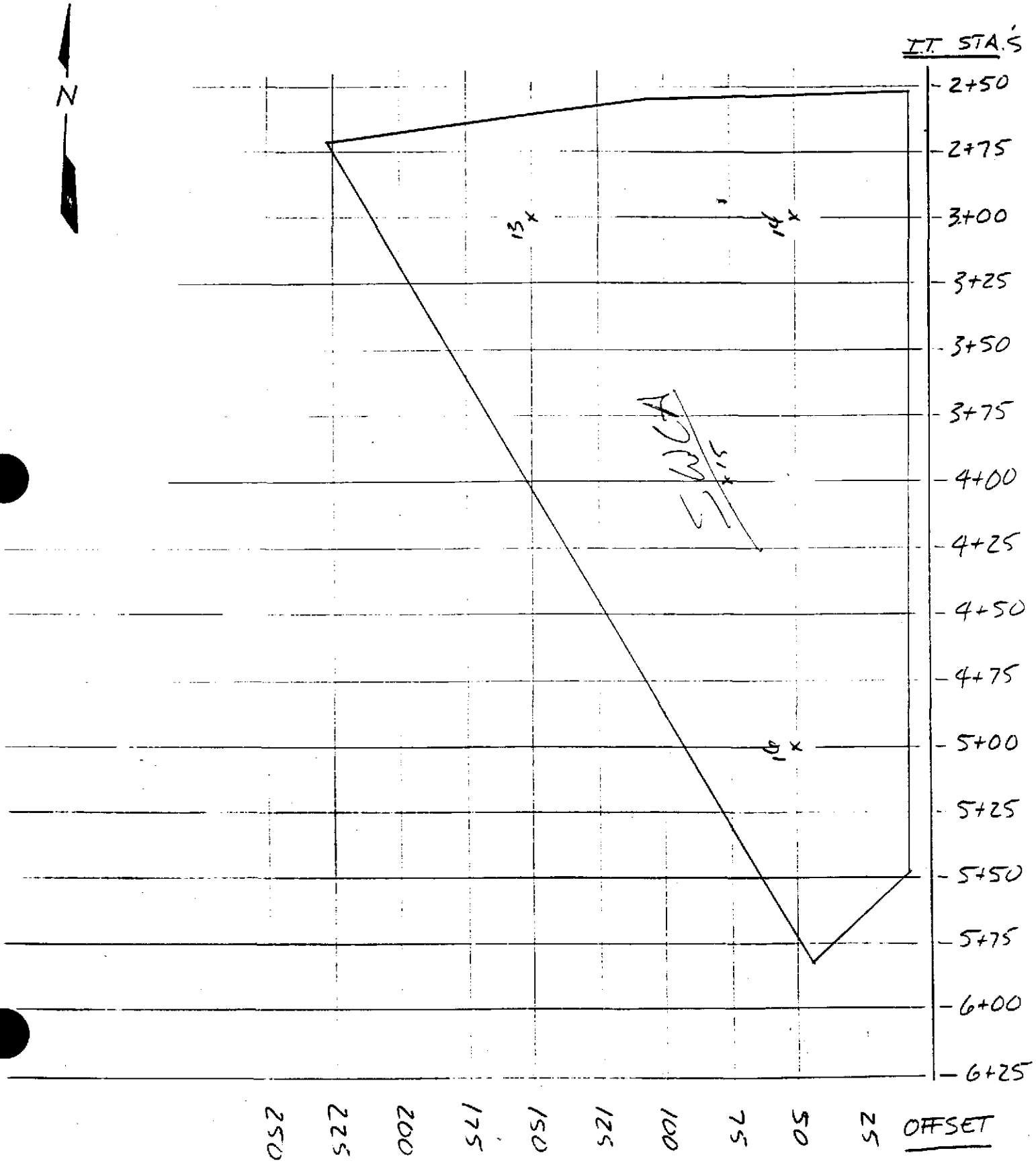
(21)

INTERNATIONAL TECHNOLOGY CORPORATION

(13)

BF Date 11-08-90 Subject NUC. DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



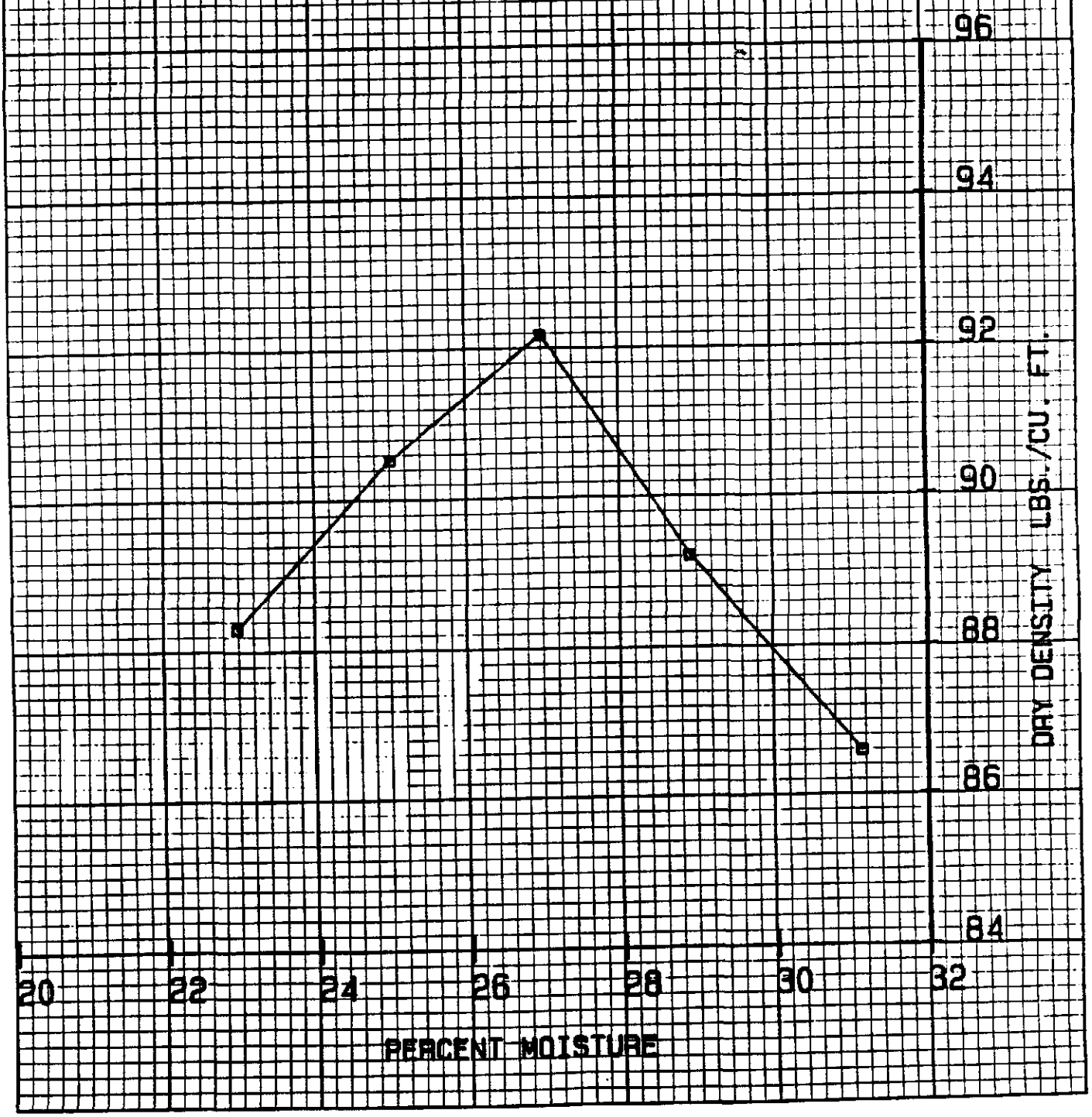
(17)

FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 87-139

TYPE MATERIAL - SAMPLE P5274

MAX. DRY DENSITY - 92.2 LBS./CU. FT.
OPTIMUM MOISTURE - 27.0 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 11-19-90

TESTED BY: [illegible]
MOISTURE CORRECTION FACTOR -19 USED

TEST NUMBER	17	18	19	20						
STATION	300	300	400	500						
OFFSET	150	50	75	50						
MODE & DEPTH	6"	6"	6"	6"						
COMPACTION METHOD	SH	SH	SH	SH						
NUMBER OF PASSES										
LIFT THICKNESS	10"	10"	10"	10" CLOSE						
WET DENSITY (PCF)	118.4	119.6	118.6	121.1						
MOISTURE (PCF)	29.6	30.02	30.9	32.7						
DRY DENSITY (PCF)	88.8	89.62	87.7	88.4						
% MOISTURE	33.32	33.5%	35.2%	37.0%						
MAX. DRY DENSITY STD. ☑ MOD. ☐	92.2	→	→	→						
OPTIMUM MOISTURE	27.0%	→	→	→						
% RELATIVE COMPACTION	96.3	97.2	95.1	95.9						
MATERIAL DISCRIPTION	SOLID. SED.	→	→	→						

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	12770
3299	0598	

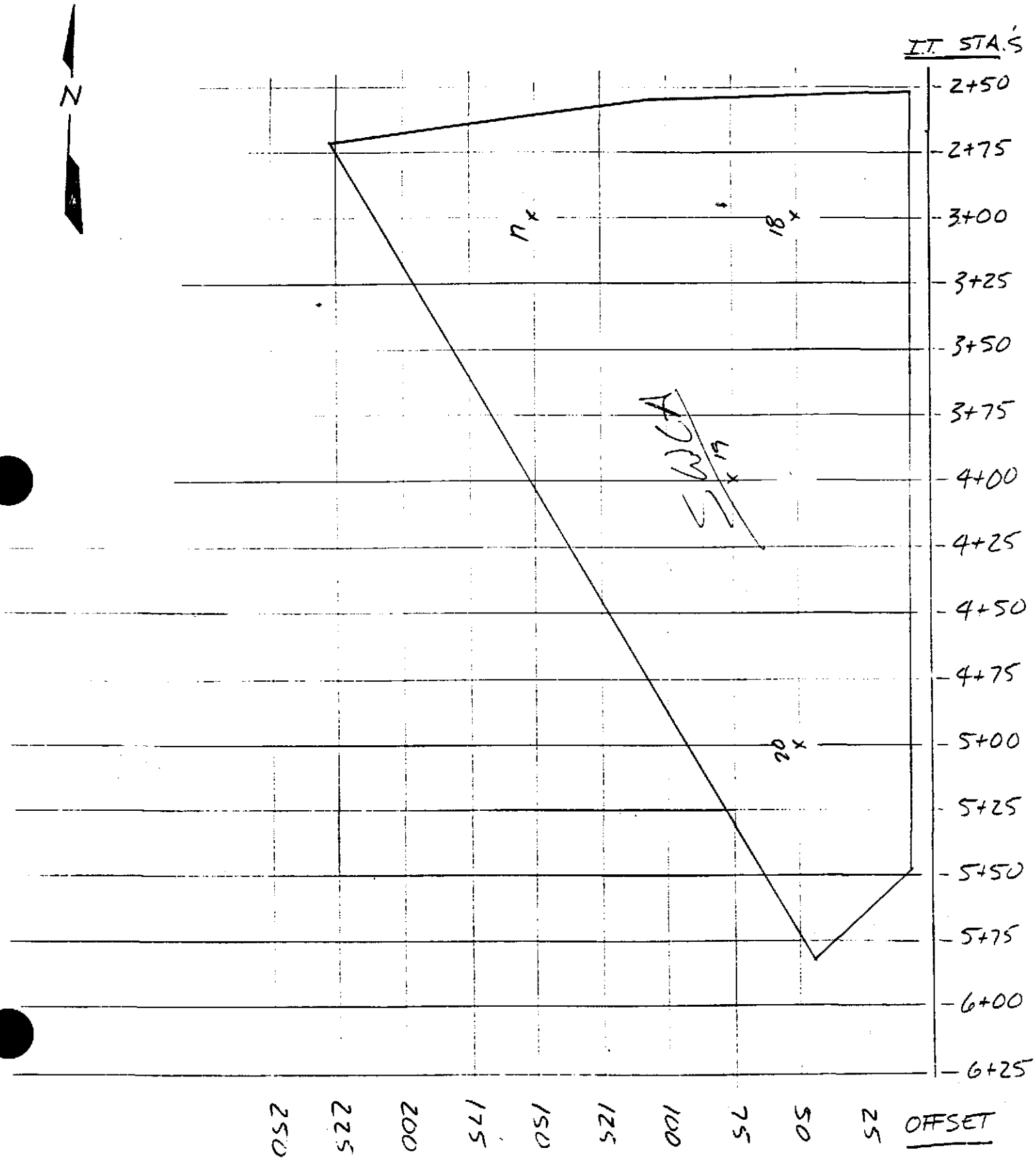
(15)

(16)

INTERNATIONAL TECHNOLOGY CORPORATION

BF Date 11-19-90 Subject NUC. DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



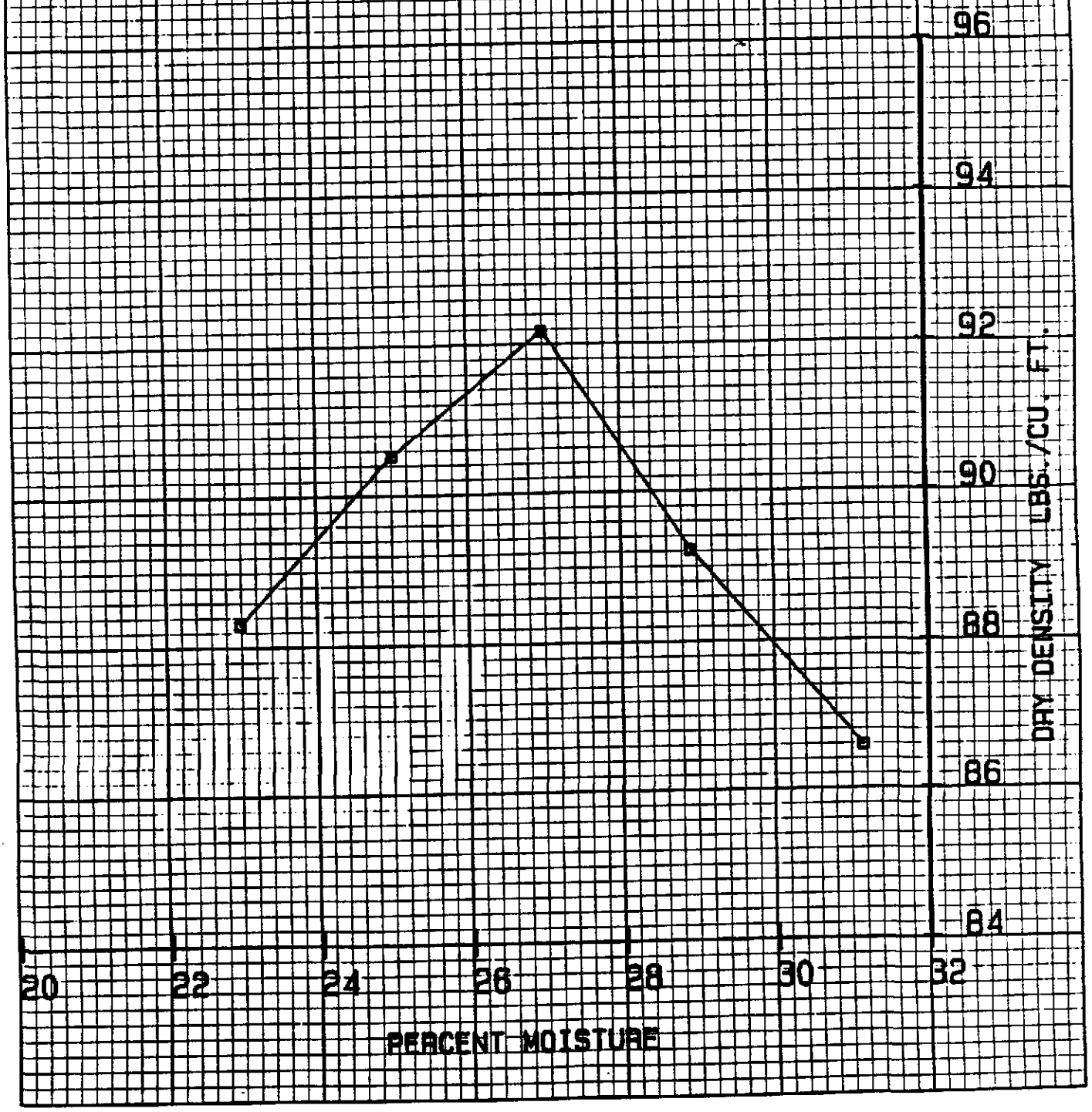
(17)

FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 87-139

TYPE MATERIAL - SAMPLE P5274

MAX. DRY DENSITY - 92.2 LBS./CU. FT.
OPTIMUM MOISTURE - 27.0 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 935425
DATE: 11-19-90

TESTED BY: [illegible]
MOISTURE CORRECTION FACTOR-19 USED

TEST NUMBER	21	22	23	24						
STATION	300	300	400	500						
OFFSET	150	50	75	50						
MODE & DEPTH	6"	6"	6"	6"						
COMPACTION METHOD	SH	SH	SH	SH						
NUMBER OF PASSES										
LIFT THICKNESS	10"	10"	10"	10" loose						
WET DENSITY (PCF)	118.5	121.0	119.1	119.6						
MOISTURE (PCF)	31.1	32.2	29.2	31.9						
DRY DENSITY (PCF)	87.4	88.8	90.0	87.7						
% MOISTURE	35.6	36.3	32.4	36.4						
MAX.DRY DENSITY STD.☑ MOD.☐	92.2	→	→	→						
OPTIMUM MOISTURE	27.0%	→	→	→						
% RELATIVE COMPACTION	94.8	96.3	97.6	95.1						
MATERIAL DISCRIPTION	SOLID SED B	SOLID. SED. B	SOLID SED. B	SOLID. SED. B						

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	12770
3285	0578	

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INTERNATIONAL TECHNOLOGY CORPORATION

(19)

B.F. Date 11-19-90 Subject NUC. DENSITY LOCATIONS Sheet No. ____ of ____

Chkd. By ____ Date ____ SWCA Proj. No. 435425

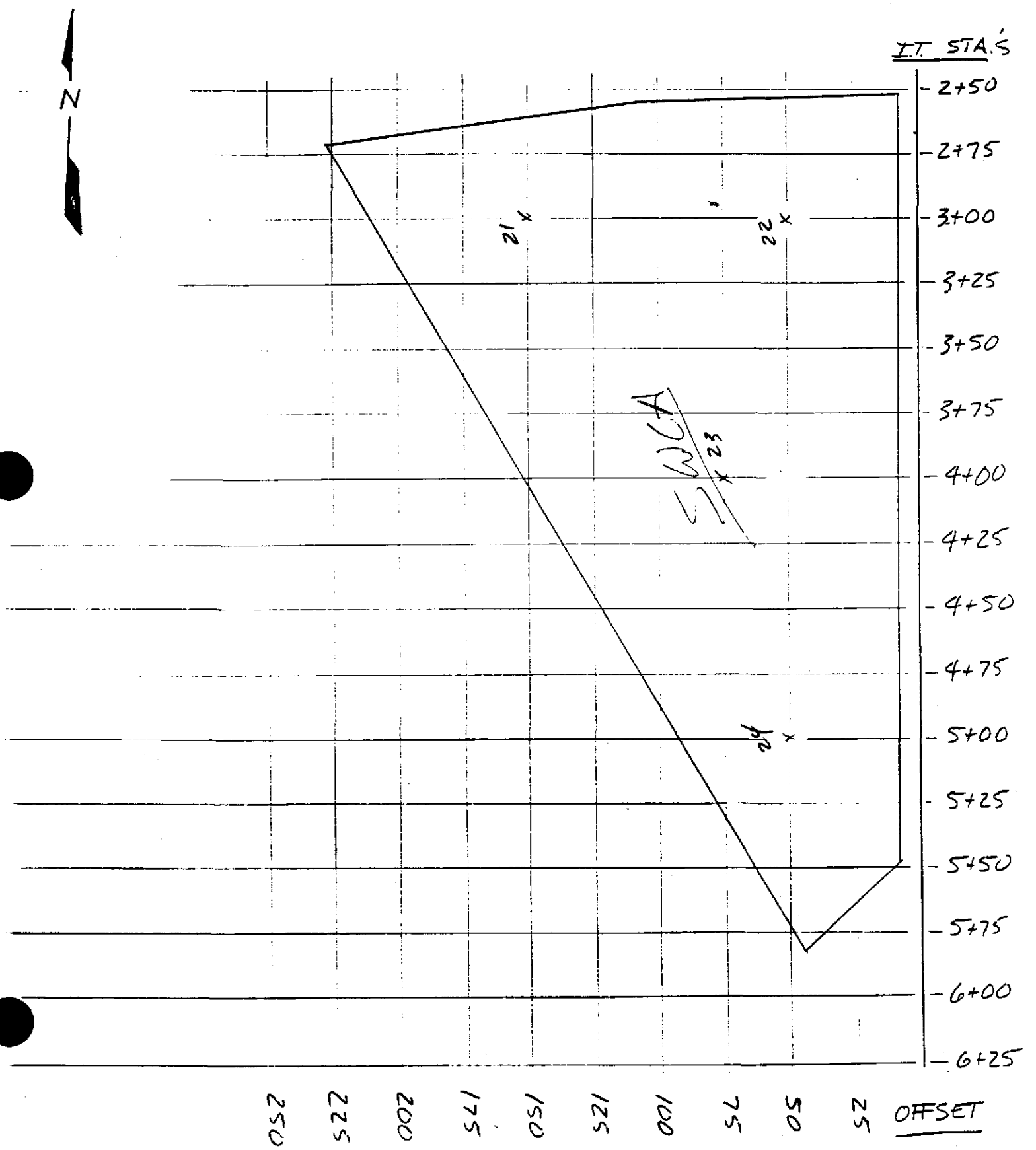
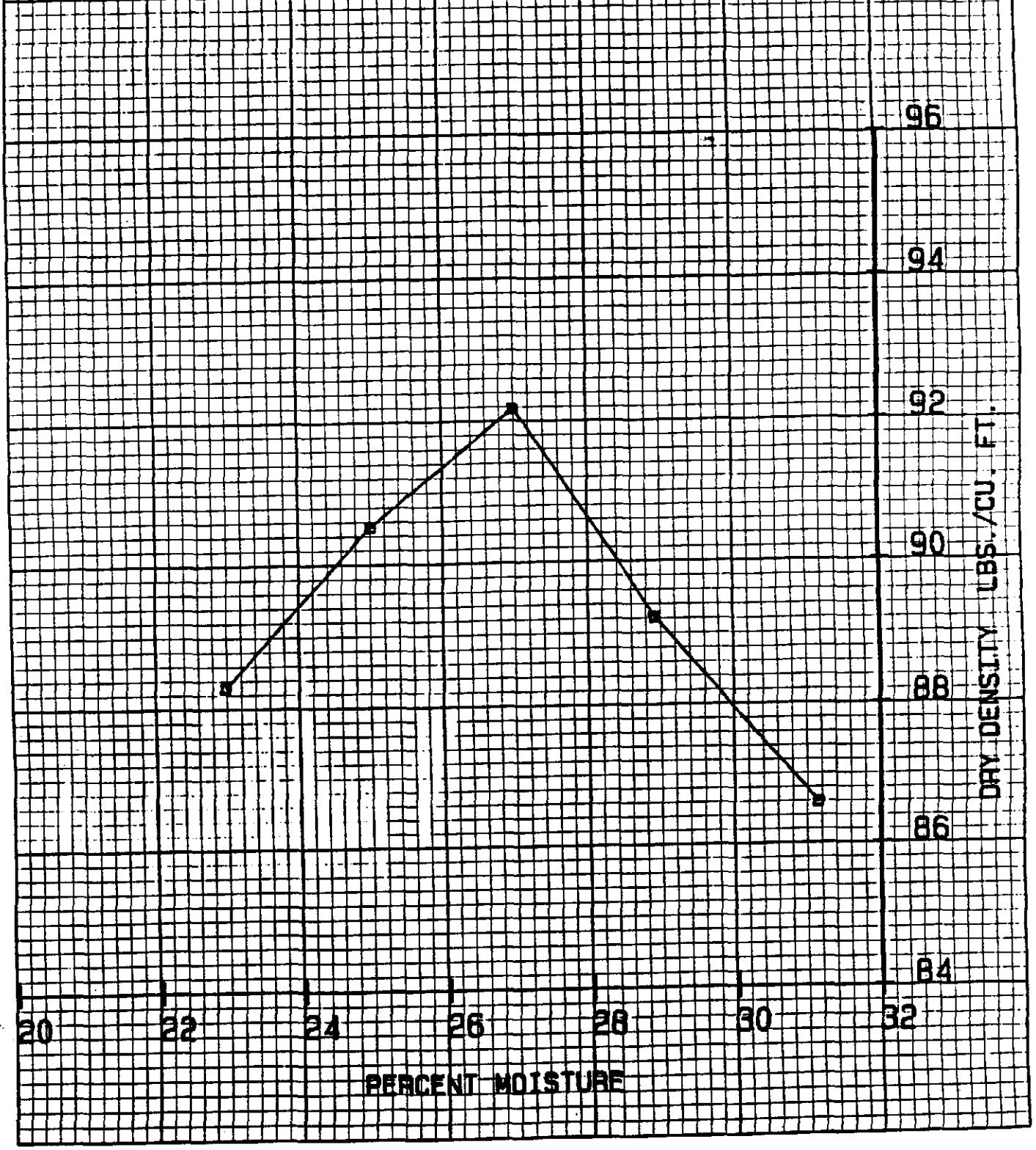


FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 87-139

TYPE MATERIAL - SAMPLE P5274

MAX. DRY DENSITY - 92.2 LBS./CU. FT.
OPTIMUM MOISTURE - 27.0 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

N.P.

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 11-21-90

TESTED BY: Billy Fay
MOISTURE CORRECTION FACTOR - 19 USED

TEST NUMBER	25	26	27	28						
STATION	300	300	400	500						
OFFSET	150	50	75	50						
MODE & DEPTH	6"	6"	6"	6"						
COMPACTION METHOD	SH	SH	SH	SH						
NUMBER OF PASSES										
LIFT THICKNESS	10"	10"	10"	10" Loose						
WET DENSITY (PCF)	101.0	104.2	108.1	108.5						
MOISTURE (PCF)	24.0	25.6	31.2	30.6						
DRY DENSITY (PCF)	77.0	78.5	76.8	77.2						
% MOISTURE	31.2	32.1	40.6	39.3						
MAX.DRY DENSITY STD. ☑ MOD. ☐	77.4	→	→	→						
OPTIMUM MOISTURE	37.3	→	→	→						
% RELATIVE COMPACTION	99.5%	100.4%	98.3%	99.6%						
MATERIAL DISCRIPTION	MH	→	→	→						

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	12770
3292	0591	

REMARKS: NEW PROCTOR USED

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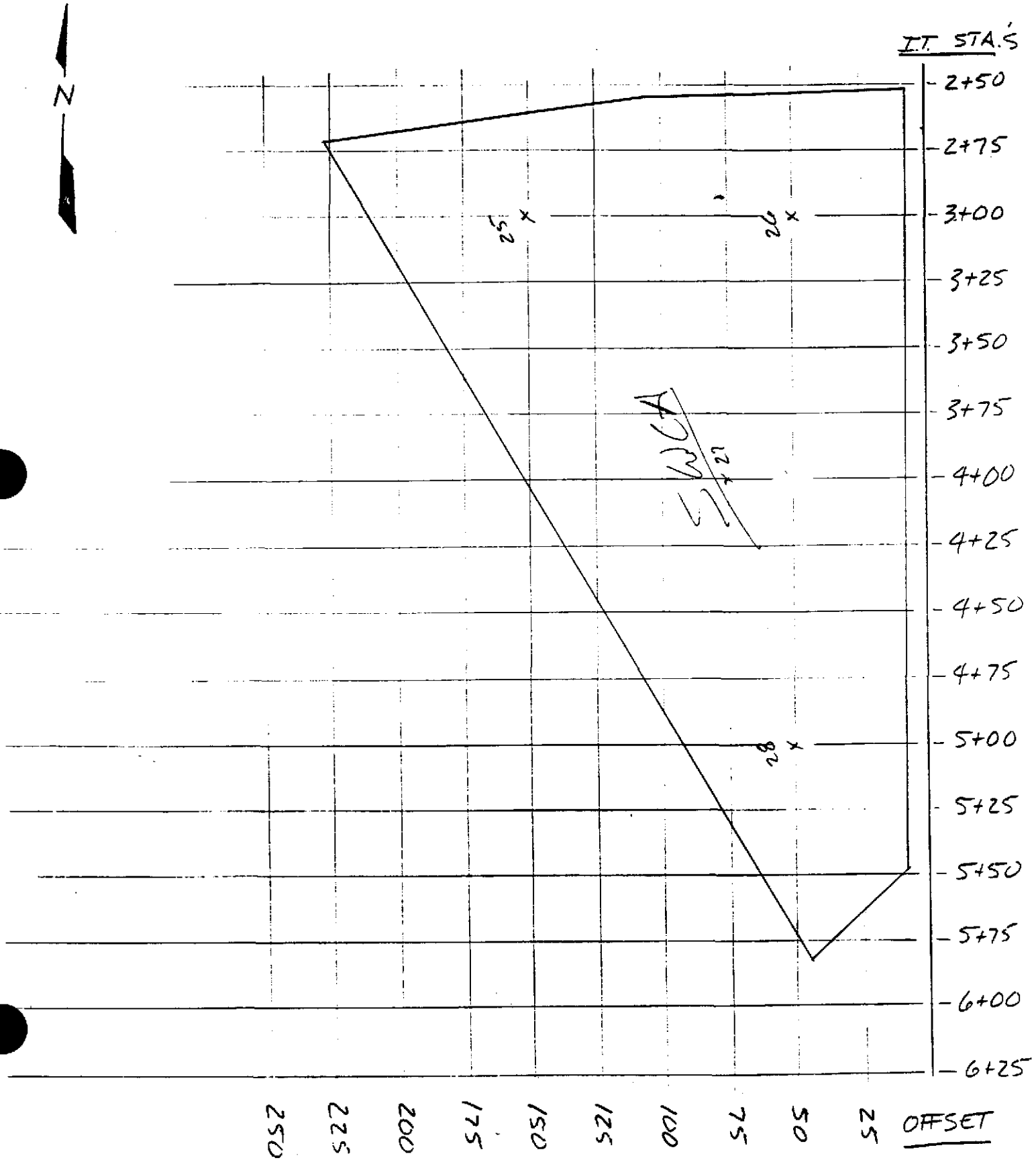
INTERNATIONAL TECHNOLOGY CORPORATION

BF Date 11-21-90 Subject NUC. DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



PROCTOR TEST REPORT

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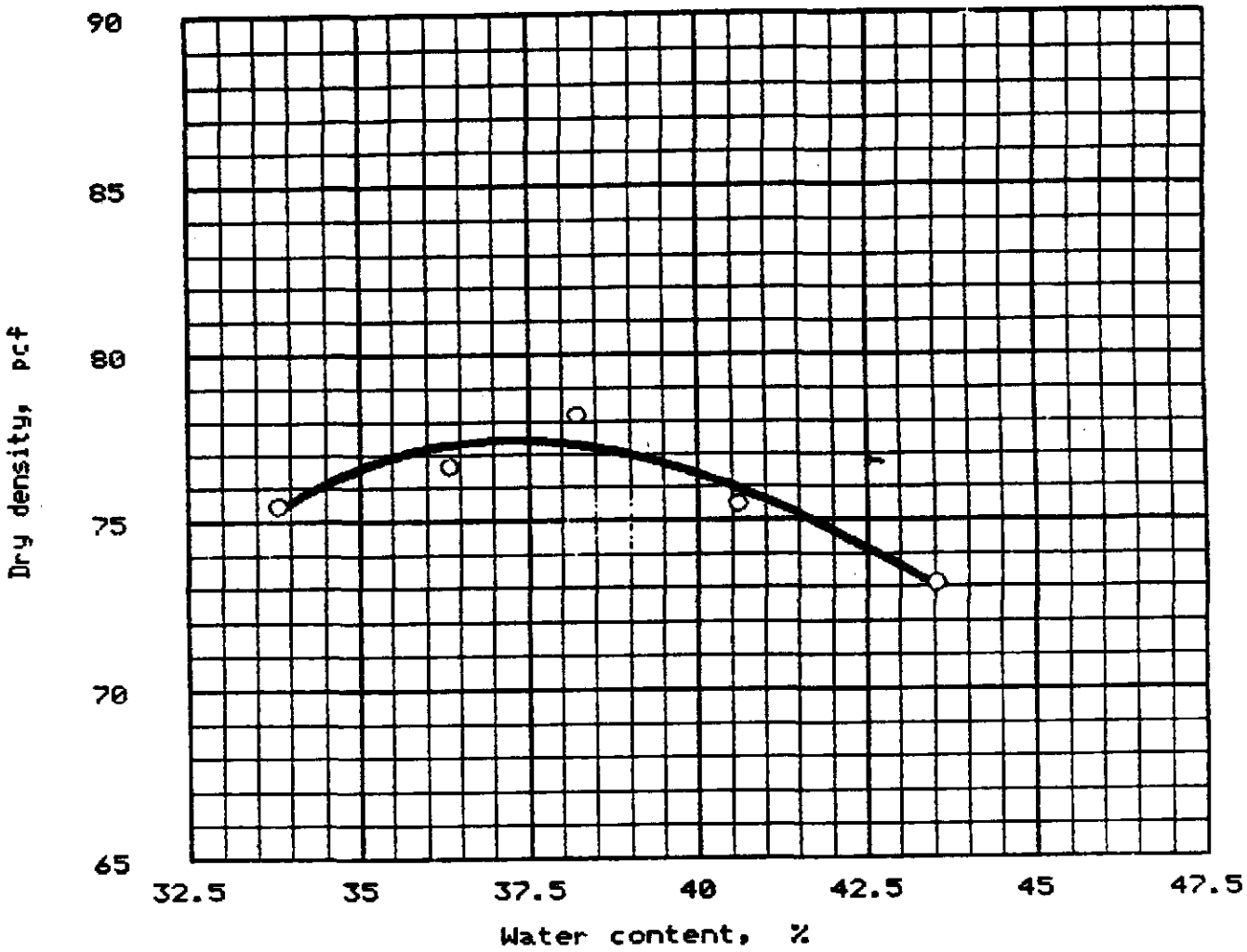


"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.20
	MH	44.7 %		56	44		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 37.3 % Maximum dry density = 77.4 pcf	Brown silty clay w/ lime

Contractor: Lewis Miller Construction
Project: Cedar Chemical Ponds
Location: On site material

Project No.: 0187.2 Date: Nov 20, 1990

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 11-27-90

TESTED BY: Billy C. Fry
MOISTURE CORRECTION FACTOR -19 USED

TEST NUMBER	29	30	31	32						
STATION	300	300	400	500						
OFFSET	150	50	75	50						
MODE & DEPTH	6"	~~10"~~	~~10"~~	~~10"~~						
COMPACTION METHOD	SH	SH	SH	SH						
NUMBER OF PASSES										
LIFT THICKNESS	10"	10"	10"	10"	LOOSE					
WET DENSITY (PCF)	109.8	110.0	109.1	109.1						
MOISTURE (PCF)	28.1	30.1	30.8	30.0						
DRY DENSITY (PCF)	81.1	79.3	78.3	79.1						
% MOISTURE	34.4%	38.6%	39.3%	37.9						
MAX.DRY DENSITY STD. ☑ MOD. ☐	77.4	→								
OPTIMUM MOISTURE	37.8	→								
% RELATIVE COMPACTION	105.6%	97.6%	98.9%	97.1%						
MATERIAL DISCRIPTION	SOLID SOIL B	→								

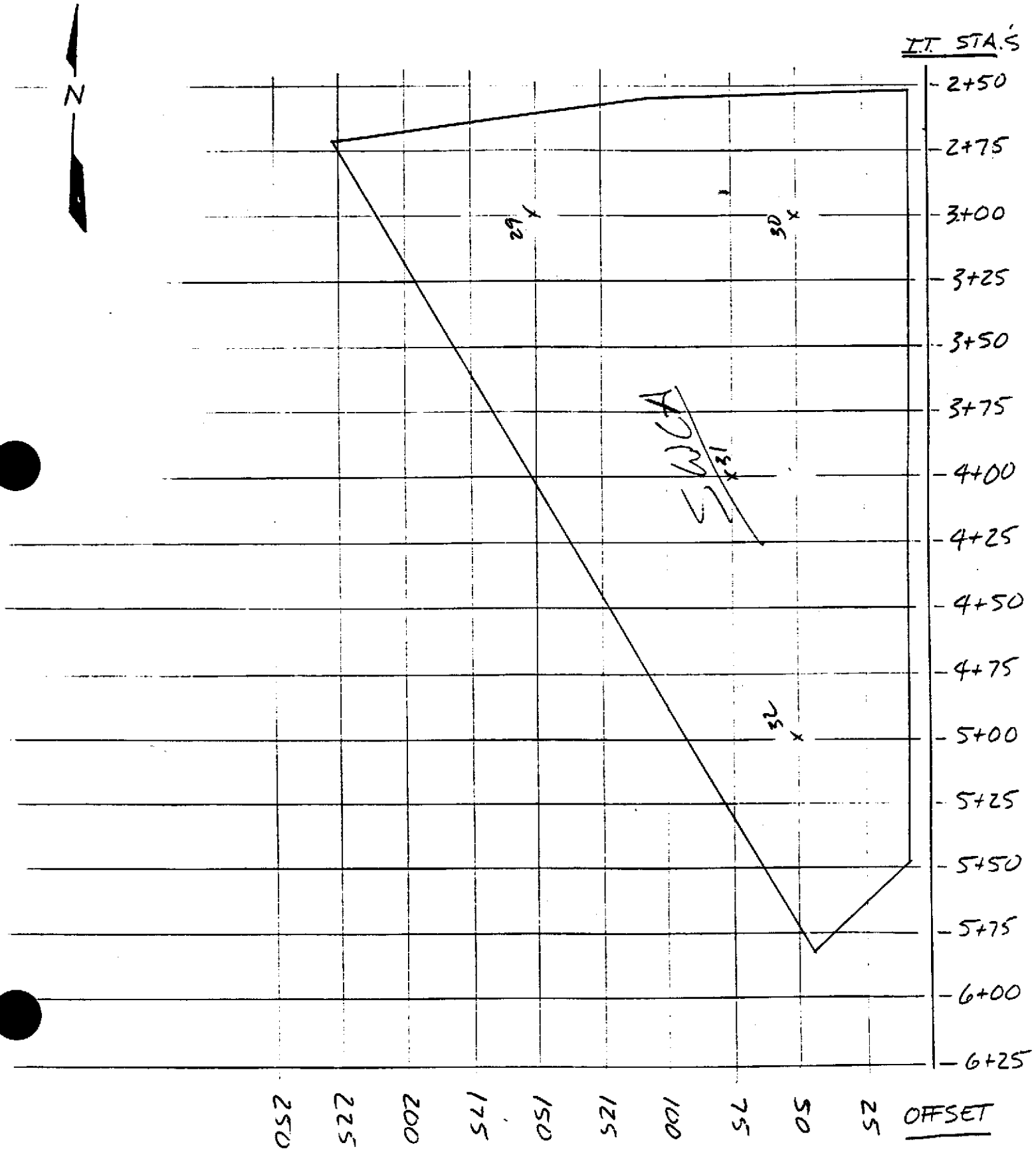
STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	12770
3300	0583	

INTERNATIONAL TECHNOLOGY CORPORATION

(25)

BF Date 11-27-90 Subject NUC. DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



INTERNATIONAL TECHNOLOGY CORPORATION

(26)

By B.F. Date 11/27/90 Subject VERIFY NUC. GA. Sheet No. 1 of 1

By ____ Date ____ Proj. No. 435425

OBJ.:
THIS TEST IS TO VERIFY M.C. & DENSITY OF NUC. GA. MSMTS.

PROC.:
USED DRIVE RING SAMPLER FOR MSMT. OF SAMPLE BELOW NUC. GA. TEST AREA.

NUC. TEST # = 32
NUC. D.D. READING = 79.7 PCF.
NUC. M.C. READING = 57.6 %

CALCULATION OF DENSITY & M.C.

WT. OF DRIVE RING + WET SOIL = 1.568#
WT. OF DRIVE RING ——— .489#
WT. OF WET SOIL ——— 1.079
WT. OF DRY SOIL ——— .788#
WT. OF WATER ——— .291#
VOL. OF DRIVE RING ——— .0101 CU.FT.
WT. DRY SOIL / VOL. OF SAMPLE = 78.06 PCF.
WT. WATER / WT DRY SOIL ——— 36.9 %

% DIFF. DENSITY FROM NUC. GA. TO VERIFIED SAMPLE:

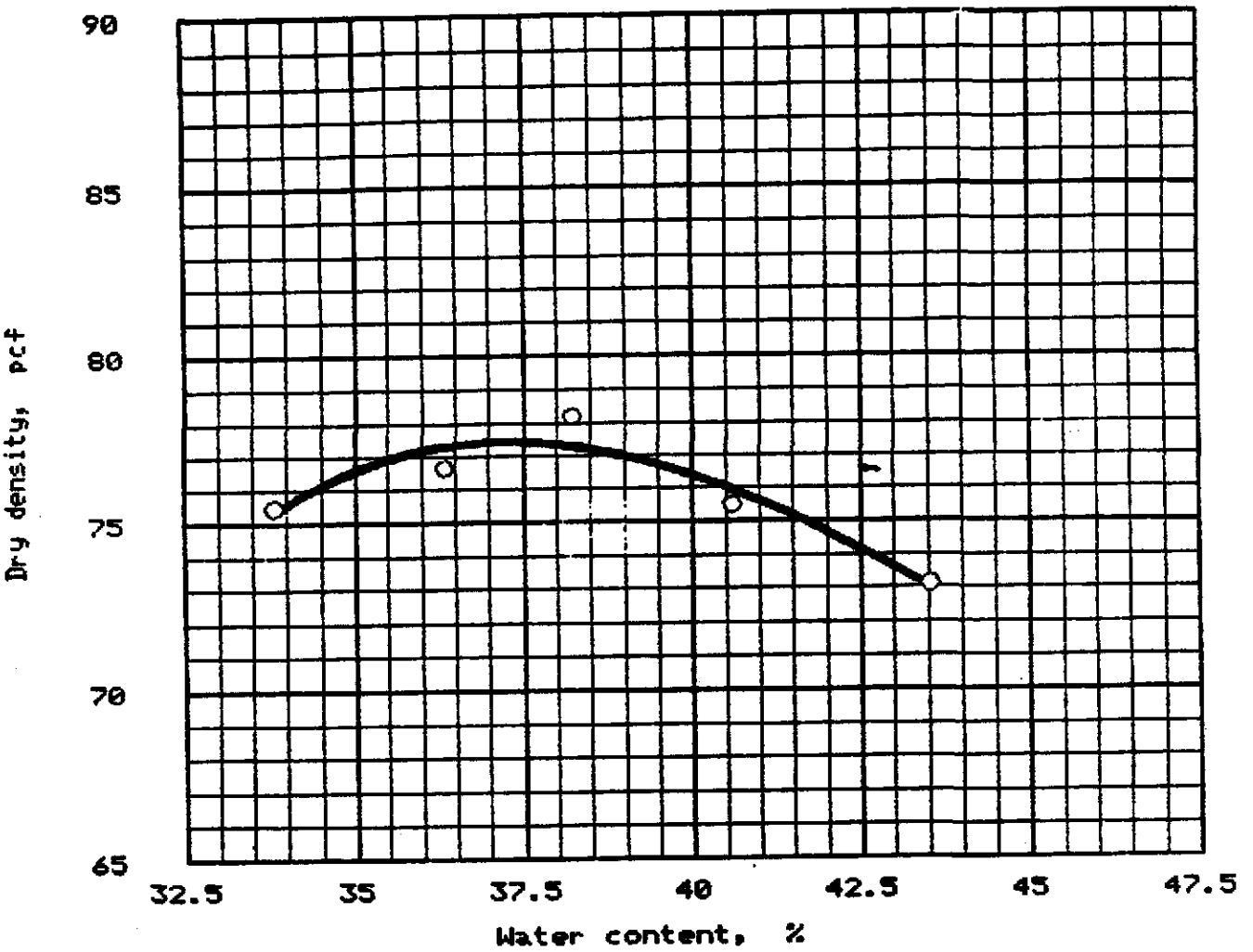
$$1 - \frac{\text{DENSITY NUC. GA.}}{\text{DENSITY SAMPLE}} \times 100 = 2.1\% < 3\% \text{ OK}$$

% DIFF. M.C. FROM NUC. GA. TO VERIFIED SAMPLE:

$$1 - \frac{\text{M.C. NUC. GA.}}{\text{M.C. SAMPLE}} \times 100 = 1.9\% < 2\% \text{ OK}$$

PROCTOR TEST REPORT

27



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.2
	MH	44.7 %		56	44		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 37.3 % Maximum dry density = 77.4 pcf	Brown silty clay w/ lime

Contractor: Lewis Miller Construction
Project: Cedar Chemical Ponds
Location: On site material

Project No.: 0187.2 Date: Nov 20, 1990

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: Cedar Chem. Co.
PROJECT NO: 435425
DATE: 11-30-90

TESTED BY: Billy O. Fry
MOISTURE CORRECTION FACTOR -19 USED

TEST NUMBER	33	34	35	36						
STATION	500	500	400	500						
OFFSET	150	50	75	50						
MODE & DEPTH	6"	→	→	→						
COMPACTION METHOD	SH	→	→	→						
NUMBER OF PASSES										
LIFT THICKNESS	10"	→	→	→	COESE					
WET DENSITY (PCF)	120.6	115.4	119.9	120.1						
MOISTURE (PCF)	32.9	31.0	33.2	33.1						
DRY DENSITY (PCF)	87.7	84.4	86.7	87.1						
% MOISTURE	37.5	36.7	38.2	37.7						
MAX.DRY DENSITY STD.☑ MOD.☐	77.4	→	→	→						
OPTIMUM MOISTURE	37.3	→	→	→						
% RELATIVE COMPACTION	99.3	95.6	98.2	99.3						
MATERIAL DISCRIPTION	MH	→	→	→						

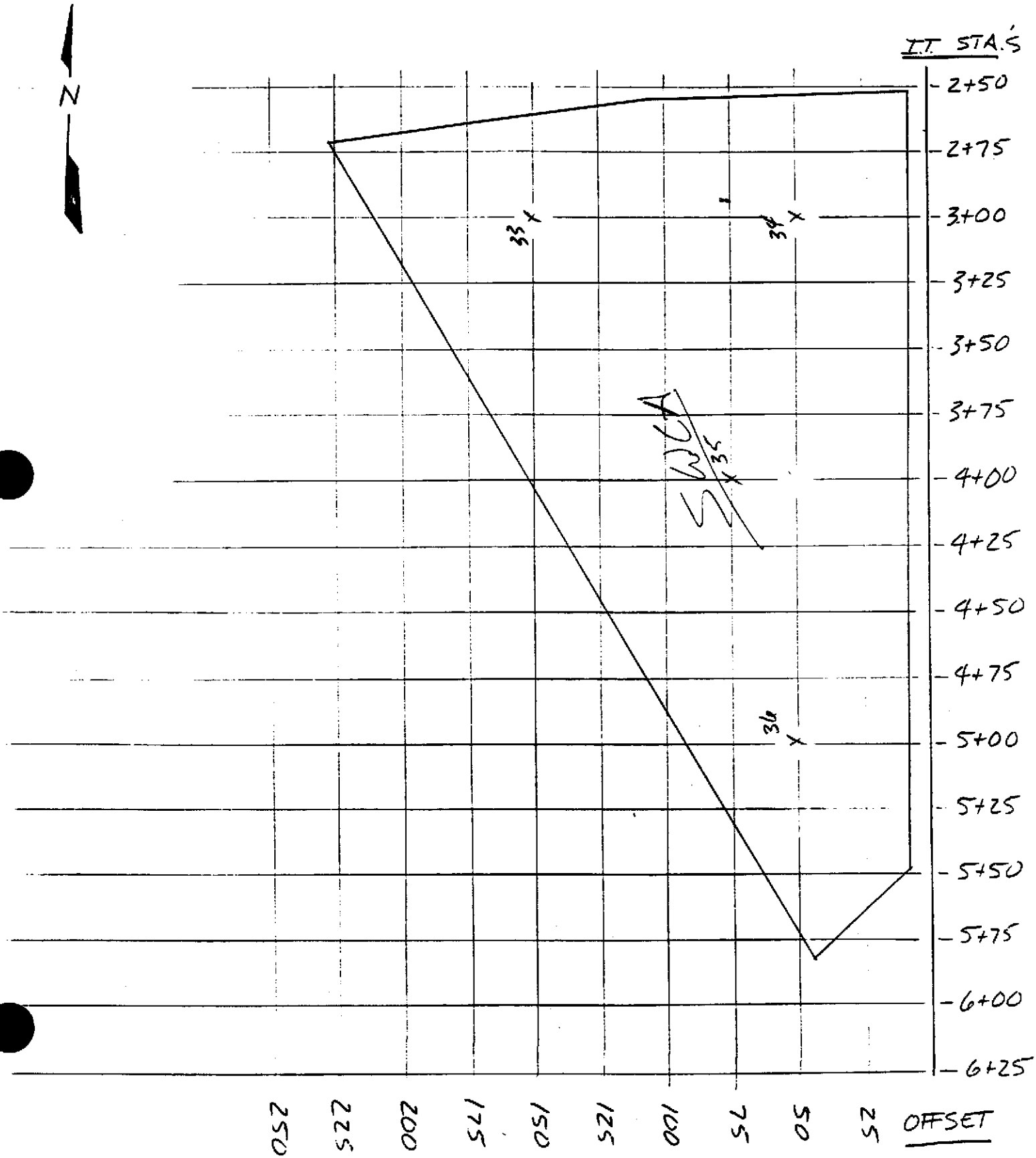
STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	12770
5290	0580	

INTERNATIONAL TECHNOLOGY CORPORATION

(29)

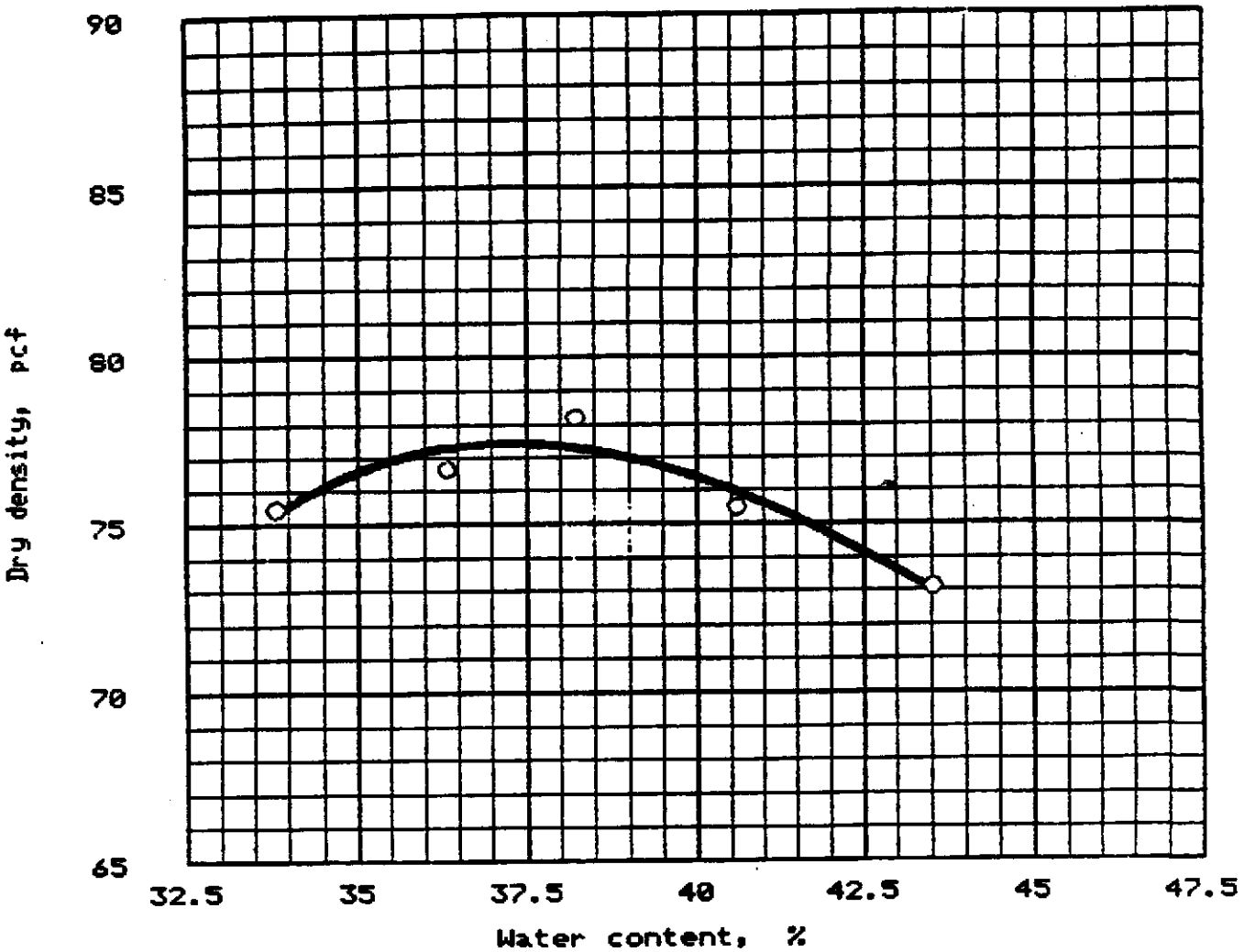
B.F. Date 11-30-90 Subject NUC. DENSITY LOCATIONS. Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



PROCTOR TEST REPORT

30



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.20
	MH	44.7 %		56	44		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 37.3 % Maximum dry density = 77.4 pcf	Brown silty clay w/ lime

Contractor: Lewis Miller Construction
Project: Cedar Chemical Ponds
Location: On site material

Project No.: 0187.2 Date: Nov 20, 1990

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: Cedar Chem. Co.
PROJECT NO: 435425
DATE: 12-01-90

TESTED BY: Billy C. Fry
MOISTURE CORRECTION FACTOR -19 USED

TEST NUMBER	37	38	39	40						
STATION	300	300	400	500						
OFFSET	150	75	75	50						
MODE & DEPTH	6"	→		→						
COMPACTION METHOD	S/	→		→						
NUMBER OF PASSES										
LIFT THICKNESS	10"	→		→	LOOSE					
WET DENSITY (PCF)	121.9	121.6	119.3	117.9						
MOISTURE (PCF)	33.5	34.0	33.0	33.9						
DRY DENSITY (PCF)	88.4	87.6	86.4	84.1						
% MOISTURE	37.9%	38.8%	38.2%	40.1%						
MAX.DRY DENSITY STD. ☐ MOD. ☐	77.4	→		→						
OPTIMUM MOISTURE	37.3	→		→						
% RELATIVE COMPACTION	100.1%	99.9%	97.8%	95.3%						
MATERIAL DISCRIPTION	MH	→		→						

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	12770
5298	0578	

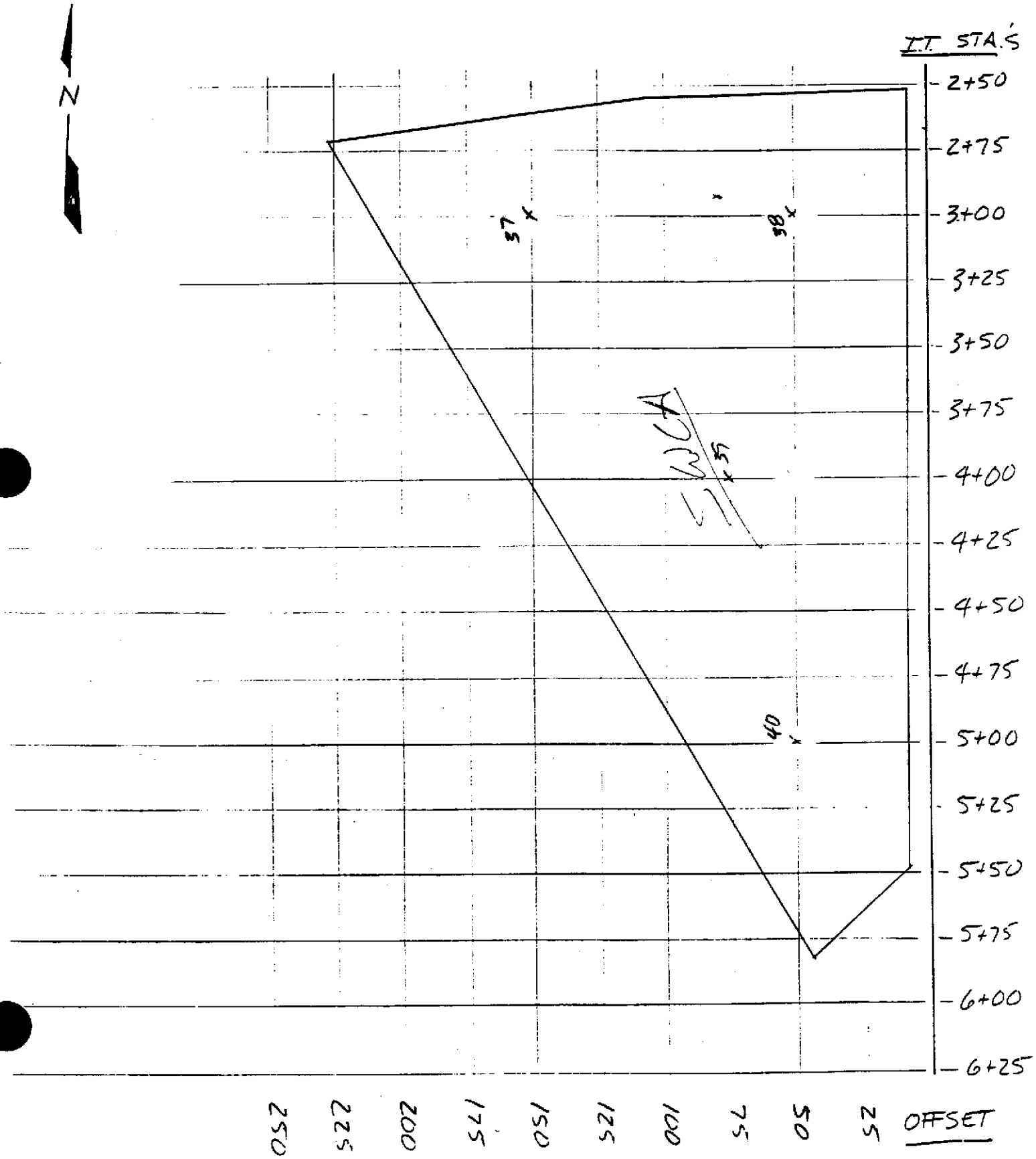
(51)

(32)

INTERNATIONAL TECHNOLOGY CORPORATION

B.F. Date 12-01-90 Subject NUC DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



PROCTOR TEST REPORT

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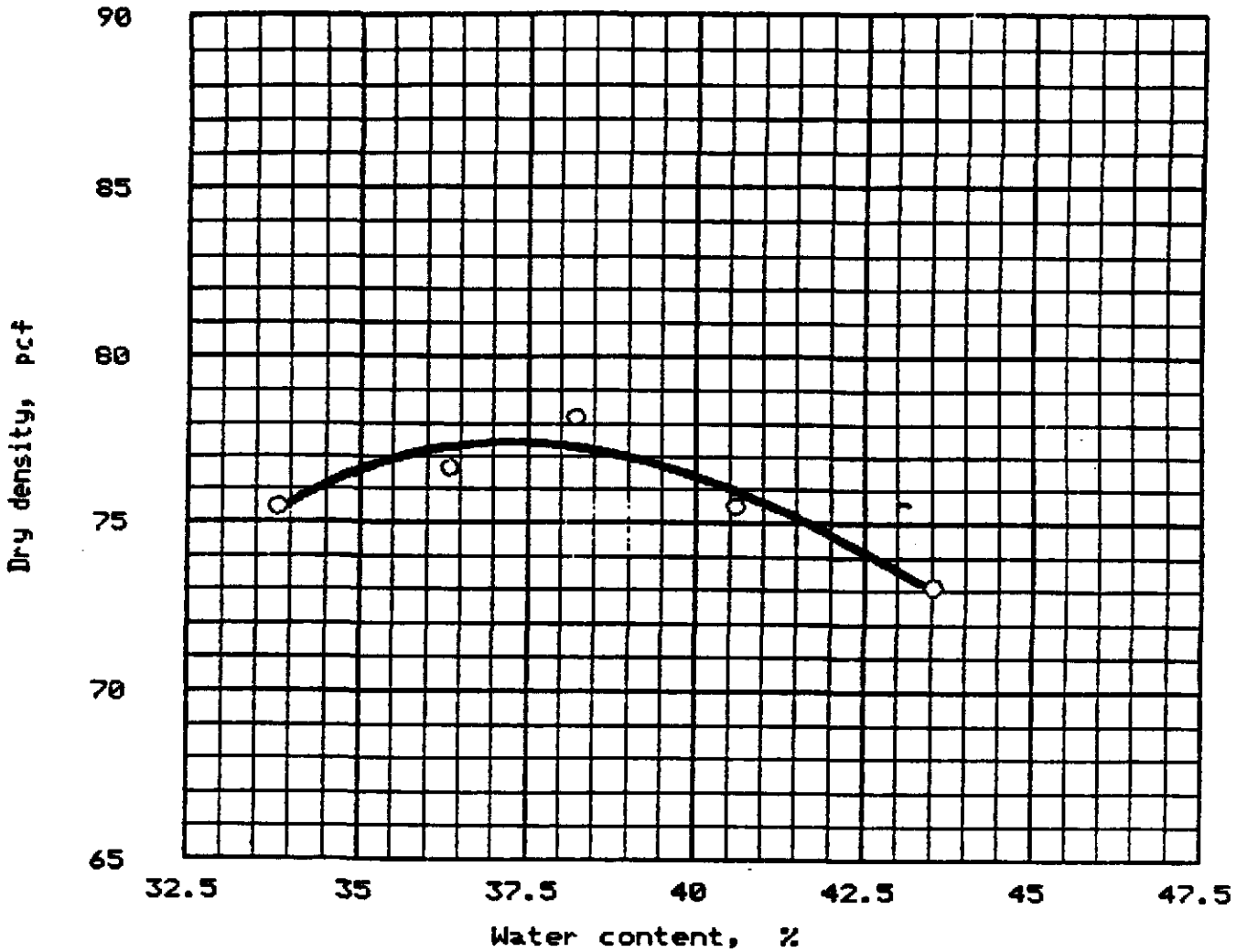


"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.20
	MH	44.7 %		56	44		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 37.3 % Maximum dry density = 77.4 pcf	Brown silty clay w/ lime

Contractor: Lewis Miller Construction
Project: Cedar Chemical Ponds
Location: On site material

Project No.: 0187.2 Date: Nov 20, 1990

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM CO.
PROJECT NO.: 435425
DATE: 07-19-91

TESTED BY: Billy Fry
USED - 43 M.C. CORRECTION

TEST NUMBER	41-A	42-A	43-A	44-A	41-B	42-B	43-B			
STATION	3+50	4+50	5+50	5+00	3+50	4+50	5+50			
OFFSET	225	175	100	125	225	175	100			
MODE & DEPTH	6"	→	→	→	→	→	→			
COMPACTION METHOD	SHEEPS	FOOT ROLLER								
NUMBER OF PASSES	4	→	→	→	9	→	→			
LIFT THICKNESS	2'	→	→	→	→	→	→			
WET DENSITY (PCF)	103^{0}	100^{6}	102^{5}	103^{7}	109^{2}	109^{7}	112^{3}			
MOISTURE (PCF)	26^{0}	23^{3}	25^{0}	25^{2}	26^{3}	25^{3}	27^{5}			
DRY DENSITY (PCF)	77^{0}	77^{4}	77^{5}	78^{5}	82^{9}	84^{4}	84^{8}			
% MOISTURE	33^{8}	30^{0}	32^{3}	32^{1}	31^{7}	30^{0}	32^{4}			
MAX.DRY DENSITY STD.☐ MOD.☐	82^{7}	→	→	→	→	→	→			
OPTIMUM MOISTURE	32^{3}	→	→	→	→	→	→			
% RELATIVE COMPACTION	93^{1}	93^{6}	93^{7}	94^{9}	100^{2}	102^{1}	102^{5}			
MATERIAL DISCRIPTION	MH SOLIDIFIED SEDIMENT									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2154	0505	

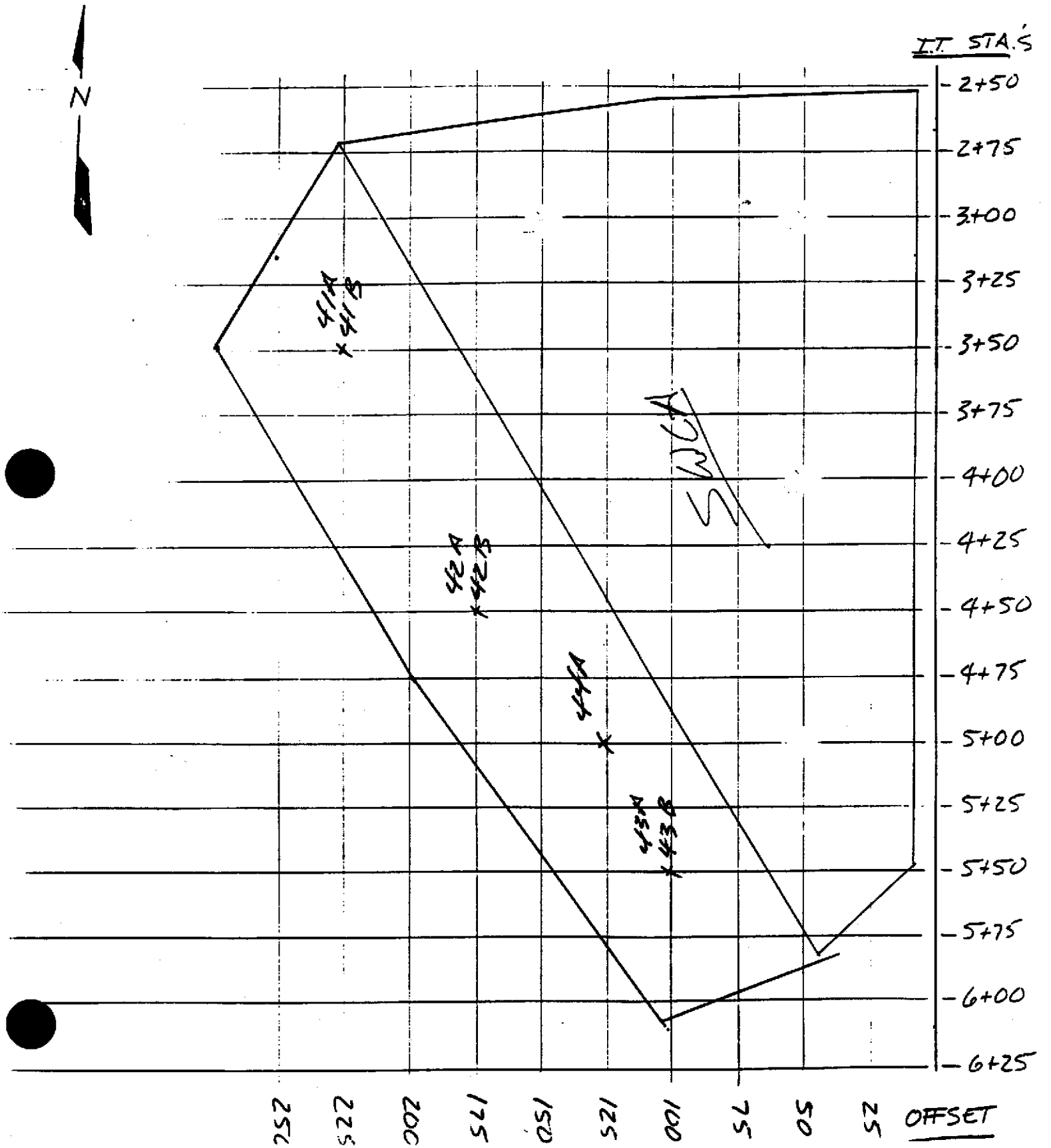
(50)

INTERNATIONAL TECHNOLOGY CORPORATION

(35)

BF Date 2-19-91 Subject NUC DENSITY LOCATIONS Sheet No. 2 of 2

Chkd. By ____ Date ____ SWCA Proj. No. 435425



INTERNATIONAL TECHNOLOGY CORPORATION

(36)

By B.F. Date 07-20-86 Subject MOISTURE CONTENT Sheet No. 1 of 1

Chkd. By ____ Date ____ VERIFICATION FOR NUC. DENS. TESTS Proj. No. 435425

SAMPLES WERE TAKEN TO 6" DEPTH BELOW NUC. GA. TEST AREA INDICATED BELOW & DRIED IN MICROWAVE OVEN @ 2 10 MIN. INTERVALS. NUC. TESTS WERE RUN W/ PREVIOUS CORRECTION OF -42.5

#41-A M.C. GA = 33.7 %

WET SOIL + CAN	= 145.2 g
WT. CAN	= 8.4
WT. DRY SOIL + C	= 111.1
WET SOIL	= 137.5
DRY SOIL	= 102.7
WATER	= 34.8
M.C.	= 33.9 %

#42-A M.C. GA = 29.9 %

WET SOIL + CAN	= 149.9 g
WT. CAN	= 8.4
DRY SOIL + CAN	= 115.3
WET SOIL	= 141.5
DRY SOIL	= 106.9
WATER	= 34.6
M.C.	= 32.4 %

#43-A M.C. GA = 32.3

WET SOIL + CAN	= 140.9 g
CAN	= 8.4
DRY SOIL + CAN	= 109.2
WET SOIL	= 132.5
DRY SOIL	= 100.8
WATER	= 31.7
M.C.	= 31.4 %

#44-A M.C. GA = 32.0

WET SOIL + CAN	= 114.7 g
CAN	= 8.4
DRY SOIL + CAN	= 88.0
WET SOIL	= 106.3
DRY SOIL	= 80.4
WATER	= 25.9
M.C.	= 32.3 %

AVG. M.C. OF NUC. GA. - M.C. SAMPLE = -.5

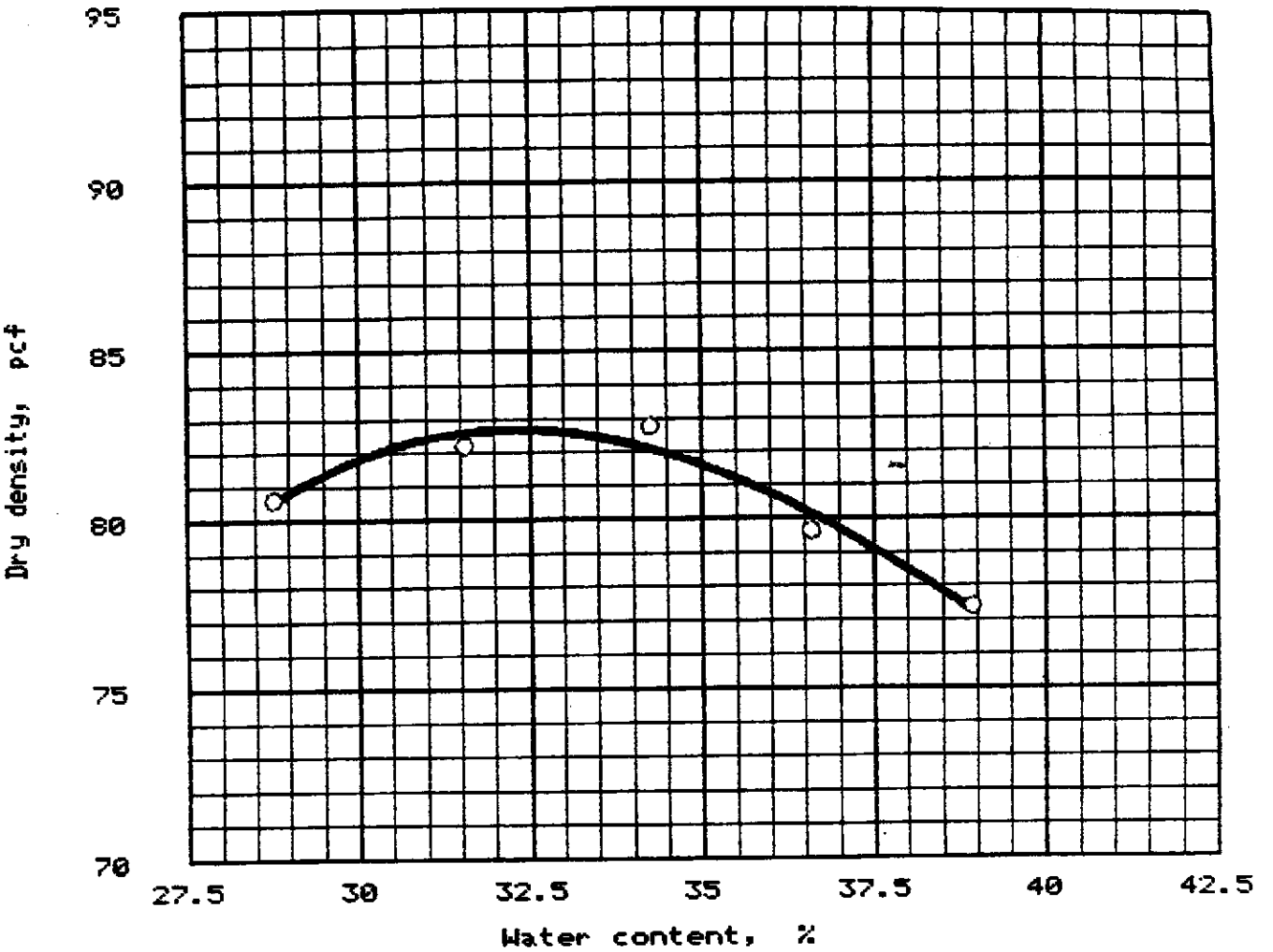
NO NEED FOR CORRECTION.

NUC. GA. SER. # 7689

108-10-85

PROCTOR TEST REPORT

37



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.20
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 07-23-91

TESTED BY: Billy Fry
USED -43 M.C. CORRECTION

TEST NUMBER	45	46	47							
STATION	3450	4150	5150							
OFFSET	225	175	100							
MODE & DEPTH	6" →									
COMPACTION METHOD	SHEEPS FOOT ROLLER									
NUMBER OF PASSES	7 →									
LIFT THICKNESS	6" →									
WET DENSITY (PCF)	108.2	106.9	109.9							
MOISTURE (PCF)	9	23.9	26.0							
DRY DENSITY (PCF)	83.3	83.0	83.9							
% MOISTURE	29.9	28.2	31.0							
MAX.DRY DENSITY STD.☑ MOD.☐	82.7 →									
OPTIMUM MOISTURE	32.3 →									
% RELATIVE COMPACTION	100.7	100.4	101.5							
MATERIAL DISCRIPTION	MIX SOLIDIFIED SEDIMENT									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2141	0500	

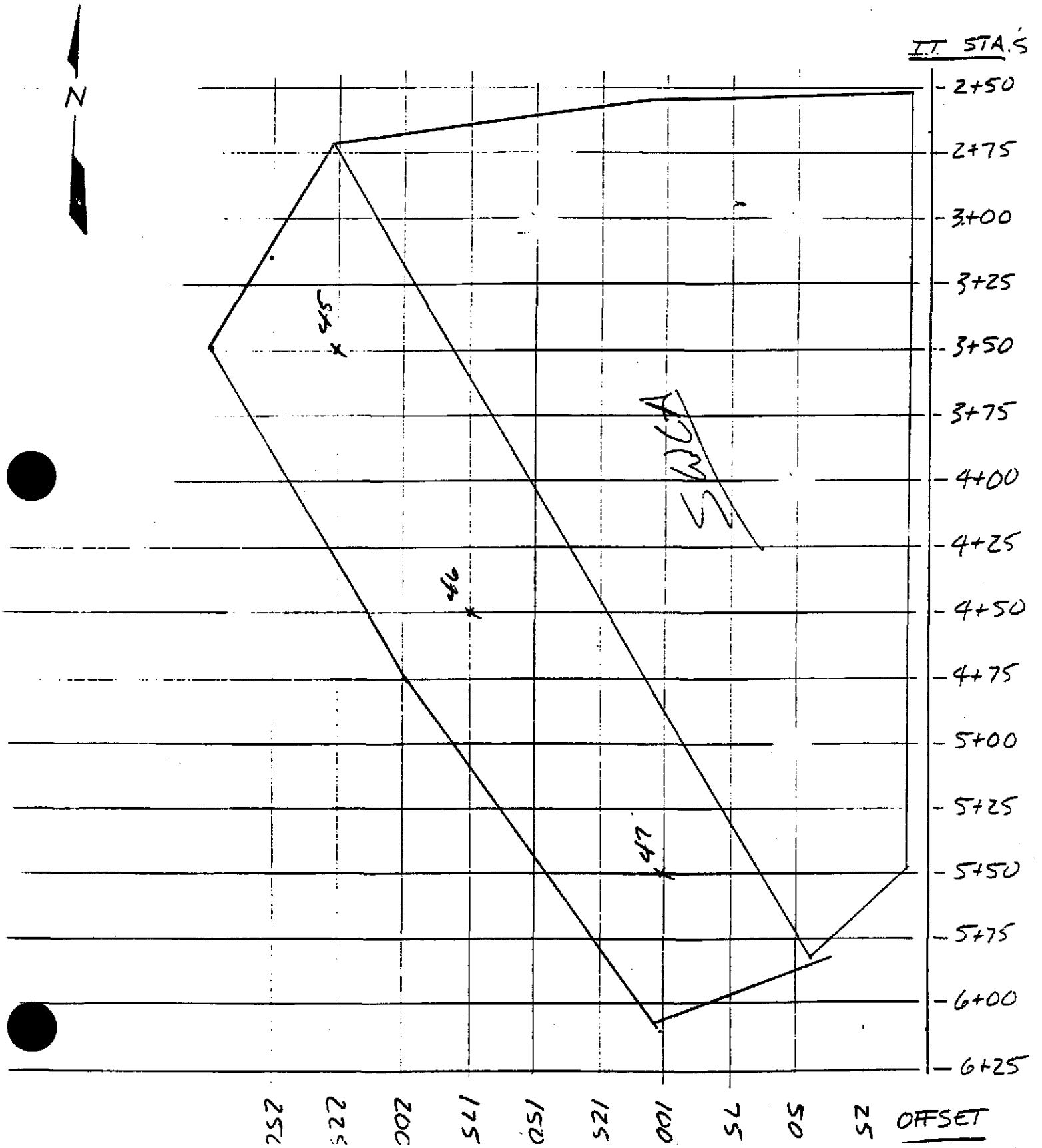
80

INTERNATIONAL TECHNOLOGY CORPORATION

(39)

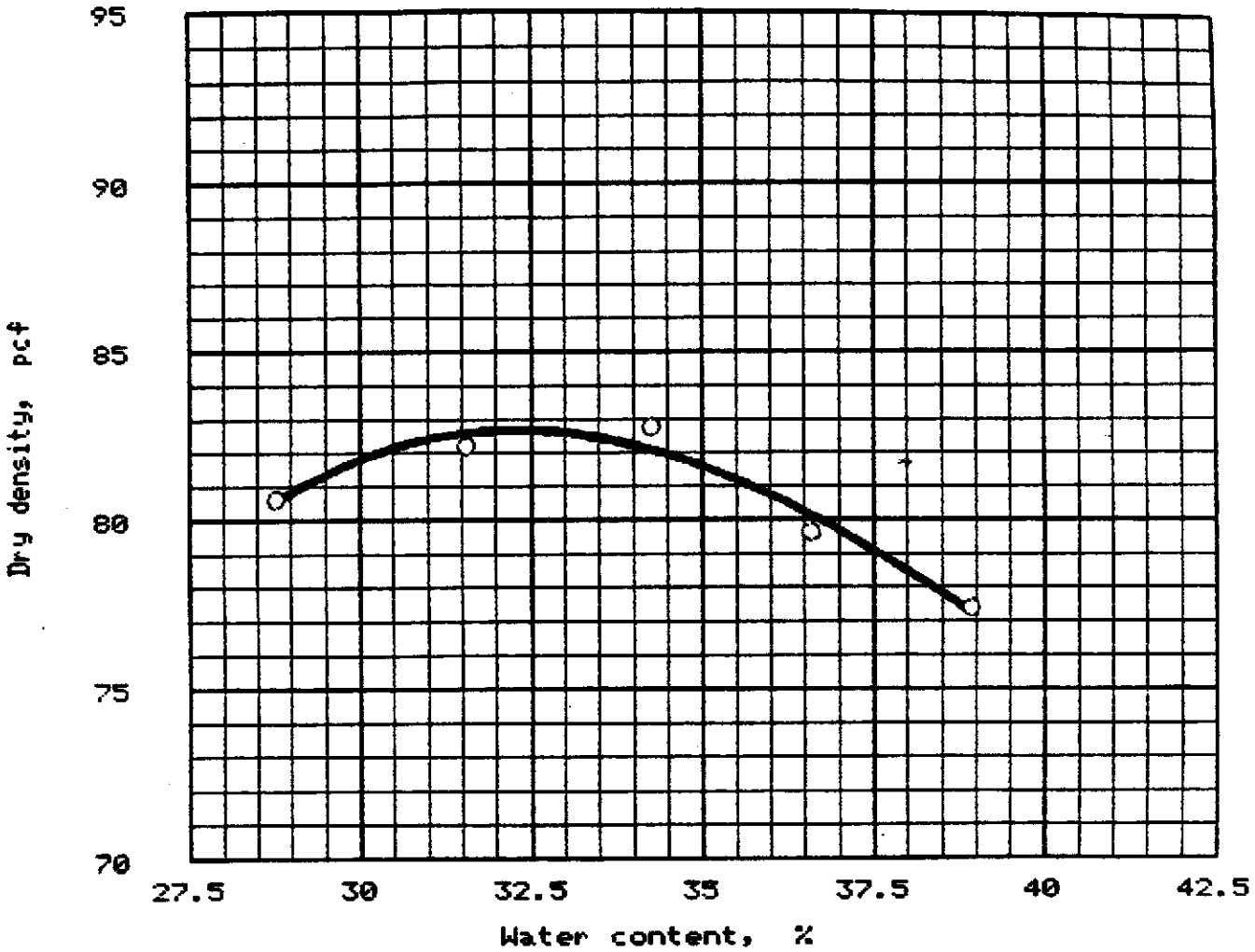
BF Date 7-23-91 Subject NUC DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 935425



PROCTOR TEST REPORT

(40)



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT

GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 07-24-91

TESTED BY: Billy Fry
USED -43 M.C. corp.

TEST NUMBER	48	49A	50	49B						
STATION	3150	4150	5150	4150						
OFFSET	225	175	100	175						
MODE & DEPTH	6" →			→						
COMPACTION METHOD	SHEEPS FOOT ROLLER →			→						
NUMBER OF PASSES	6 →			→						
LIFT THICKNESS	6" →			→						
WET DENSITY (PCF)	111^{3}	108^{3}	112^{1}	111^{2}						
MOISTURE (PCF)	26^{9}	26^{5}	27^{3}	27^{3}						
DRY DENSITY (PCF)	84^{4}	81^{8}	84^{8}	84^{0}						
% MOISTURE	31^{9}	32^{4}	32^{5}	32^{4}						
MAX.DRY DENSITY STD. ☑ MOD. ☐	82^{2} →			→						
OPTIMUM MOISTURE	32^{3} →			→						
% RELATIVE COMPACTION	102^{1}	98^{9}	102^{5}	101^{6}						
MATERIAL DISCRIPTION	MM SOLIDIFIED SEDIMENT									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2121	0521	

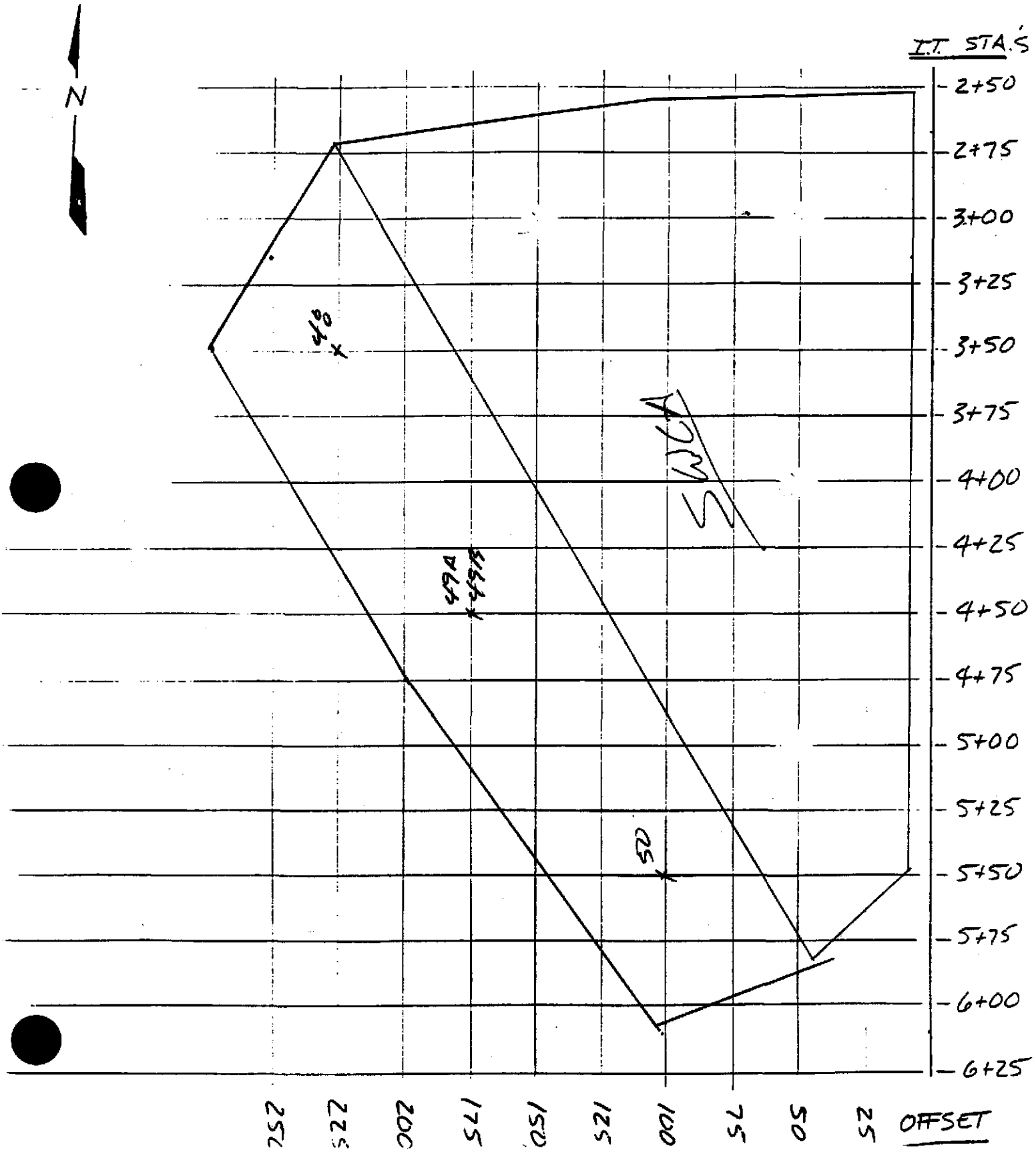
(41)

INTERNATIONAL TECHNOLOGY CORPORATION

(42)

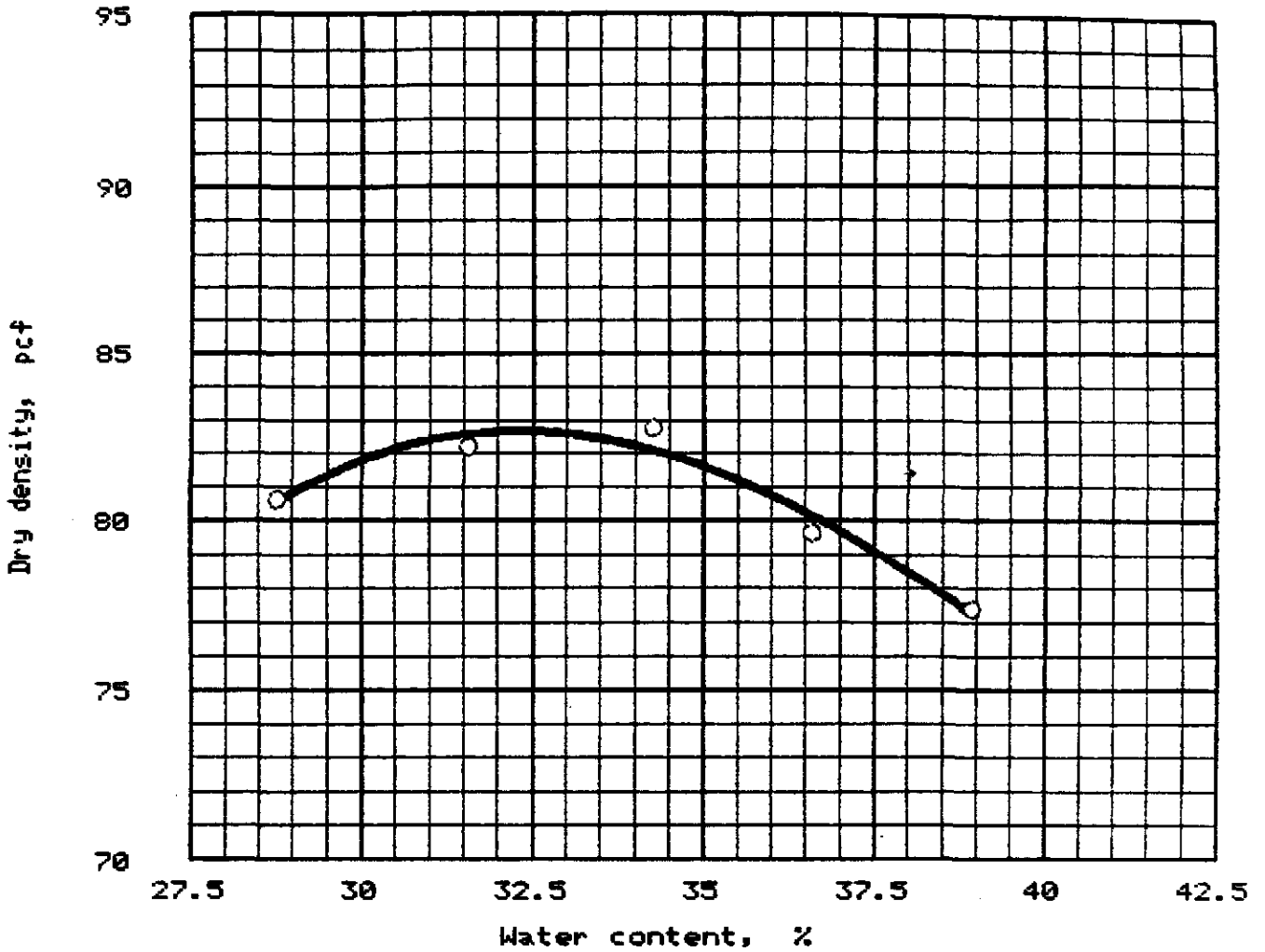
B.F. Date 7-24-91 Subject NUC. DENSITY LOCATIONS Sheet No. 1 of 1

Chkd. By ____ Date ____ SWCA Proj. No. 435425



PROCTOR TEST REPORT

43



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435925
DATE: 07-25-91

TESTED BY: Billy Frey
USED -43 CORR.

TEST NUMBER	51	52	53							
STATION	3150	4150	5150							
OFFSET	225	175	100							
MODE & DEPTH	6" →									
COMPACTION METHOD	SHEEPS FOOT ROLLER									
NUMBER OF PASSES	6 →									
LIFT THICKNESS	6" →									
WET DENSITY (PCF)	109^{2}	111^{0}	111^{1}							
MOISTURE (PCF)	26^{3}	27^{1}	27^{1}							
DRY DENSITY (PCF)	83^{0}	83^{9}	83^{6}							
% MOISTURE	31^{9}	32^{3}	32^{6}							
MAX.DRY DENSITY STD. ☑ MOD. ☐	82^{7} →									
OPTIMUM MOISTURE	32^{3} →									
% RELATIVE COMPACTION	100^{4}	101^{3}	101^{2}							
MATERIAL DISCRIPTION	MM SOLIDIFIED SEDIMENT									

STANDARD COUNT	
DENSITY	MOISTURE
2170	0498

DENSITY GUAGE SERIAL NUMBER
7689

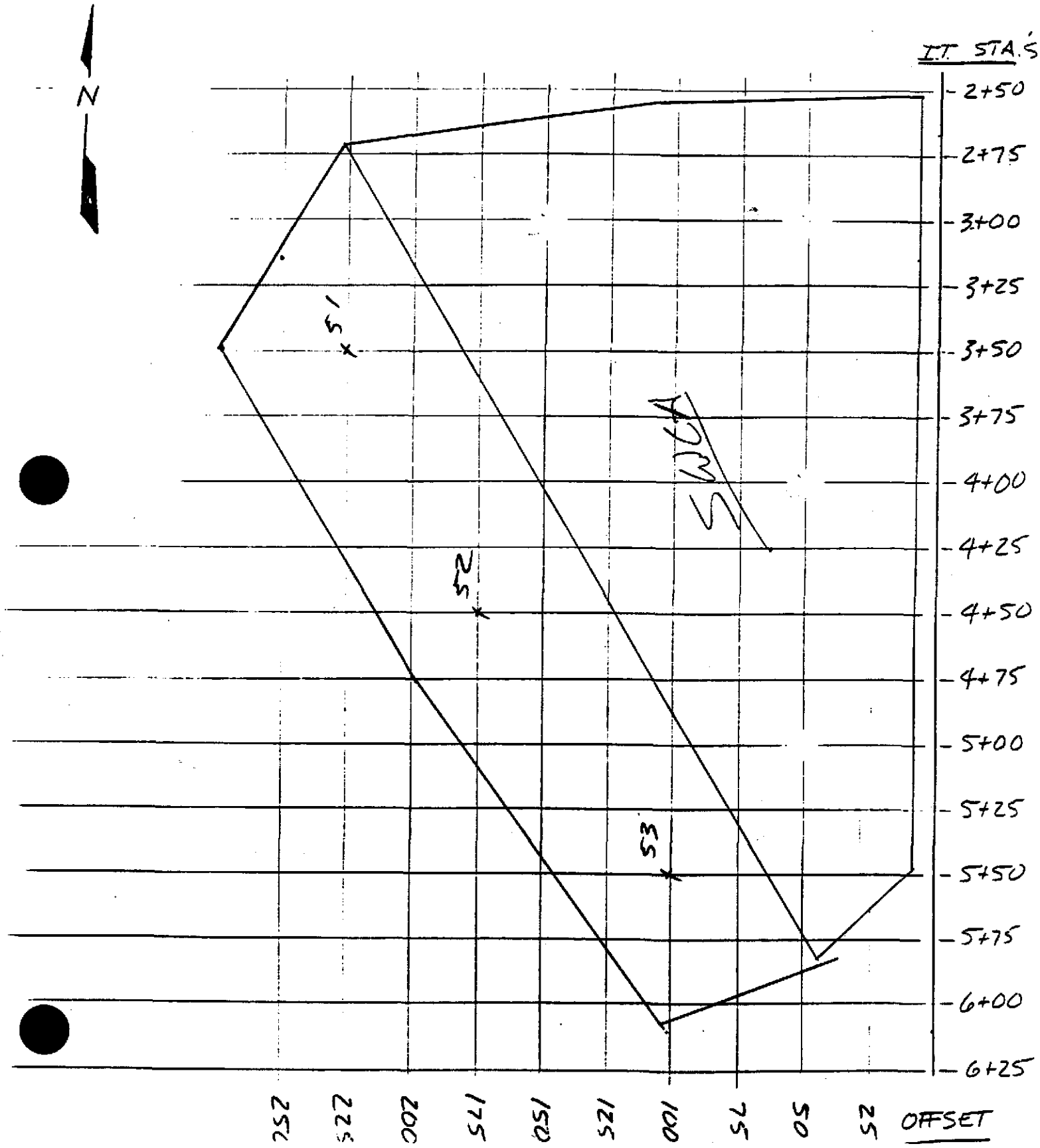
(69)

(45)

INTERNATIONAL TECHNOLOGY CORPORATION

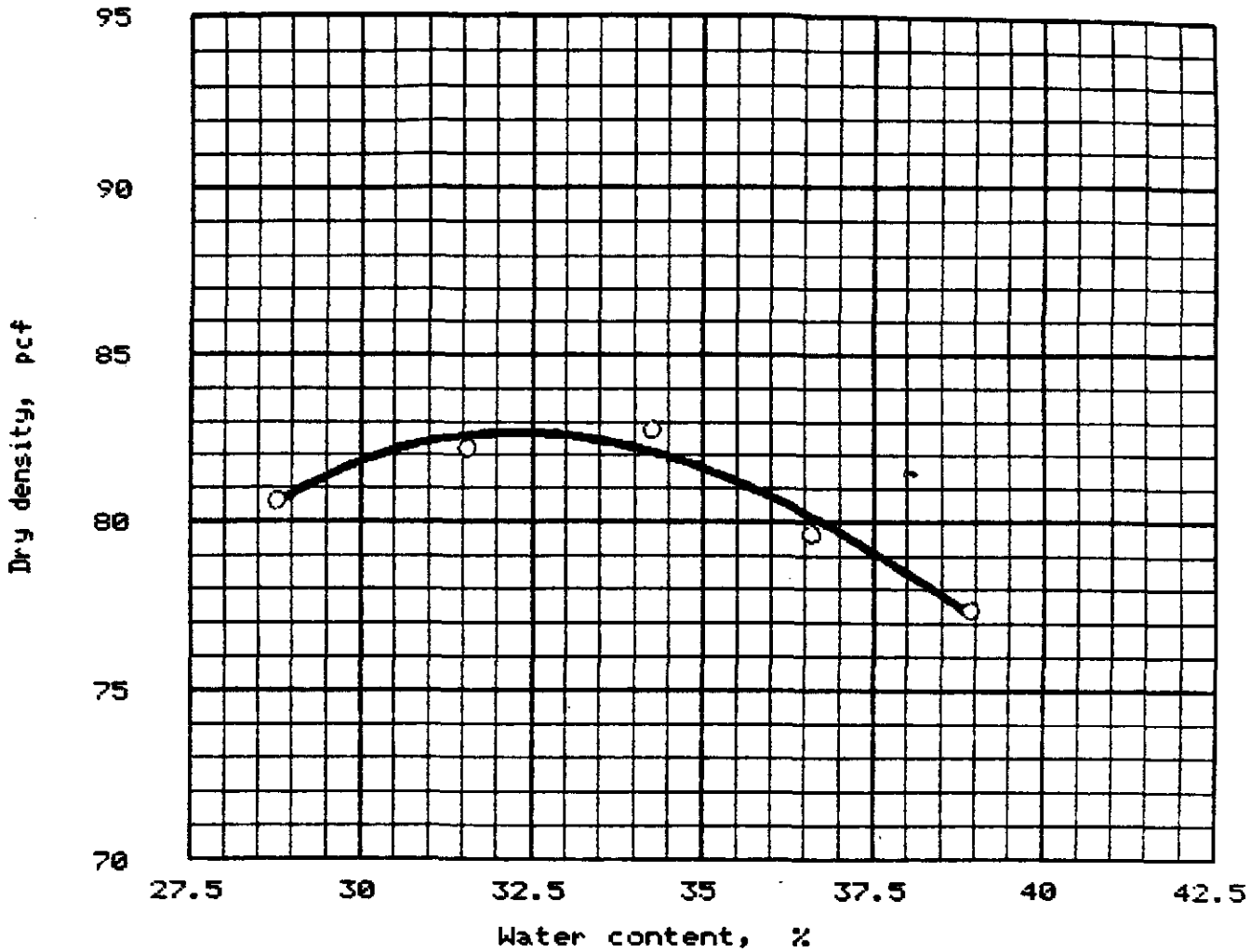
BF Date 7-24-91 Subject NUC DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



PROCTOR TEST REPORT

(46)



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: Cedar Chem. Co.
PROJECT NO.: 435423
DATE: 07-29-91

TESTED BY: Billy Fry
USED -43 M.C. CORRECTION

TEST NUMBER	54	55	56							
STATION	3150	4150	5150							
OFFSET	225	175	100							
MODE & DEPTH	6"	→	→							
COMPACTION METHOD	SHEEPS FOOT ROLLER									
NUMBER OF PASSES	4	→	→							
LIFT THICKNESS	6"	→	→							
WET DENSITY (PCF)	108^{7}	110^{6}	111^{7}							
MOISTURE (PCF)	25^{6}	26^{8}	29^{0}							
DRY DENSITY (PCF)	83^{1}	83^{8}	82^{7}							
% MOISTURE	30^{8}	32^{0}	35^{1}							
MAX.DRY DENSITY STD.☑ MOD.☐	82^{7}	→	→							
OPTIMUM MOISTURE	32^{3}	→	→							
% RELATIVE COMPACTION	100^{5}	101^{3}	100^{0}							
MATERIAL DISCRIPTION	MH	SOLIDIFIED	SEDIMENT							

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2168	0499	

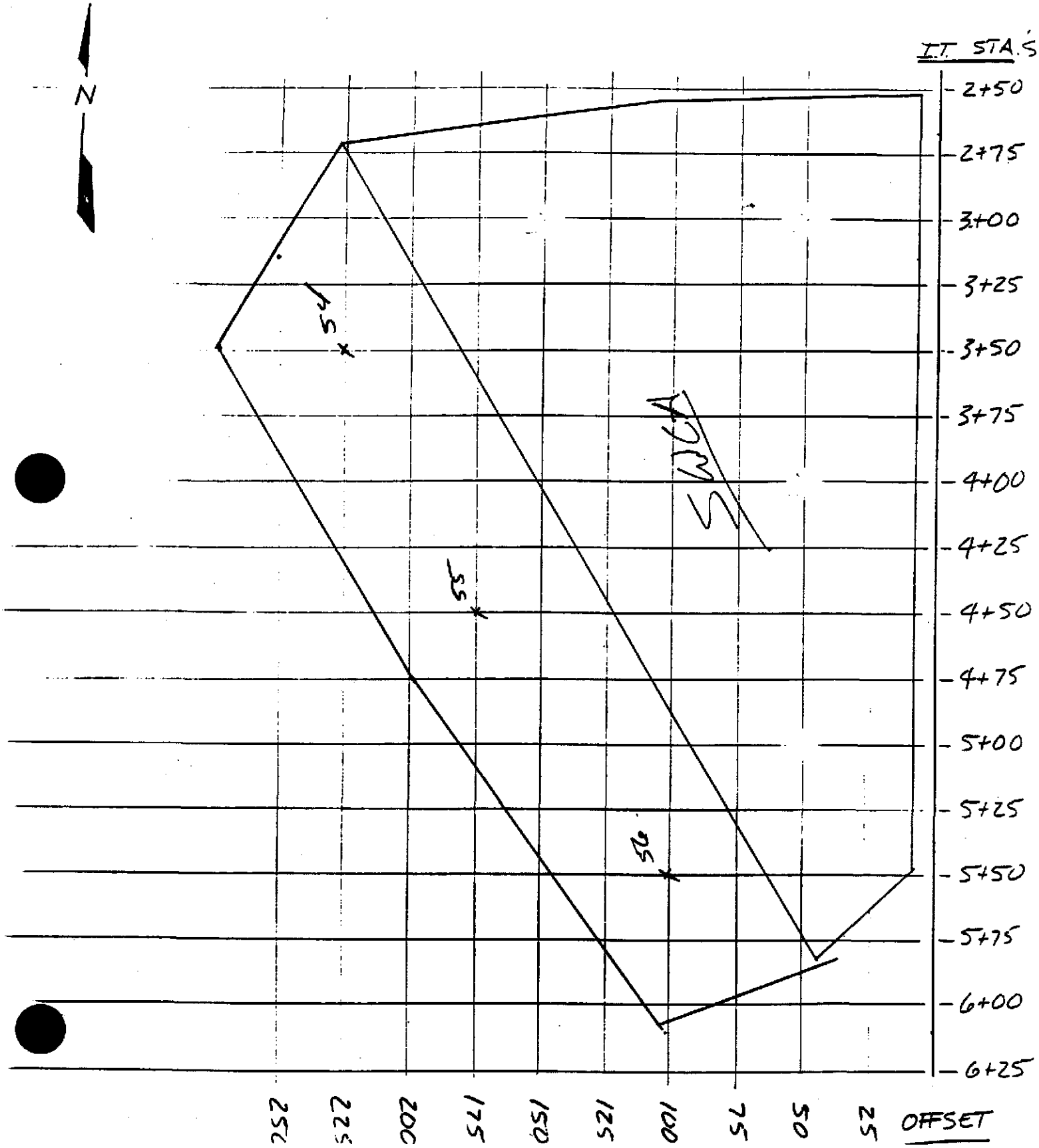
(47)

(48)

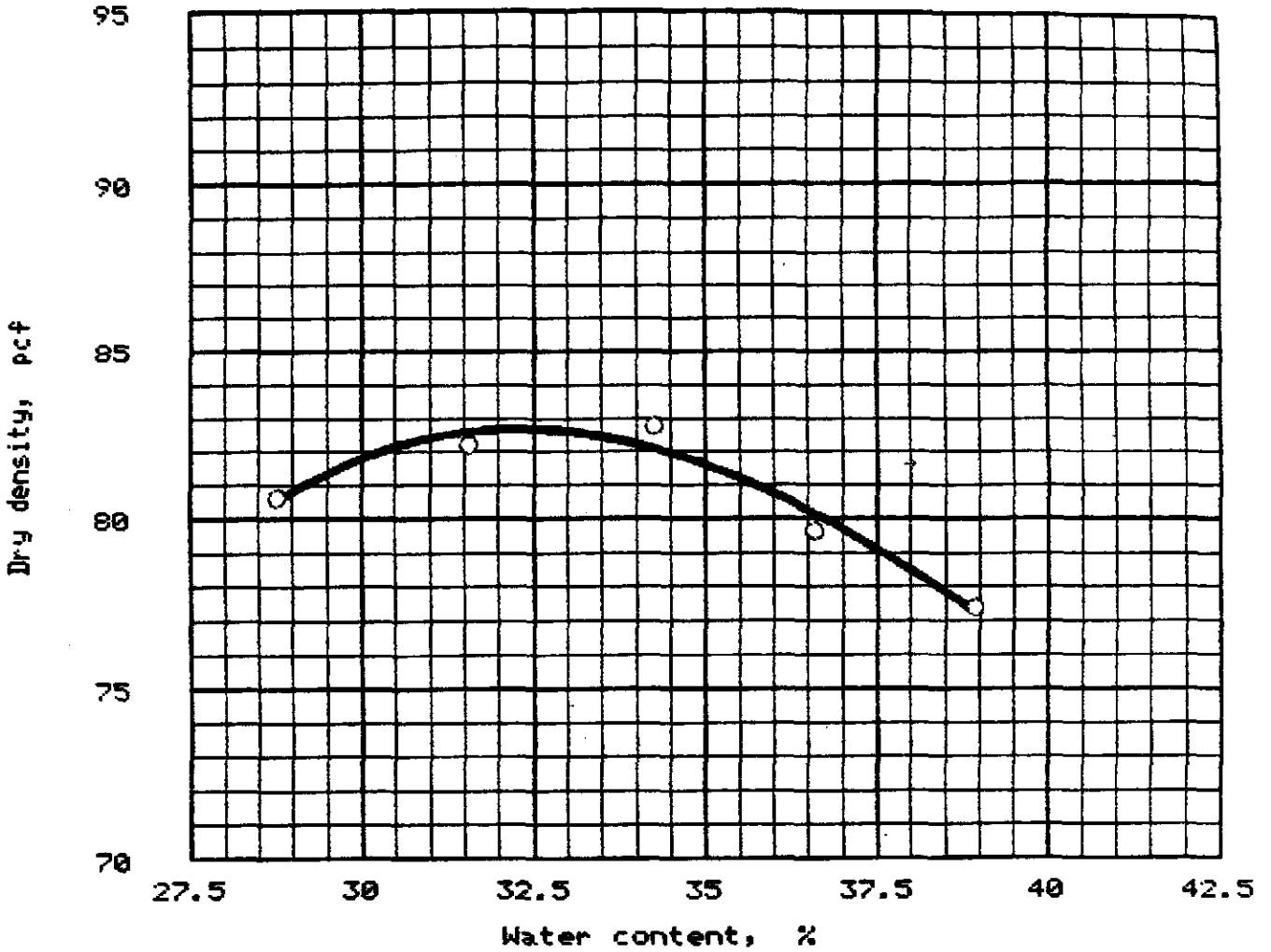
INTERNATIONAL TECHNOLOGY CORPORATION

B.F. Date 7-29-91 Subject NUC DENSITY LOCATIONS Sheet No. ____ of ____

Chkd. By ____ Date ____ SWCA Proj. No. 435425



PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 07-29-91

TESTED BY: Billy Fry
USED -43 MC. CORRECTION

TEST NUMBER	57	58	59							
STATION	3150	4150	5150							
OFFSET	225	175	100							
MODE & DEPTH	6" →									
COMPACTION METHOD	SHEEPS FOOT ROLLER									
NUMBER OF PASSES	4 →									
LIFT THICKNESS	6" →									
WET DENSITY (PCF)	111.5	111.8	111.5							
MOISTURE (PCF)	27.6	27.8	28.3							
DRY DENSITY (PCF)	85.7	85.0	82.5							
% MOISTURE	29.7	31.3	35.2							
MAX.DRY DENSITY STD. ☑ MOD. ☐	82.7 →									
OPTIMUM MOISTURE	32.3 →									
% RELATIVE COMPACTION	103.6	102.8	99.8							
MATERIAL DISCRIPTION										

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2171	0521	

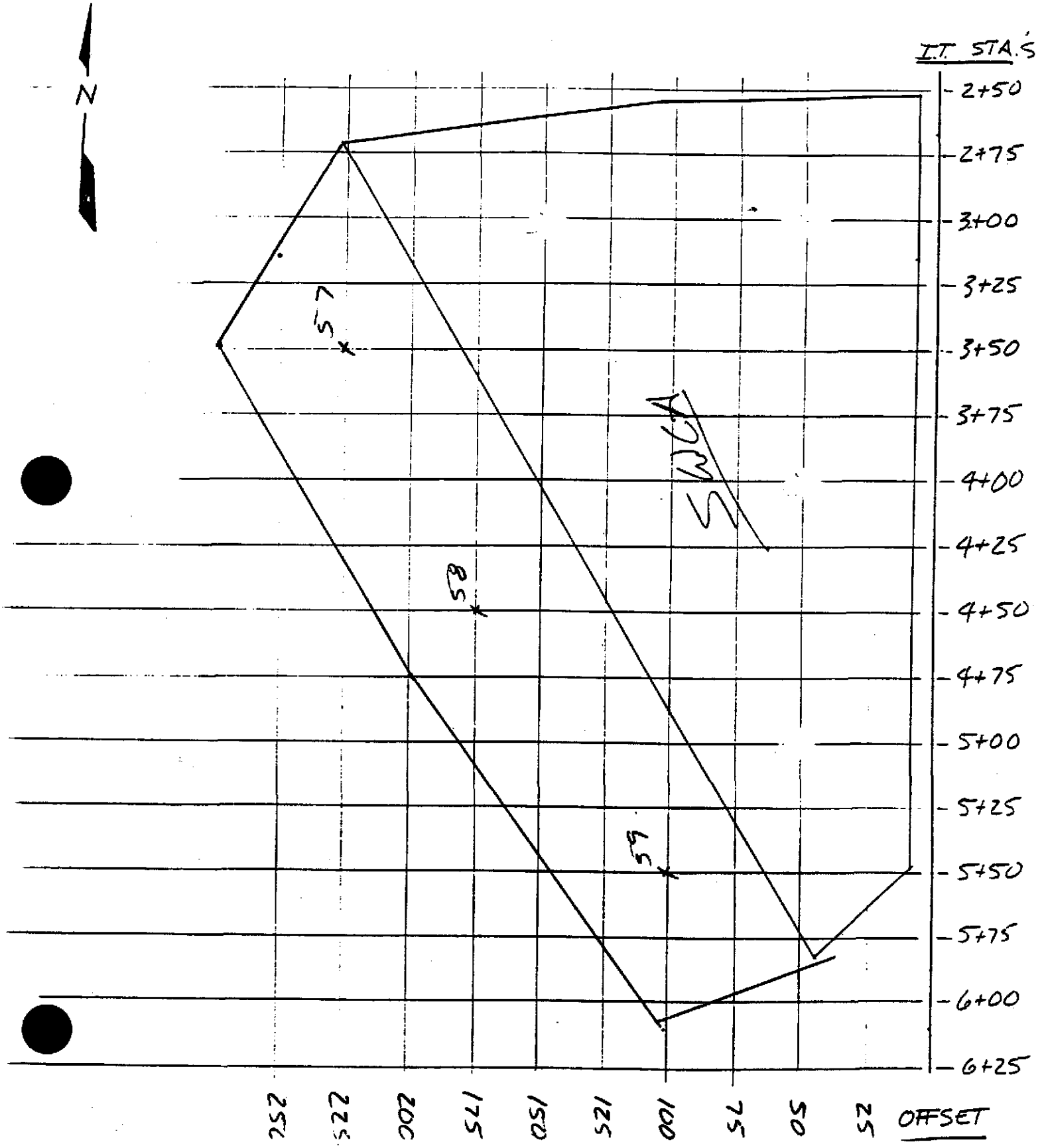
52

INTERNATIONAL TECHNOLOGY CORPORATION

(51)

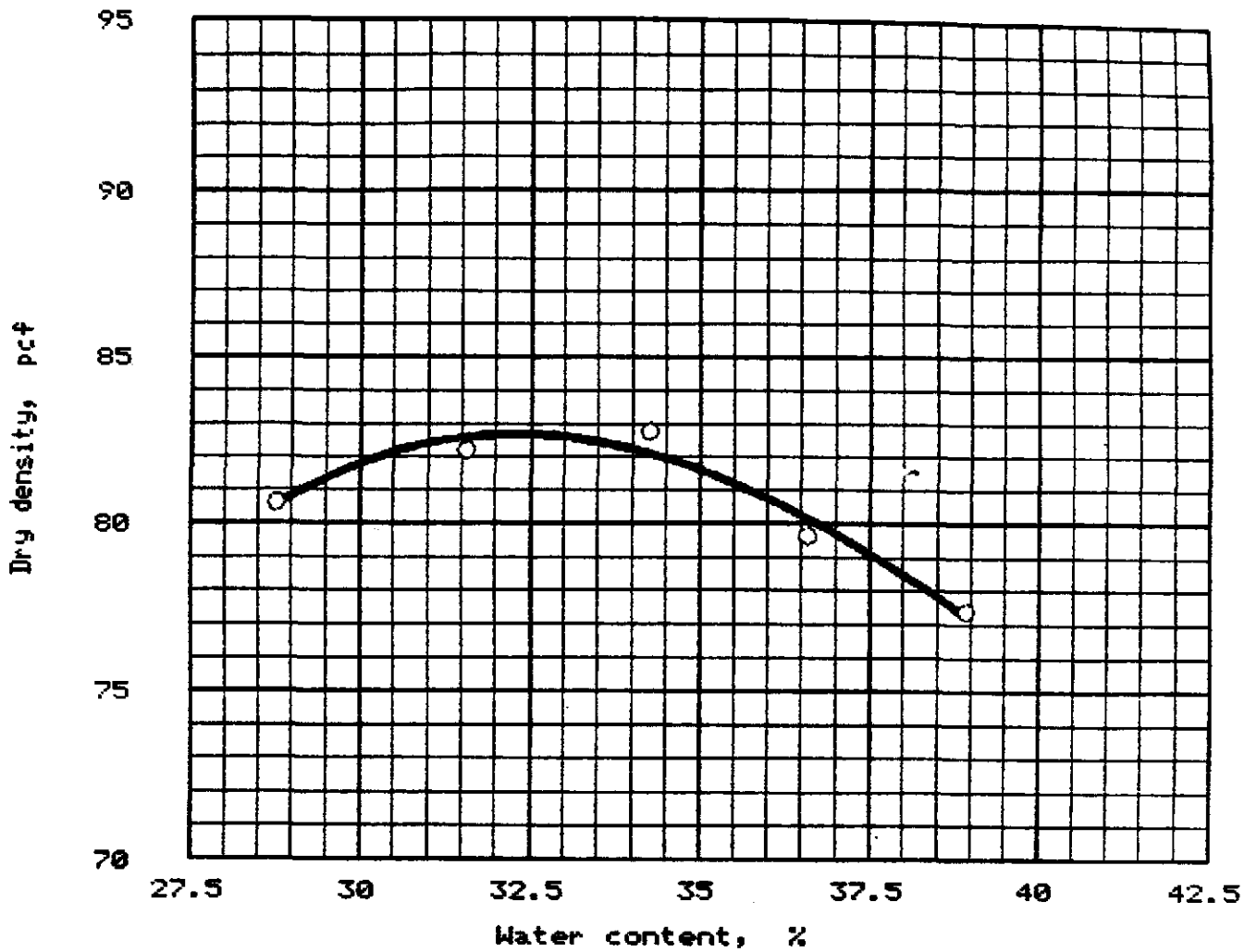
BF Date 7-29-96 Subject NUC DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



PROCTOR TEST REPORT

52



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 07-31-91

TESTED BY: Billy W. Fry
USED -43 M.C. CORRECTION

TEST NUMBER	60	61	62							
STATION	5+50	4+50	5+50							
OFFSET	225	175	100							
MODE & DEPTH	6" →		→							
COMPACTION METHOD	SHEEPS	FOOT ROLLER								
NUMBER OF PASSES										
LIFT THICKNESS	6" →		→							
WET DENSITY (PCF)	111^{9}	113^{5}	111^{3}							
MOISTURE (PCF)	27^{9}	28^{8}	27^{7}							
DRY DENSITY (PCF)	84^{0}	84^{7}	83^{6}							
% MOISTURE	33^{2}	34^{0}	33^{1}							
MAX.DRY DENSITY STD.☑ MOD.☐	82^{7} →		→							
OPTIMUM MOISTURE	32^{3} →		→							
% RELATIVE COMPACTION	101^{6}	102^{4}	101^{1}							
MATERIAL DISCRIPTION	MH SOLIDIFIED		SEDIMENT.							

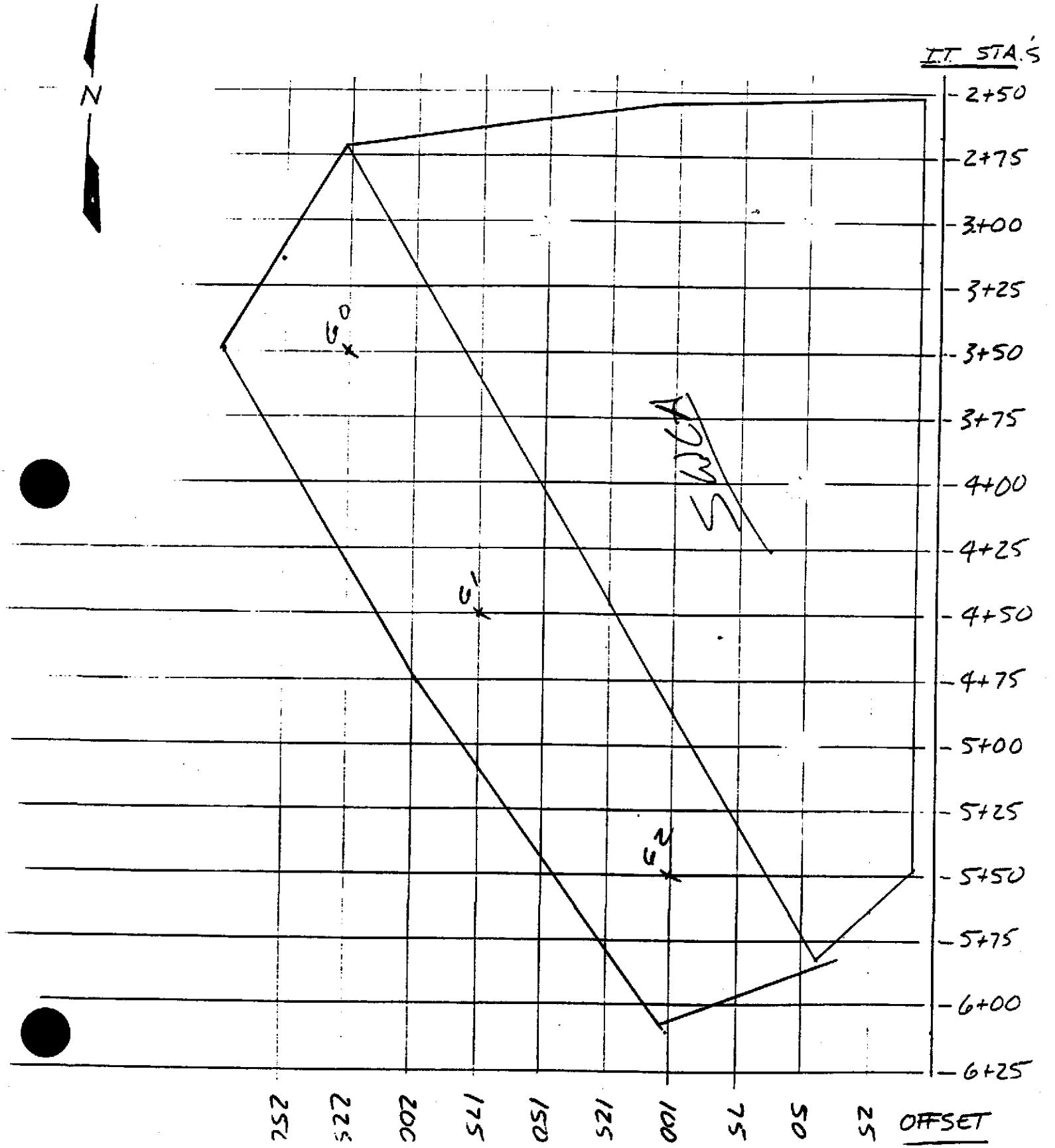
STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2174	0502	

INTERNATIONAL TECHNOLOGY CORPORATION

(54)

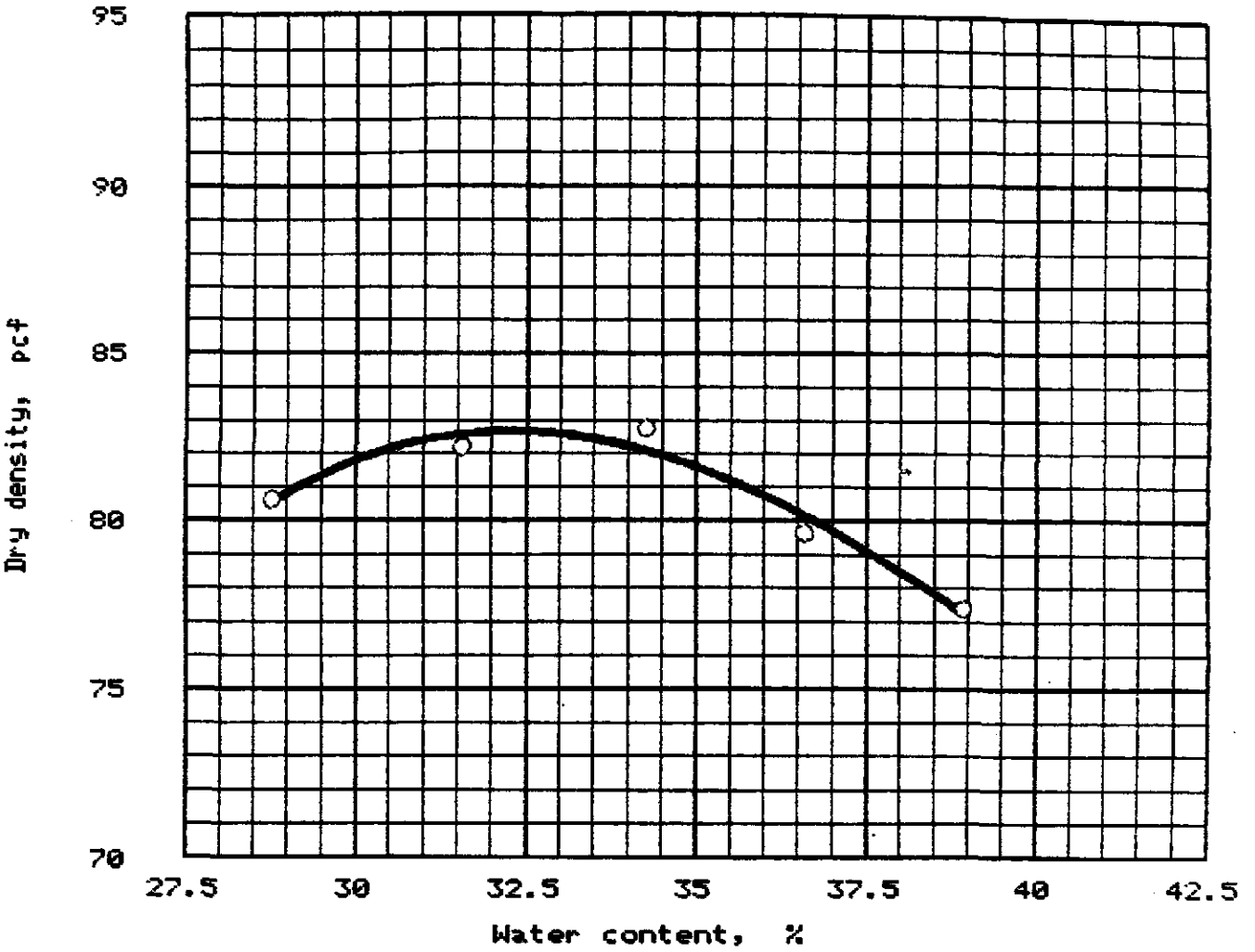
B.F. Date 7-31-91 Subject NUC DENSITY LOCATIONS Sheet No. ____ of ____

Chkd. By ____ Date ____ SWCA Proj. No. 435425



PROCTOR TEST REPORT

55



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. Co.
PROJECT NO.: 435425
DATE: 08-01-91

TESTED BY: Billy Fry
USED M.C. -43 CORRECTION

TEST NUMBER	63	64	65	66	67					
STATION	3+50	4+50	5+50	4+60	4+60					
OFFSET	225	175	100	115	115					
MODE & DEPTH	6" →									
COMPACTION METHOD	SHEEPS FOOT ROLLER →									
NUMBER OF PASSES	2 →			1 →						
LIFT THICKNESS	6" →									
WET DENSITY (PCF)	112^{6}	115^{5}	111^{3}	111^{3}	112^{3}					
MOISTURE (PCF)	28^{7}	26^{2}	26^{5}	26^{3}	26^{6}					
DRY DENSITY (PCF)	83^{9}	89^{3}	84^{2}	85^{1}	85^{7}					
% MOISTURE	34^{2}	29^{3}	31^{3}	30^{2}	31^{0}					
MAX.DRY DENSITY STD. ☑ MOD. ☐	82^{7} →									
OPTIMUM MOISTURE	32^{3} →									
% RELATIVE COMPACTION	101^{5}	108^{0}	102^{4}	102^{7}	103^{6}					
MATERIAL DISCRIPTION	MH SOLIDIFIED SEDIMENT									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2174	0500	

52

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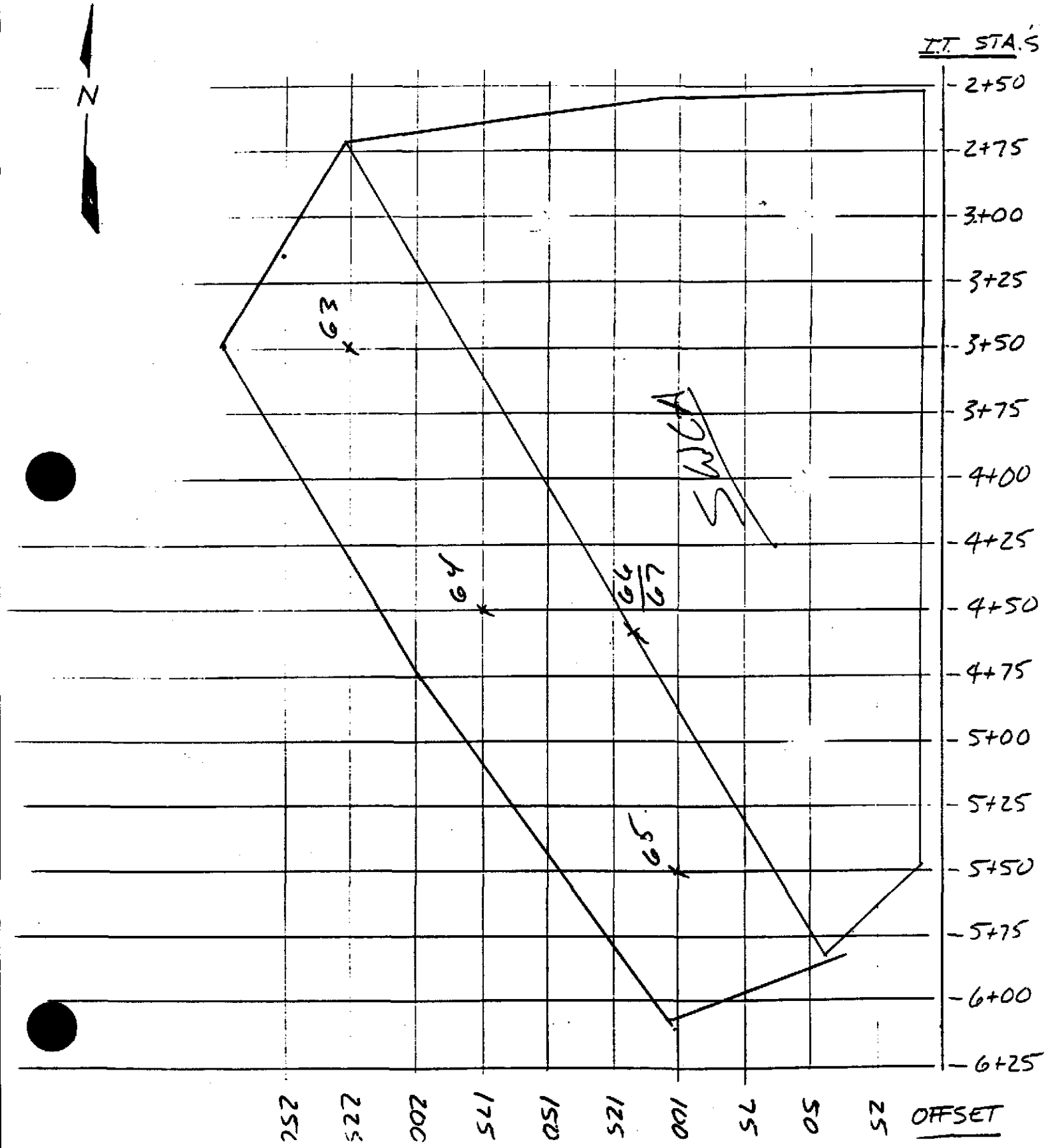
INTERNATIONAL TECHNOLOGY CORPORATION

B.F. Date 8-1-91 Subject NUC. DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



INTERNATIONAL TECHNOLOGY CORPORATION

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BF Date 8-1-91 Subject M.C. VERIFICATION Sheet No. ___ of ___

Chkd. By ___ Date ___ Proj. No. 435425

SAMPLE WAS TAKEN TO 10" DEPTH BELOW NUC GA. LOCATION ~~BELOW~~ & DRIED IN MICROWAVE @ 5-2 min. INTERVALS

NUC. TEST LOCATION #64

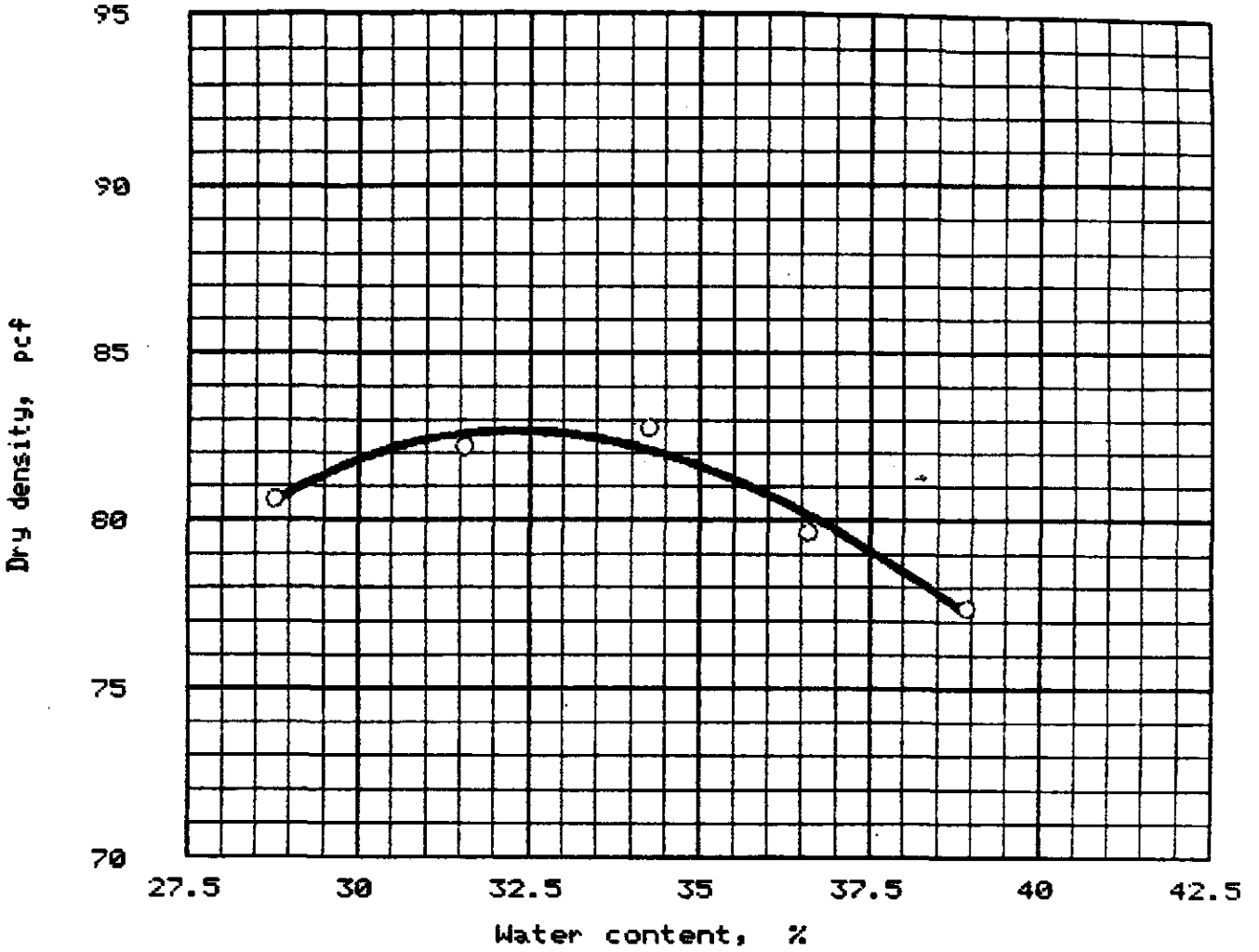
WET SOIL + CAN	=	526.1
CAN	=	8.6
DRY SOIL + CAN	=	405.8
WET SOIL	=	517.5
DRY SOIL	=	397.2
WATER	=	120.3
M.C. OVEN	=	30.3
M.C. GA.	=	29.3

M.C. OVEN - M.C. GA. = 1.02 < 2.0 OK

108-10-85

PROCTOR TEST REPORT

59



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM.
PROJECT NO.: 435425
DATE: 08-02-91

TESTED BY: Billy Fry
USED M.C. CORRECTION -43

TEST NUMBER	68	69								
STATION	3400	4400								
OFFSET	75	75								
MODE & DEPTH	6" →									
COMPACTION METHOD	SHEEPS FOOT ROLLER									
NUMBER OF PASSES	3 →									
LIFT THICKNESS	6" →									
WET DENSITY (PCF)	110.0	115.5								
MOISTURE (PCF)	27.0	28.8								
DRY DENSITY (PCF)	83.0	86.7								
% MOISTURE	32.5	33.2								
MAX.DRY DENSITY STD.☑ MOD.☐	82.7	82.7								
OPTIMUM MOISTURE	32.3 →									
% RELATIVE COMPACTION	100.4	104.8								
MATERIAL DISCRIPTION	MH SOCIAFIED SEDIMENT									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2147	0505	

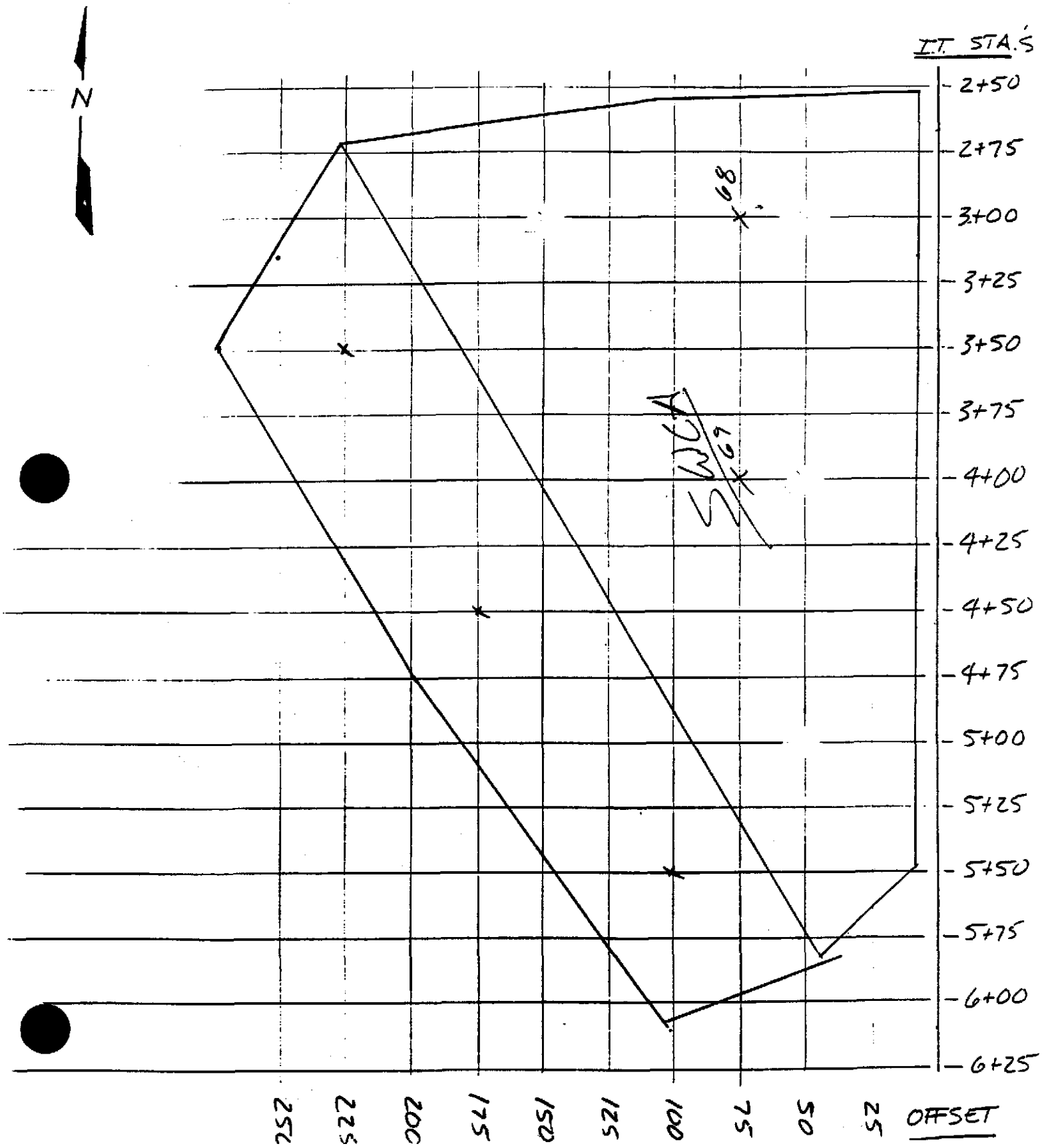
62

INTERNATIONAL TECHNOLOGY CORPORATION

(61)

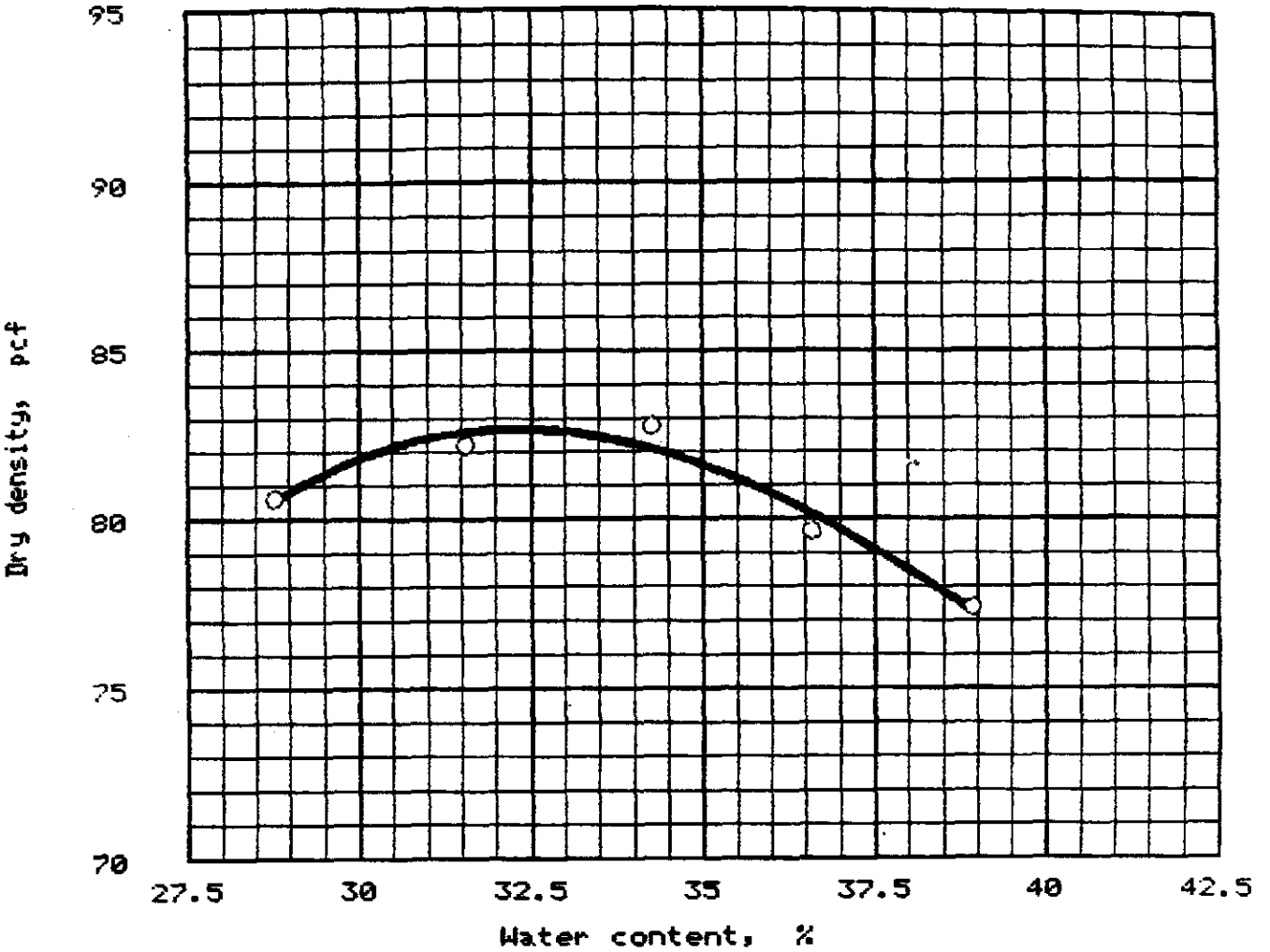
BF Date 8-2-91 Subject NUC DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



PROCTOR TEST REPORT

(62)



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: Cooper Chem. Co.
PROJECT NO.: 48525
DATE: 08-08-91

TESTED BY: [illegible]
M.C. CORRECTION - 4/3 USED

TEST NUMBER	70	71	72	73-A	74-A	75-A	73-B	74-B	75-B	
STATION	3+50	3+50	3+50	4+50	4+50	5+50	4+50	4+50	5+50	
OFFSET	100	150	225	175	100	100	175	100	100	
MODE & DEPTH	6" →								→	
COMPACTION METHOD	SHEEPS FOOT ROLLER →								→	
NUMBER OF PASSES	1	1	1	1	1	1	5	5	5	
LIFT THICKNESS	6" →								→	
WET DENSITY (PCF)	113^{4}	103^{2}	112^{9}	100^{0}	102^{1}	101^{8}	105^{8}	108^{6}	106^{9}	
MOISTURE (PCF)	26^{5}	20^{8}	27^{0}	21^{6}	22^{9}	22^{8}	22^{6}	24^{3}	21^{9}	
DRY DENSITY (PCF)	86^{9}	82^{2}	85^{9}	78^{4}	75^{3}	79^{0}	83^{3}	84^{3}	85^{0}	
% MOISTURE	30^{5}	25^{3}	31^{4}	27^{5}	28^{9}	28^{9}	27^{2}	28^{8}	25^{8}	
MAX.DRY DENSITY STD. ☑ MOD. ☐	82^{3} →								→	
OPTIMUM MOISTURE	32^{3} →								→	
% RELATIVE COMPACTION	105^{1}	99^{4}	103^{9}	94^{8}	95^{8}	95^{5}	100^{6}	101^{9}	102^{8}	
MATERIAL DISCRIPTION	MH SOLIDIFIED SEDIMENT									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2150	0506	

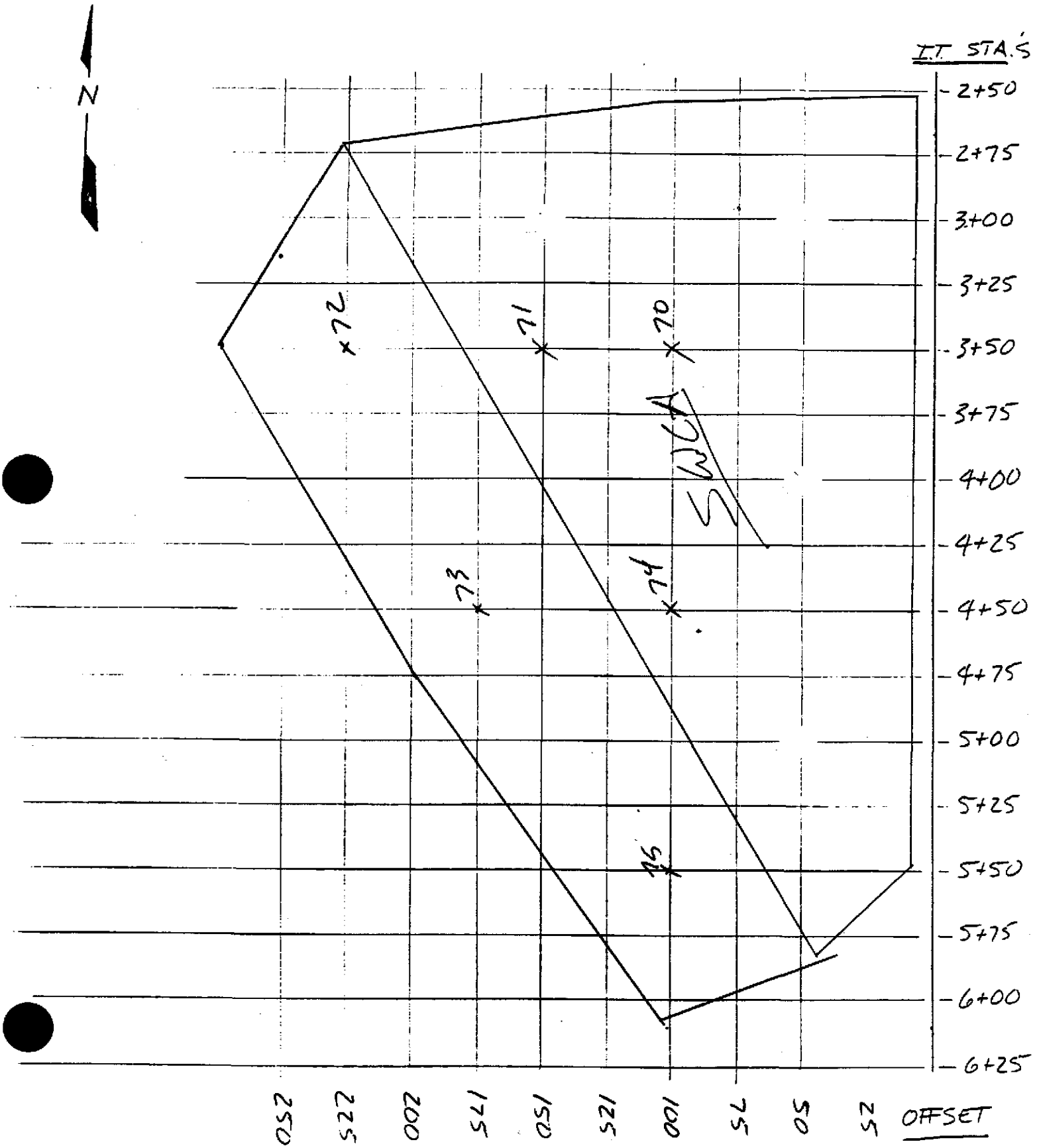
63

INTERNATIONAL TECHNOLOGY CORPORATION

(64)

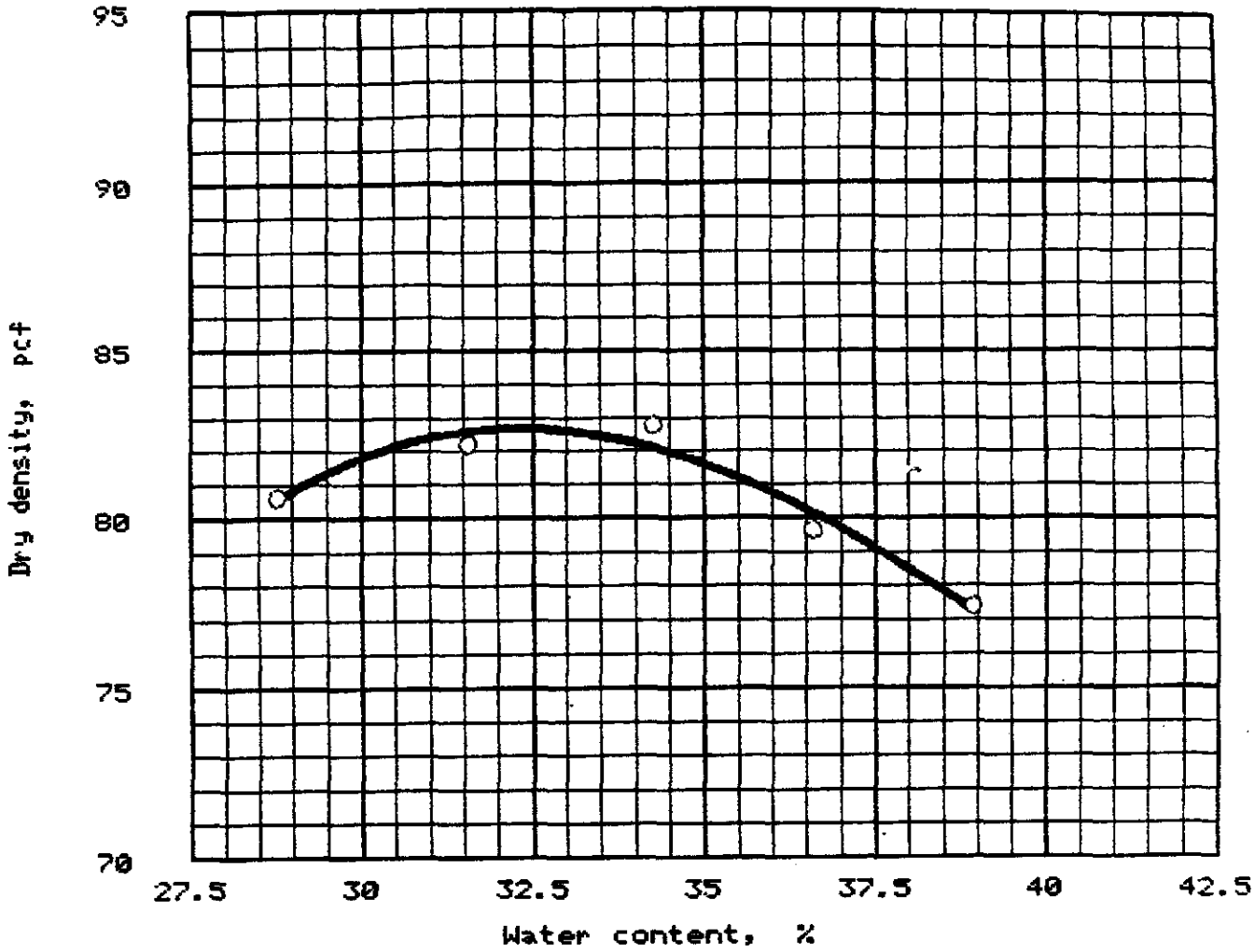
B.F. Date 08-08-91 Subject NUC. DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



PROCTOR TEST REPORT

65



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEMAR CHEM.
PROJECT NO.: 435425
DATE: 08-26-91

TESTED BY: [illegible]
M.C. CORRECTION -43 USED

TEST NUMBER	76	77								
STATION	3475	4400								
OFFSET	150	100								
MODE & DEPTH	6" →									
COMPACTION METHOD	SHEEPS FOOT ROLLER									
NUMBER OF PASSES	4 →									
LIFT THICKNESS	6" →									
WET DENSITY (PCF)	108^1	110^2								
MOISTURE (PCF)	24^7	26^2								
DRY DENSITY (PCF)	83^4	85^0								
% MOISTURE	29%	29%								
MAX.DRY DENSITY STD.☐ ☑ MOD.☐	82^7 →									
OPTIMUM MOISTURE	32^3 →									
% RELATIVE COMPACTION	100^8	102^8								
MATERIAL DISCRIPTION	LIME SOLIDIFIED SEDIMENT									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7699
2148	0525	

66

INTERNATIONAL TECHNOLOGY CORPORATION

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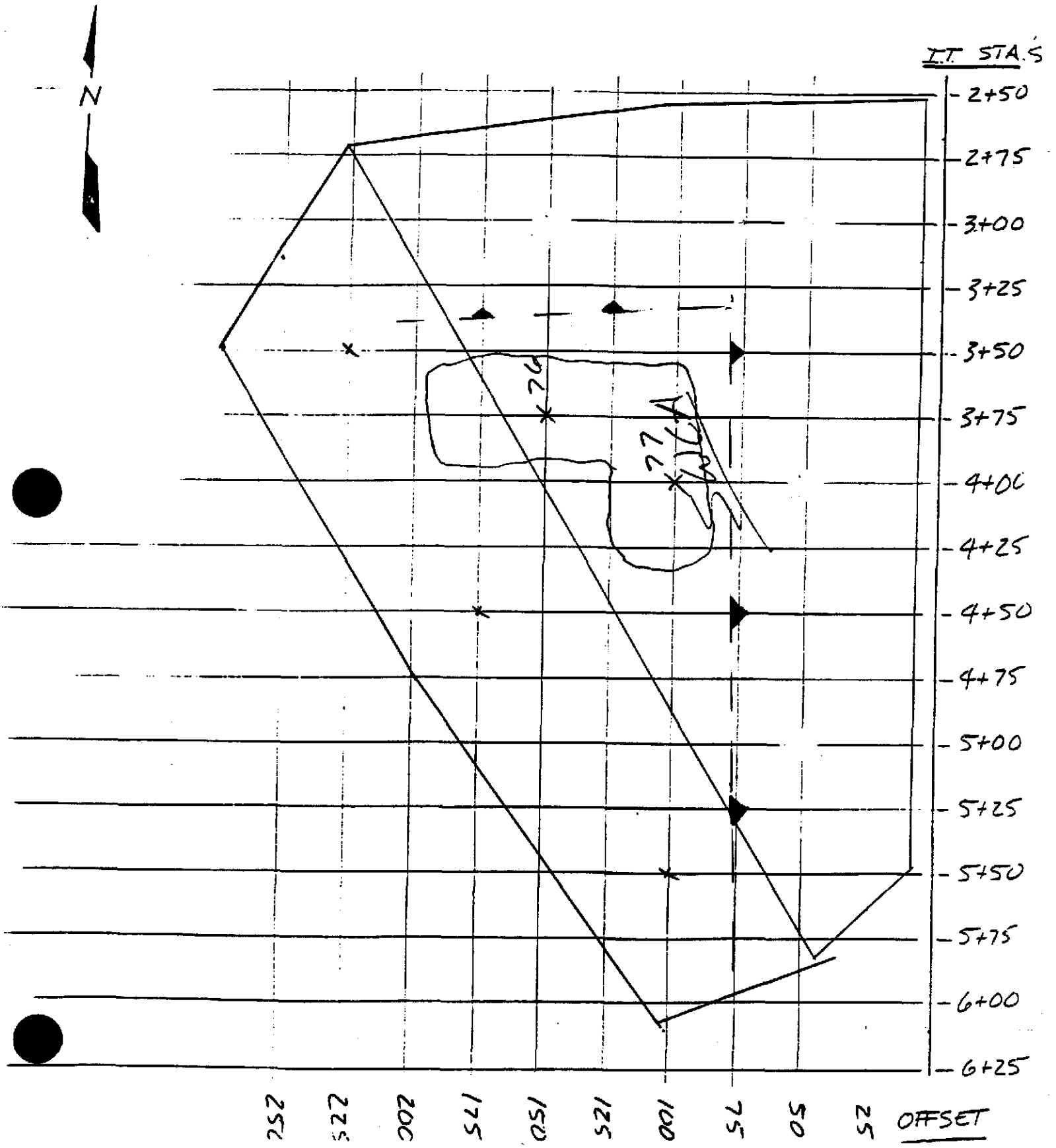
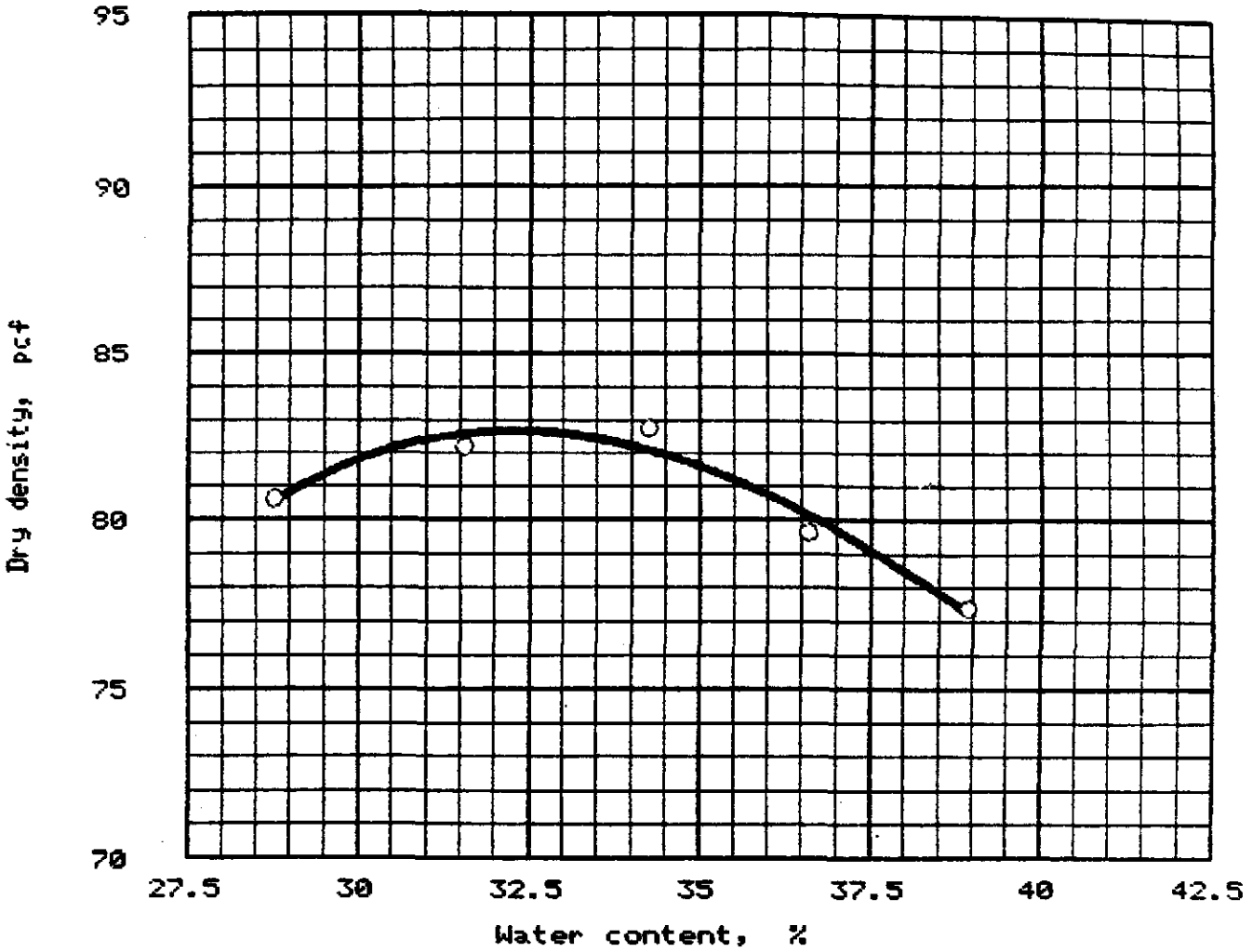
By BF Date 8-26-91 Subject NUC. DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWLA Proj. No. 435425



PROCTOR TEST REPORT

(68)



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 08-28-91

TESTED BY: Billy Fry
M.S. CORRECTION - #3 USED

TEST NUMBER	78	79	80	81	82	83				
STATION	3+75	4+00	3+75	4+00	3+75	4+00				
OFFSET	150	100	150	100	150	100				
MODE & DEPTH	6"	→				→				
COMPACTION METHOD	SHEEPS FOOT ROLLER	→				→				
NUMBER OF PASSES	5	→				→				
LIFT THICKNESS	6"	→				→				
WET DENSITY (PCF)	111.9	113.4	108.6	105.0	111.5	108.3				
MOISTURE (PCF)	25.8	26.4	24.6	21.9	25.9	24.1				
DRY DENSITY (PCF)	86.1	87.0	84.6	83.1	85.6	84.2				
% MOISTURE	30.0	30.2	28.4	26.4	30.3	28.6				
MAX.DRY DENSITY STD. ☑ MOD. ☐	82.7	→				→				
OPTIMUM MOISTURE	32.3	→				→				
% RELATIVE COMPACTION	104.4	105.3	102.3	100.5	103.5	101.6				
MATERIAL DISCRIPTION	MH SOLIDIFIED SEDIMENT	→				→				

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2157	0505	

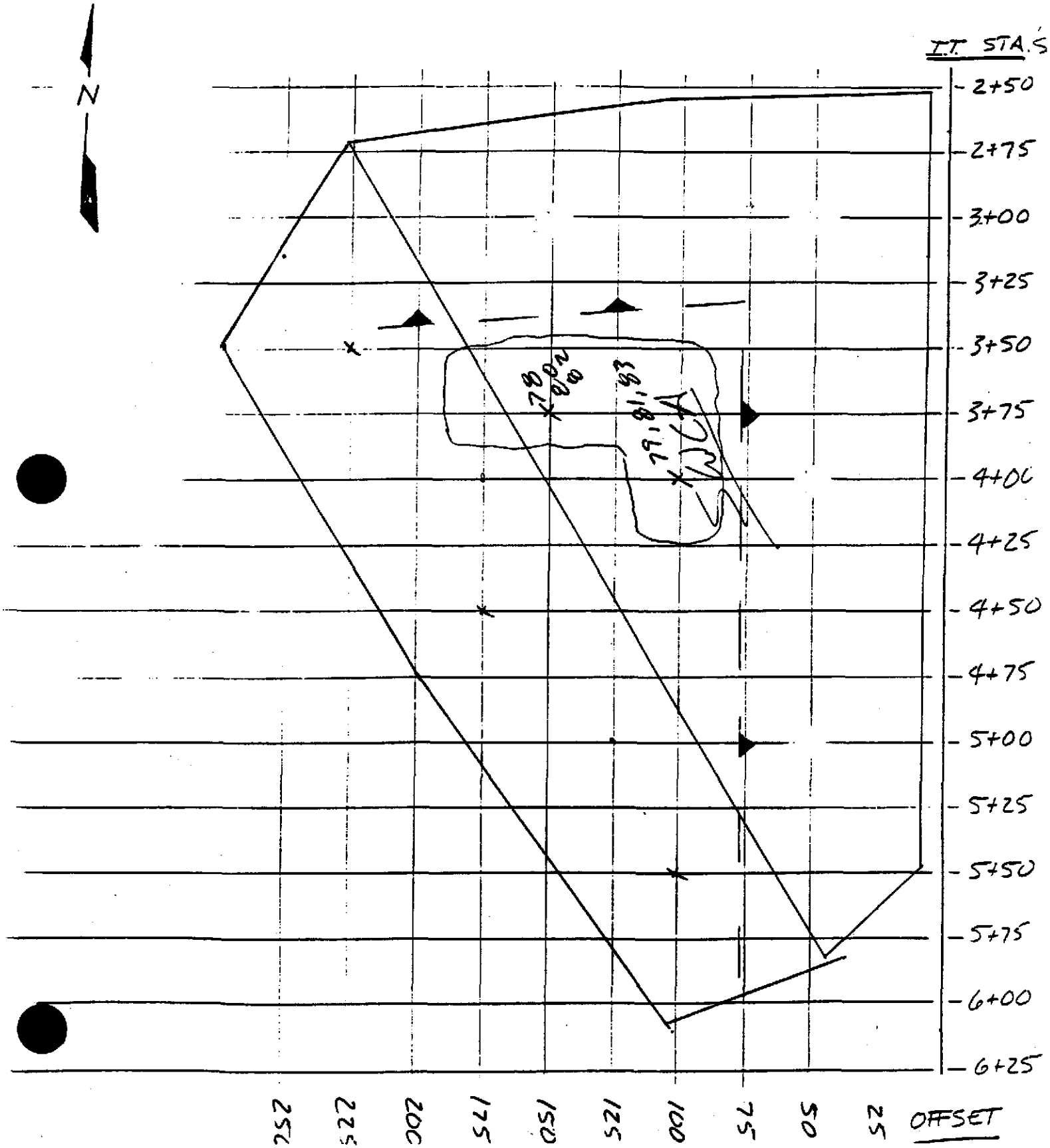
69

INTERNATIONAL TECHNOLOGY CORPORATION

(70)

BF Date 8-28-91 Subject NUC DENSITY LOCATIONS Sheet No. ____ of ____

Chkd. By ____ Date ____ SWCA Proj. No. 435425



INTERNATIONAL TECHNOLOGY CORPORATION

(21)

BF. Date 8-28-91 Subject M.C. VERIFICATION OF Sheet No. ___ of ___
Chkd. By ___ Date ___ NUC. GA. Proj. No. 435425

SAMPLE WAS TAKEN TO 10" DEPTH BELOW NUC. GA. LOCATION & DRIED IN MICROWAVE @ 5-2min INTERVALS.

NUC. GA. TEST LOCATION #83

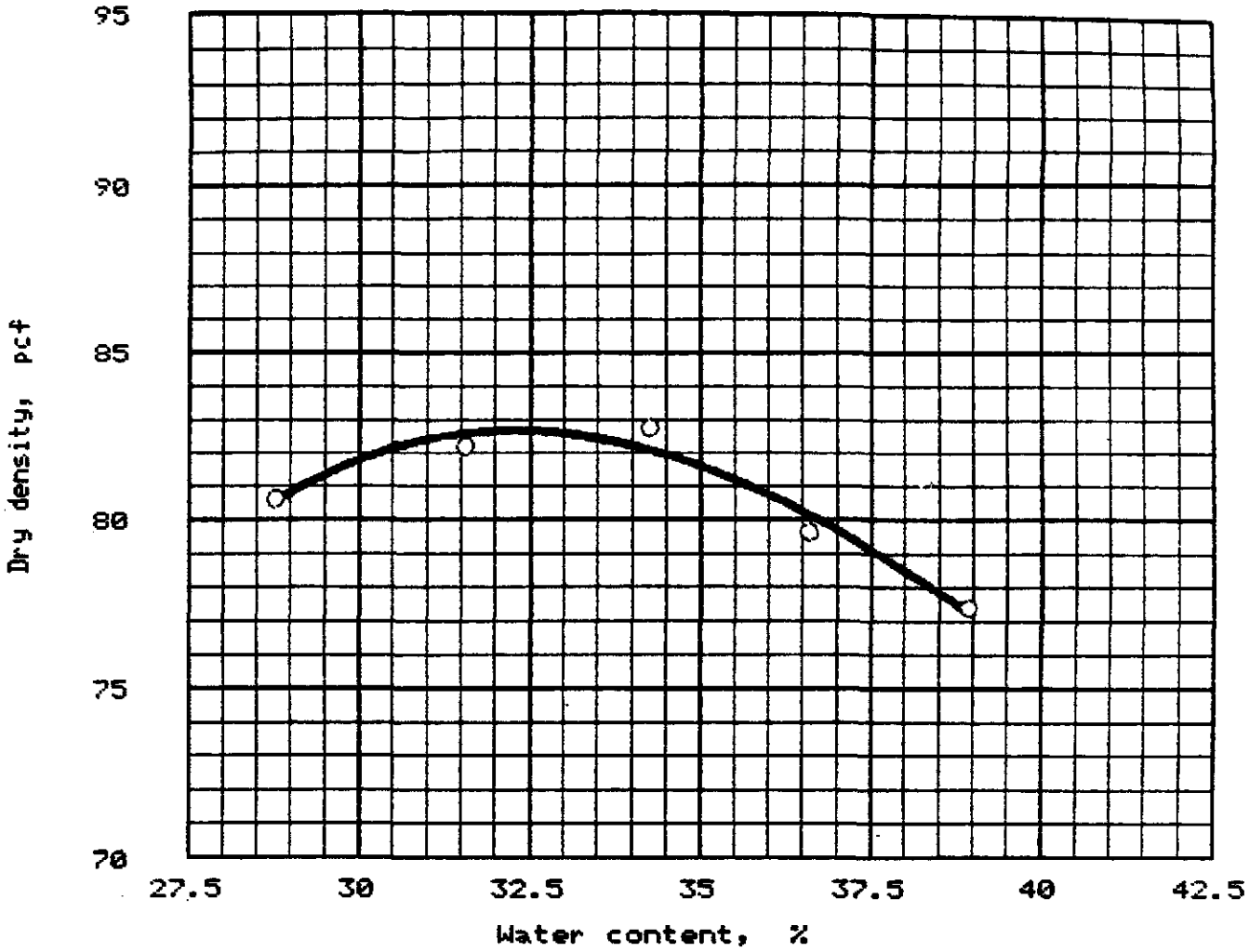
WET SOIL + CAN	=	406.5
CAN	=	8.7
DRY SOIL + CAN	=	321.8
WET SOIL	=	399.8
DRY SOIL	=	313.1
WATER	=	86.7
M.C. OVEN	=	27.7%
M.C. GA.	=	28.6%

M.C. OVEN − M.C. GA. = −0.9% < 2% OK

108-10-85

PROCTOR TEST REPORT

72



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM Co.
PROJECT NO.: 435425
DATE: 09-03-91

TESTED BY: Billy Fry
USED M.C. CORRECTION -43

TEST NUMBER	84	85	86							
STATION	400	3+75	5+00							
OFFSET	175	100	125							
MODE & DEPTH	6" →		→							
COMPACTION METHOD	SHEEPS FOOT ROLLER									
NUMBER OF PASSES	6 →		→							
LIFT THICKNESS	6" →		→							
WET DENSITY (PCF)	108.2	110.7	110.0							
MOISTURE (PCF)	24.3	24.9	25.3							
DRY DENSITY (PCF)	83.9	85.8	84.7							
% MOISTURE	29.0	29.0	29.9							
MAX.DRY DENSITY STD.☐ MOD.☐	82.7 →		→							
OPTIMUM MOISTURE	32.3 →		→							
% RELATIVE COMPACTION	101.5	103.7	102.4							
MATERIAL DISCRIPTION	WW SOLIDIFIED SEDIMENT									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2157	0505	

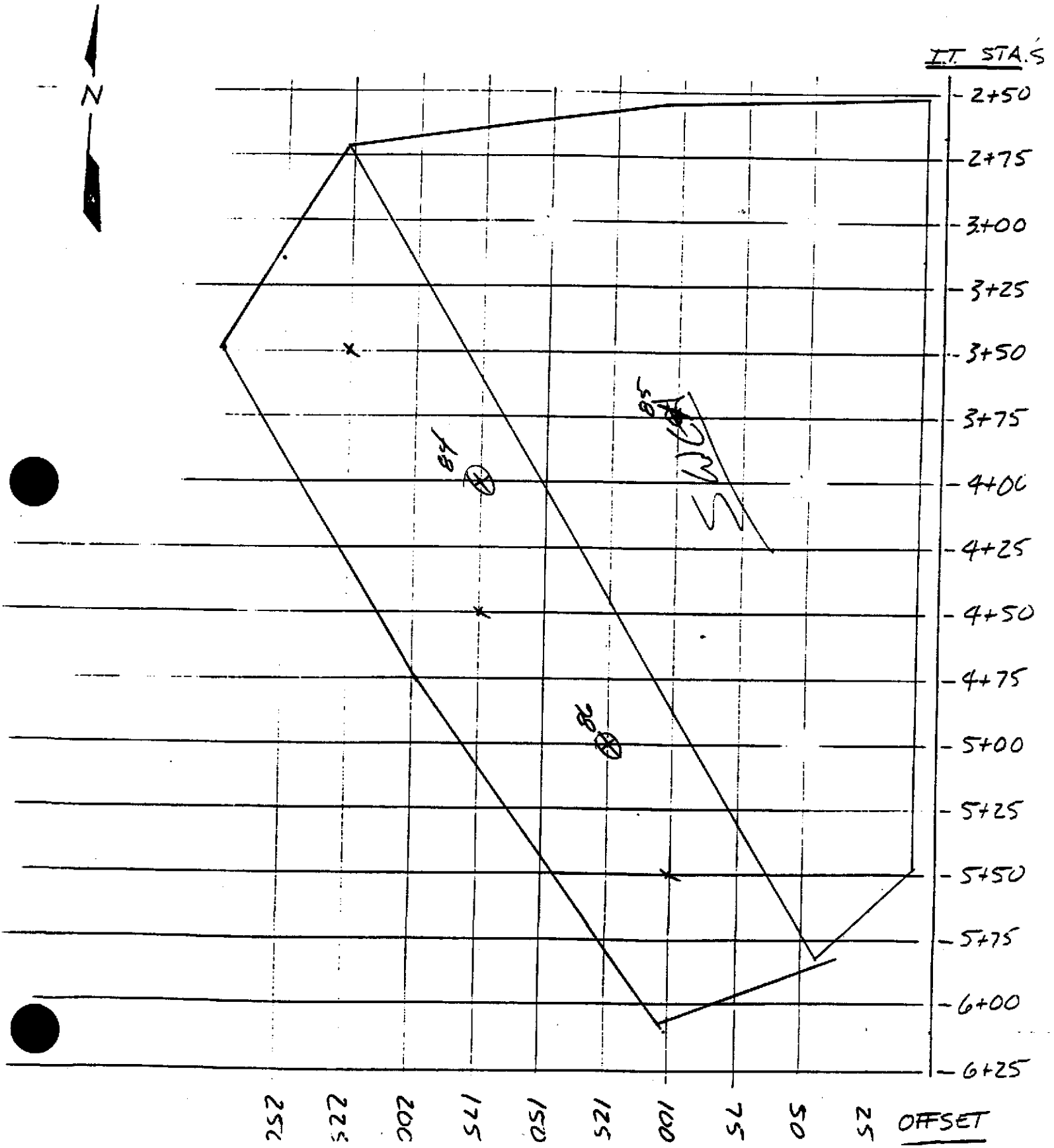
(24)

INTERNATIONAL TECHNOLOGY CORPORATION

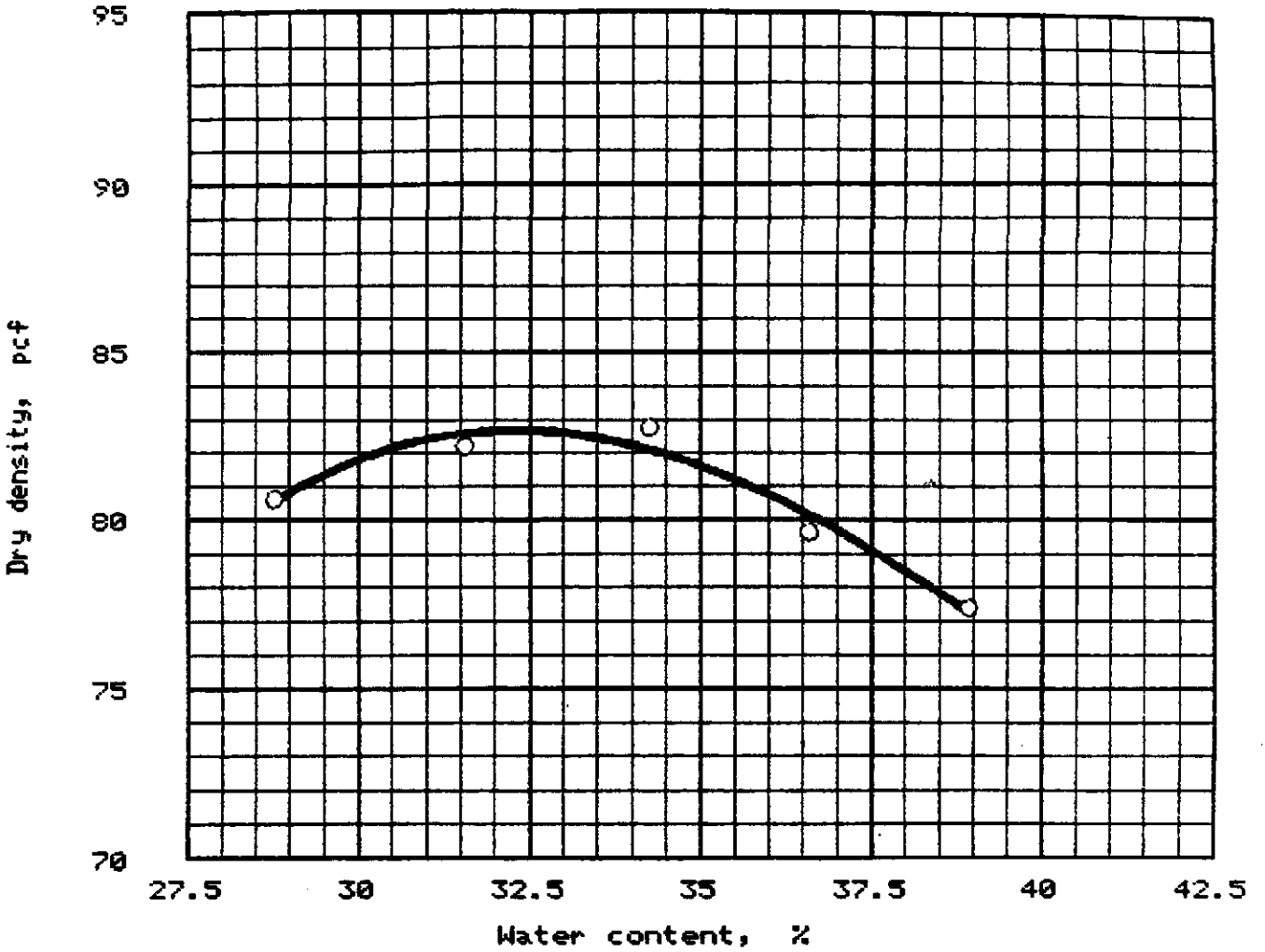
(74)

BF Date 9-3-91 Subject NUC DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



PROCTOR TEST REPORT



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 436425
DATE: 09-09-91

TESTED BY: Billy Fry
USED M.S. CORRECTION -43

TEST NUMBER	87	88	89	90	91	92				
STATION	4+00	3+75	5+00	4+00	3+75	5+00				
OFFSET	175	100	125	175	100	125				
MODE & DEPTH	6" →									
COMPACTION METHOD	SHEEPS FOOT ROLLER →									
NUMBER OF PASSES										
LIFT THICKNESS	6" →									
WET DENSITY (PCF)	115.1	111.3	106.9	110.3	114.3	106.3				
MOISTURE (PCF)	27.6	26.9	23.3	25.5	27.5	23.5				
DRY DENSITY (PCF)	87.5	85.2	83.2	84.8	86.8	82.8				
% MOISTURE	31.5	30.5	27.1	30.1	31.1	28.4				
MAX.DRY DENSITY STD. ☑ MOD. ☐	82.7 →									
OPTIMUM MOISTURE	32.5 →									
% RELATIVE COMPACTION	105.8	103.9	101.3	102.5	105.9	100.1				
MATERIAL DISCRIPTION	MIX SOLIDIFIED SEDIMENT									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2160	0503	

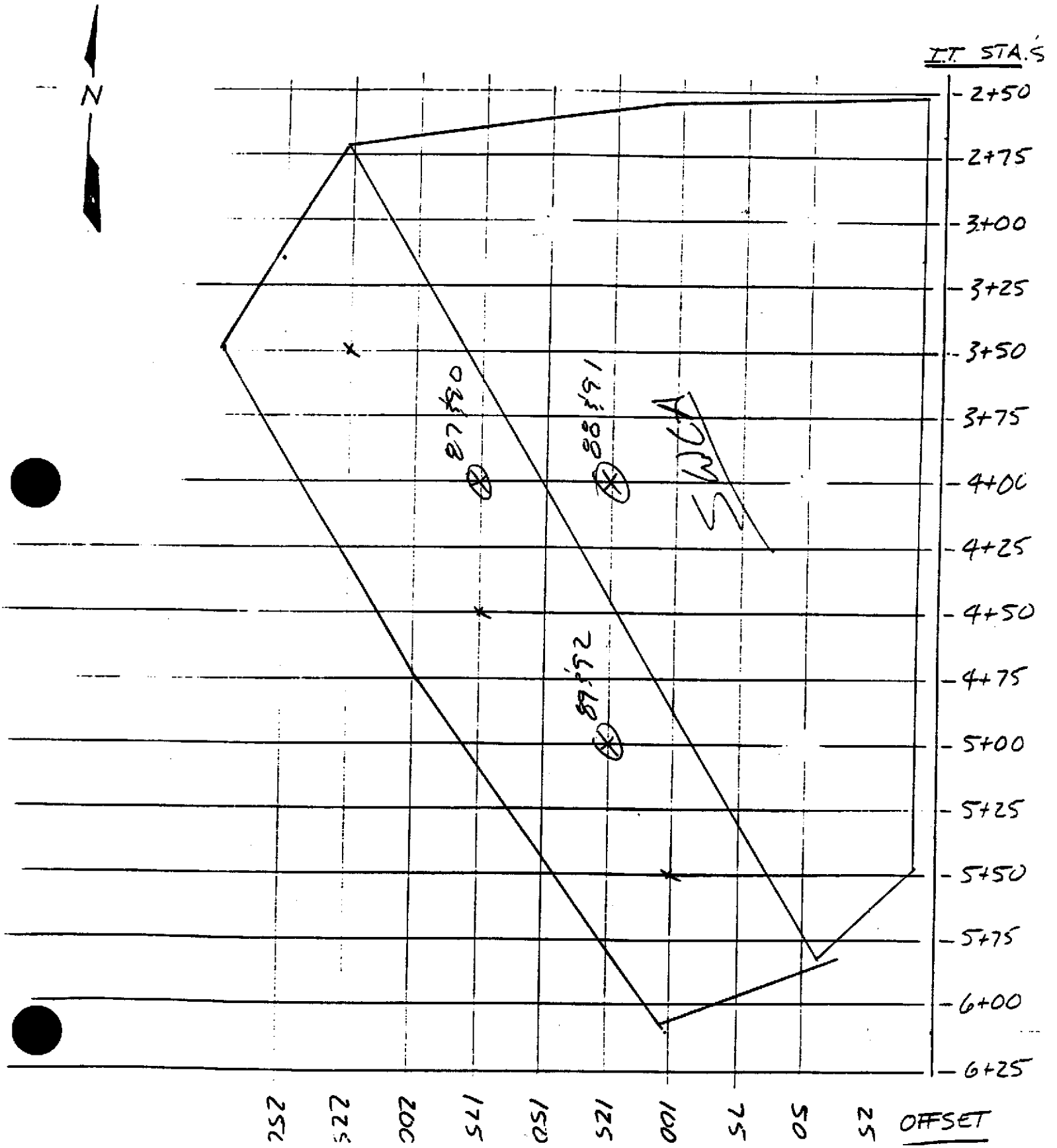
76

INTERNATIONAL TECHNOLOGY CORPORATION

(77)

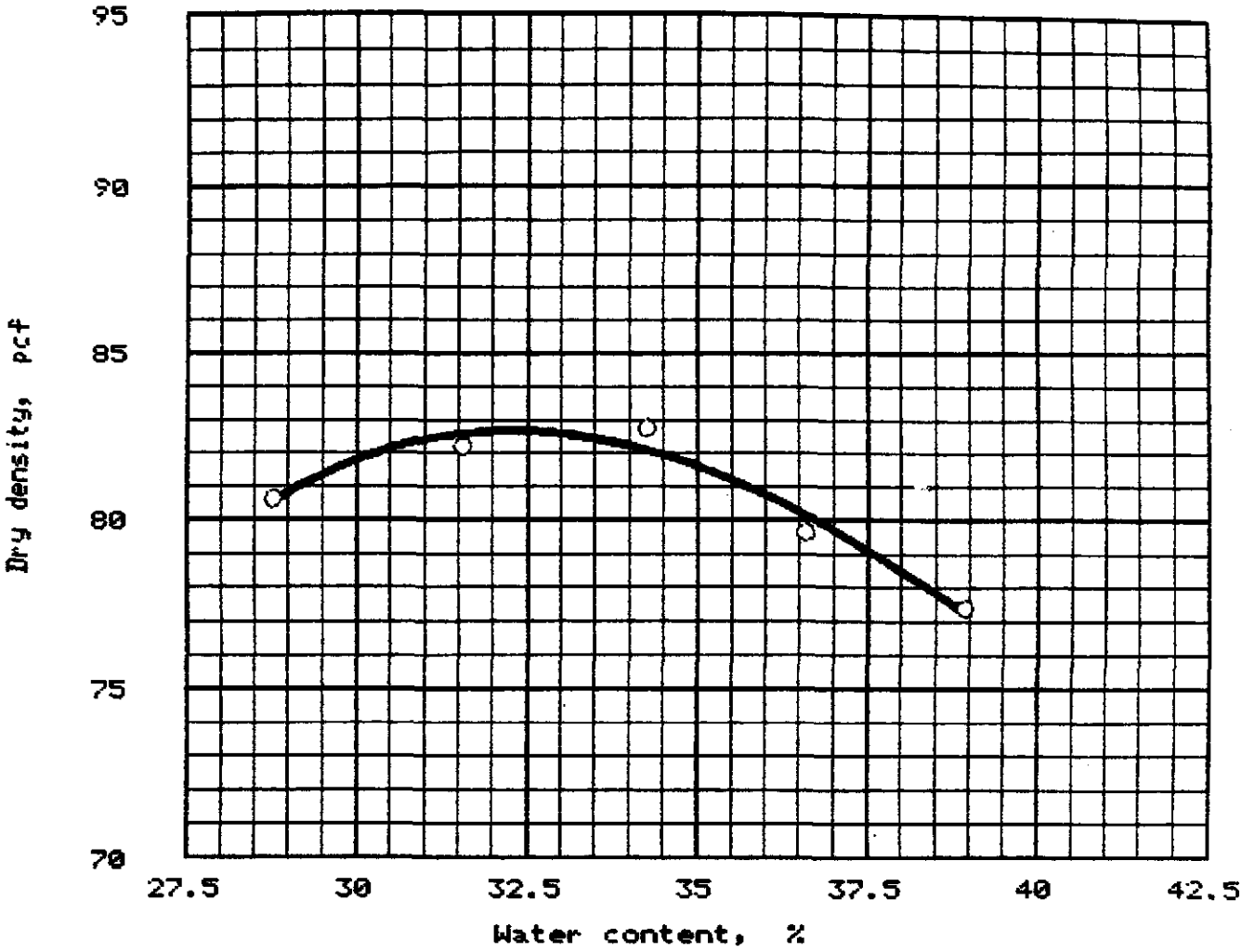
BF Date 9-4-91 Subject NUC DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



PROCTOR TEST REPORT

(78)



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 455425
DATE: 09-05-91

TESTED BY: Billy Fry
M.C. CORR. USED 1-43

TEST NUMBER	93	94	95	96	97	98	99	100	101	
STATION	4+00	3+75	5+00	4+00	3+75	5+00	4+00	3+75	5+00	
OFFSET	1+75	100	125	175	100	125	175	100	125	
MODE & DEPTH	6"	→							→	
COMPACTION METHOD	SHEEPS	FOOT ROLLER	→						→	
NUMBER OF PASSES										
LIFT THICKNESS	6"	→							→	
WET DENSITY (PCF)	106^{3}	108^{2}	108^{4}	107^{2}	108^{2}	106^{0}	111^{2}	109^{1}	106^{9}	
MOISTURE (PCF)	23^{2}	23^{9}	24^{4}	23^{6}	24^{3}	23^{2}	25^{8}	25^{2}	23^{4}	
DRY DENSITY (PCF)	83^{1}	84^{3}	84^{1}	85^{6}	84^{0}	82^{8}	85^{4}	83^{9}	83^{5}	
% MOISTURE	27^{9}	28^{2}	29^{3}	28^{2}	28^{3}	28^{0}	30^{5}	30^{1}	28^{0}	
MAX.DRY DENSITY STD.☑ MOD.☐	87^{2}	→							→	
OPTIMUM MOISTURE	32^{3}	→							→	
% RELATIVE COMPACTION	95^{5}	96^{2}	96^{4}	95^{2}	96^{3}	95^{0}	97^{2}	96^{3}	95^{8}	
MATERIAL DISCRIPTION										

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2158	0505	

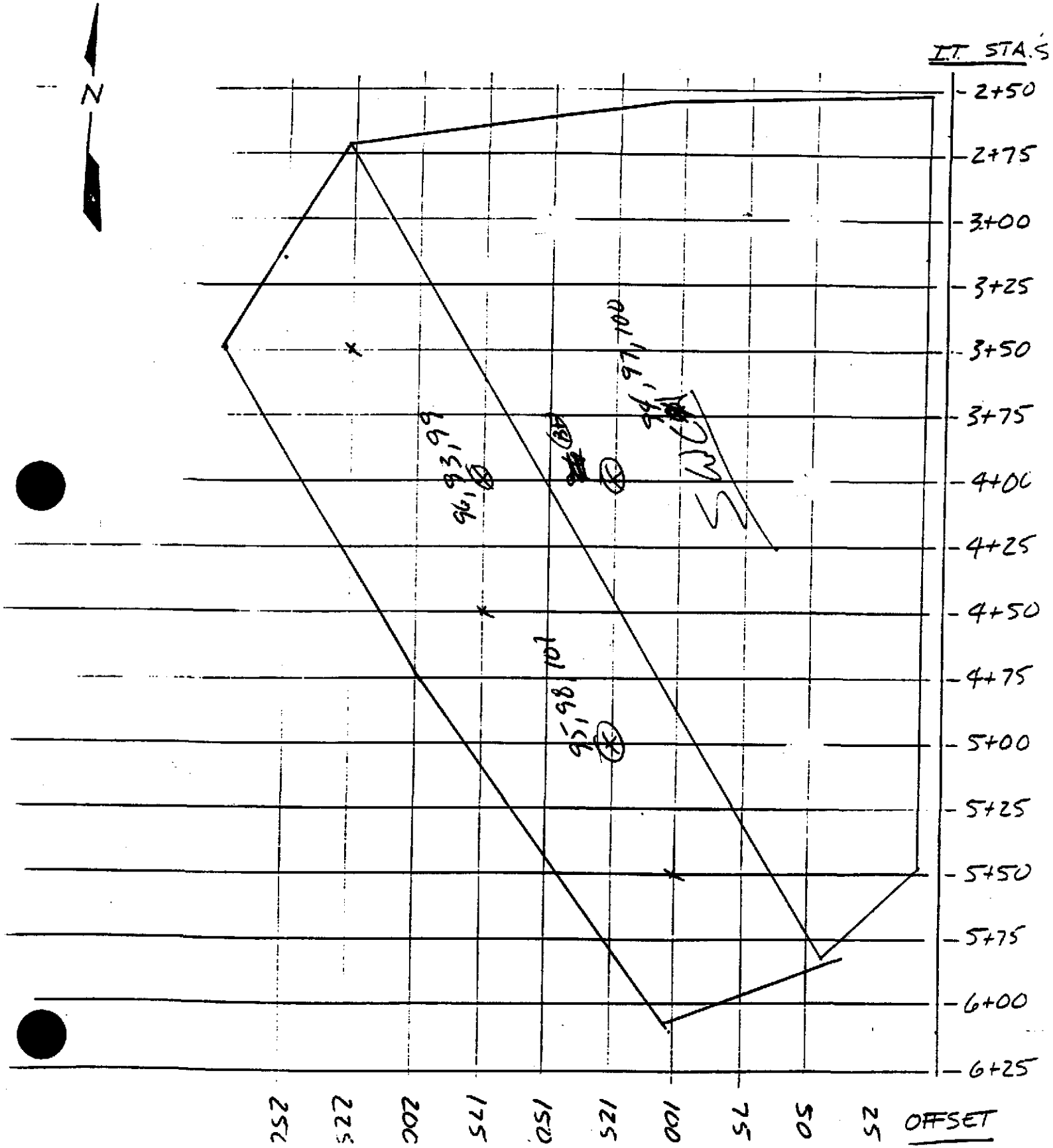
(32)

INTERNATIONAL TECHNOLOGY CORPORATION

(80)

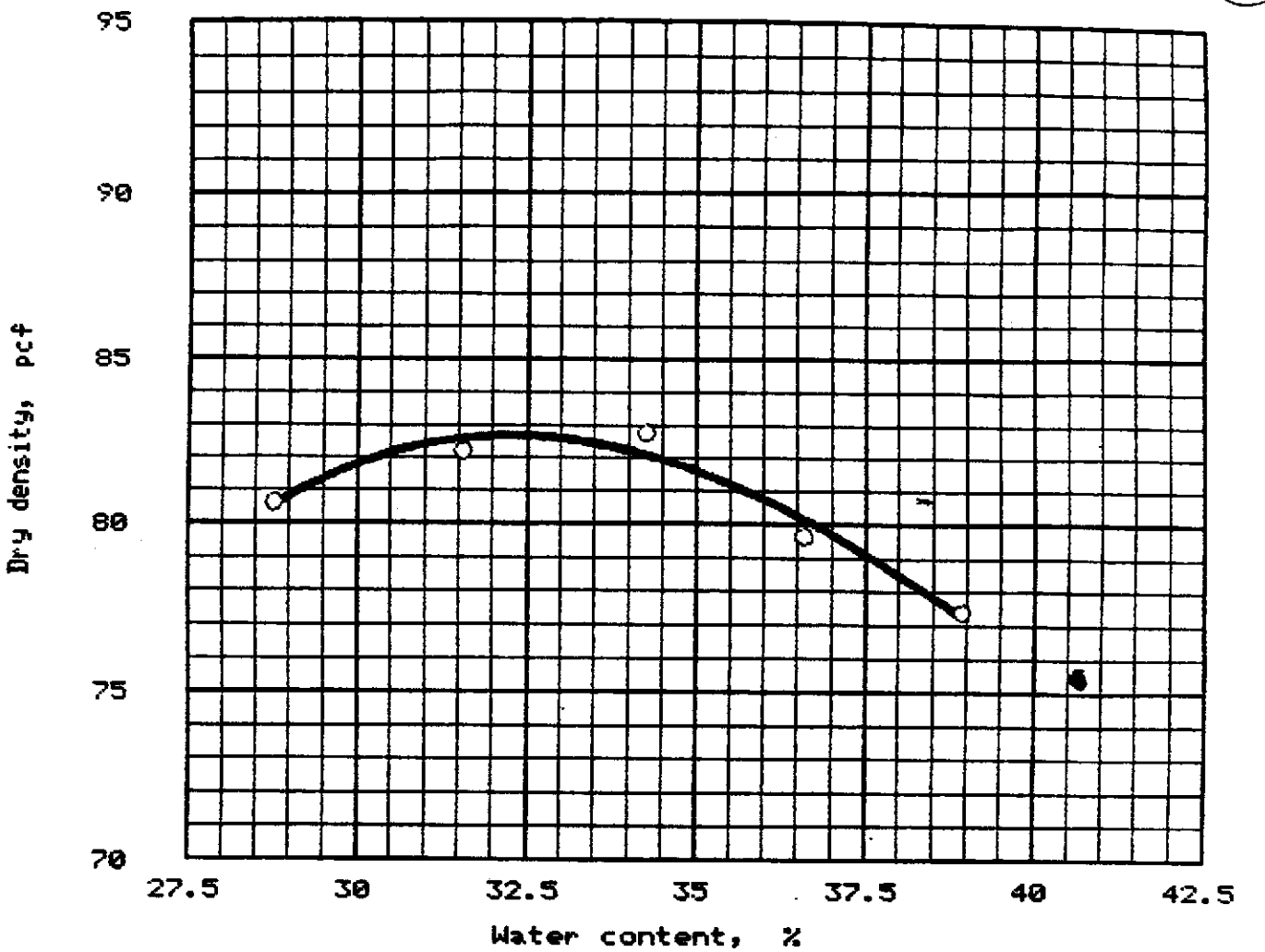
BF Date 9-5-91 Subject NUC DENSITY LOCATIONS Sheet No. ____ of ____

Chkd. By ____ Date ____ SWCA Proj. No. 435425



PROCTOR TEST REPORT

(81)



"Standard" Proctor, ASTM D 698, Method A

Elev/ Depth	USCS Classification	Natural Moisture	Specific gravity	LL	PI	% > No.4	% < No.200
	MH	32.1 %		50	13		

TEST RESULTS	MATERIAL DESCRIPTION
Optimum moisture = 32.3 % Maximum dry density = 82.7 pcf	Brown silt w/ chemicals

Contractor: Miller Construction
Project: Cedar Chemical Waste Pond
Location: On site material

Project No.: 0101.5 Date: July 12, 1991

Remarks:
Technician: Doss

PROCTOR TEST REPORT
GEE & STRICKLAND, INC.

Figure No._____

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM CO.
PROJECT NO.: 435425
DATE: 10-07-91

TESTED BY: Billy Fr

NO M.C. CORRECTION USED

M.C. ADJUSTED TO DRY OVEN WEIGHTS

TEST NUMBER	C-1A	C-2A	C-3A	C-4A	C-1B	C-2B	C-3B	C-4B		
STATION	5+50	4+00	4+25	3+50	5+50	4+00	4+25	3+50		
OFFSET	120	140	55	225	120	140	55	225		
MODE & DEPTH	6"	6"	6"	6"						
COMPACTION METHOD	SHEEPS FOOT + RUBBER TIRE FRONT END LOADER									
NUMBER OF PASSES	7	7	7	7						
LIFT THICKNESS	6"	6"	6"	6"						
WET DENSITY (PCF)	116.8	116.8	115.5	115.4	116.8	116.8	115.5	115.4		
MOISTURE (PCF)	34.2	30.8	29.4	30.0	28.1	26.3	24.8	25.4		
DRY DENSITY (PCF)	84.3	86.0	86.1	85.4	88.8	90.6	90.2	90.0		
% MOISTURE	38.1	35.8	34.1	35.1	31.6	29.0	27.3	28.2		
MAX.DRY DENSITY STD. ☑ MOD. ☐	97.2	→								
OPTIMUM MOISTURE	22.1	→								
% RELATIVE COMPACTION	86.7%	88.5%	88.5%	87.8%	91.2%	93.1%	93.2%	92.5%		
MATERIAL DISCRIPTION	CH CLAY "GUMBO"	→								

STANDARD COUNT	
DENSITY	MOISTURE
2162	0509

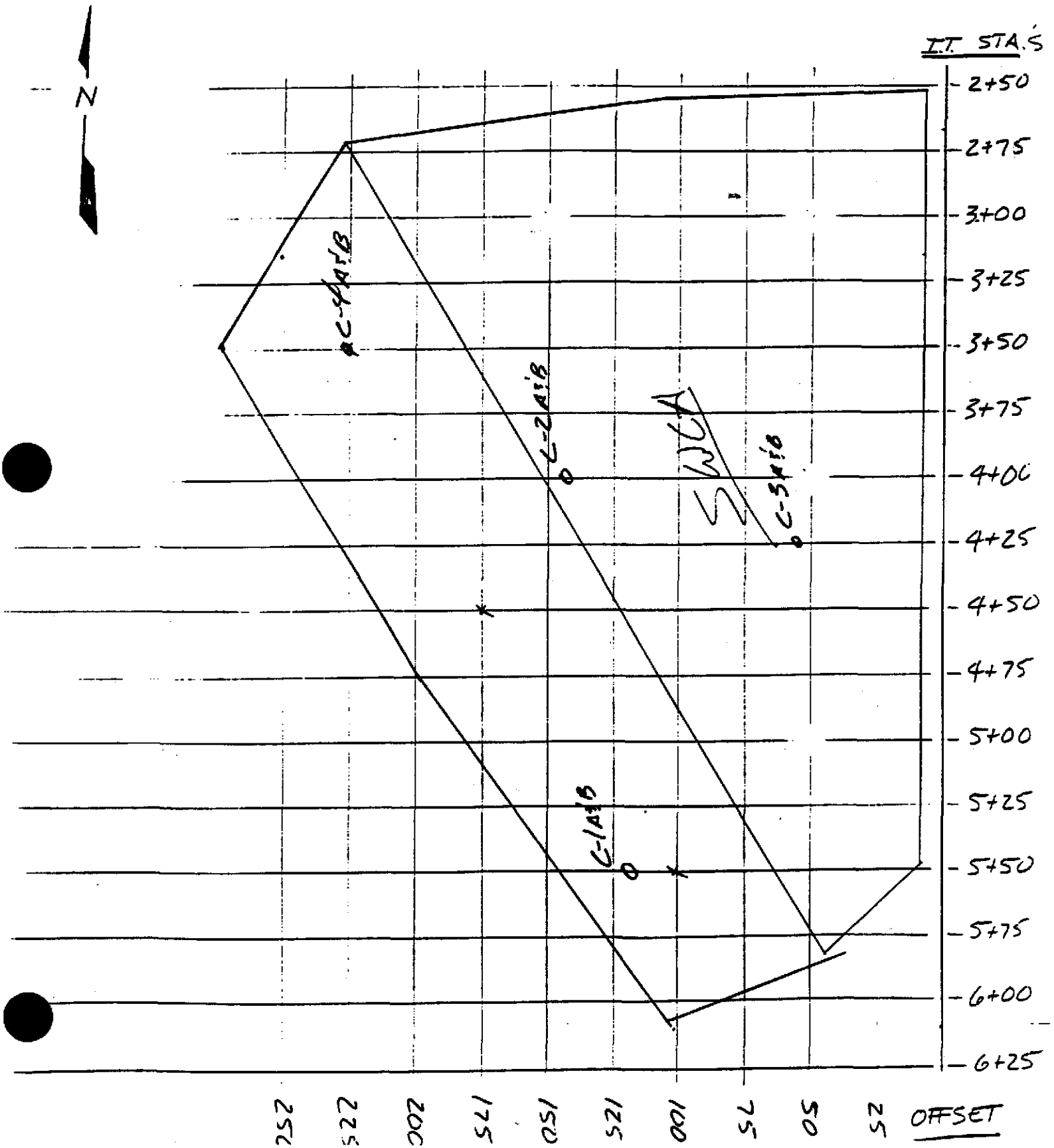
DENSITY GUAGE SERIAL NUMBER
7689

INTERNATIONAL TECHNOLOGY CORPORATION

(83)

BF Date 10-7-91 Subject NUC DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



INTERNATIONAL TECHNOLOGY CORPORATION

(84)

B.F. Date 10-7-91 Subject MOISTURE CONTENT VERIFICATION FOR NUC. DEN. TESTS. Sheet No. 1 of 1

Ckd. By ____ Date ____ Proj. No. 435425

SAMPLES WERE TAKEN TO 6" DEPTH BELOW NUC. GA. TEST AREA INDICATED BELOW & DRIED IN MICROWAVE OVEN @ 2- 10 MIN INTERVALS. NUC. TESTS WERE RUN W/ NO MOISTURE CORRECTION.

#C-1

WET SOIL + CAN = 655.3 g
WT. CAN = 111.5 g
WT. DRY SOIL + CAN = 526.7 g
WET SOIL = 543.8 g
DRY SOIL = 415.2 g
WATER = 128.6 g
M.C. OVEN = 31.0 %
M.C. GUAGE = 38.4 %

M.C. OVEN - M.C. GA = -7.4 %

#C-2

WET SOIL + CAN = 277.4 g
WT. CAN = 8.7 g
WT. DRY SOIL + CAN = 215.8 g
WET SOIL = 268.7 g
DRY SOIL = 207.1 g
WATER = 61.6 g
M.C. OVEN = 29.7 %
M.C. GUAGE = 35.8 %

M.C. OVEN - M.C. GA = -6.1 %

#C-3

WET SOIL + CAN = 342.5 g
WT. CAN = 8.7 g
WT. DRY SOIL + CAN = 270.8 g
WET SOIL = 333.8 g
DRY SOIL = 262.1 g
WATER = 71.7 g
M.C. OVEN = 27.4 %
M.C. GUAGE = 34.1 %

M.C. OVEN - M.C. GA. = -6.7 %

#C-4

WET SOIL + CAN = 290.1 g
WT CAN = 8.5 g
DRY SOIL + CAN = 227.99 g
WET SOIL = 281.6 g
DRY SOIL = 219.5 g
WATER = 62.1 g
M.C. OVEN = 28.3 g
M.C. GA. = 35.1 g

M.C. OVEN - M.C. GA. = -6.8 %

$\bar{X} = -6.75$

CORR. FACTOR $= \frac{-6.75}{100 + 35.85} \times 1000 = -50 =$ CORR. FACTOR

108-10-85

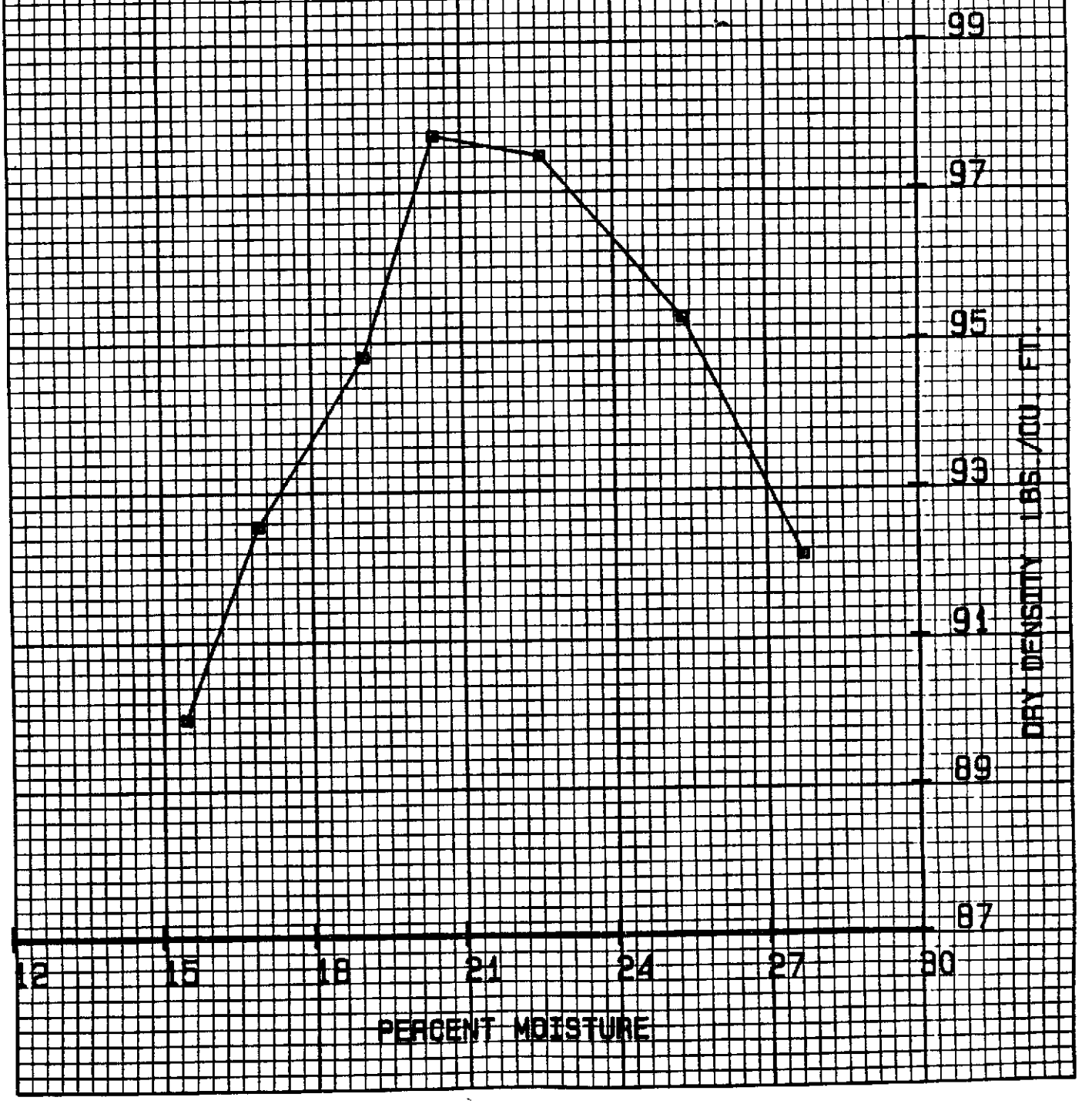
(85)

27-AUG-91 FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5309 (CH)

LL - 69 MAX. DRY DENSITY - 97.7 LBS./CU. FT.
PL - 28 OPTIMUM MOISTURE - 20.5 PERCENT
PI - 41

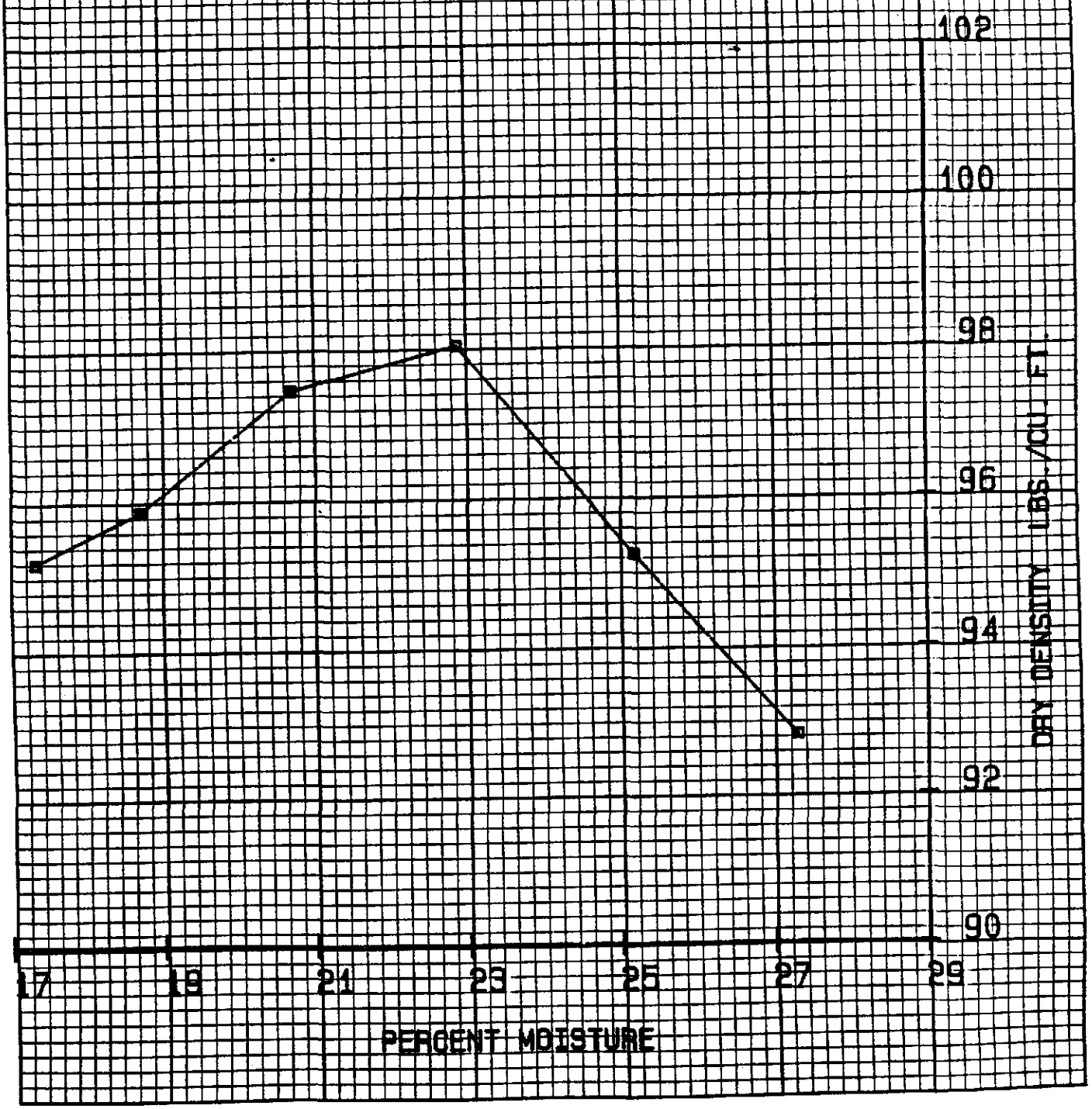


27-AUG-91 FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5310 (CH)

LL - 54 MAX. DRY DENSITY - 98.0 LBS./CU. FT.
PL - 24 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 30



(01)

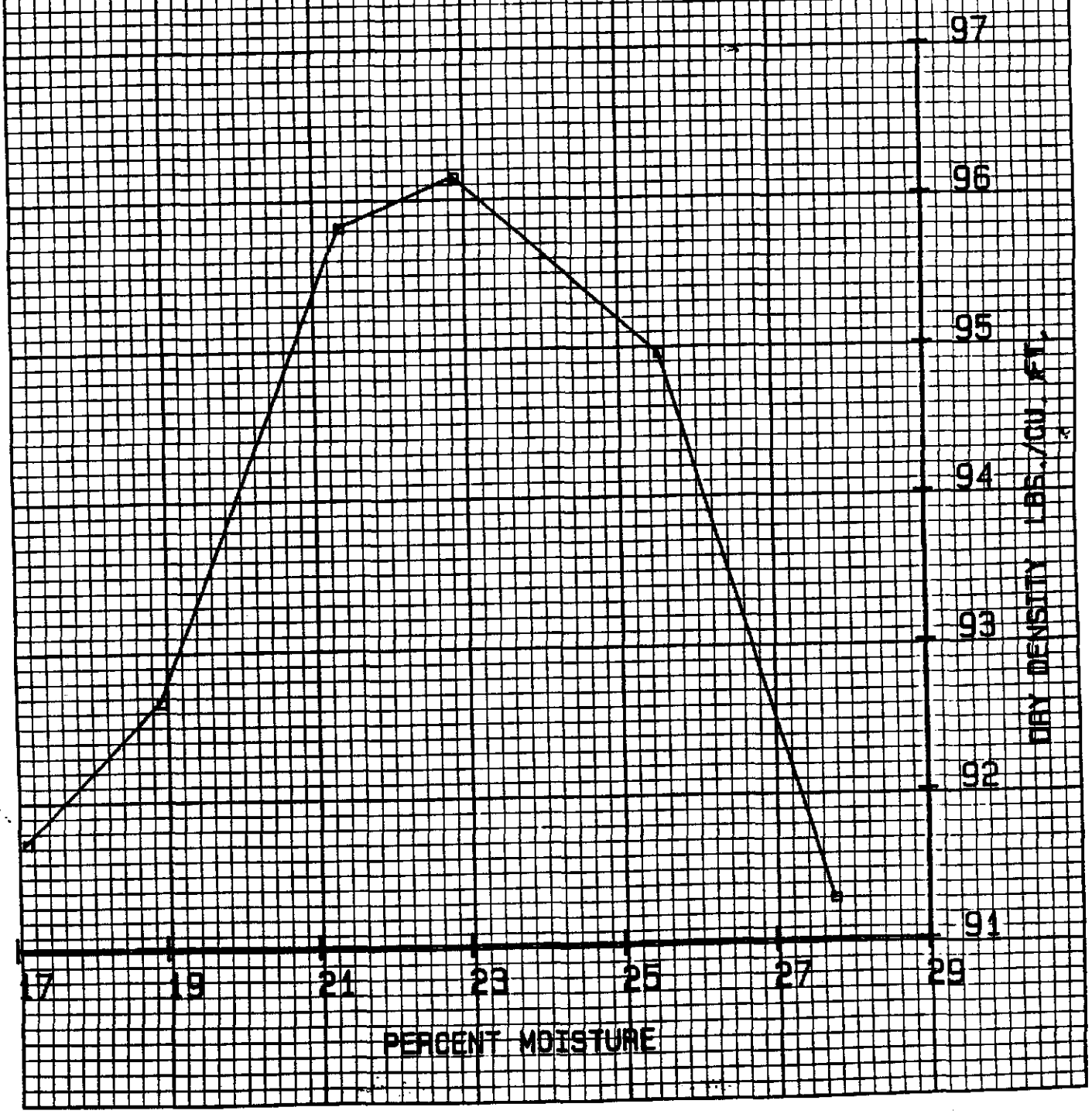
28-AUG-91

FIGURE 3

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5311 (CH)

LL - 63 MAX. DRY DENSITY - 96.1 LBS./CU. FT.
PL - 26 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 37



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: LONZA CHEM CO.
PROJECT NO.: 435425
DATE: 10-8-91

TESTED BY: Billy Fry

USE -50 M.C. W/ 3411B ALL OTHER TESTS AFTER THESE USED 3440 NUC.GA. W/ DIFF. MOIST. CORR.

TEST NUMBER	C-10A	C-9A	C-14	C-19	C-18	C-26	C-25	C-22	C-23	C-15
STATION	5+50	5+50	4+00	4+50	4+50	5+50	5+50	5+00	5+00	4+00
OFFSET	100	50	50	100	50	100	50	50	100	100
MODE & DEPTH	6"	→								→
COMPACTION METHOD	SHEEPSFOOT ROLLER & RUBBER TIRE FRONT END LOADER W/ 20 PSI TIRE PRESS.	→								→
NUMBER OF PASSES	6	→								→
LIFT THICKNESS	6"	→								→
WET DENSITY (PCF)	112^{1}	115^{8}	118^{5}	118^{2}	115^{7}	115^{2}	116^{6}	116^{2}	117^{8}	118^{0}
MOISTURE (PCF)	26^{1}	29^{8}	24^{4}	24^{5}	23^{9}	26^{6}	26^{5}	26^{6}	26^{2}	25^{0}
DRY DENSITY (PCF)	85^{9}	85^{9}	94^{2}	95^{7}	91^{7}	89^{2}	90^{2}	90^{2}	91^{6}	93^{0}
% MOISTURE	30^{4}	34^{1}	25^{9}	26^{7}	26^{1}	29^{9}	29^{4}	29^{5}	28^{6}	26^{9}
MAX.DRY DENSITY STD. ☑ MOD. ☐	97^{3}	→								→
OPTIMUM MOISTURE	22^{1}	→								→
% RELATIVE COMPACTION	88^{2}	88^{3}	96^{8}	96^{5}	94^{3}	91^{7}	92^{6}	92^{7}	94^{1}	95^{6}
MATERIAL DISCRIPTION	CLAY, (GUM BO) CH	→								→

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2169	0499	

M.C. CORR. USED = -50

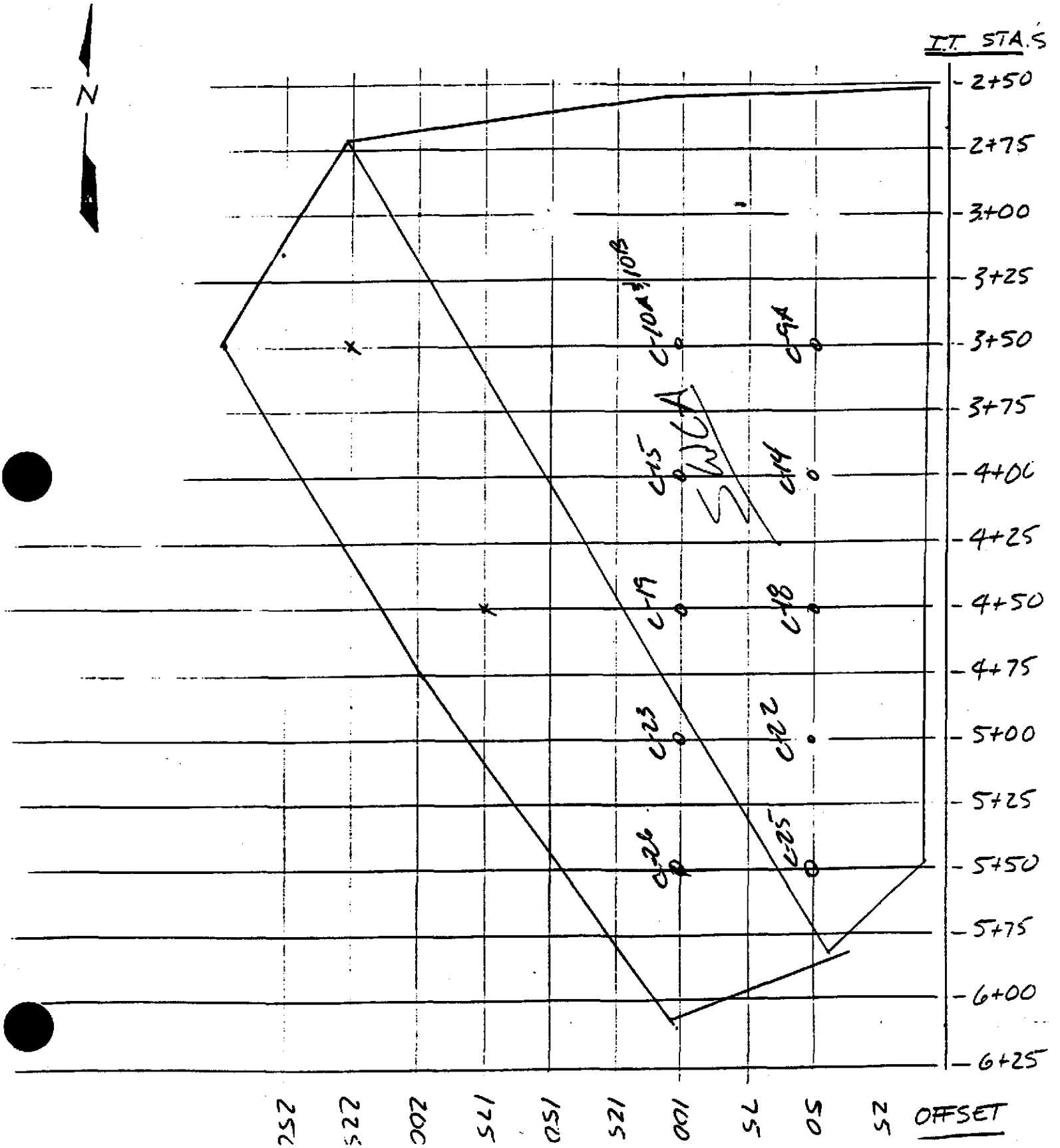
88

INTERNATIONAL TECHNOLOGY CORPORATION

(89)

BF Date 10-08-91 Subject NUC DENSITY LOCATIONS Sheet No. 2 of 2

Chkd. By ____ Date ____ SWCA Proj. No. 435425



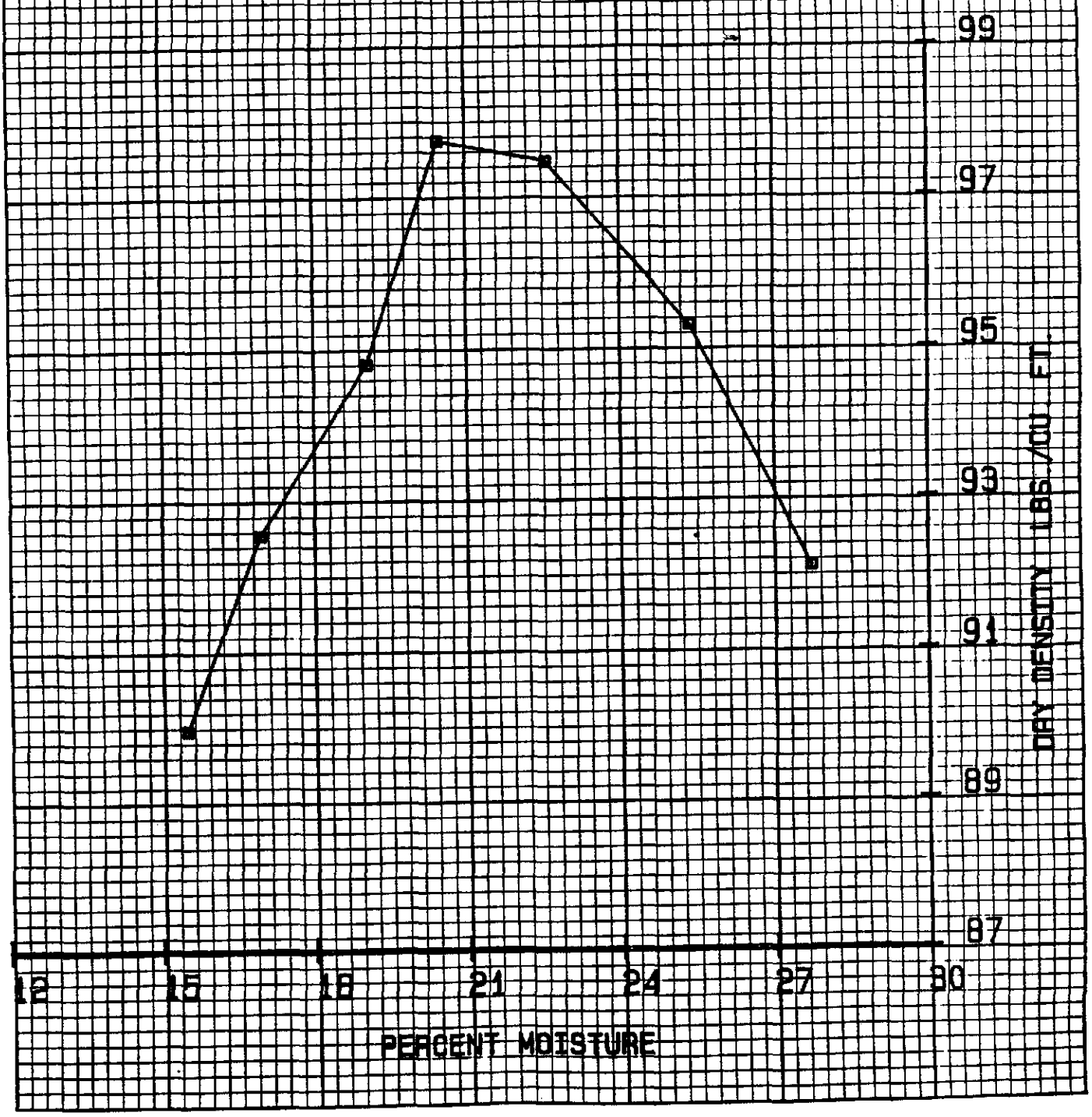
(90)

27-AUG-91 FIGURE. 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5309 (CH)

LL - 69 MAX. DRY DENSITY - 97.7 LBS./CU. FT.
PL - 28 OPTIMUM MOISTURE - 20.5 PERCENT
PI - 41



(91)

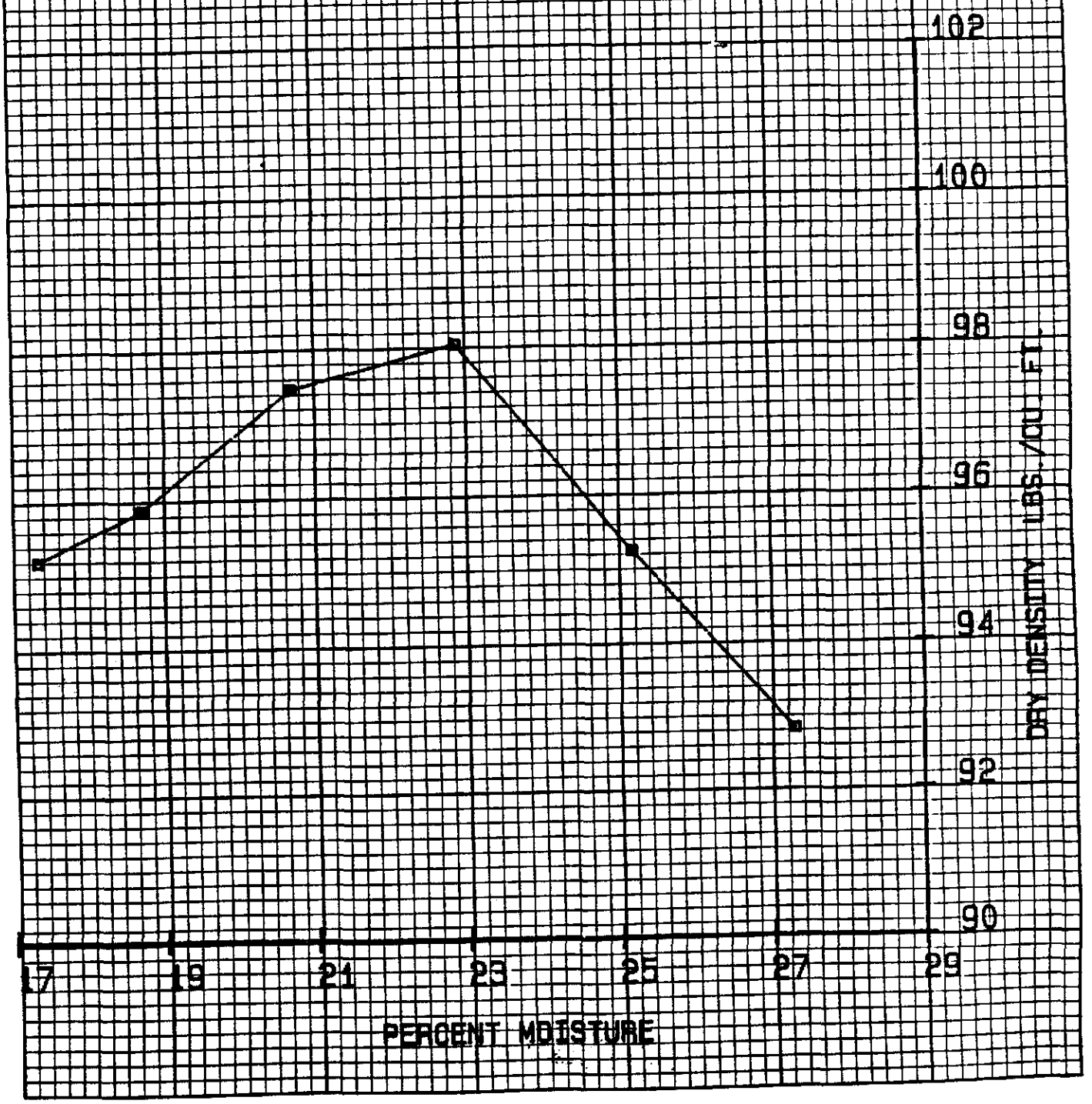
27-AUG-91

FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5310 (CH)

LL - 54 MAX. DRY DENSITY - 98.0 LBS./CU. FT.
PL - 24 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 30



(92)

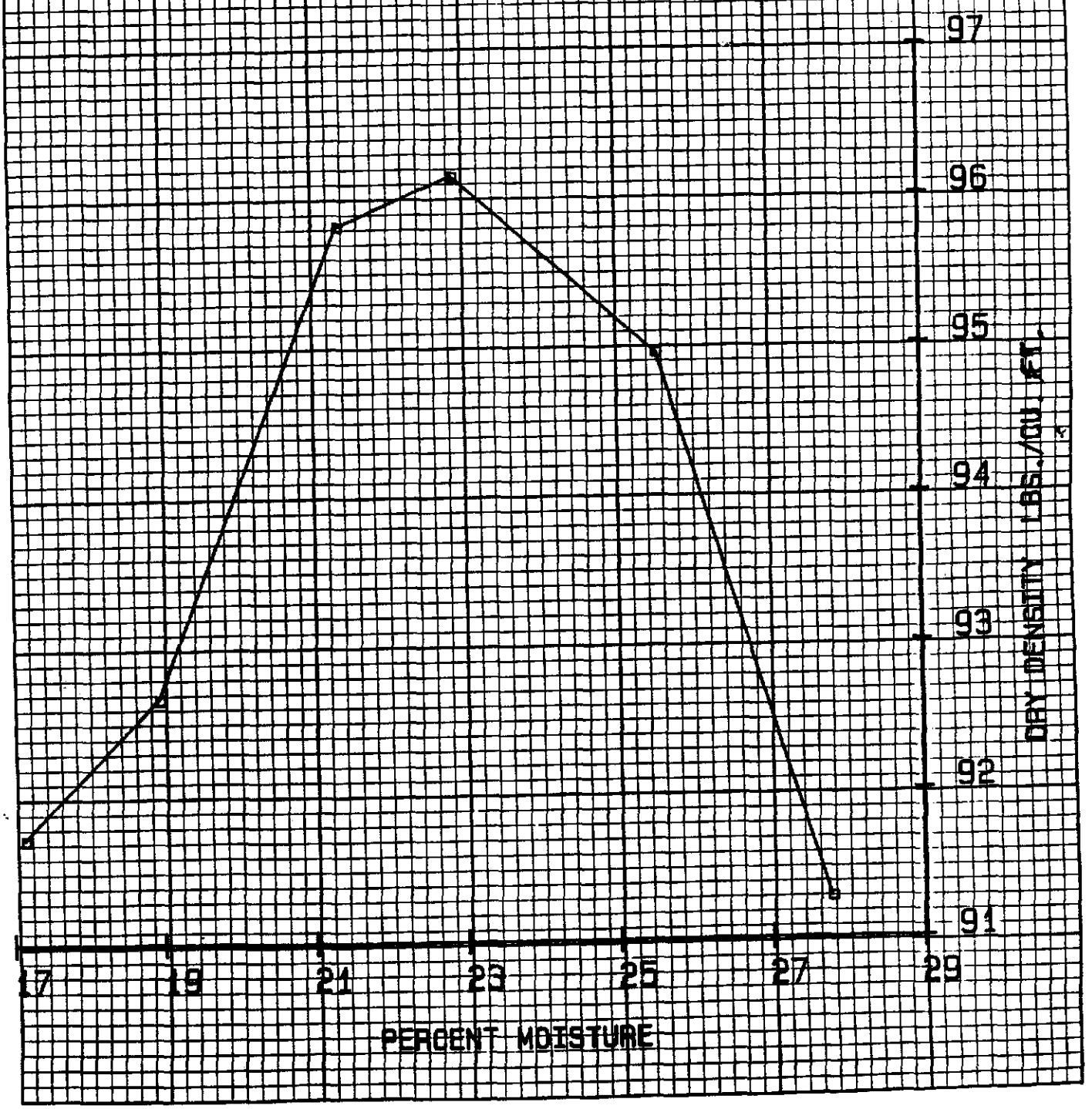
28-AUG-91

FIGURE 3

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5311 (CH)

LL - 63 MAX. DRY DENSITY - 96.1 LBS./CU. FT.
PL - 26 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 37



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 10-08-91

TESTED BY: Billy Fry
USED NUC. GA. M. 5440 / SER 16399
M.C. WORK-5 USED

TEST NUMBER	C-9B	C-11	C-12A	C-13A	C-16	C-17	C-20	C-21	C-24	C-8A
STATION	3+50	5+50	3+50	5+50	4+00	4+00	4+50	4+50	5+00	3+00
OFFSET	50	150	200	250	150	200	150	200	150	200
MODE & DEPTH	6"									
COMPACTION METHOD	SHEEPS FOOT ROLLER & RUBBER TIRE PLANT AND COMPACTOR W/ 80 PSI TIRE PRESS.									
NUMBER OF PASSES	10									
LIFT THICKNESS	6"									
WET DENSITY (PCF)	116^{1}	116^{5}	106^{2}	111^{7}	117^{2}	118^{3}	118^{1}	119^{2}	116^{5}	115^{5}
MOISTURE (PCF)	27^{0}	29^{6}	25^{2}	28^{2}	25^{4}	27^{1}	26^{3}	26^{2}	27^{4}	29^{1}
DRY DENSITY (PCF)	89^{1}	88^{3}	81^{6}	83^{5}	91^{8}	91^{4}	91^{9}	93^{0}	89^{1}	86^{4}
% MOISTURE	30^{3}	32^{0}	30^{9}	33^{8}	27^{7}	29^{6}	28^{5}	28^{2}	30^{8}	33^{1}
MAX. DRY DENSITY STD. ☑ MOD. ☐	97^{3}									
OPTIMUM MOISTURE	22^{1}									
% RELATIVE COMPACTION	91^{6}	90^{7}	83^{9}	85^{8}	94^{3}	93^{2}	94^{5}	95^{6}	91^{6}	88^{8}
MATERIAL DISCRIPTION	CLAY (CH)	(LUMPS)								

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	16399
2120	0500	

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 10-8-91

TESTED BY: Bill [illegible] (RC)
USED NUC. GA. M 3440 SER # 16399

TEST NUMBER	C-10B	C-5	C-6	C-7	C-8B					
STATION	3+50	3+00	3+00	3+00	3+00					
OFFSET	100	50	100	150	200					
MODE & DEPTH	6" →	→	→	→	→					
COMPACTION METHOD	SHEEPS FOOT ROLLER									
NUMBER OF PASSES	10 →	→	→	→	→					
LIFT THICKNESS	6" →	→	→	→	→					
WET DENSITY (PCF)	115^{6}	117^{0}	116^{5}	118^{1}	104^{6}					
MOISTURE (PCF)	25^{8}	24^{0}	26^{9}	27^{4}	27^{1}					
DRY DENSITY (PCF)	89^{3}	93^{0}	89^{5}	90^{7}	87^{6}					
% MOISTURE	28^{1}	25^{6}	30^{1}	30^{2}	30^{9}					
MAX.DRY DENSITY STD. ☒ MOD. ☐	97^{3} →	→	→	→	→					
OPTIMUM MOISTURE	22^{1} →	→	→	→	→					
% RELATIVE COMPACTION	92^{3}	95^{6}	92^{0}	93^{2}	90^{0}					
MATERIAL DISCRIPTION	CH CLAY GUMBO →	→	→	→						

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	~~[illegible]~~ 16399 (RC)

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INTERNATIONAL TECHNOLOGY CORPORATION

(95)

B.F. Date 10-08-91 Subject VERIFICATION & MOISTURE Sheet No. 1 of 1

d. By ____ Date ____ CORR. FOR NUC. GA MODEL # Proj. No. 435425

5440 SER# 16599

SAMPLES WERE TAKEN TO 10" DEPTH BELOW THE NUC. LOCATION & DRIED IN MICROWAVE @ 5-2 min. INTERVALS.

NUC. TEST LOC. . .	C-11	C-12	C-13	C-8
GA. M.C.	54.1 %	31.4 %	55.4 %	32.4 %
WT. CAN.	111.6 g	112.1 g	8.5 g	8.5 g
WT. WET S. + CAN.	586.2	512.0	437.7	369.6
WT. DRY S. + CAN.	433.2	417.5	329.3	278.5
WT. WET SOIL . .	424.6	599.9	429.2	561.1
WT. DRY SOIL . .	321.4	505.4	320.8	270.0
WT. WATER	103.0	94.5	108.4	91.1
M.C.	32.0 %	30.9 %	33.8 %	33.7 %
- GA. M.C. . . .	54.1 %	31.4 %	55.4 %	58.4 %
DIFF. . . .	-2.1 %	-0.5 %	-1.6 %	~~-1.7~~ % +1.5

ALL M.C. NUC. GA. = 55.3 %

ALL M.C. OVEN SAMP. = 32.6 %

K = -5.25

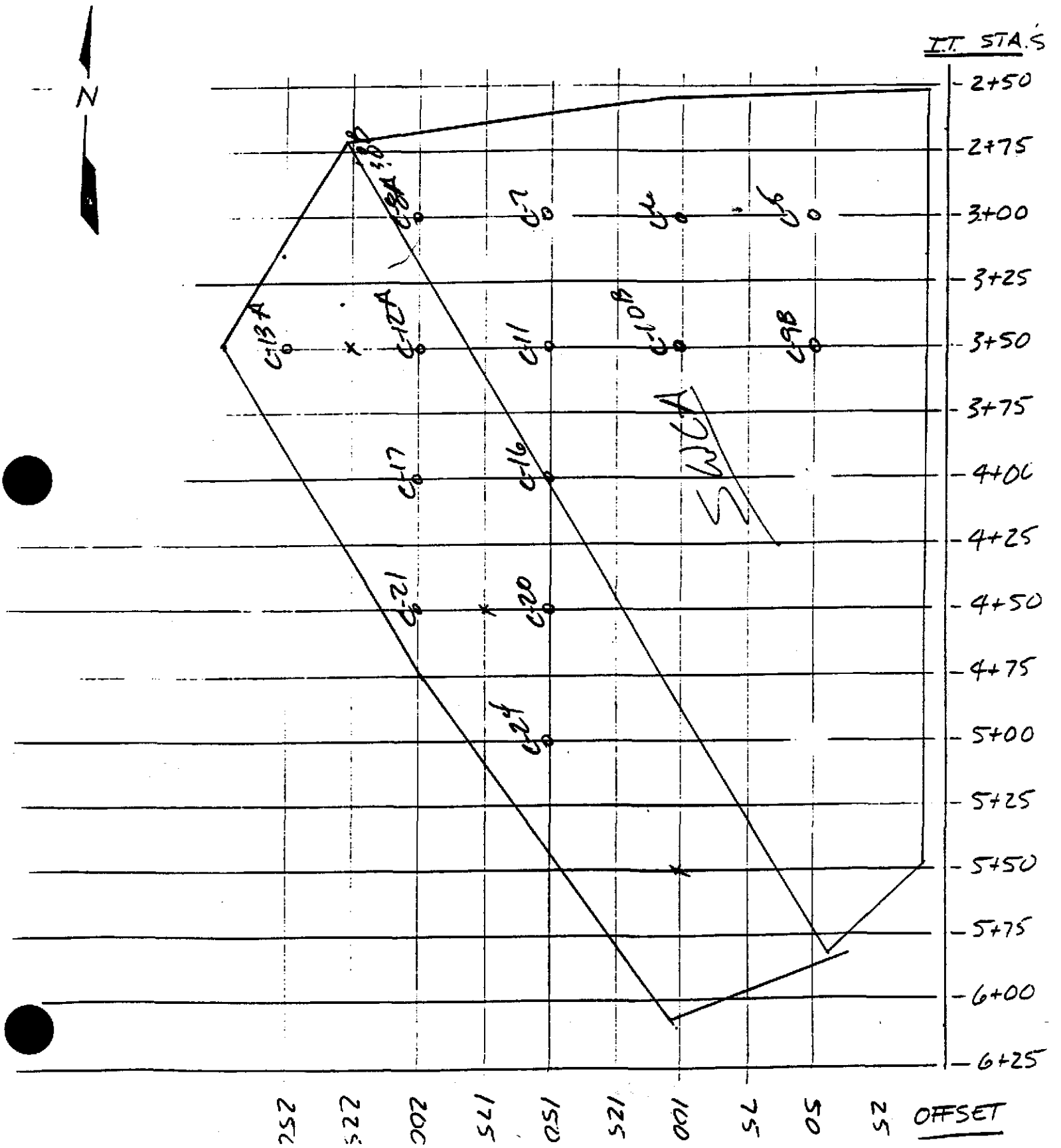
108-10-85

INTERNATIONAL TECHNOLOGY CORPORATION

(86)

BF Date 10-89 Subject NUC DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



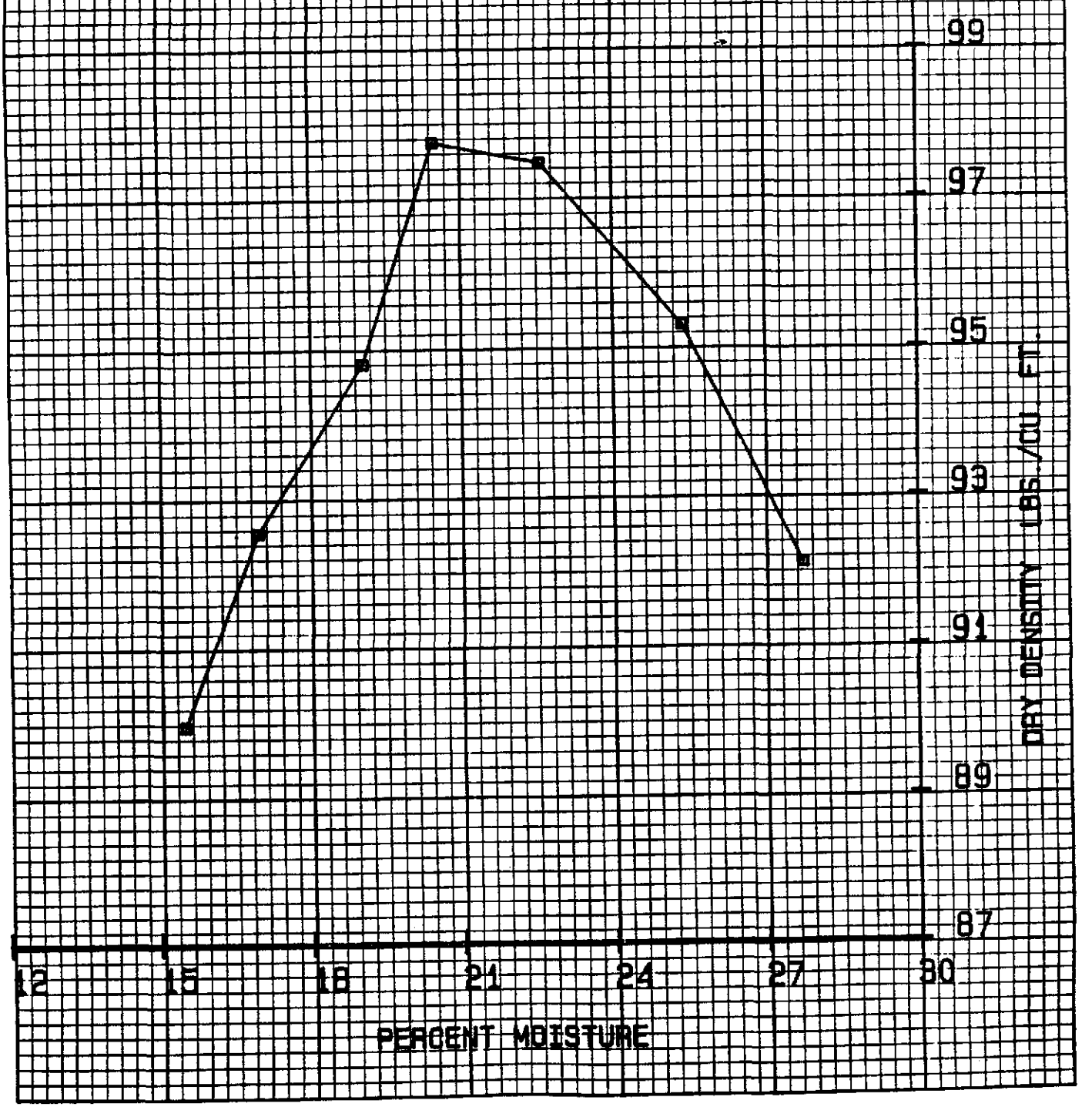
(92)

27-AUG-91 FIGURE. 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5309 (CH)

LL - 69 MAX. DRY DENSITY - 97.7 LBS./CU. FT.
PL - 28 OPTIMUM MOISTURE - 20.5 PERCENT
PI - 41



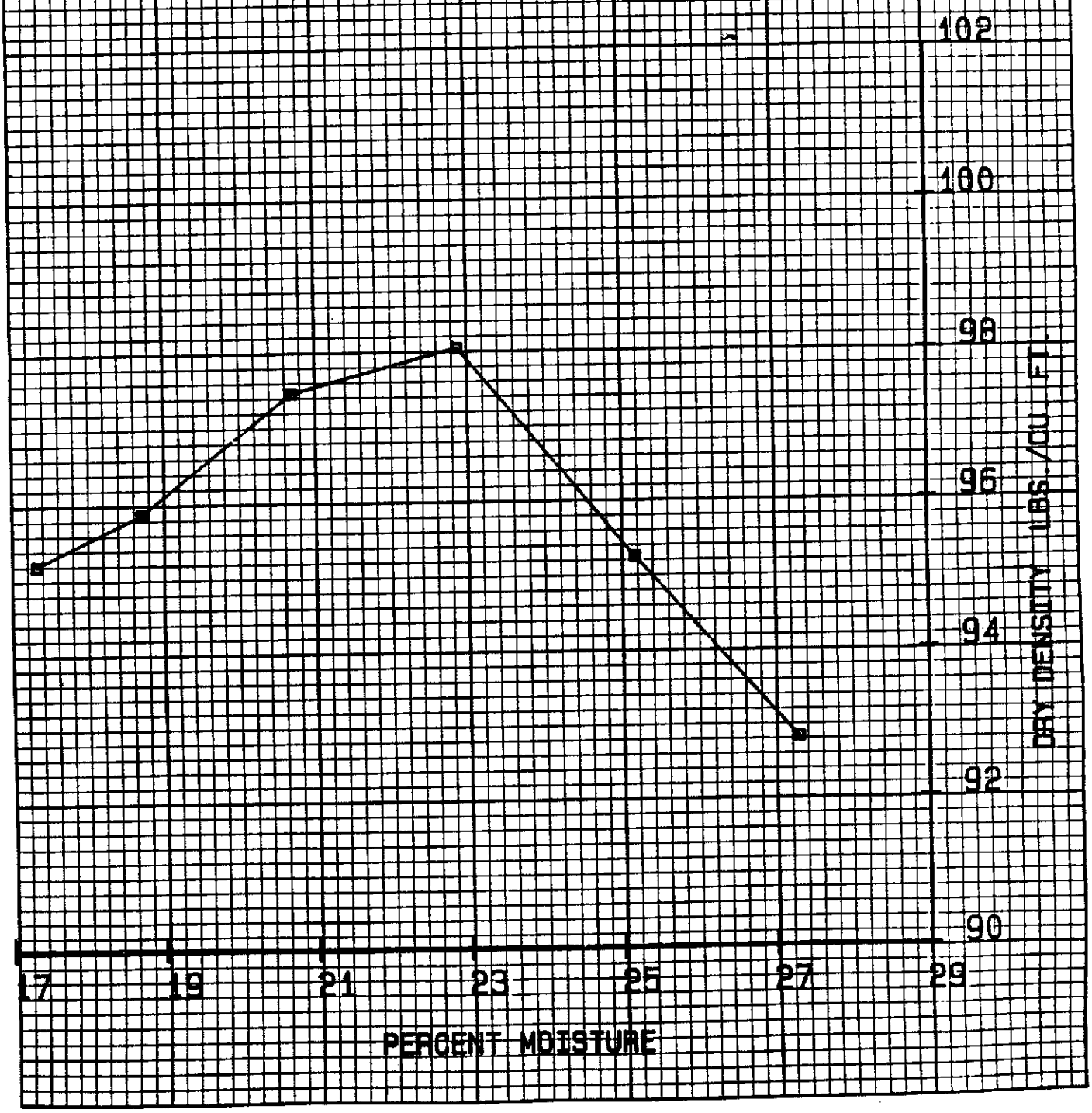
(98)

27-AUG-91 FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE B5310 (CH)

LL - 54 MAX. DRY DENSITY - 98.0 LBS./CU. FT.
PL - 24 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 30



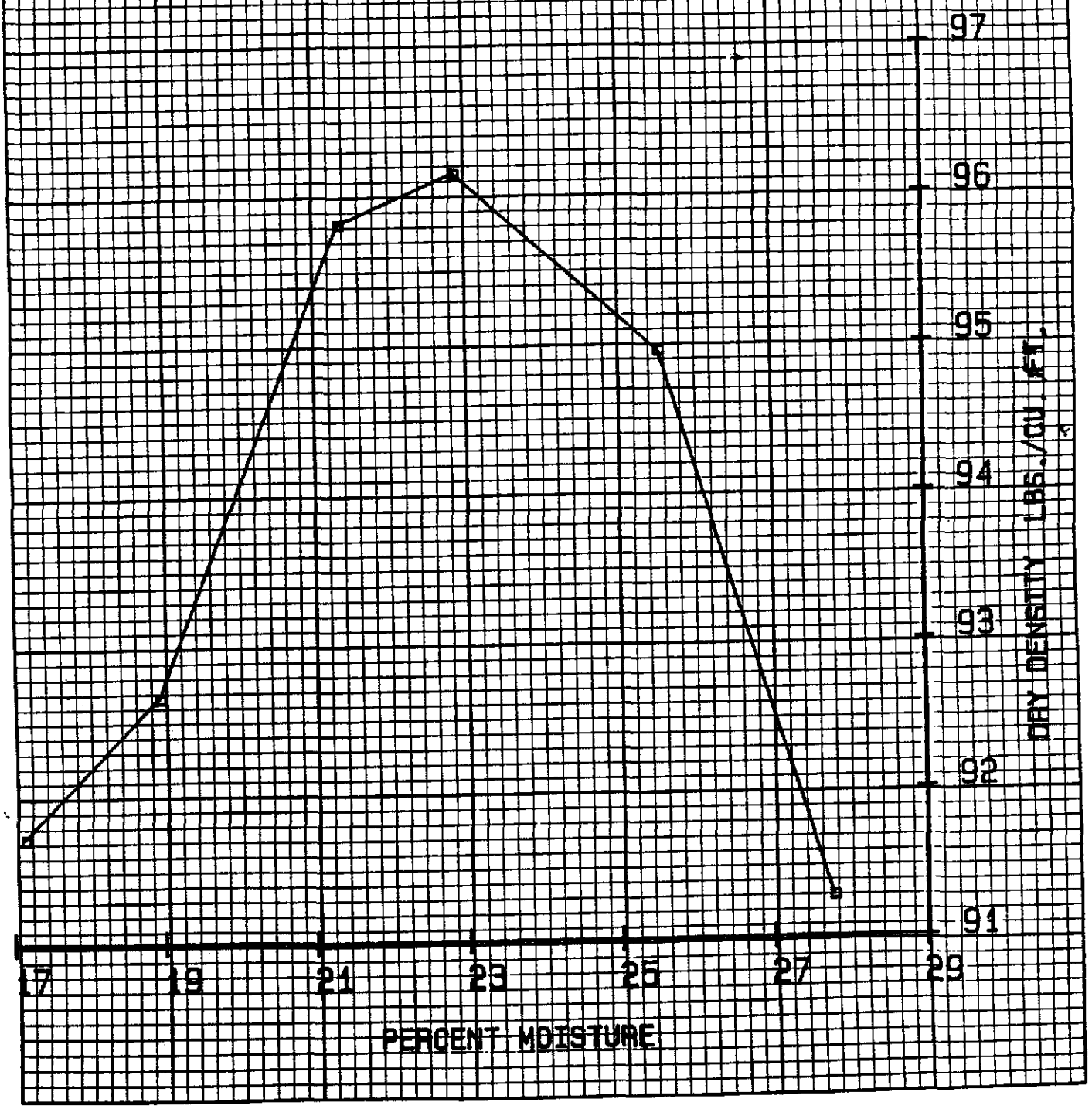
28-AUG-91

FIGURE 3

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5311 (CH)

LL - 63 MAX. DRY DENSITY - 96.1 LBS./CU. FT.
PL - 26 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 37



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 10-09-91

TESTED BY: Billy Fu
M.C. ~~ADJUSTED~~ CORR. USED -5

TEST NUMBER	C-12B	C-13B								
STATION	3+50	3+50								
OFFSET	200	250								
MODE & DEPTH	6"	→								
COMPACTION METHOD	SHEEPS FOOT ROLLER & RUBBER TIRE FRONT END LOADER									
NUMBER OF PASSES	10	10								
LIFT THICKNESS	6"	6"								
WET DENSITY (PCF)	113.3	116.1								
MOISTURE (PCF)	25.8	26.9								
DRY DENSITY (PCF)	87.5	89.2								
% MOISTURE	29.2	30.1								
MAX.DRY DENSITY STD.☑ MOD.☐	97.2	→								
OPTIMUM MOISTURE	22.1	→								
% RELATIVE COMPACTION	90.2	91.8								
MATERIAL DISCRIPTION	RH CONT GUMBO									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	~~[illegible]~~ 16399
2167	0502	

106

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: COVAC CHEM. CO. TESTED BY: Billy Frey
PROJECT NO.: 435425
DATE: 10-9-91

TEST NUMBER	C35A	C34A	C33A	C30						
STATION	345.0	345.0	34[illegible]							
OFFSET	25.0	20.0	15.0							
MODE & DEPTH	6"	→	→							
COMPACTION METHOD	SHEEPS FOOT ROLLER									
NUMBER OF PASSES										
LIFT THICKNESS	6"									
WET DENSITY (PCF)	111.5	112.2	113.2							
MOISTURE (PCF)	27.1	27.0	28.4							
DRY DENSITY (PCF)	84.5	85.2	84.8							
% MOISTURE	32.1	31.[illegible]	33.3							
MAX.DRY DENSITY STD.☑ MOD.☐	97.8	→	→							
OPTIMUM MOISTURE	27.1	←	←							
% RELATIVE COMPACTION	86.3	88.4	87.[illegible]							
MATERIAL DISCRIPTION	[illegible]									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	16597

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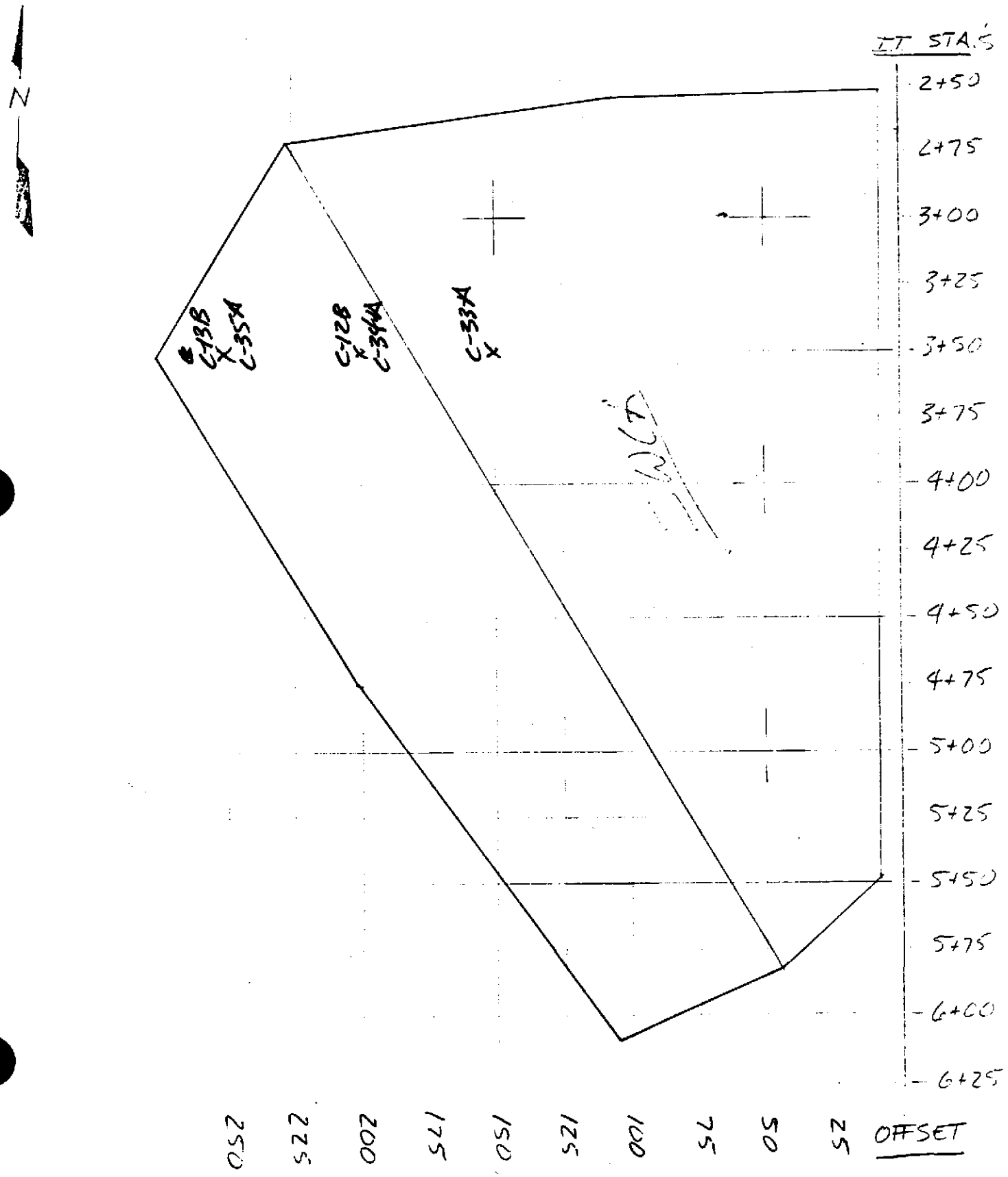
INTERNATIONAL TECHNOLOGY CORPORATION

(102)

By BF Date 10-09-91 Subject NUC DENSITY LOCATIONS Sheet No. ____ of ____

Chkd. By ____ Date ____ SWCA Proj. No. 435425

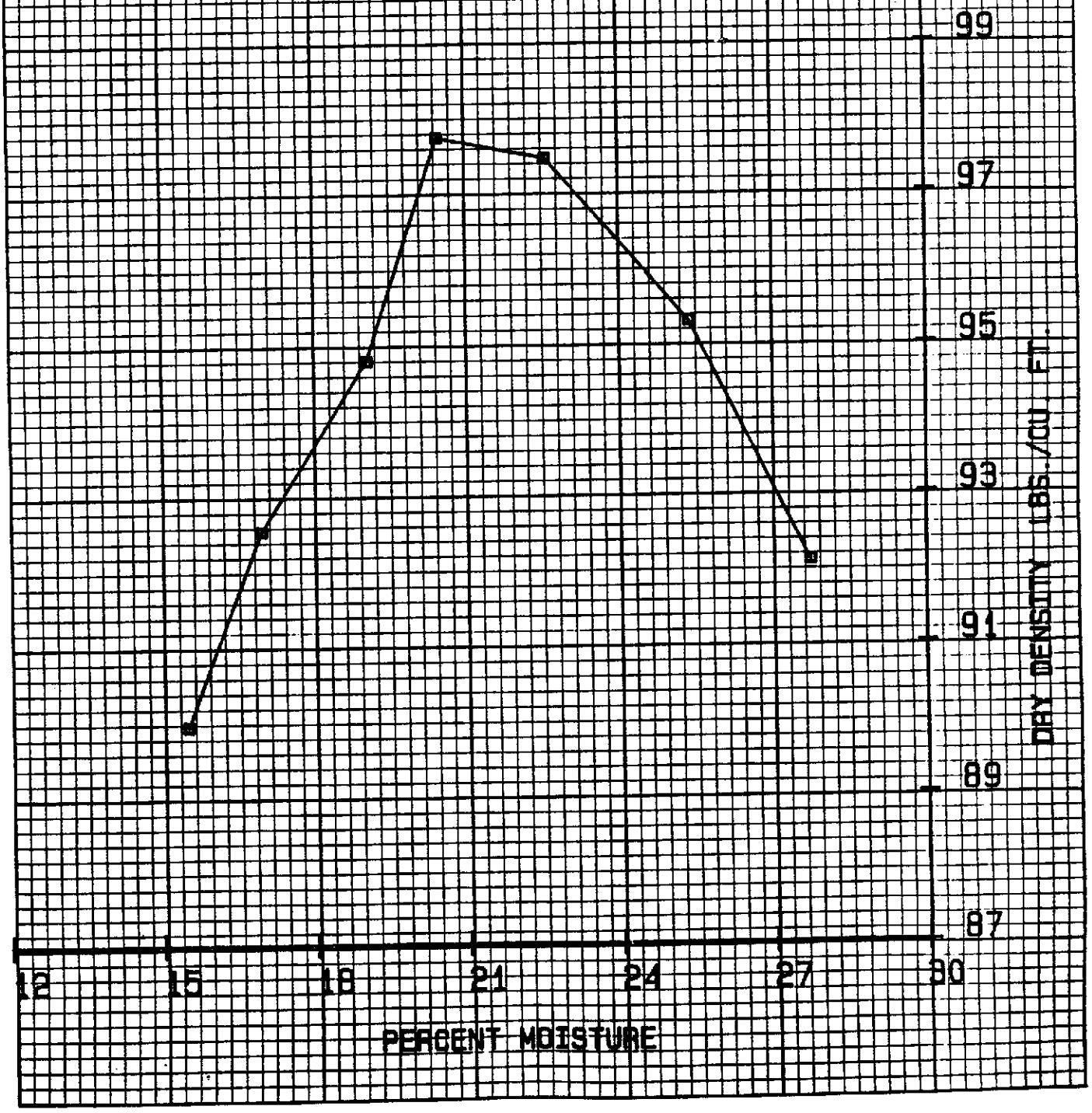


27-AUG-91 FIGURE. 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5309 (CH)

LL - 69 MAX. DRY DENSITY - 97.7 LBS./CU. FT.
PL - 28 OPTIMUM MOISTURE - 20.5 PERCENT
PI - 41

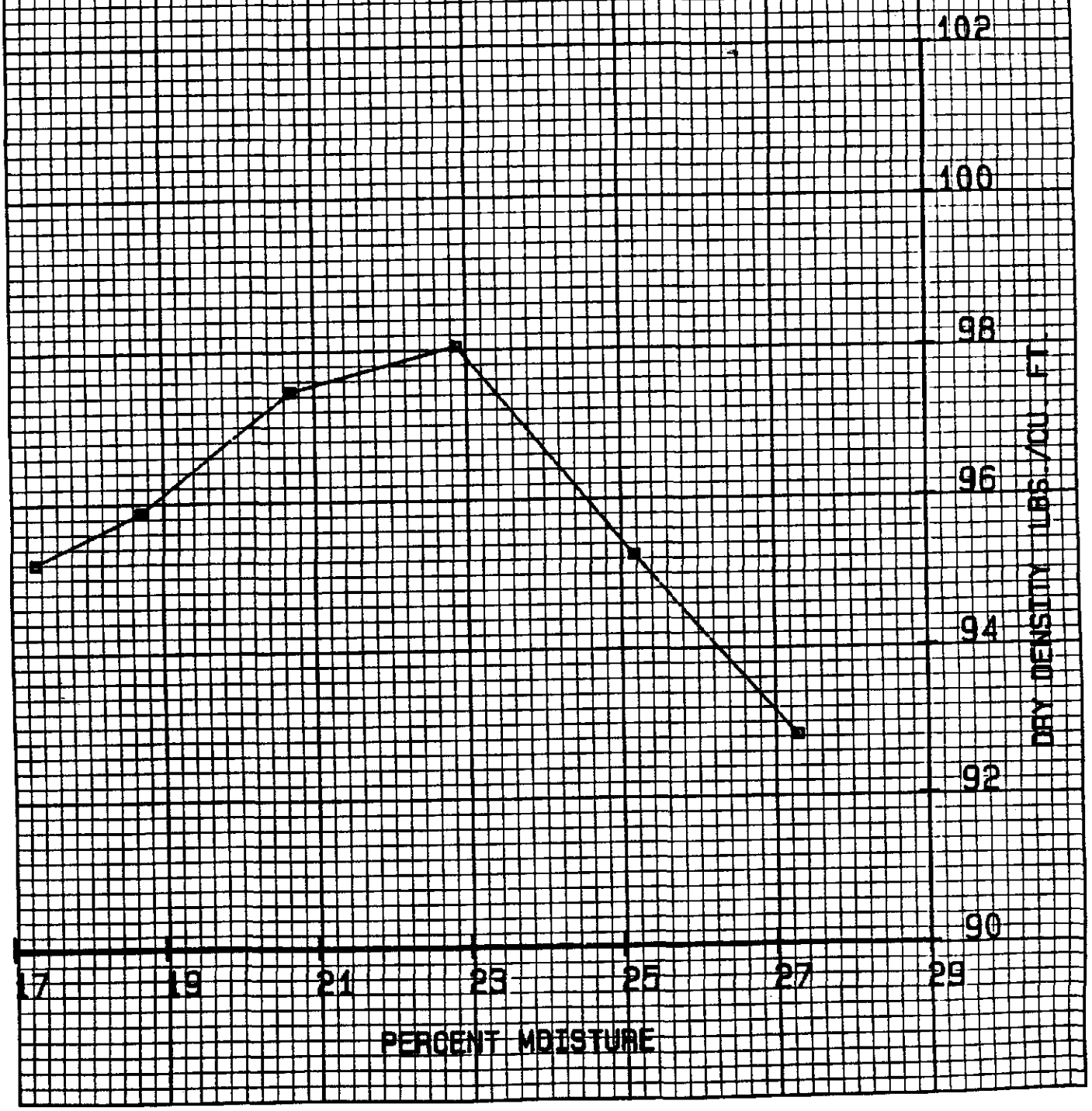


27-AUG-91 FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5310 (CH)

LL - 54 MAX. DRY DENSITY - 98.0 LBS./CU. FT.
PL - 24 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 30



(105)

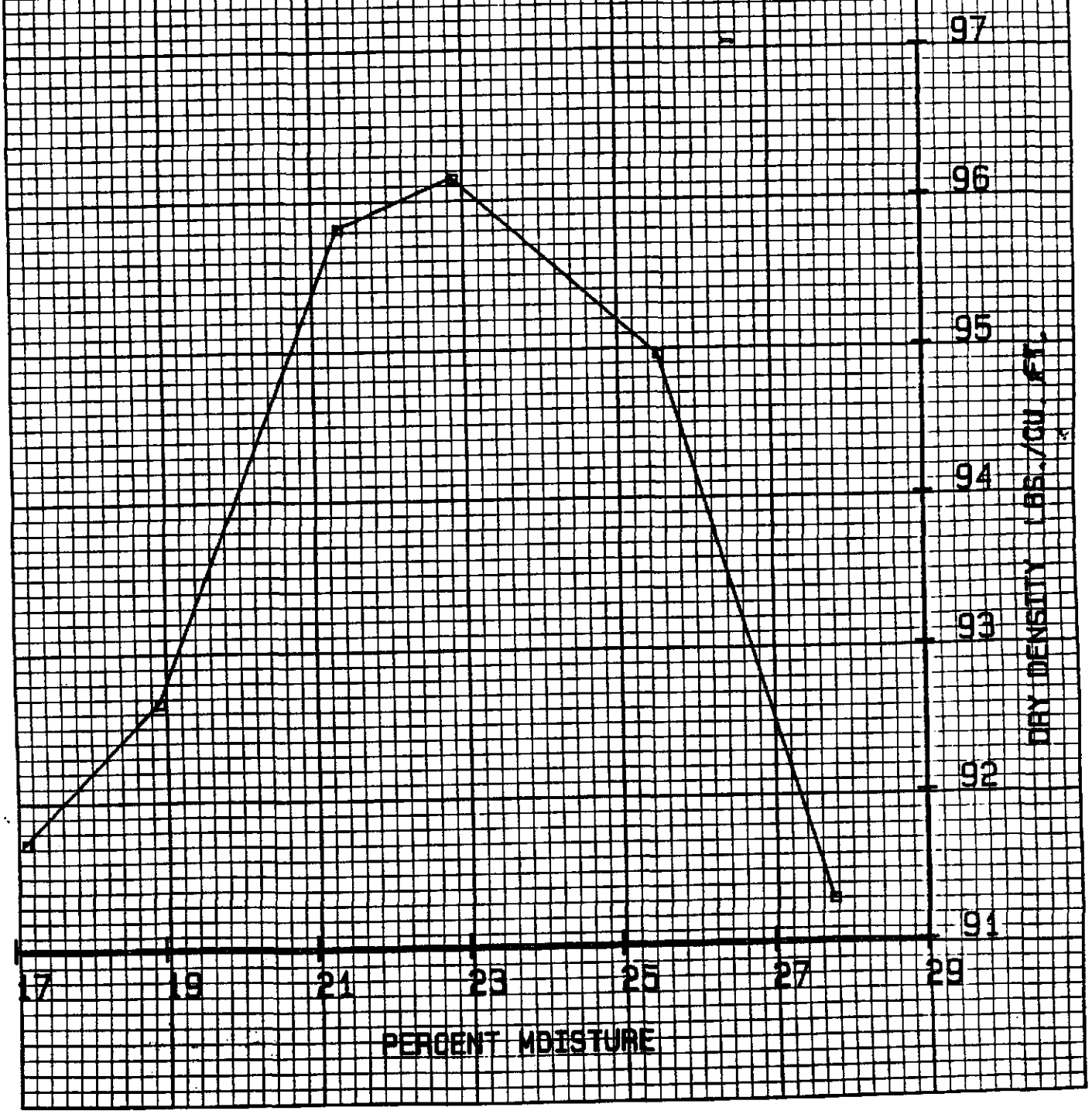
28-AUG-91

FIGURE 3

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5311 (CH)

LL - 63 MAX. DRY DENSITY - 96.1 LBS./CU. FT.
PL - 26 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 37



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435423
DATE: 10-10-91

TESTED BY: Billy Fry
M.C. CORR -5 USED

TEST NUMBER	C-28A	C-33B	C-30	C-32A						
STATION	3+00	3+50	3+00	3+50						
OFFSET	100	150	200	100						
MODE & DEPTH	6" →									
COMPACTION METHOD	SHEEPSFOOT ROLLER & RUBBER TIRE FRONT END LOADER									
NUMBER OF PASSES	2	6	6	2						
LIFT THICKNESS	6" →									
WET DENSITY (PCF)	112.6	116.5	117.0	113.9						
MOISTURE (PCF)	27.1	26.2	26.0	27.2						
DRY DENSITY (PCF)	85.0	90.3	91.0	86.7						
% MOISTURE	32.6	29.0	28.6	31.4						
MAX.DRY DENSITY STD.☑ MOD.☐	97.2	→								
OPTIMUM MOISTURE	22.1	→								
% RELATIVE COMPACTION	87.4	92.9	93.6	89.2						
MATERIAL DISCRIPTION	CH COAT GUMBO →									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	16399
2169	0500	

INTERNATIONAL TECHNOLOGY CORPORATION

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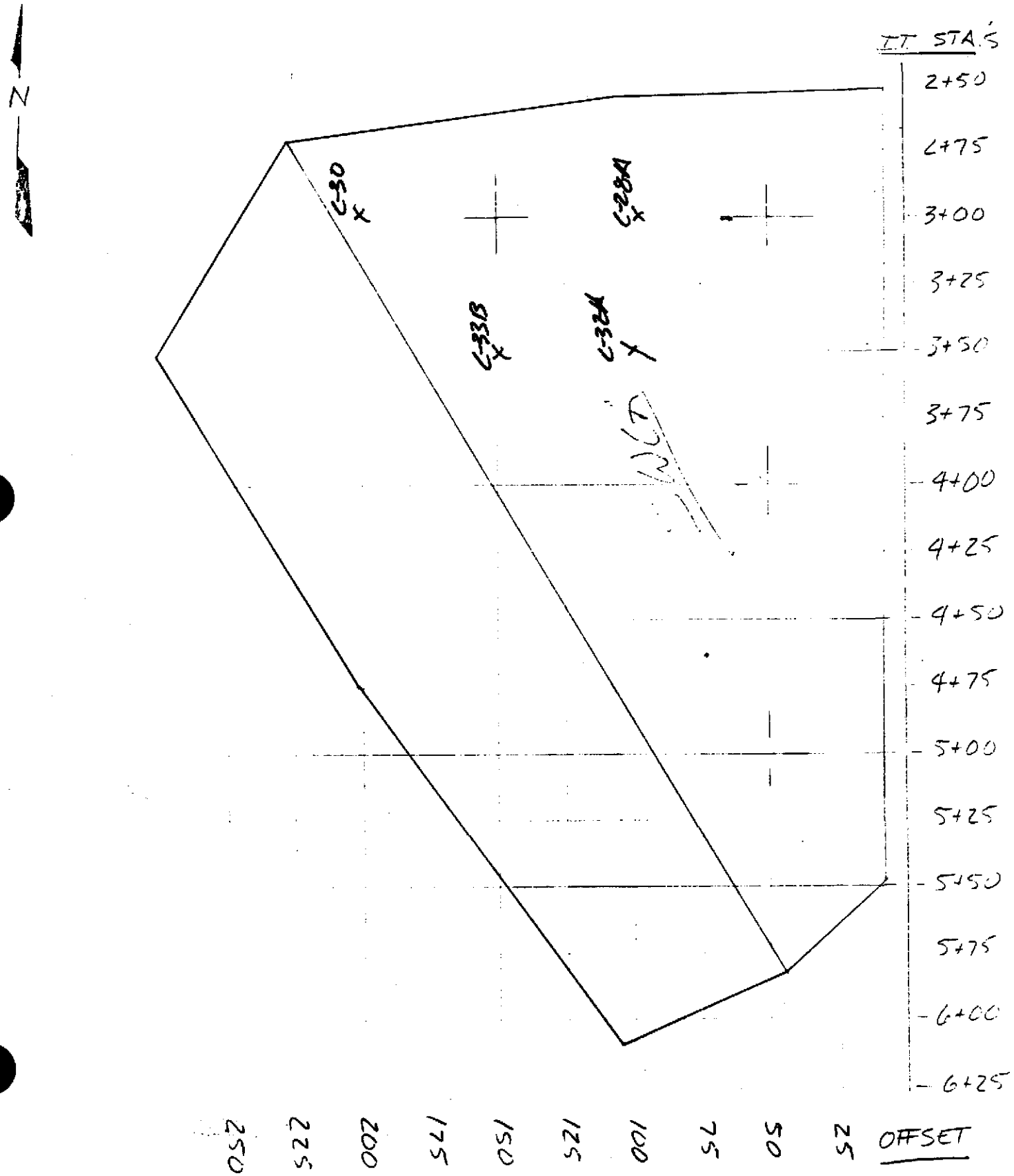
By BF Date 10-10-91 Subject NUC DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425

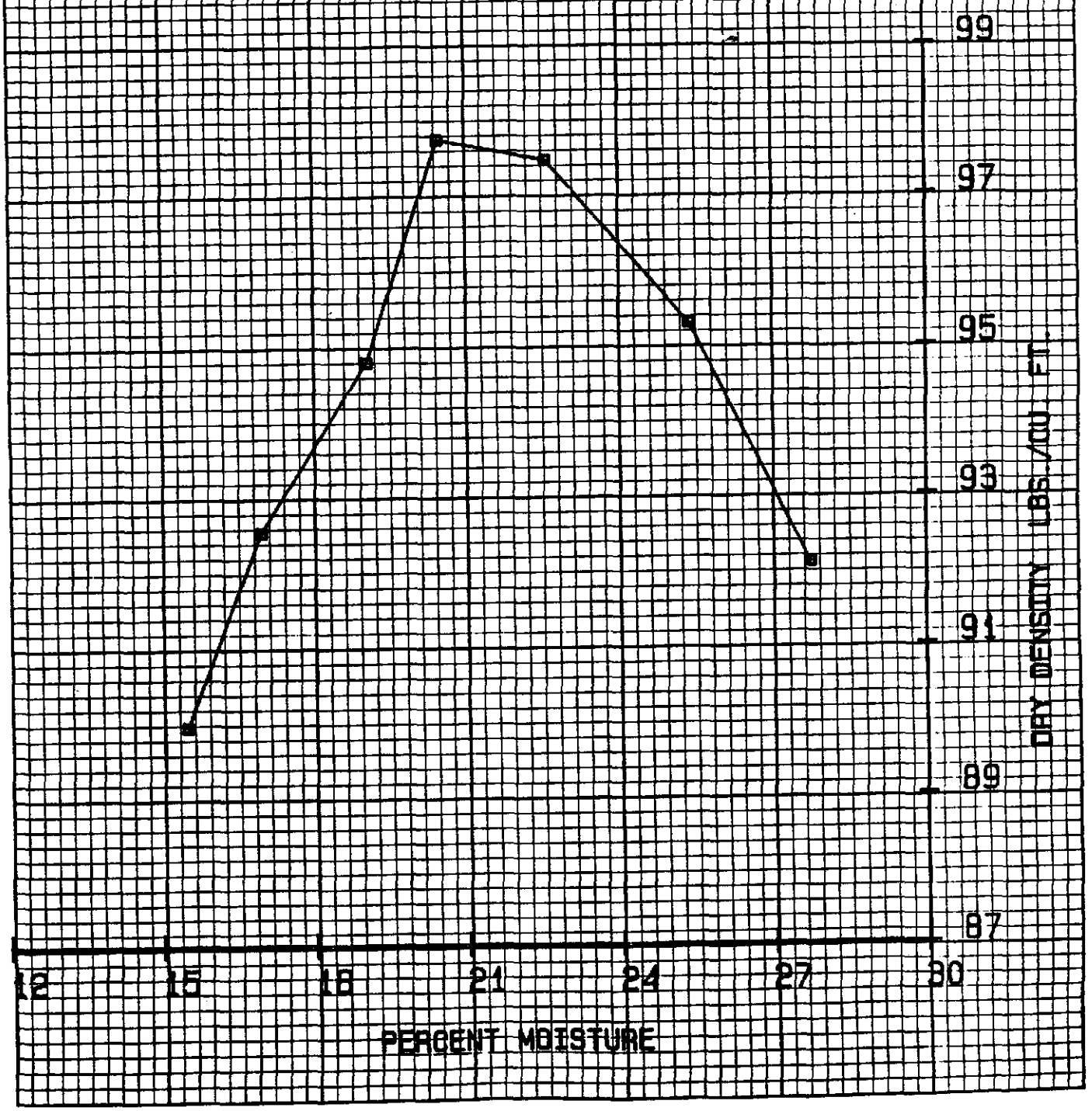


27-AUG-91 FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5309 (CH)

LL - 69 MAX. DRY DENSITY - 97.7 LBS./CU. FT.
PL - 28 OPTIMUM MOISTURE - 20.5 PERCENT
PI - 41



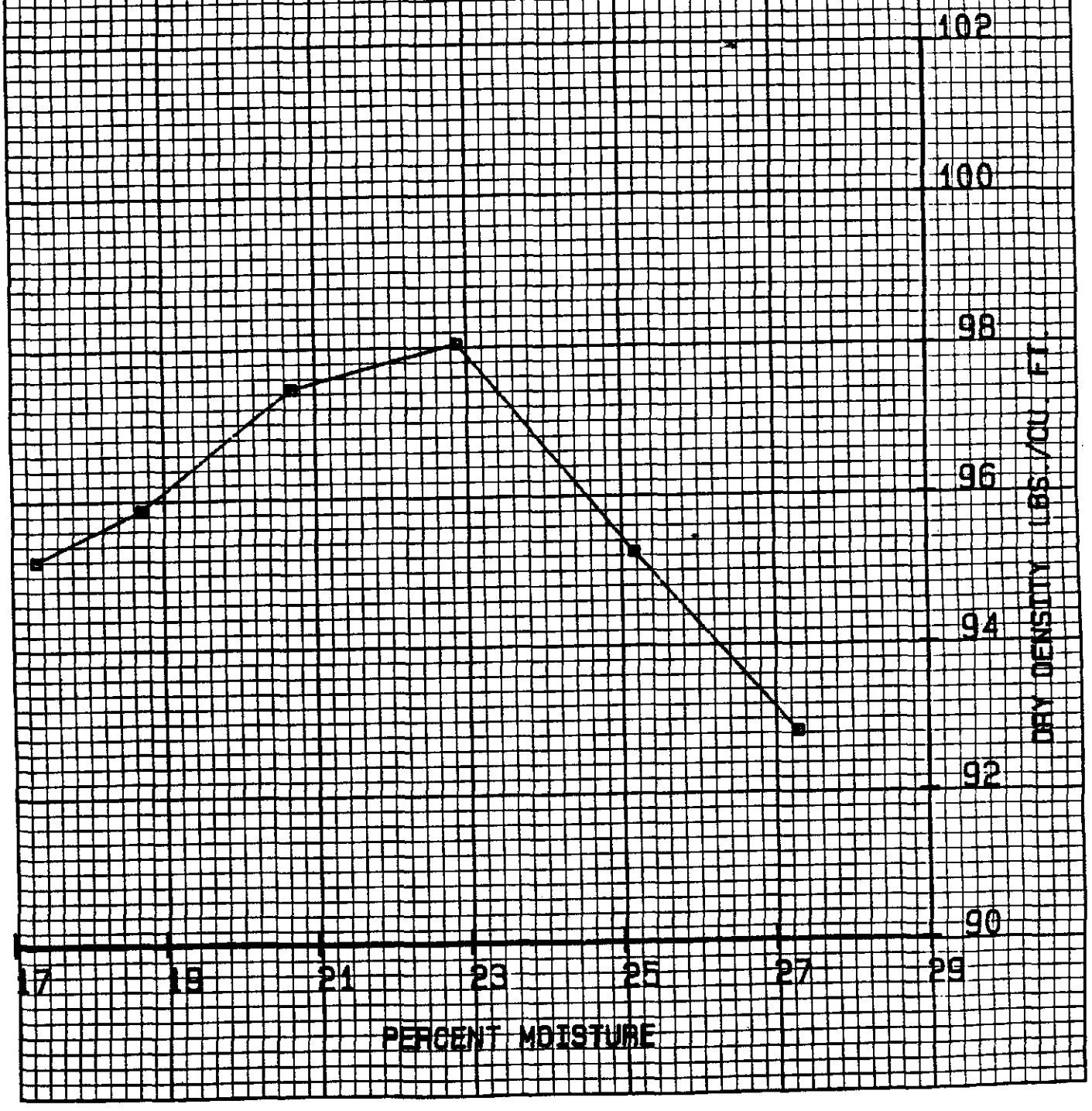
(109)

27-AUG-91 FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5310 (CH)

LL - 54 MAX. DRY DENSITY - 98.0 LBS./CU. FT.
PL - 24 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 30



(110)

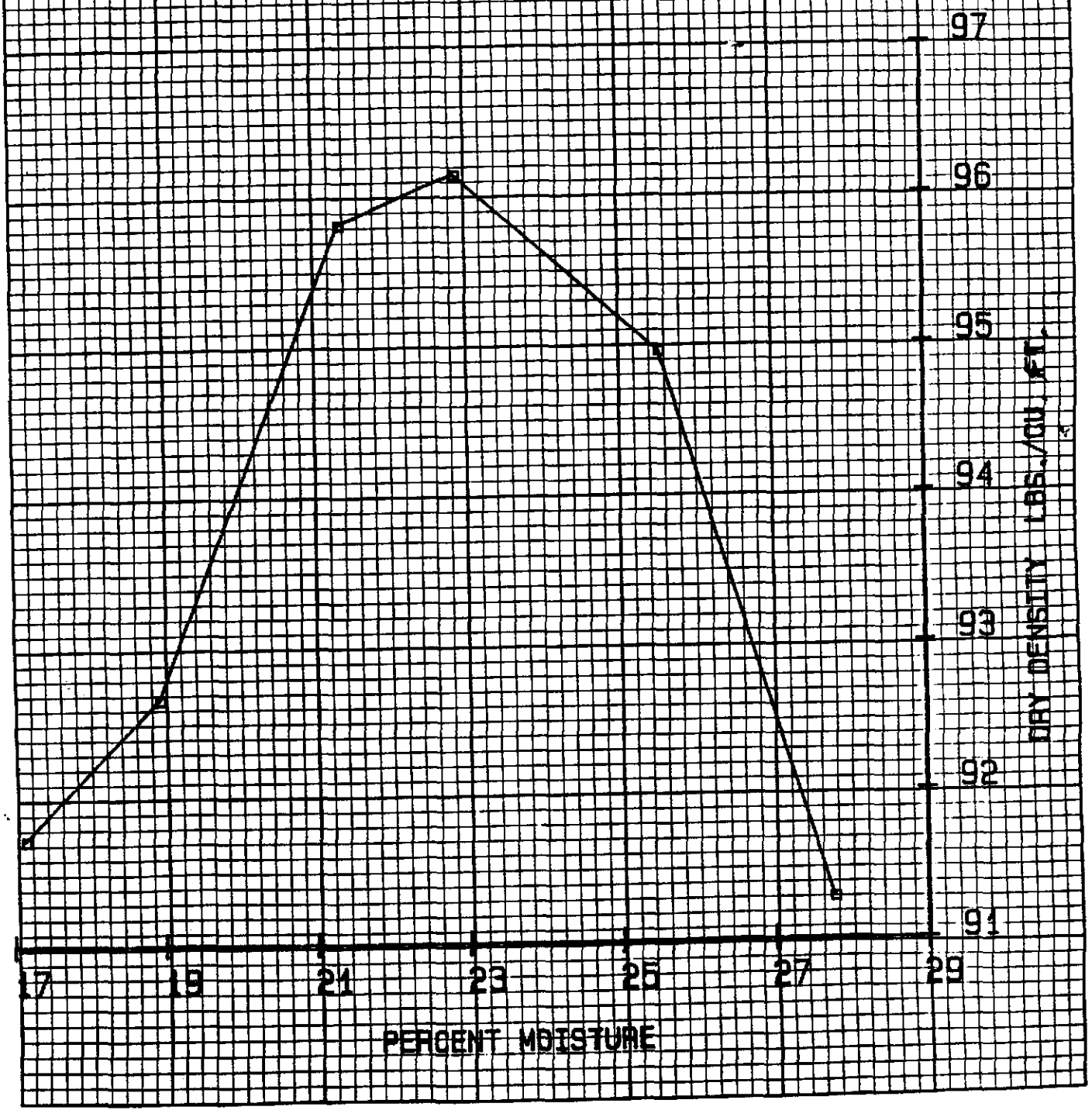
28-AUG-91

FIGURE 3

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5311 (CH)

LL - 63 MAX. DRY DENSITY - 96.1 LBS./CU. FT.
PL - 26 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 37



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 10-12-91

TESTED BY: Billy Frey
M.C. CORR. -5 USED

TEST NUMBER	C-38	C-39	C-42	C-43	C-46	C-37A	C-27A	C-40A		
STATION	4+00	4+00	4+50	4+50	5+00	4+00	3+00	4+50		
OFFSET	150	200	150	200	150	100	50	50		
MODE & DEPTH	6"	→	→	→	→	→	→	→		
COMPACTION METHOD	SHEEPS	FOOT ROLLER								
NUMBER OF PASSES	6	→	→	→	→	2	→	→		
LIFT THICKNESS	6"	→	→	→	→	→	→	→		
WET DENSITY (PCF)	118^{0}	117^{2}	118^{3}	117^{5}	115^{8}	112^{3}	113^{4}	113^{1}		
MOISTURE (PCF)	24^{4}	24^{4}	25^{4}	26^{1}	26^{1}	28^{5}	28^{3}	27^{3}		
DRY DENSITY (PCF)	93^{6}	92^{5}	92^{9}	91^{5}	89^{7}	88^{8}	85^{1}	85^{7}		
% MOISTURE	26^{1}	26^{4}	27^{3}	28^{5}	29^{1}	34^{0}	33^{2}	31^{2}		
MAX. DRY DENSITY STD. ☑ MOD. ☐	97^{2}	→	→	→	→	→	→	→		
OPTIMUM MOISTURE	22^{1}	→	→	→	→	→	→	→		
% RELATIVE COMPACTION	96^{3}	95^{2}	95^{6}	94^{1}	92^{3}	86^{2}	87^{6}	88^{2}		
MATERIAL DISCRIPTION	CH CLAY GUMBO	→	→	→	→	→	→	→		

STANDARD COUNT	
DENSITY	MOISTURE
2172	0499

DENSITY GUAGE SERIAL NUMBER
16399

(11)

INTERNATIONAL TECHNOLOGY CORPORATION

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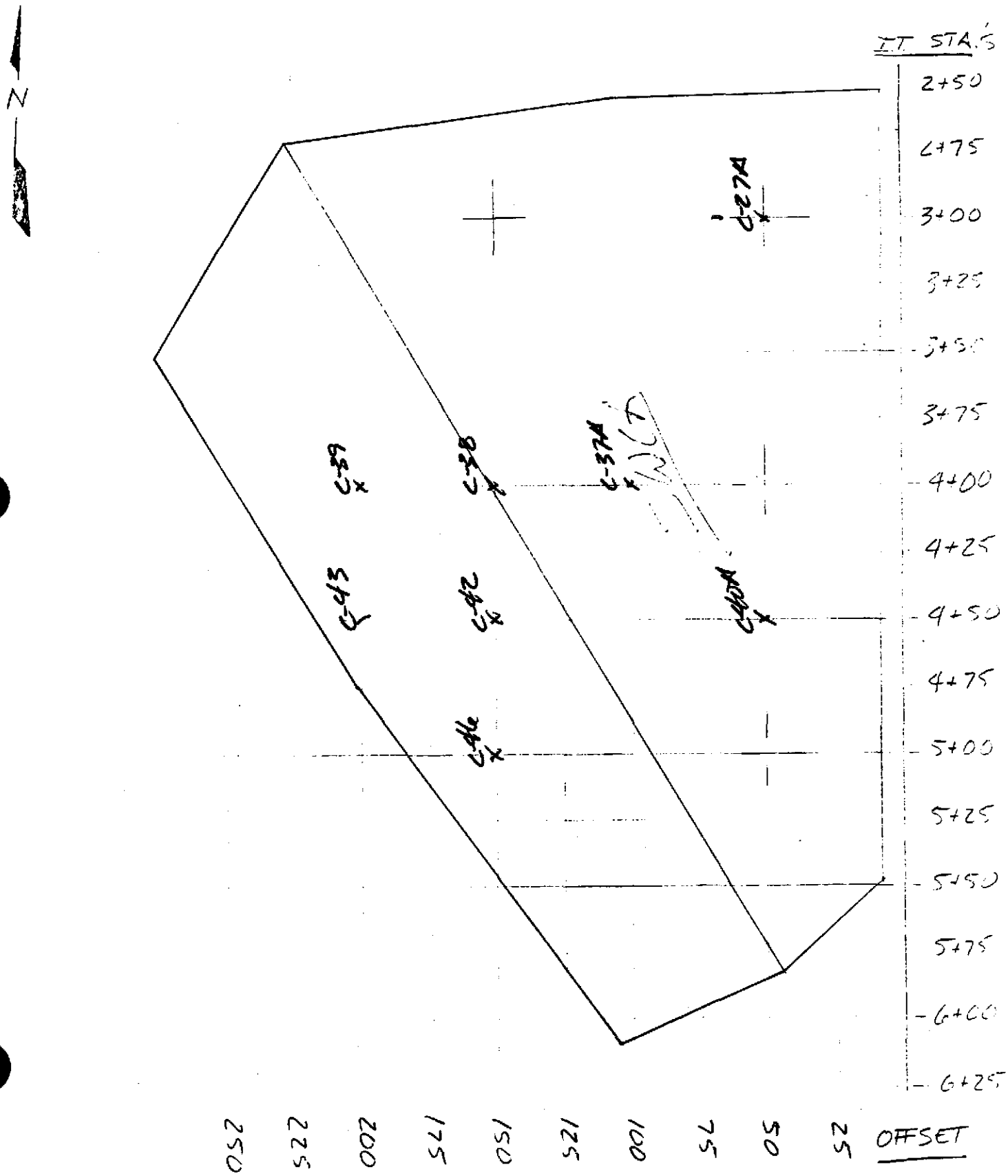
BF Date 10-12-91 Subject NUC DENSITY LOCATIONS Sheet No. ____ of ____

Chkd. By ____ Date ____ SWCA Proj. No. 435425



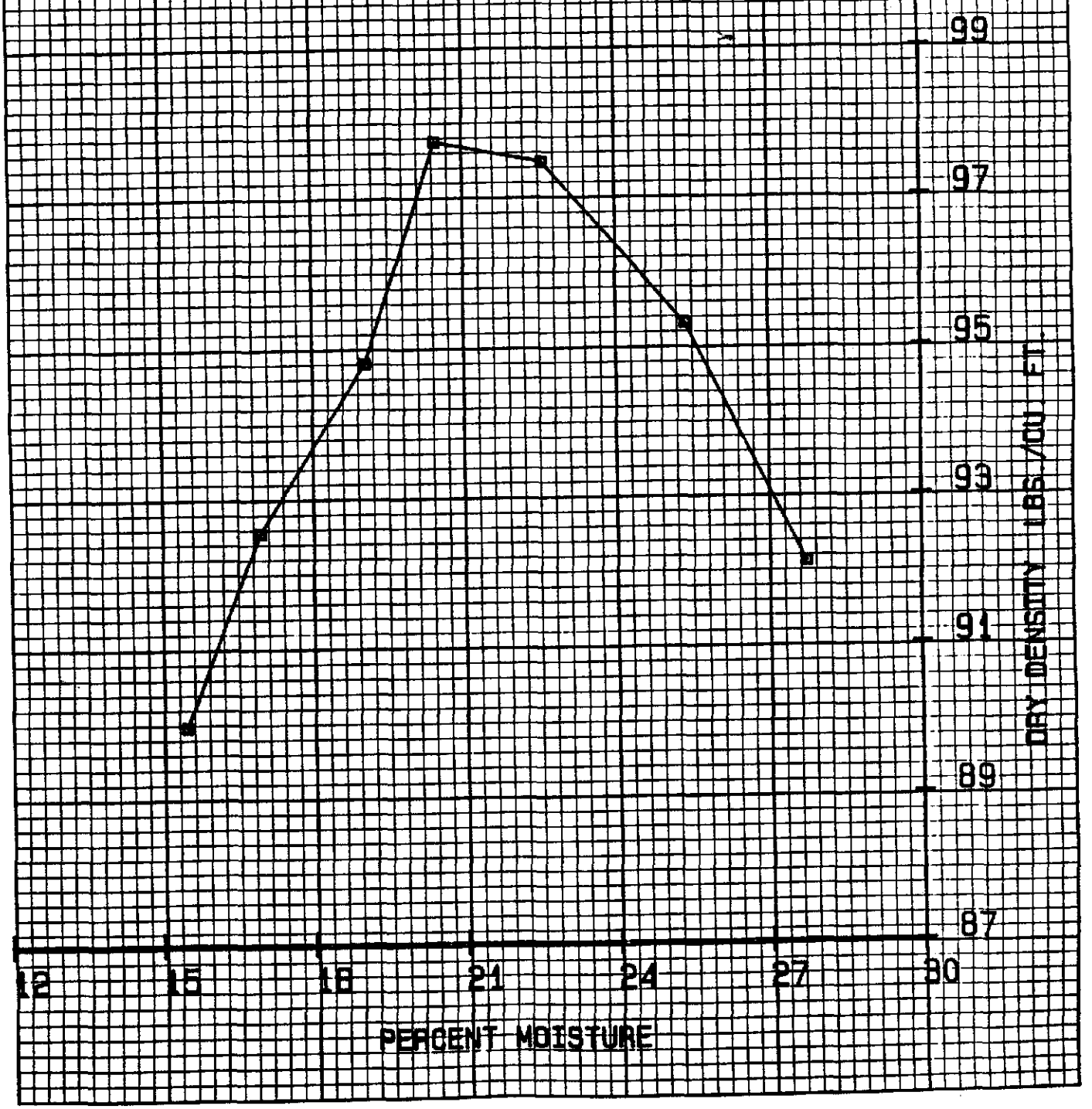
27-AUG-91

FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5309 (CH)

LL - 69 MAX. DRY DENSITY - 97.7 LBS./CU. FT.
PL - 28 OPTIMUM MOISTURE - 20.5 PERCENT
PI - 41

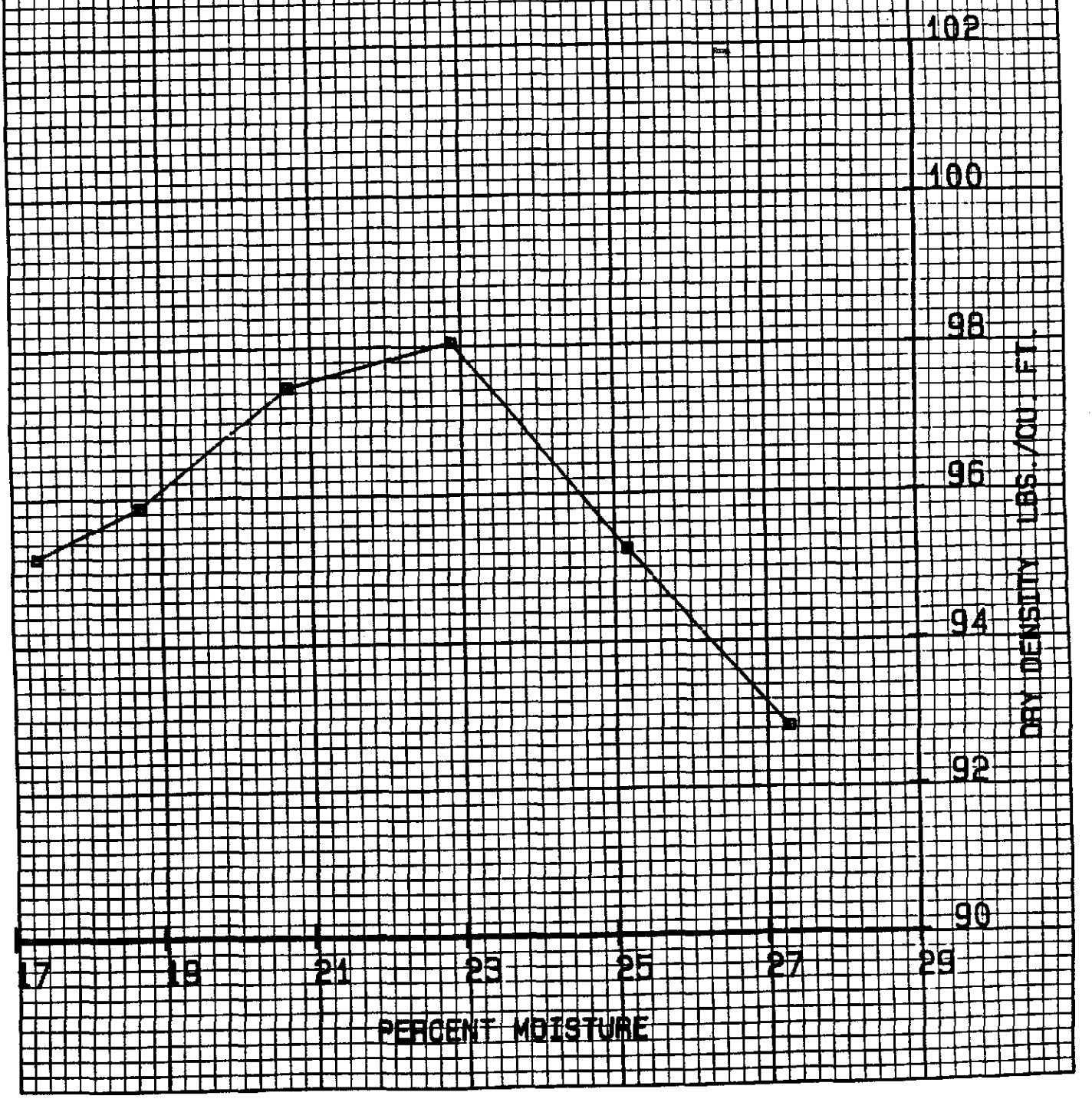


27-AUG-91 FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5310 (CH)

LL - 54 MAX. DRY DENSITY - 98.0 LBS./CU. FT.
PL - 24 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 30



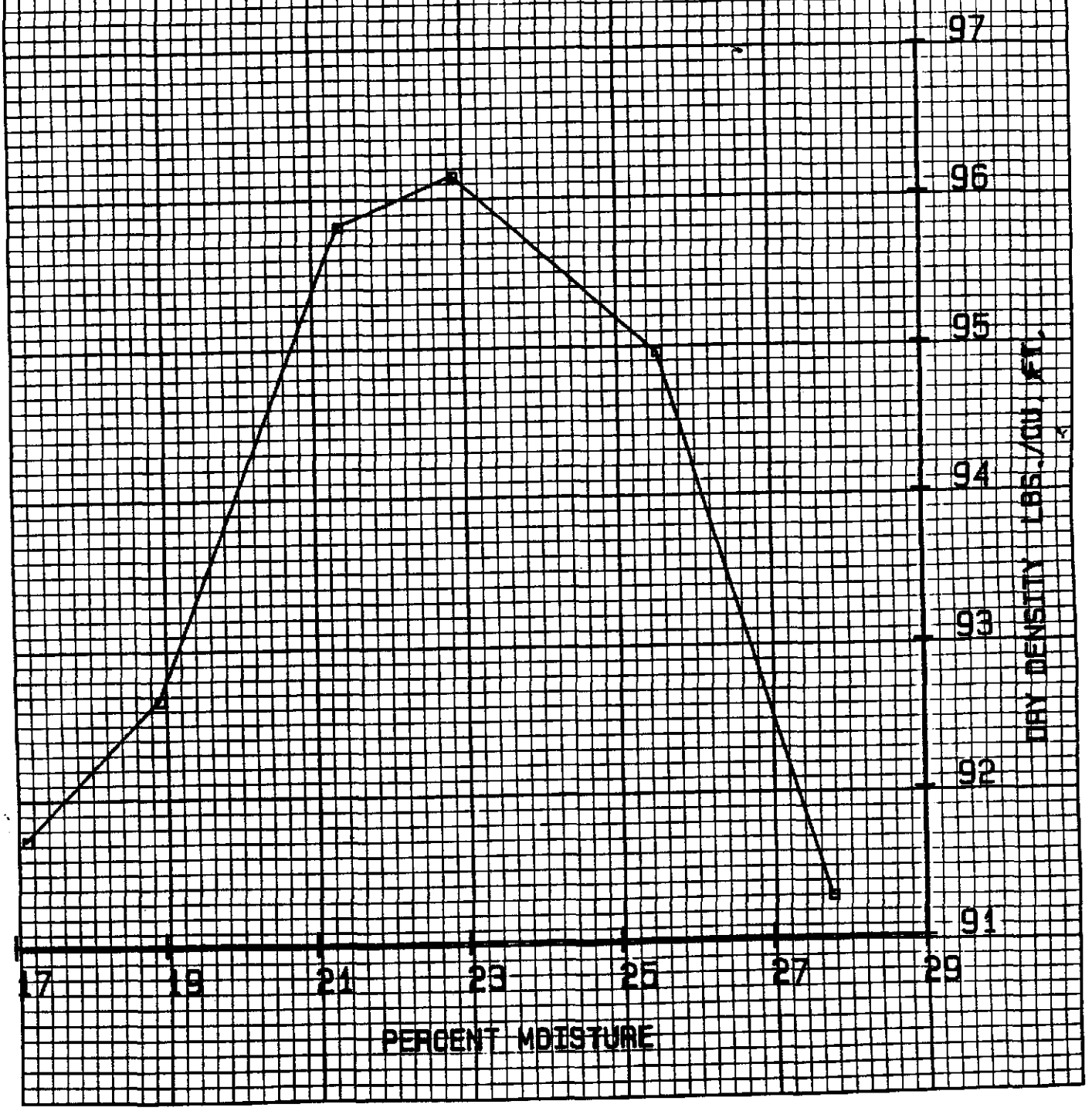
28-AUG-91

FIGURE 3

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5311 (CH)

LL - 63 MAX. DRY DENSITY - 96.1 LBS./CU. FT.
PL - 26 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 37



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. Co.
PROJECT NO.: 835425
DATE: 10-14-91

TESTED BY: Bill Fry
MC. CORR. -5 USED

TEST NUMBER	C-29A	C-32A	C-37A							
STATION	3400	3450	4000							
OFFSET	100'	100'	100'							
MODE & DEPTH	6"									
COMPACTION METHOD	VIBRATORY ROLLER & RUBBER TIRE FRONT END LOADER									
NUMBER OF PASSES	4	2	4							
LIFT THICKNESS	6"	—	—							
WET DENSITY (PCF)	114.5	113.6	115.6							
MOISTURE (PCF)	27.2	27.1	28.3							
DRY DENSITY (PCF)	86.8	86.2	87.3							
% MOISTURE	31.9	31.3	32.4							
MAX.DRY DENSITY STD.☑ MOD.☐	97.2	—	—							
OPTIMUM MOISTURE	22.1		—							
% RELATIVE COMPACTION	89.3	89.0	89.8							
MATERIAL DISCRIPTION	CH CLAY COMBO									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	16[illegible]
2171	0501	

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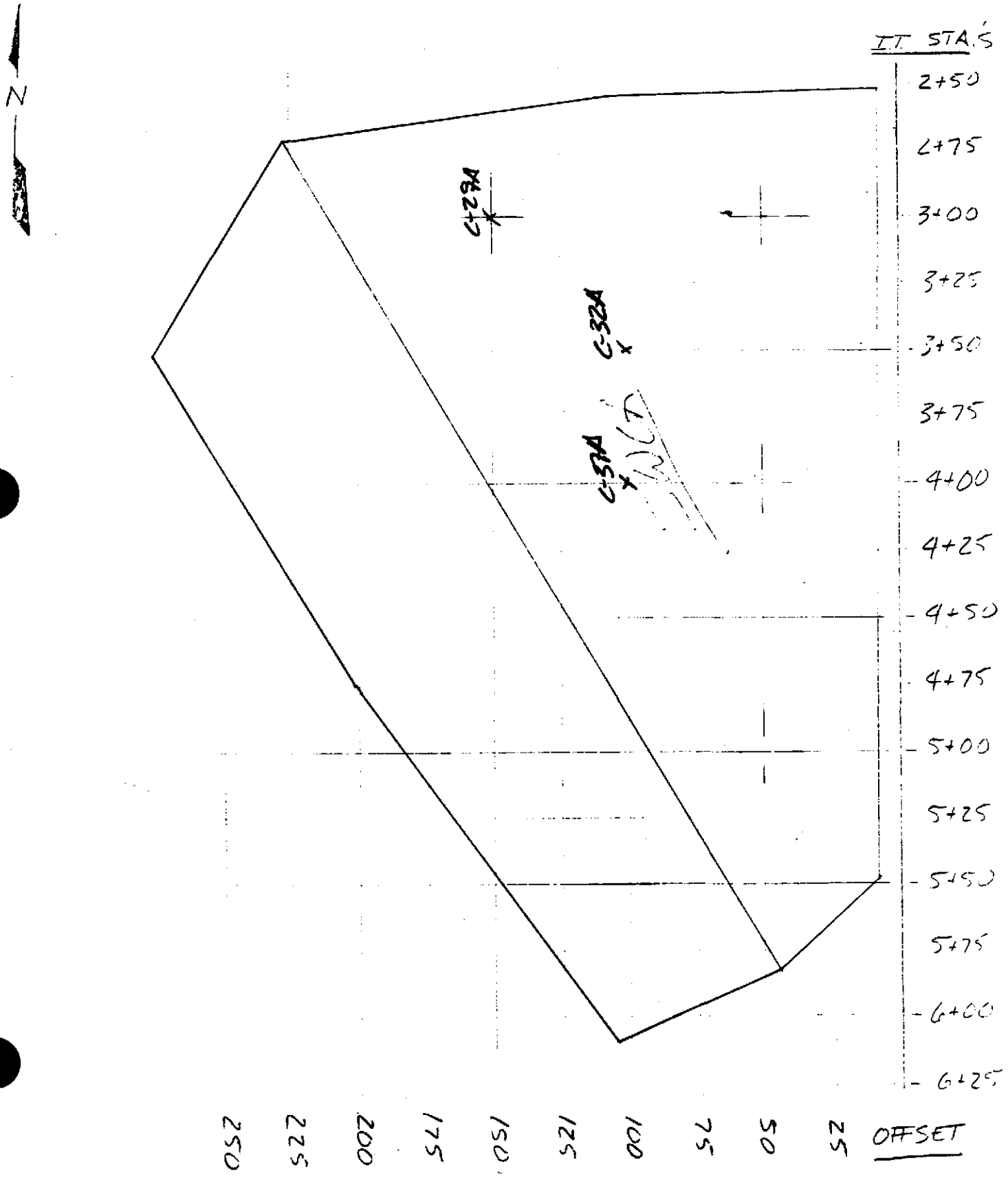
INTERNATIONAL TECHNOLOGY CORPORATION

(117)

By F Date 10-14-91 Subject NUC DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



INTERNATIONAL TECHNOLOGY CORPORATION

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By B.F. Date 10-14-91 Subject M.C. VERIFICATION FOR Sheet No. 1 of 1

Chkd. By ____ Date ____ NUC. GA. #16399 Proj. No. 435425

SAMPLE WAS TAKEN BELOW NUC. GA. TO 10" DEPTH & DRIED IN MICROWAVE @ 5-2 min. INTERVALS.

NUC. TEST LOC.	37A
NUC. GA. M.C.	32.4 %
WT. CAN	8.4 g
WET SOIL + CAN	296.5 g
DRY SOIL + CAN	228.1 g
WET SOIL	288.1 g
DRY SOIL	219.7 g
WATER	68.4 g
OVEN M.C.	31.1 %
GA. M.C.	32.4 %
DIFF.	-1.32 < 2% OK

108-10-85

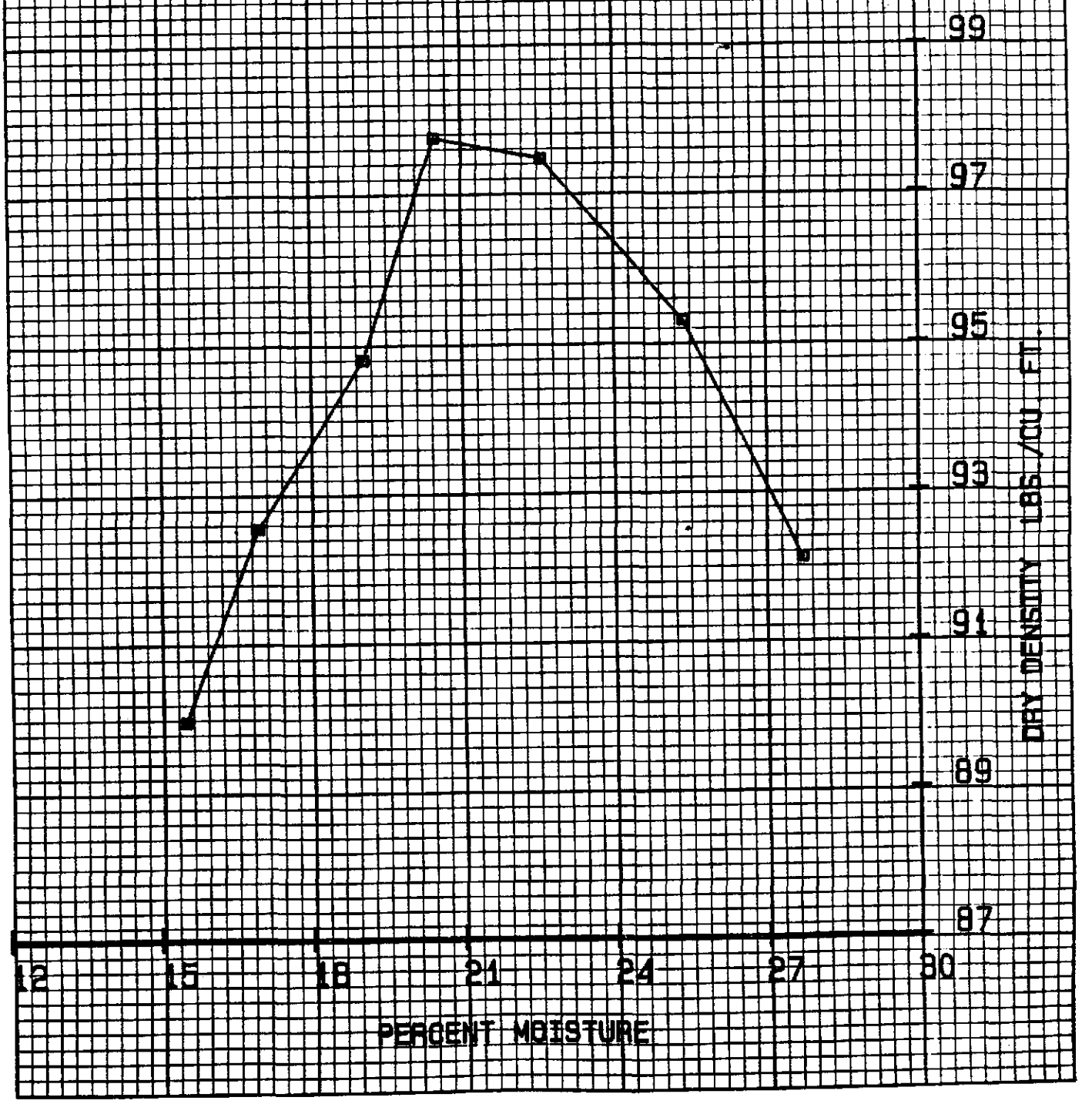
(19)

27-AUG-91 FIGURE. 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5309 (CH)

LL - 69 MAX. DRY DENSITY - 97.7 LBS./CU. FT.
PL - 28 OPTIMUM MOISTURE - 20.5 PERCENT
PI - 41



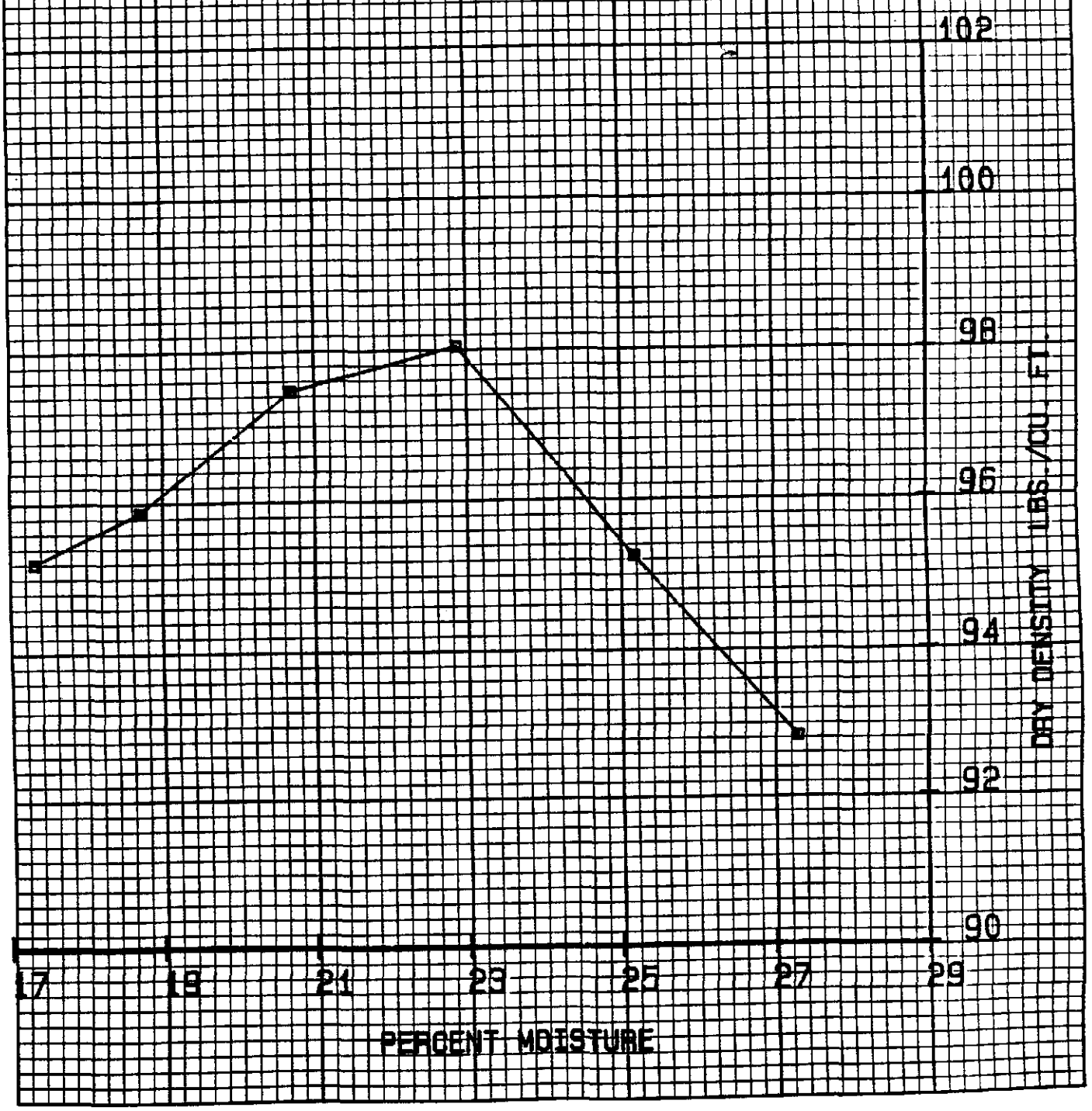
(120)

27-AUG-91 FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5310 (CH)

LL - 54 MAX. DRY DENSITY - 98.0 LBS./CU. FT.
PL - 24 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 30



(121)

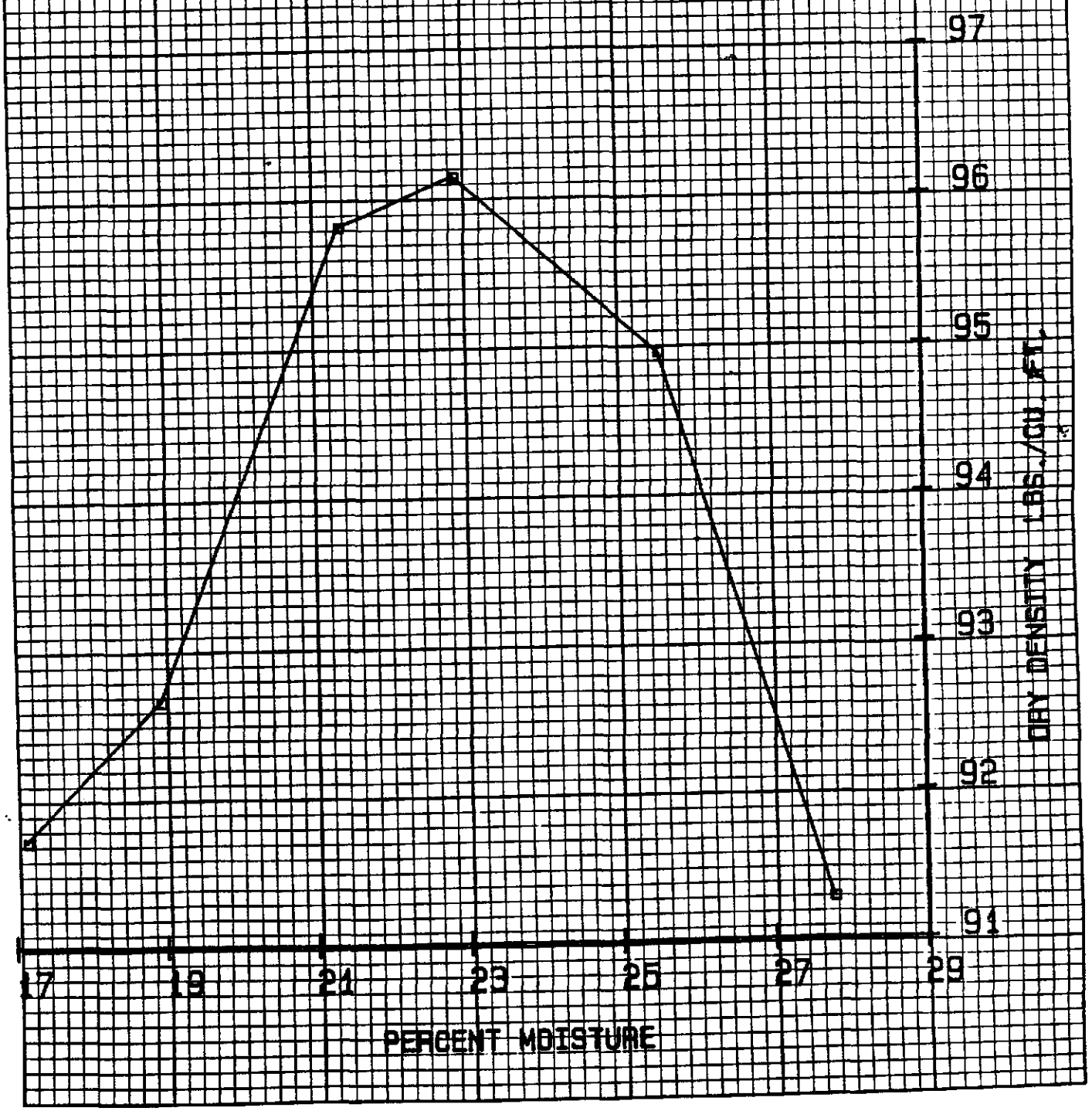
28-AUG-91

FIGURE 3

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5311 (CH)

LL - 63 MAX. DRY DENSITY - 96.1 LBS./CU. FT.
PL - 26 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 37



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. Co.
PROJECT NO.: 935925
DATE: 10-15-91

TESTED BY: Billy Fry
M.C. CORR. - 5 USED

TEST NUMBER	C-28B	C-29B	C-34B	C-35B						
STATION	3+00	3+00	3+50	3+50						
OFFSET	100	150	200	250						
MODE & DEPTH	6"	→	→	→						
COMPACTION METHOD	SHEEPS FOOT ROLLER & RUBBER TIRE FRONT END LOADER									
NUMBER OF PASSES	6	8	8	8						
LIFT THICKNESS	6"	→	→	→						
WET DENSITY (PCF)	120.0	115.2	121.5	120.2						
MOISTURE (PCF)	25.3	25.2	25.0	25.1						
DRY DENSITY (PCF)	94.7	90.0	96.5	95.1						
% MOISTURE	26.7	28.3	25.9	26.4						
MAX.DRY DENSITY STD.☑ MOD.☐	97.2			→						
OPTIMUM MOISTURE	22.1			→						
% RELATIVE COMPACTION	97.4	92.6	99.3	97.8						
MATERIAL DISCRIPTION	CH CLAY GRAVEL			→						

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	16399
[illegible]	[illegible]	

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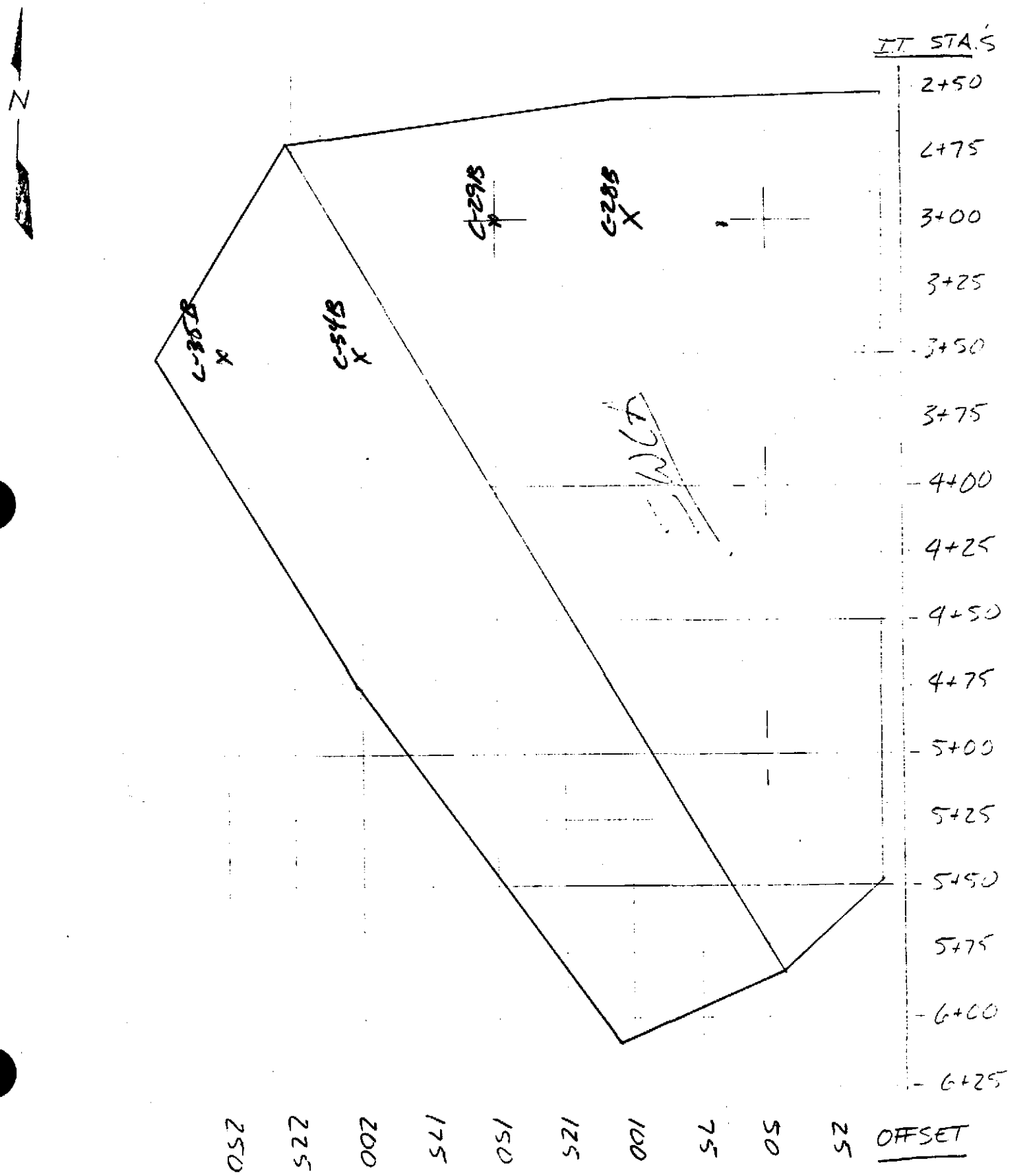
INTERNATIONAL TECHNOLOGY CORPORATION

(123)

BF Date 10-15-91 Subject NUC DENSITY LOCATIONS Sheet No. ____ of ____

Chkd. By ____ Date ____ SWCA Proj. No. 435425



(129)

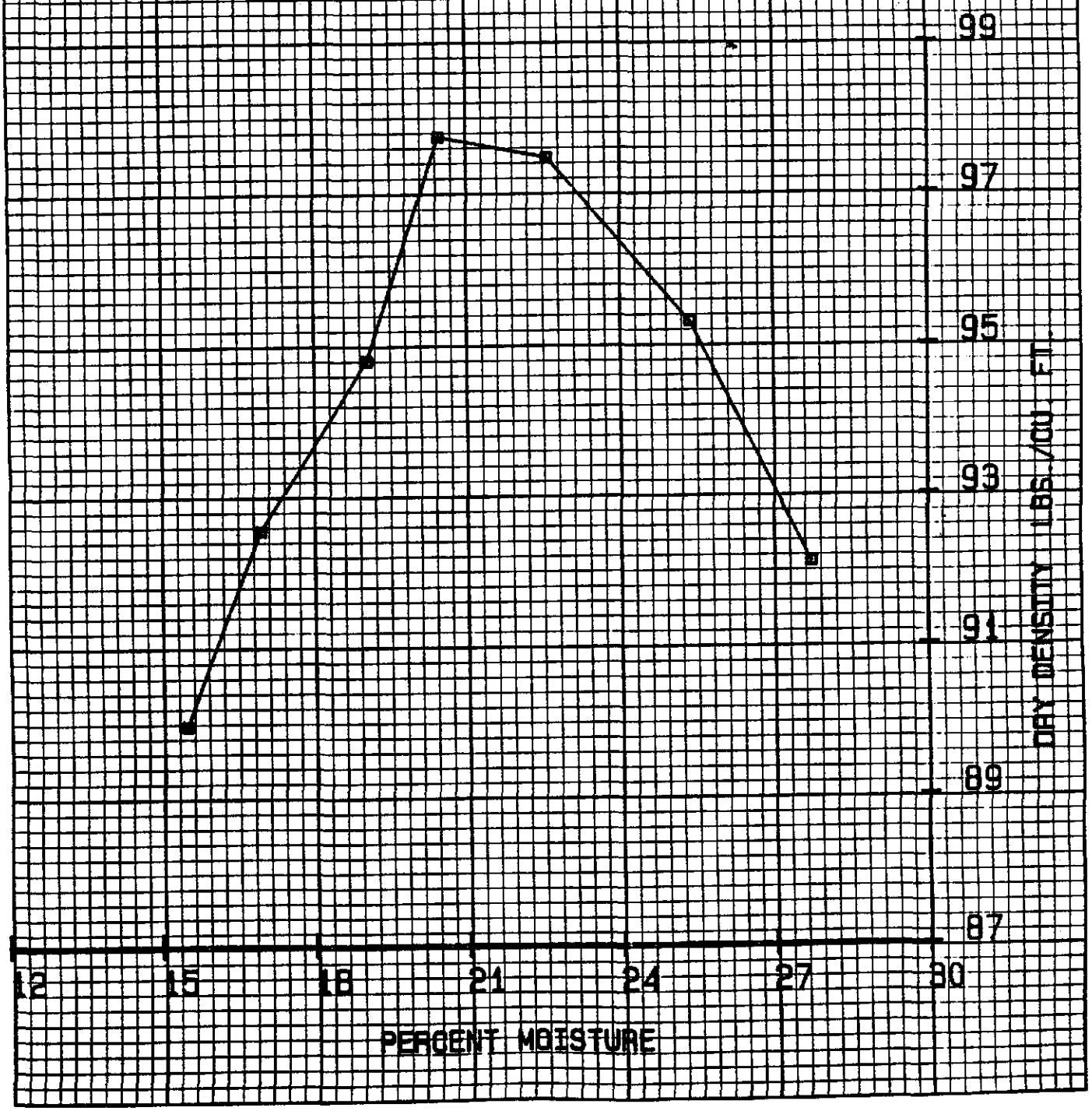
27-AUG-91

FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5309 (CH)

LL - 69 MAX. DRY DENSITY - 97.7 LBS./CU. FT.
PL - 28 OPTIMUM MOISTURE - 20.5 PERCENT
PI - 41



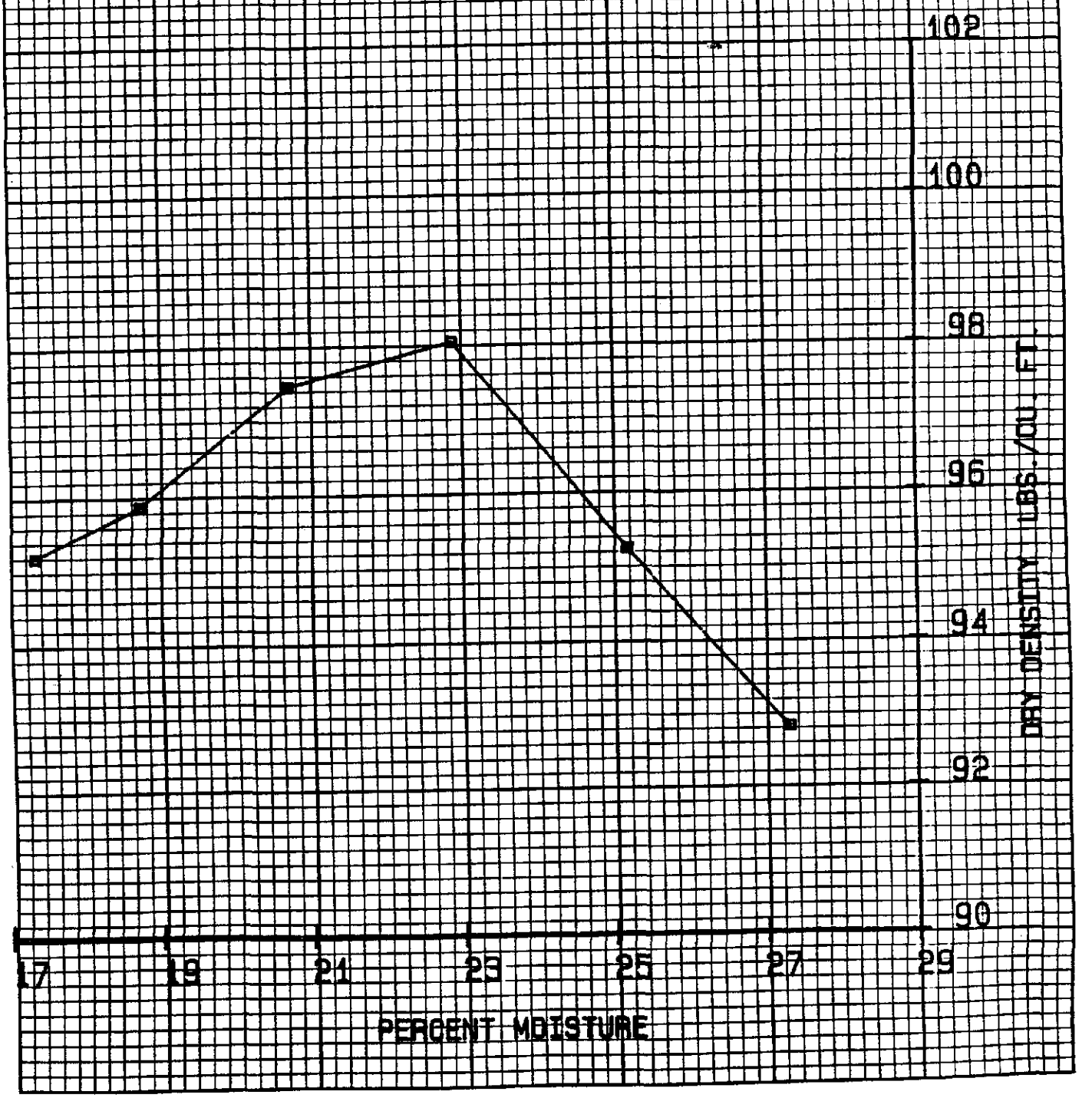
(129)

27-AUG-91 FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5310 (CH)

LL - 54 MAX. DRY DENSITY - 98.0 LBS./CU. FT.
PL - 24 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 30



(126)

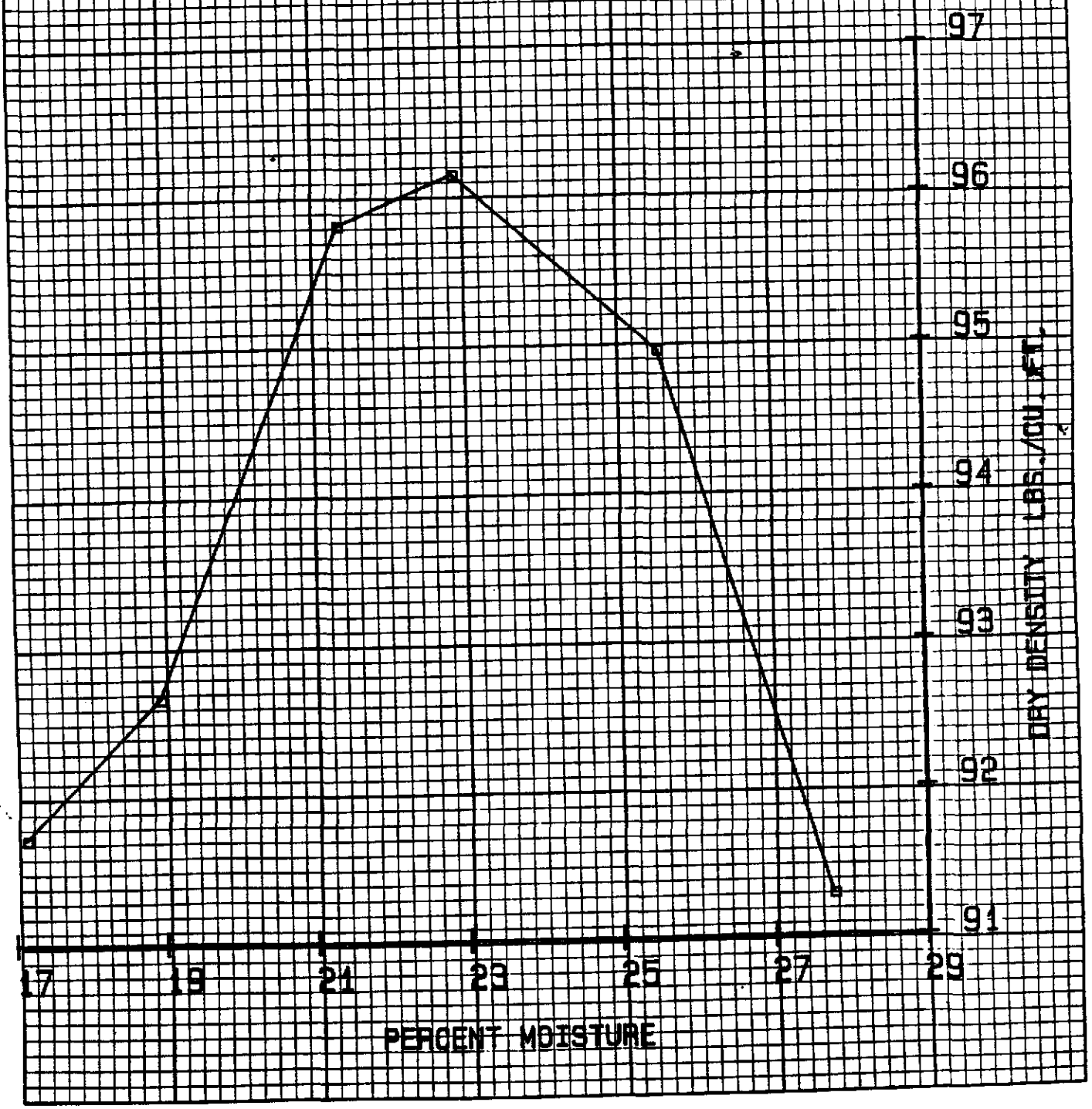
28-AUG-91

FIGURE 3

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5311 (CH)

LL - 63 MAX. DRY DENSITY - 96.1 LBS./CU. FT.
PL - 26 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 37



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 10-17-91

TESTED BY: Billy Fry
M.C. CORR-5 USED

TEST NUMBER	C27B	C31B	C32B	C37B	C36	C40B	C41	C44	C47	C48
STATION	3+00	3+50	3+50	4+00	4+00	4+50	4+50	5+00	5+50	5+50
OFFSET	50	50	100	100	50	50	100	50	50	100
MODE & DEPTH	6"									
COMPACTION METHOD	SHEEPS FOOT ROLLER & RUBBER TIRE FRONT END LOADER.									
NUMBER OF PASSES	8									
LIFT THICKNESS	6"									
WET DENSITY (PCF)	113.9	118.6	121.8	117.0	119.7	119.2	118.6	115.1	113.4	113.2
MOISTURE (PCF)	26.4	25.0	25.1	26.2	25.5	25.5	24.0	24.9	25.1	25.5
DRY DENSITY (PCF)	87.6	93.6	96.4	90.2	94.3	93.7	94.6	90.2	88.4	87.8
% MOISTURE	30.1	26.7	26.3	28.7	27.0	27.2	25.4	27.6	28.4	29.0
MAX.DRY DENSITY STD. ☑ MOD. ☐	97.2									
OPTIMUM MOISTURE	22.1									
% RELATIVE COMPACTION	90.1	96.3	99.2	93.4	97.0	96.4	97.3	92.8	90.7	90.3
MATERIAL DISCRIPTION	CH CLAY GRAYSO									

STANDARD COUNT	
DENSITY	MOISTURE
2167	0499

DENSITY GUAGE SERIAL NUMBER
16399

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INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: Cenne Chem. Co.
PROJECT NO.: 435025
DATE: 10-17-91

TESTED BY: Billy Fry
M.C. Corp. - USED

TEST NUMBER	C-45									
STATION	5+00									
OFFSET	100									
MODE & DEPTH	6"									
COMPACTION METHOD	SHEEPS FOOT ROLLER									
NUMBER OF PASSES	6									
LIFT THICKNESS	6"									
WET DENSITY (PCF)	113.5									
MOISTURE (PCF)	24.8									
DRY DENSITY (PCF)	88.7									
% MOISTURE	27.9									
MAX.DRY DENSITY STD. ☑ MOD. ☐	97.2									
OPTIMUM MOISTURE	22.1									
% RELATIVE COMPACTION	91.3									
MATERIAL DISCRIPTION	CH CLAY GUMBO									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	16399

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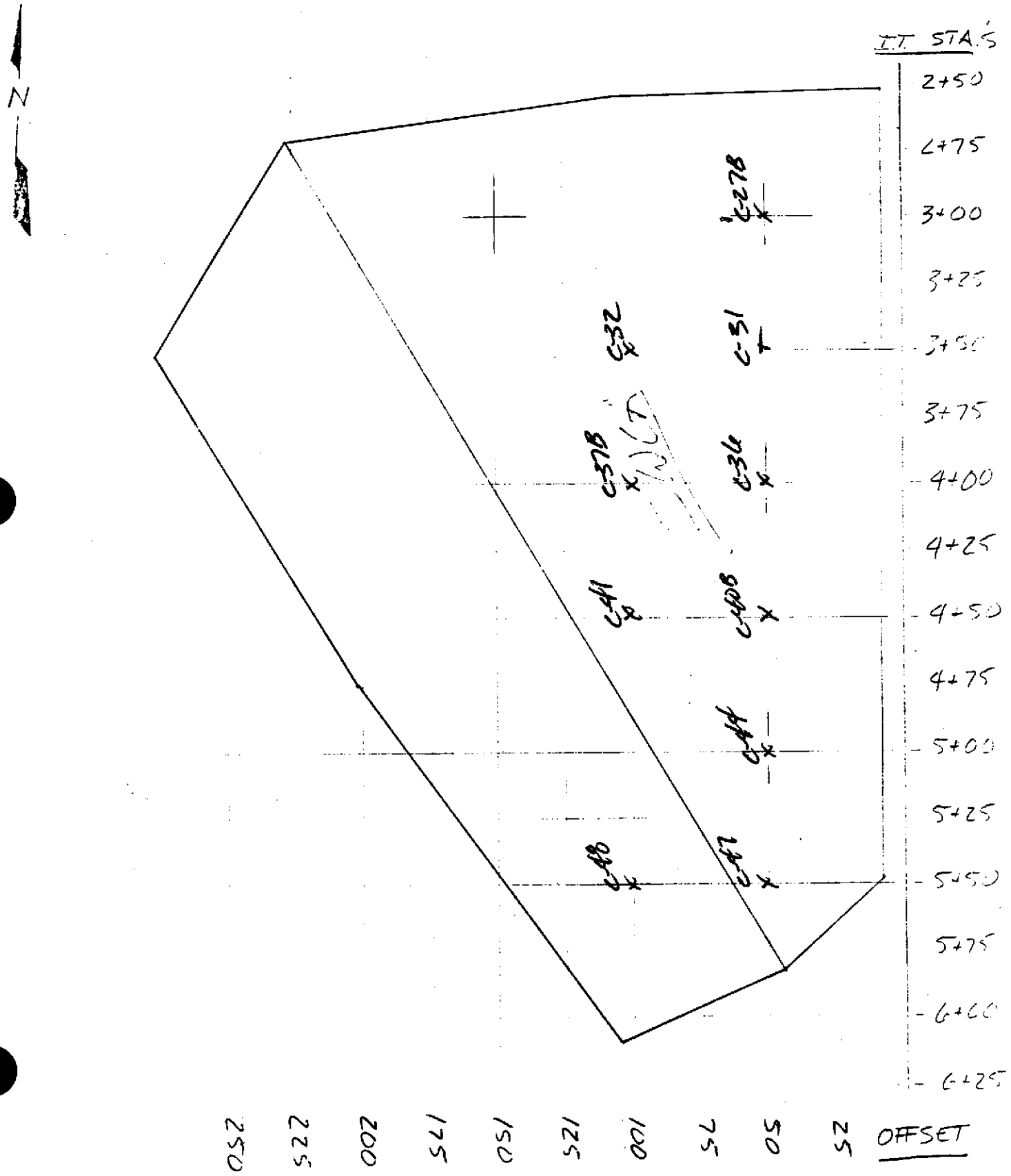
INTERNATIONAL TECHNOLOGY CORPORATION

(129)

BF Date 10-17-91 Subject NUC DENSITY LOCATIONS Sheet No. ___ of ___

Chkd. By ___ Date ___ SWCA Proj. No. 435425



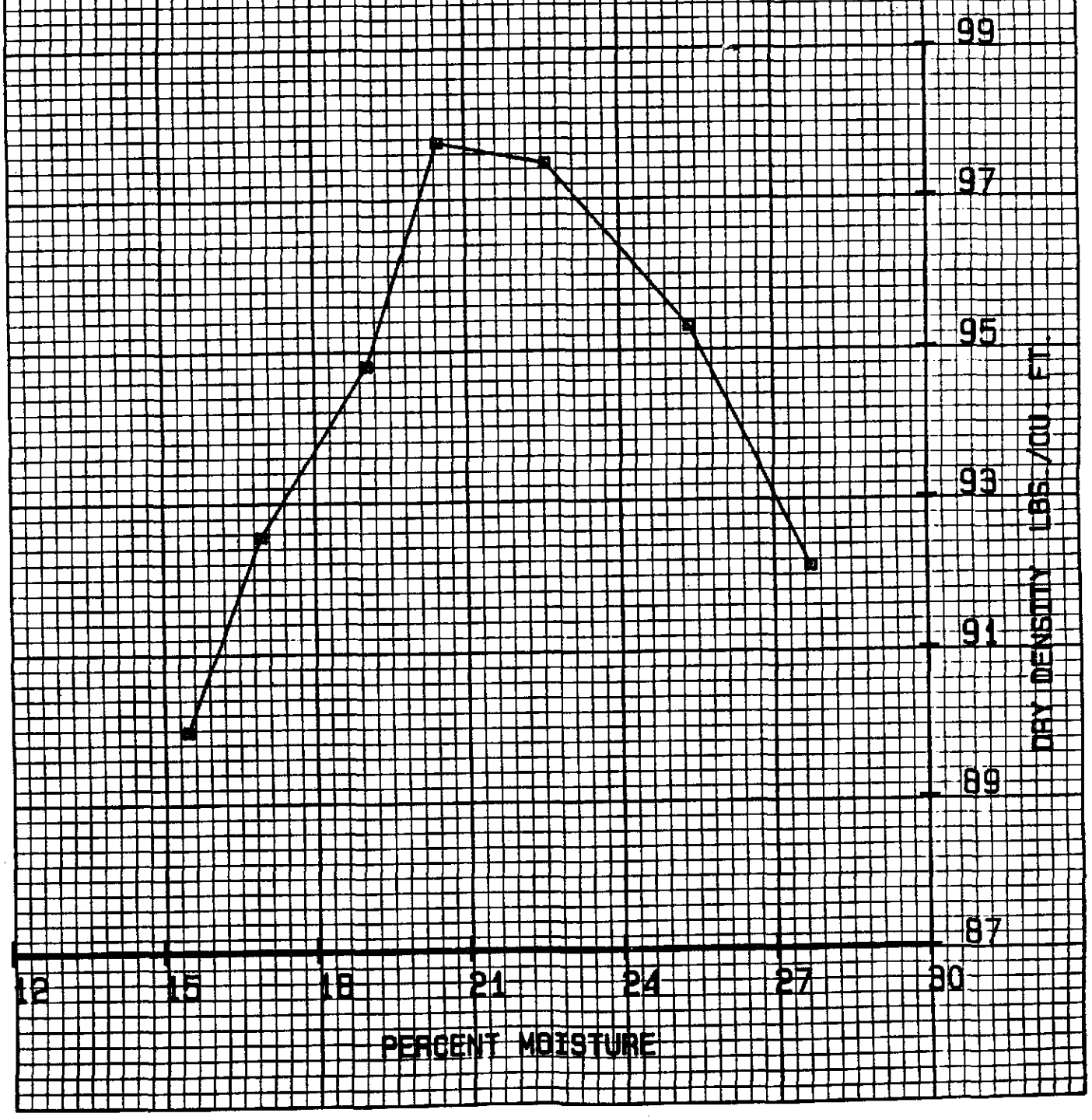
(130)

27-AUG-91 FIGURE. 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5309 (CH)

LL - 69 MAX. DRY DENSITY - 97.7 LBS./CU. FT.
PL - 28 OPTIMUM MOISTURE - 20.5 PERCENT
PI - 41



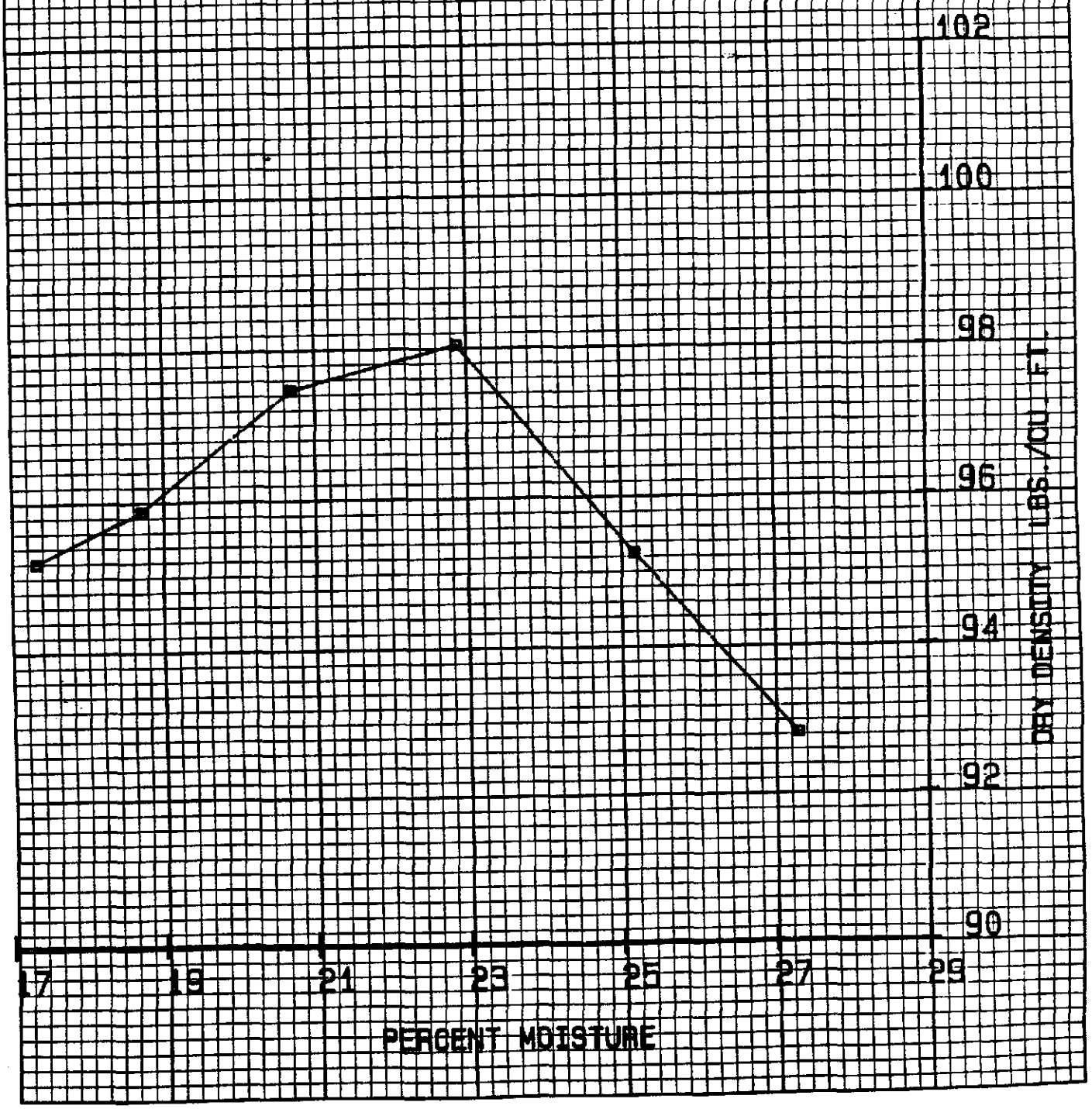
27-AUG-91

FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5310 (CH)

LL - 54 MAX. DRY DENSITY - 98.0 LBS./CU. FT.
PL - 24 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 30



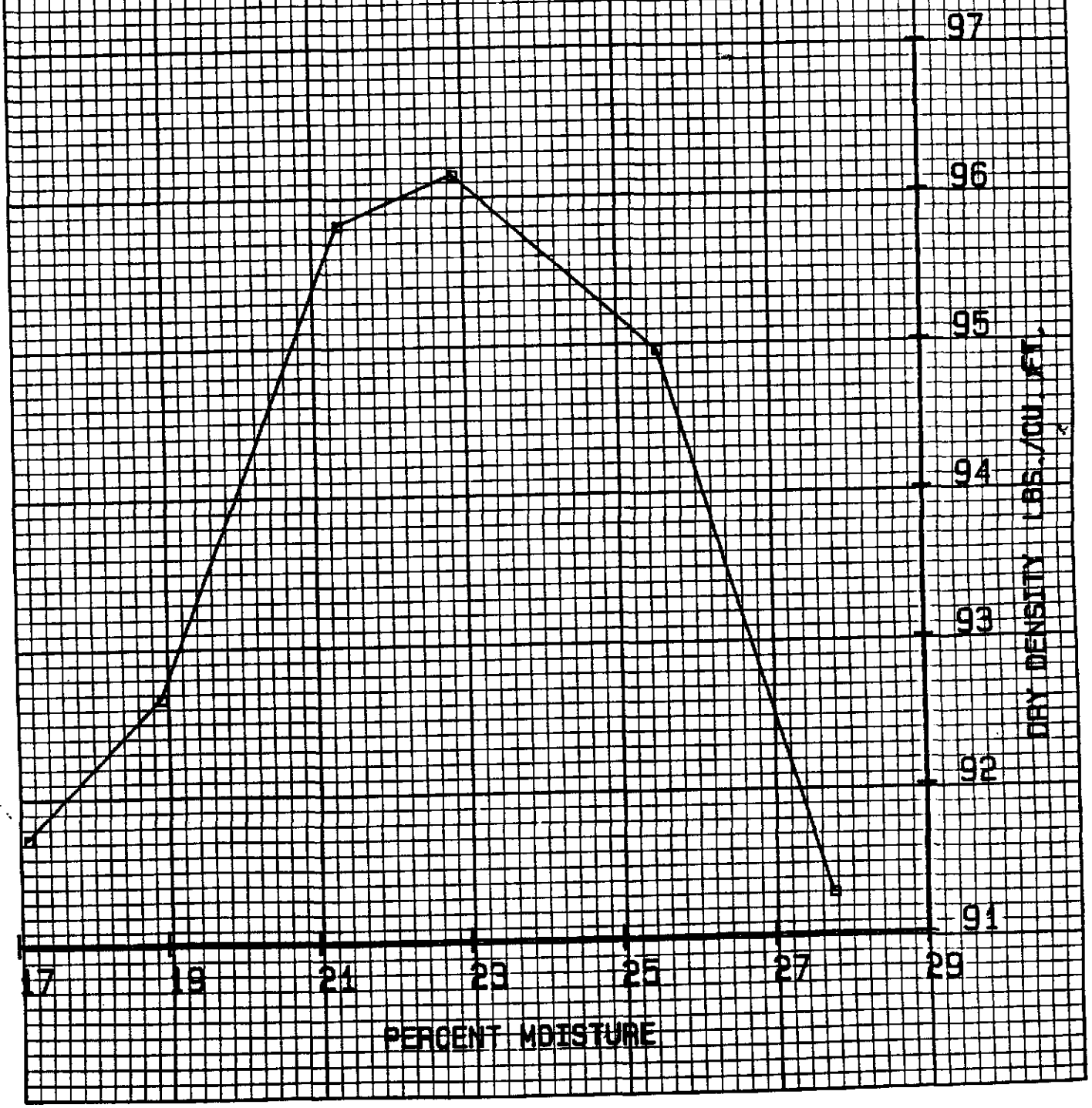
28-AUG-91

FIGURE 3

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5311 (CH)

LL - 63 MAX. DRY DENSITY - 96.1 LBS./CU. FT.
PL - 26 OPTIMUM MOISTURE - 22.9 PERCENT
PI - 37



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435426
DATE: 3-11-91

TESTED BY: Billy Fry
MC-5 USED
CORP.

TEST NUMBER	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10
STATION	1+00	1+00	1+00	1+00	1+00	2+00	2+00	2+00	2+00	2+00
OFFSET	35	31	26	20	15	36	31	25	20	15
MODE & DEPTH	8"									
COMPACTION METHOD	SHEEPS	FOOT	ROLLER							
NUMBER OF PASSES										
LIFT THICKNESS	8"									
WET DENSITY (PCF)	107^{1}	107^{5}	112^{9}	110^{2}	111^{2}	106^{3}	109^{0}	110^{8}	110^{9}	112^{4}
MOISTURE (PCF)	26^{6}	26^{8}	25^{2}	25^{9}	25^{3}	26^{0}	26^{2}	25^{4}	24^{9}	25^{4}
DRY DENSITY (PCF)	80^{5}	80^{2}	87^{2}	84^{2}	86^{0}	80^{3}	82^{2}	85^{4}	86^{0}	87^{0}
% MOISTURE	33^{1}	33^{2}	28^{2}	30^{6}	29^{4}	32^{4}	32^{5}	29^{8}	29^{0}	29^{2}
MAX.DRY DENSITY STD.☑ MOD.☐	89^{3}									
OPTIMUM MOISTURE	27^{4}									
% RELATIVE COMPACTION	90^{1}	90^{4}	98^{2}	94^{9}	96^{3}	89^{9}	92^{1}	95^{6}	96^{3}	97^{4}
MATERIAL DISCRIPTION	MH SOLIDIFIED BOTTOM SOILS,									

STANDARD COUNT	
DENSITY	MOISTURE
2181	0509

DENSITY GUAGE SERIAL NUMBER
7689

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 3-11-91

TESTED BY: Bill F
M.C. CORR -5 USED

TEST NUMBER	B-11	B-12	B-13	B-14	B-15	B-16	B-17	B-18	B-19	B-20
STATION	3+00	3+00	3+00	3+00	3+00	3+00	4+00	4+00	4+00	4+00
OFFSET	36	31	25	20	15	10	35	30	25	20
MODE & DEPTH	8"	—	—	—	—	—	—	—	—	—
COMPACTION METHOD	SHEEPS	FOOT ROLLER	—	—	—	—	—	—	—	—
NUMBER OF PASSES										
LIFT THICKNESS	8"	—	—	—	—	—	—	—	—	—
WET DENSITY (PCF)	106.7	106.8	109.3	111.4	110.8	109.6	107.0	108.2	109.3	100.8
MOISTURE (PCF)	27.4	25.9	26.1	26.8	24.9	24.7	26.4	26.3	26.2	25.7
DRY DENSITY (PCF)	79.3	80.9	83.2	84.2	85.9	84.9	80.3	82.8	83.1	83.0
% MOISTURE	34.5	32.0	31.3	31.6	29.0	29.1	32.2	31.6	31.5	31.0
MAX.DRY DENSITY STD.☐ MOD.☐	89.3	—	—	—	—	—	—	—	—	—
OPTIMUM MOISTURE	27.4	—	—	—	—	—	—	—	—	—
% RELATIVE COMPACTION	88.8	90.6	93.2	94.8	96.2	95.1	90.2	92.1	93.1	93.0
MATERIAL DISCRIPTION	MH. SOLIDIFIED BOTTOM SLICS.									

STANDARD COUNT	
DENSITY	MOISTURE
2181	0509

DENSITY GUAGE SERIAL NUMBER
7689

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INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435423
DATE: 3-11-91

TESTED BY: Billy F
M.C. CORR-5 USED

TEST NUMBER	B-21	B-22	B-23	B-24	B-25	B-26	B-27	B-28	B-29	B-30
STATION	4+00	4+00	5+00	5+00	5+00	5+00	5+00	5+00	5+00	5+00
OFFSET	15	10	15	88	15	88	15	88	15	88
MODE & DEPTH	8"									
COMPACTION METHOD	SHEEPS FOOT ROLLER									
NUMBER OF PASSES	5									
LIFT THICKNESS	8"									
WET DENSITY (PCF)	112.4	111.1	110.1	111.3	108.3	111.8	111.4	112.3	111.0	112.3
MOISTURE (PCF)	25.4	25.1	25.9	25.3	26.0	28.5	28.9	26.5	26.8	25.8
DRY DENSITY (PCF)	87.0	86.0	84.1	86.0	80.3	83.1	82.5	85.1	84.1	86.4
% MOISTURE	29.1	29.1	30.6	29.4	32.4	34.1	35.0	30.1	31.9	29.9
MAX.DRY DENSITY STD. ☑ MOD. ☐	89.3									
OPTIMUM MOISTURE	27.4									
% RELATIVE COMPACTION	97.4	96.3	94.9	96.3	89.9	93.3	92.4	96.0	94.2	96.8
MATERIAL DISCRIPTION	MM SAND. BOTTOM SOILS.									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2181	0509	

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INTERNATIONAL TECHNOLOGY CORPORATION

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By BF. Date 3-11-91 Subject MOISTURE VERIFICATION FOR NUC. DENSITY TESTS ON POND B DIKES Sheet No. 1 of 2

Chkd. By ____ Date ____ Proj. No. 4-5425

SAMPLES WERE TAKEN TO 10" DEPTH BELOW NUC. DEN. GA. TEST AREAS INDICATED BELOW & OVEN DRIED @ 105° FOR 17 HRS. ALL WTS. ARE IN GRAMS.

#B-4 M.C. GA. 30.6
TARE # 1

WT. CAN + WET SOIL	= 169.83
WT. CAN	= 8.38
WT. D. SOIL + CAN	= 135.24
WT. W. SOIL	= 161.45
WT. D. SOIL	= 125.36
WATER	= 36.09
WT. WATER/WT. DRY SOIL X100	= 28.79 %

#B-5 M.C. GA. = 29.4
TARE #2

	152.88
	8.36
	123.55
	144.52
	115.19
	29.33
	25.46 %

TARE #3
#B-6 M.C. GA = 32.4

WT. CAN + WET SOIL	= 166.96
WT. CAN	= 8.33
WT. D. SOIL + CAN	= 126.93
WT. W. SOIL	= 158.63
WT. D SOIL	= 118.60
WATER	= 40.03
WT. WATER/WT. D. SOIL X100	= 33.75 %

TARE #4
#B-7 M.C. GA = 32.5

	162.97
	8.30
	123.39
	154.67
	115.09
	39.58
	34.39 %

AVG. M.C. GA. 31.3 %
- AVG. M.C. OVEN 30.6 %
.7 %

INTERNATIONAL TECHNOLOGY CORPORATION

(137)

By B.F. Date 3-11-91 Subject VERIFY NUC. GA DEN.? Sheet No. 1 of 1
Chkd. By ____ Date ____ M.C. Proj. No. 435425

NUC. TEST # = B-23
NUC. D.D. READ. = 847
NUC. M.C. READ = 30%

CALCULATION OF DEN. & M.C.

WT. DRIVE RING + WET SOIL = 1.569#
WT. DRIVE RING. = .483#
WT. WET SOIL = 1.086#
WT. DRY SOIL = .840#
WT. WATER = .250#
VOL. DRIVE RING = .0101 CU. FT.
WT. DRY SOIL / VOL. OF SAMPLE = 83.2 PCF
WT. WATER / WT. DRY SOIL = 29.3%

% DIFF. DENSITY FROM NUC. GA. TO SAMPLE:

$$1 - \frac{\text{DEN. NUC GA.}}{\text{DEN. SAMPLE}} \times 100 = 1.8\% < 3\% \text{ OK}$$

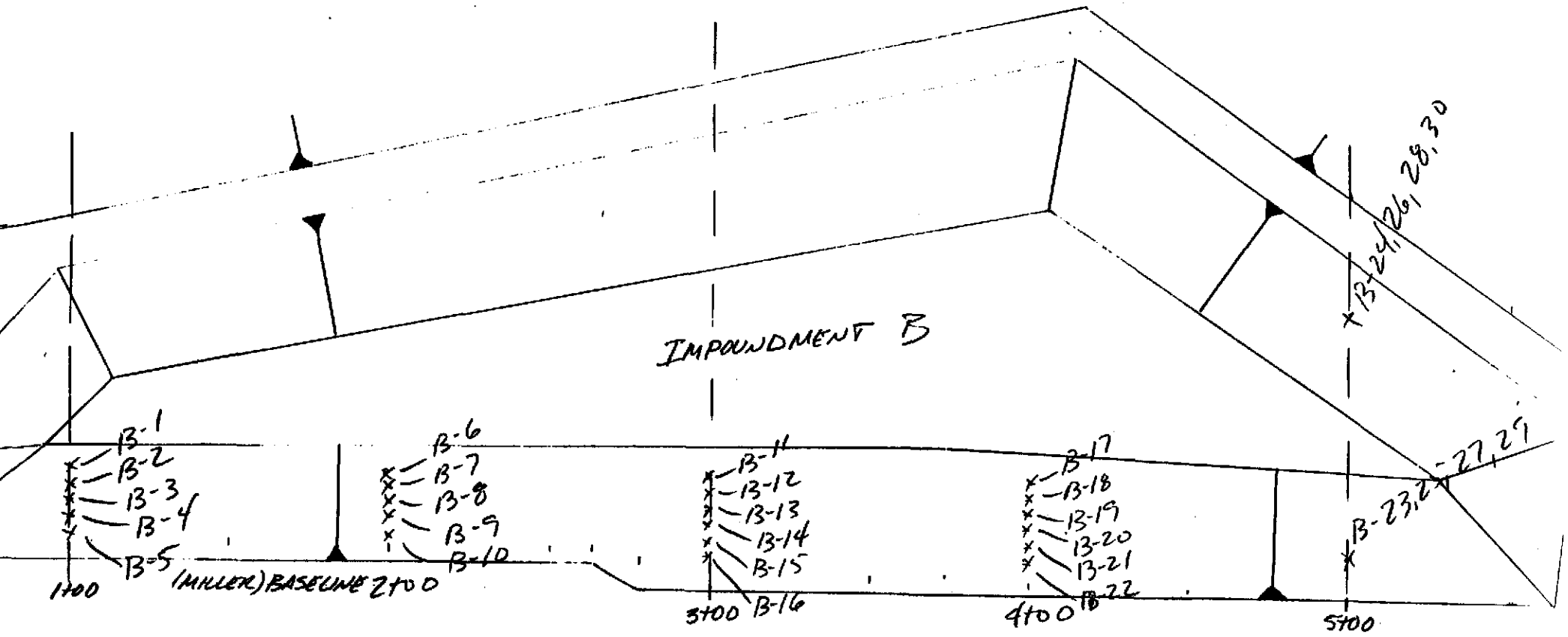
% DIFF. M.C. FROM NUC. GA. TO SAMPLE:

M.C. GA. − M.C. SAMPLE = 1.3% < 2% OK

INTERNATIONAL TECHNOLOGY CORPORATION

By BF Date 3-11-91 Subject _____ Sheet No. 2 of 2

Chkd. By ____ Date _____ Proj. No. 435425



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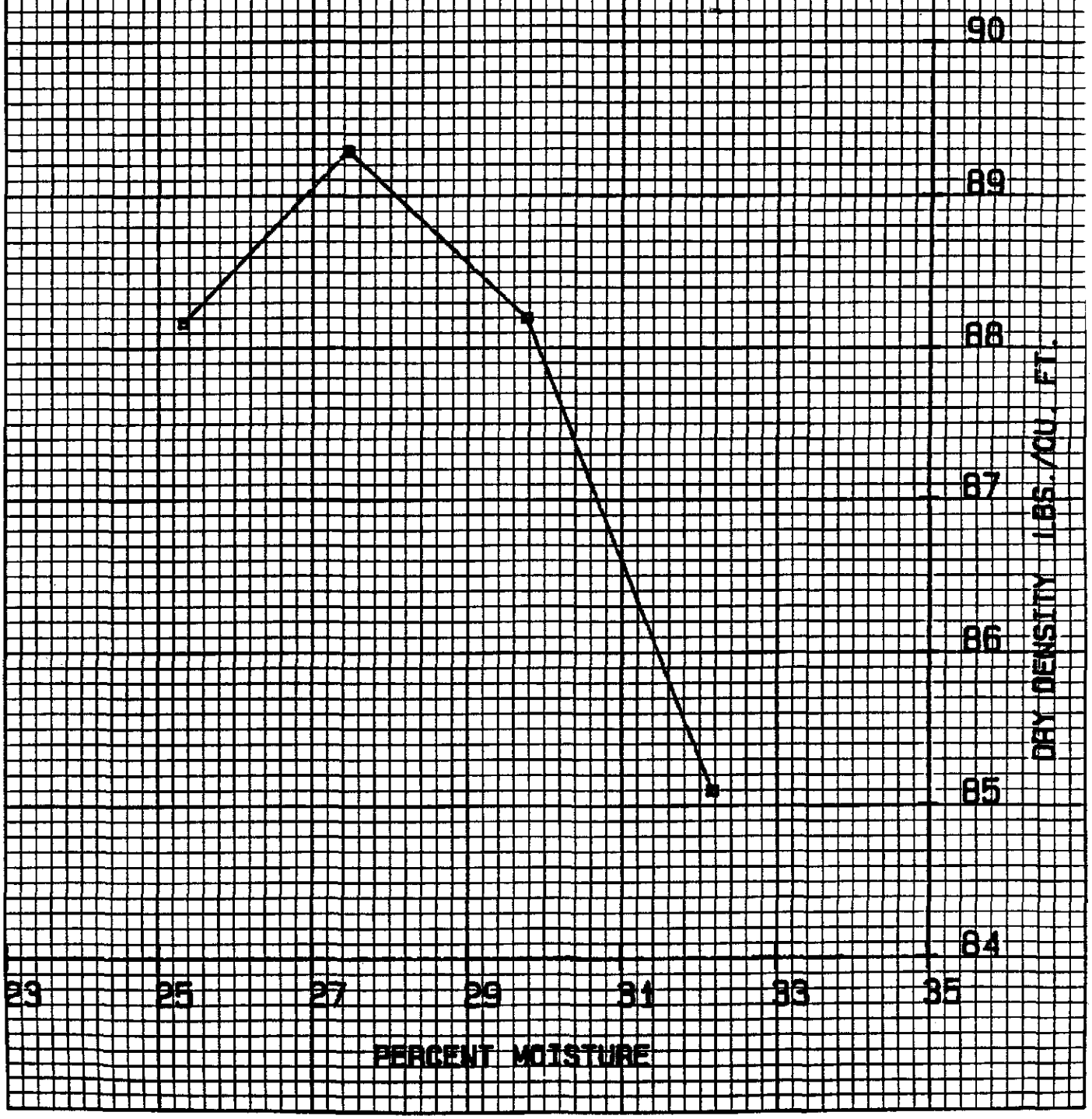
12MAR91 FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5280

MAX. DRY DENSITY - 89.3 LBS./CU. FT.
OPTIMUM MOISTURE - 27.4 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 3-12-91

TESTED BY: [illegible]
M.C. CORR. -5 USED

TEST NUMBER	B-31	B-32	B-33	B-34	B-35	B-36	B-37	B38	B-39	B-40
STATION	4+00	3+00	4+00	3+00	4+00	3+00	4+00	3+00	4+00	3+00
OFFSET	145'	130'	145	130	145	130	146	130	145	130
MODE & DEPTH	8"									
COMPACTION METHOD	SHEEPS FOOT ROLLER									
NUMBER OF PASSES										
LIFT THICKNESS	8"									
WET DENSITY (PCF)	113.2	112.2	112.6	113.6	114.6	113.2	112.6	111.7	111.8	111.4
MOISTURE (PCF)	26.7	28.2	27.5	28.5	26.6	26.4	27.4	28.5	27.3	29.1
DRY DENSITY (PCF)	86.5	84.0	85.0	85.1	88.0	86.2	85.2	83.1	84.5	82.8
% MOISTURE	30.8	33.5	32.1	33.5	30.2	30.5	32.3	34.2	32.1	35.4
MAX.DRY DENSITY STD. ☑ MOD. ☐	89.3									
OPTIMUM MOISTURE	27.4									
% RELATIVE COMPACTION	96.5	94.1	95.3	95.3	98.6	97.1	95.2	93.1	94.6	92.1
MATERIAL DISCRIPTION	MH	SOLIDIFIED	BOTTOM	SOILS						

STANDARD COUNT	
DENSITY	MOISTURE
2184	0308

DENSITY GUAGE SERIAL NUMBER
7689

INTERNATIONAL TECHNOLOGY CORPORATION

(141)

By BE. Date 3-12-91 Subject MOISTURE CONTENT Sheet No. 1 of 1
Chkd. By ___ Date ___ VERIFICATION FOR NUC. DEN. Proj. No. 435425
TESTS ON POND B DIKES.

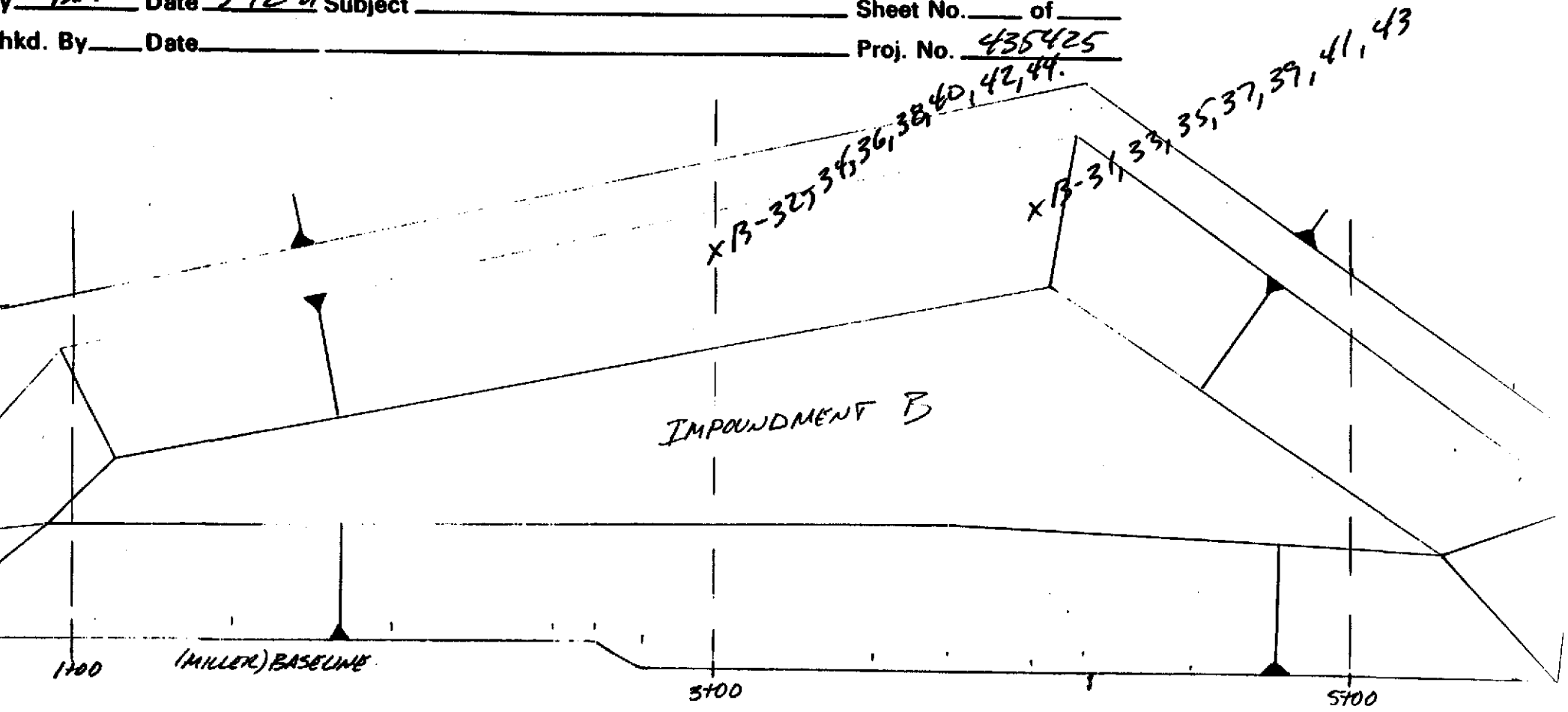
SAMPLE WAS TAKEN TO 10" DEPTH BELOW NUC. DEN. CA
TEST AREAS INDICATED BELOW & OVEN DRIED @ 105° FOR
14 HRS. ALL WTS. ARE IN GRAMS.

B-44 MC. WA. 30%
TARE # 2
WT. CAN + WET SOIL = 194.03
WT. CAN = 8.36
WT. D. SOIL + CAN = 150.36
WT. WET SOIL = 185.67
WT. DRY SOIL = 142.00
WATER = 43.67
WT. W./WT. D.S X100 = MC. = 30%

INTERNATIONAL TECHNOLOGY CORPORATION

By BF. Date 3-12-91 Subject _____ Sheet No. ____ of ____

Chkd. By ____ Date ____ Proj. No. 435425



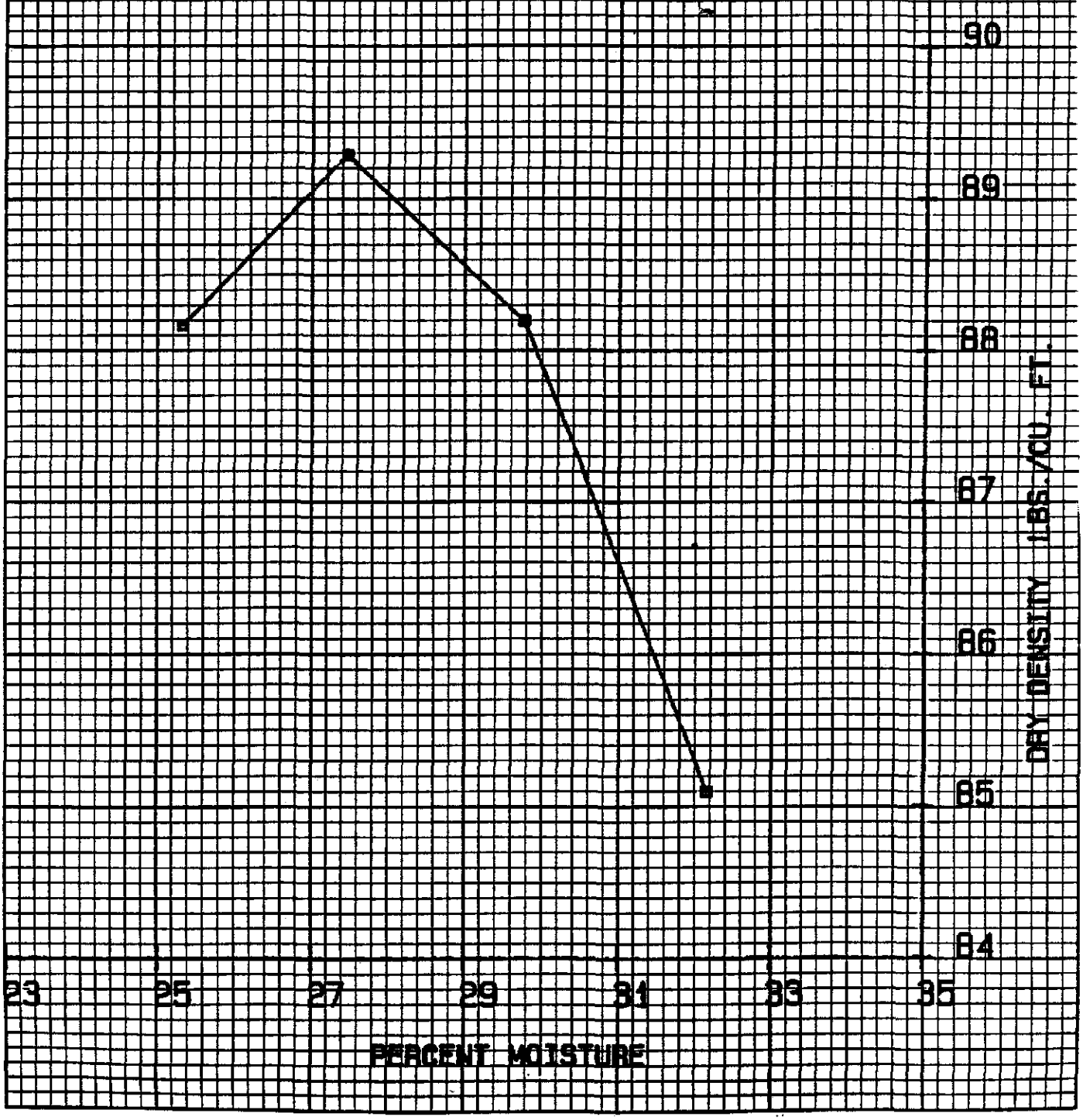
TS

12MAR91 FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5280

MAX. DRY DENSITY - 89.3 LBS./CU. FT.
OPTIMUM MOISTURE - 27.4 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: Cedar Chem Co.
PROJECT NO.: 435425
DATE: 3-13-91

TESTED BY: [illegible]
M.C. Corr. -5 used

TEST NUMBER	B-45	B-46	B-47	B-48	B-49	B-50	B-51	B-52	B-53	B-54
STATION	4+00	3+00	2+00	2+00	2+00	2+00	2+00	2+00	2+00	2+00
OFFSET	150'	135'	104'	104'	104'	104'	104'	104'	104'	104'
MODE & DEPTH	8"									
COMPACTION METHOD	Sheeps Foot Roller.									
NUMBER OF PASSES										
LIFT THICKNESS	8"									
WET DENSITY (PCF)	109^{5}	109^{5}	109^{1}	111^{2}	110^{8}	112^{5}	111^{7}	114^{6}	111^{4}	114^{3}
MOISTURE (PCF)	25^{9}	25^{5}	25^{0}	27^{3}	28^{1}	24^{9}	25^{7}	27^{7}	28^{3}	27^{5}
DRY DENSITY (PCF)	83^{6}	83^{9}	84^{1}	83^{9}	82^{7}	87^{6}	86^{0}	86^{8}	83^{0}	86^{3}
% MOISTURE	31^{2}	30^{4}	29^{7}	32^{6}	34^{0}	28^{4}	29^{9}	31^{9}	34^{2}	31^{6}
MAX.DRY DENSITY STD. ☑ MOD. ☐	89^{3}									
OPTIMUM MOISTURE	27^{4}									
% RELATIVE COMPACTION	93^{6}	94^{0}	94^{3}	95^{1}	92^{6}	98^{4}	96^{3}	97^{3}	93^{0}	97^{3}
MATERIAL DISCRIPTION	MAY SOLIDIFIED BOTTOM SOILS									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2178	0507	

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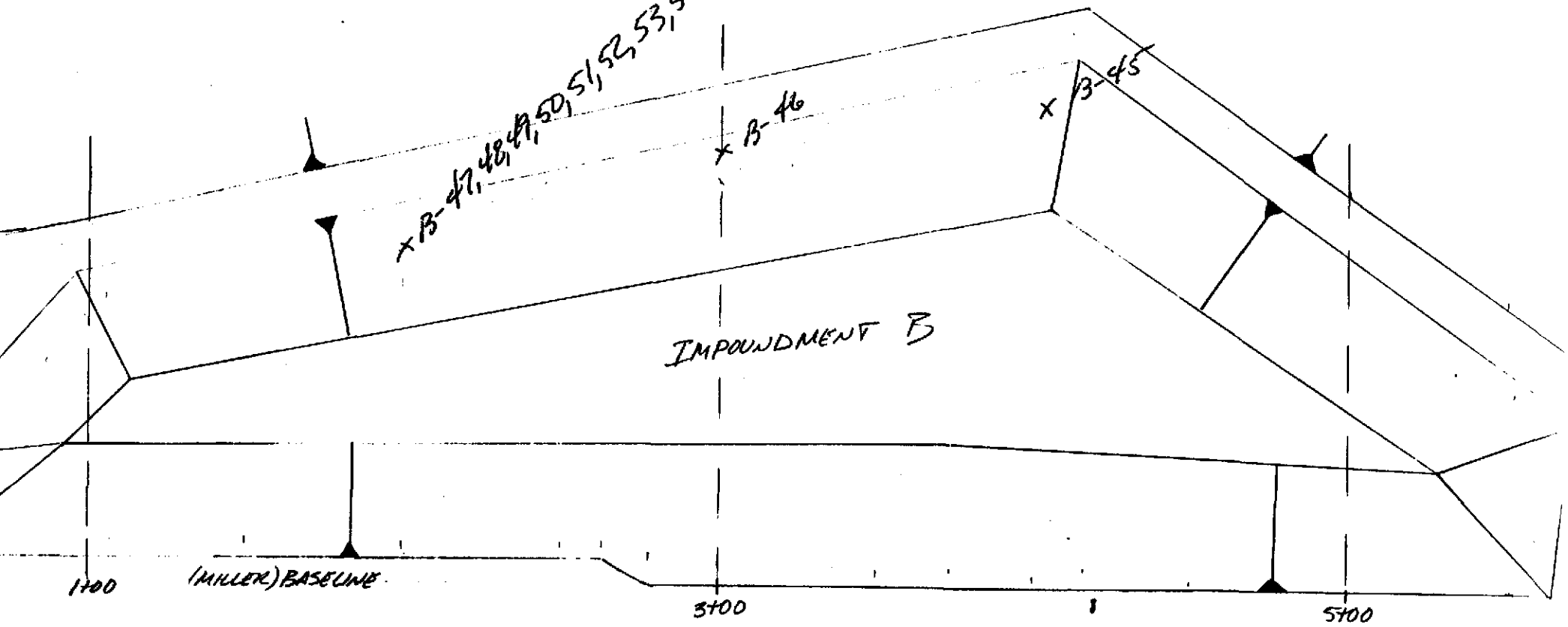
INTERNATIONAL TECHNOLOGY CORPORATION

By B.F. Date 3-13-96 Subject _____ Sheet No. 2 of 2

Chkd. By ____ Date ____ Proj. No. 435425



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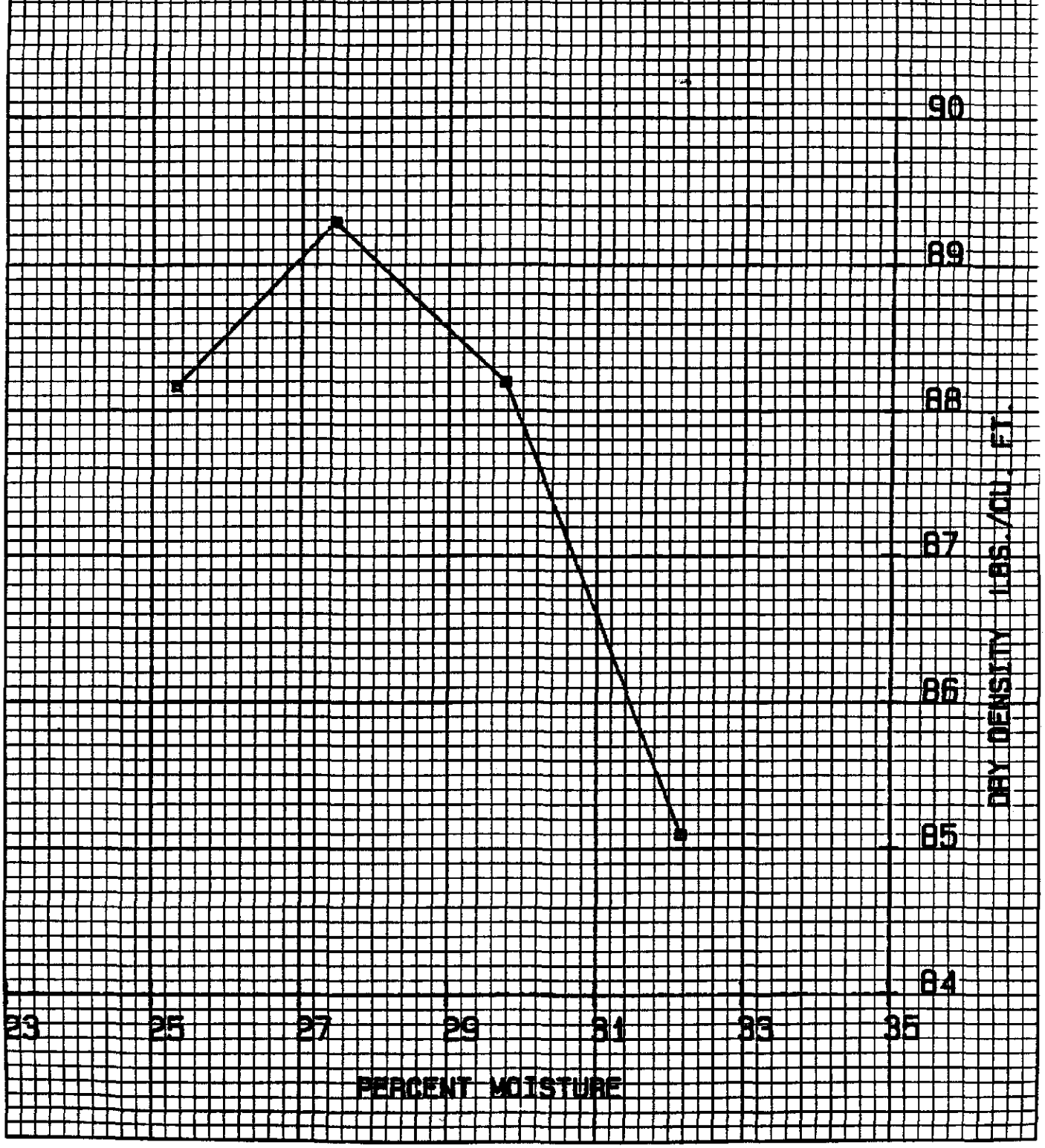
12MAR91 FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5280

MAX. DRY DENSITY - 89.3 LBS./CU. FT.
OPTIMUM MOISTURE - 27.4 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435423
DATE: 3-14-91

TESTED BY: Billy Fu
M.C. CORR. VED -9

TEST NUMBER	B-55	B-56	B-57	B-58	B-59	B-60	B-61			
STATION	H00	H00	H00	H00	H00	H00	H00			
OFFSET	74'	74'	74'	74'	74'	74'	74'			
MODE & DEPTH	8"	→	→	→	→	→	→			
COMPACTION METHOD	SHEEPS	FOOT	ROLLER	→	→	→	→			
NUMBER OF PASSES										
LIFT THICKNESS	8"	→	→	→	→	→	→			
WET DENSITY (PCF)	111^{3}	110^{2}	111^{2}	111^{5}	112^{1}	111^{4}	110^{9}			
MOISTURE (PCF)	26^{8}	26^{5}	26^{9}	26^{4}	26^{4}	26^{1}	25^{9}			
DRY DENSITY (PCF)	84^{5}	83^{8}	84^{7}	85^{1}	85^{7}	85^{3}	85^{0}			
% MOISTURE	31^{1}	31^{0}	31^{0}	31^{0}	30^{8}	30^{0}	30^{3}			
MAX.DRY DENSITY STD.☑ MOD.☐	89^{3}	→	→	→	→	→	→			
OPTIMUM MOISTURE	27^{4}	→	→	→	→	→	→			
% RELATIVE COMPACTION	94^{6}	93^{8}	94^{7}	95^{3}	96^{0}	95^{5}	95^{3}			
MATERIAL DISCRIPTION	MM	SOLIDIFIED	BOTTOM	SOILS	→	→	→			

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2179	0510	

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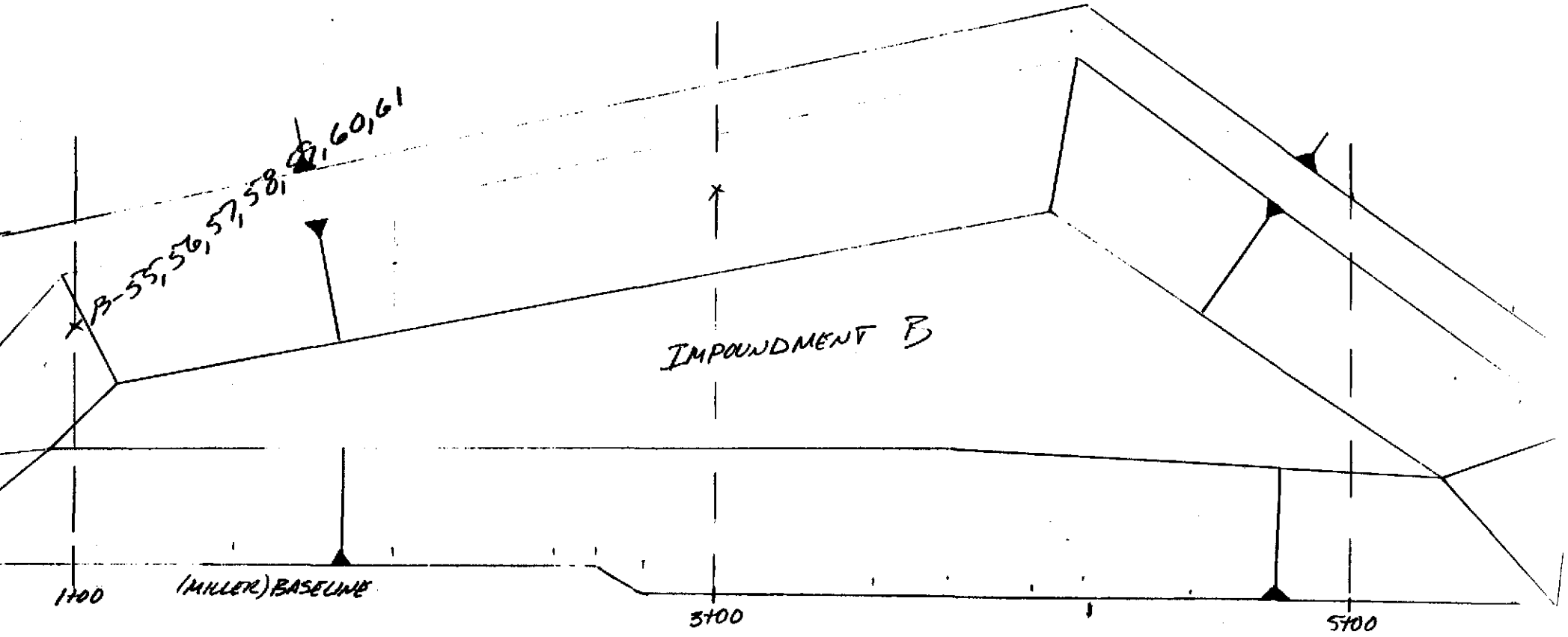
INTERNATIONAL TECHNOLOGY CORPORATION

By BF Date 3-14-91 Subject _____ Sheet No. 2 of 2

Chkd. By ____ Date ____ Proj. No. 435425



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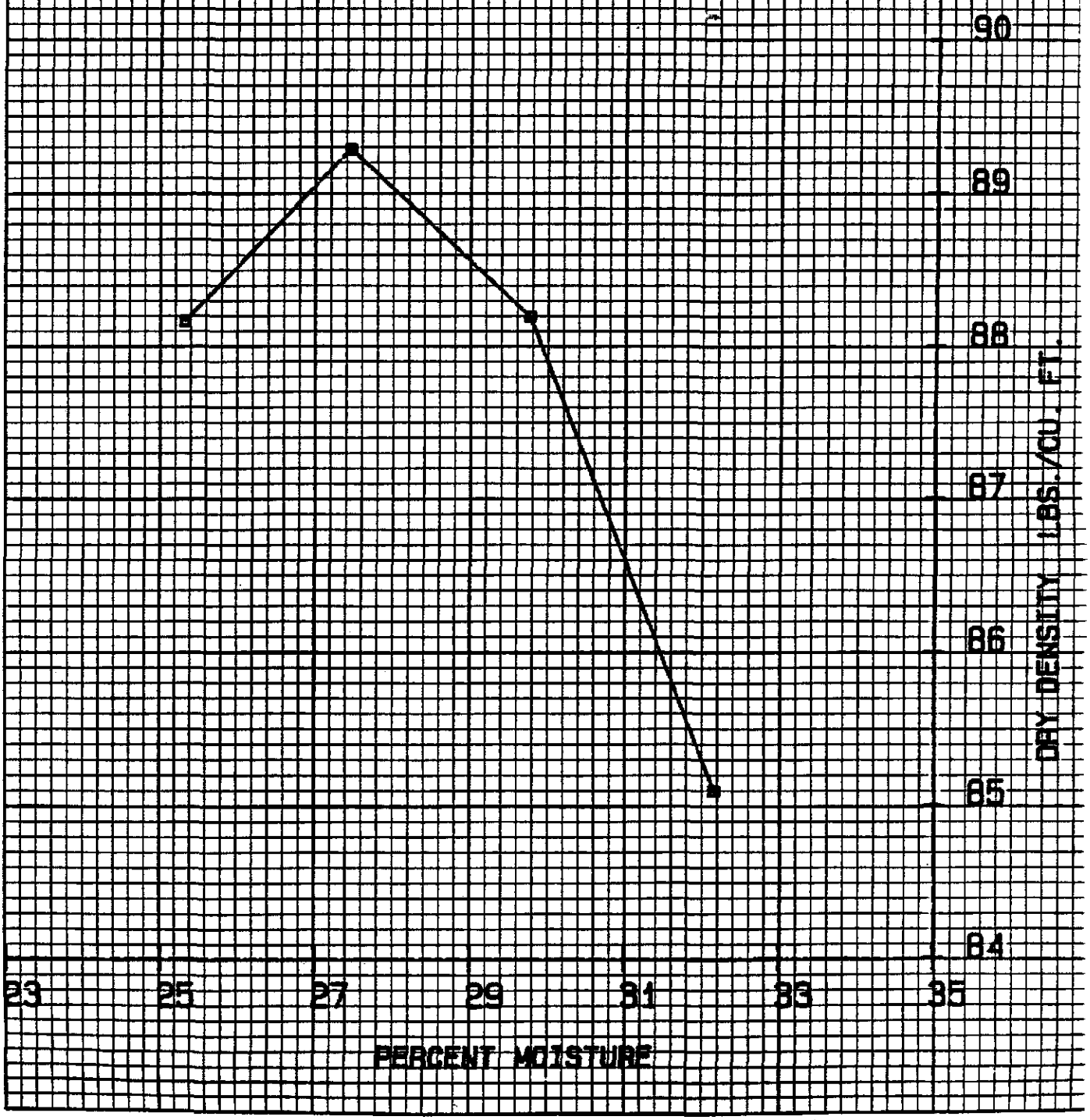
12MAR91 FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5280

MAX. DRY DENSITY - 89.3 LBS./CU. FT.
OPTIMUM MOISTURE - 27.4 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEMAR CHEM. D.
PROJECT NO.: 435425
DATE: 3-20-91

TESTED BY: [illegible]
M.C. CORER -5 USED

TEST NUMBER	B-62	B-63								
STATION	2+00	2+00								
OFFSET	65	65								
MODE & DEPTH	12"	12"								
COMPACTION METHOD	SHEEPS	FOOT	ROLLER							
NUMBER OF PASSES	7	7								
LIFT THICKNESS	1st N.A.	2nd 10"								
WET DENSITY (PCF)	106^{0}	109^{8}								
MOISTURE (PCF)	24^{6}	25^{8}								
DRY DENSITY (PCF)	81^{4}	84^{0}								
% MOISTURE	30^{2}	30^{1}								
MAX.DRY DENSITY STD. ☑ MOD. ☐	89^{3}	→								
OPTIMUM MOISTURE	27^{4}	→								
% RELATIVE COMPACTION	91^{2}	94^{1}								
MATERIAL DISCRIPTION	MIX SOLIDIFIED BOTTOM SOILS.									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2180	0507	

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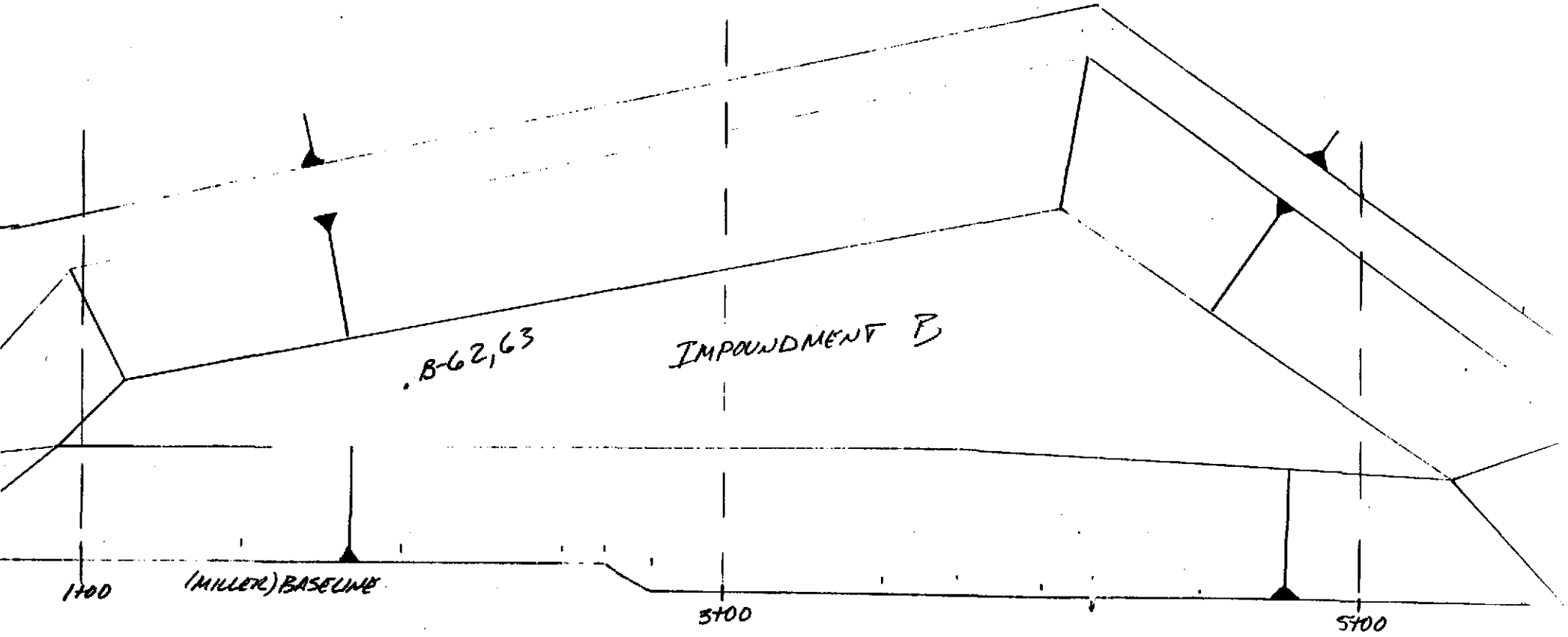
INTERNATIONAL TECHNOLOGY CORPORATION

By BF. Date 3-20-91 Subject _____ Sheet No. 2 of 2

Chkd. By ____ Date ____ Proj. No. 435425



TS

(15)

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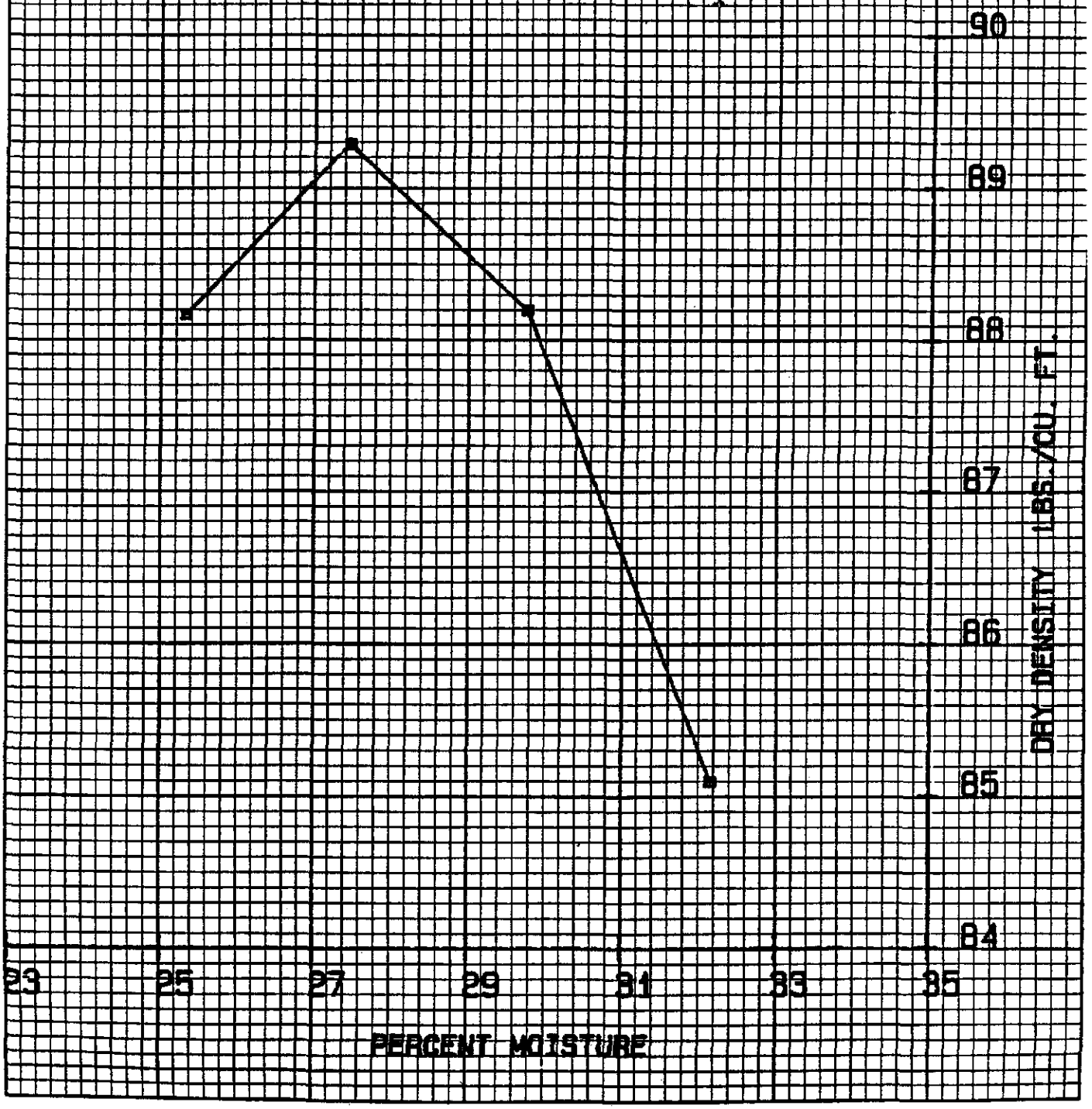
12MAR91 FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5280

MAX. DRY DENSITY - 89.3 LBS./CU. FT.
OPTIMUM MOISTURE - 27.4 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 3-26-91

TESTED BY: Billy Fry
M.C. CORR-5 USED.

TEST NUMBER	B-64	B-65	B-66	B-67						
STATION	4+80	4+80	4+00	4+00						
OFFSET	55	55	60	60						
MODE & DEPTH	12"	→	→	→						
COMPACTION METHOD	SHEEP'S FOOT ROLLER									
NUMBER OF PASSES	6	→	→	→						
LIFT THICKNESS	1ST NA	2ND 10"	1ST NA.	2ND 11"						
WET DENSITY (PCF)	106.2	110.1	107.6	110.9						
MOISTURE (PCF)	26.2	26.2	26.2	26.2						
DRY DENSITY (PCF)	80.5	83.4	80.9	84.0						
% MOISTURE	32.0	32.0	33.0	32.0						
MAX.DRY DENSITY STD.☑ MOD.☐	89.2	→	→	→						
OPTIMUM MOISTURE	27.4	→	→	→						
% RELATIVE COMPACTION	90.1	93.4	90.6	94.1						
MATERIAL DISCRIPTION	MH SRUD. BOTH SOILS									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2182	0509	

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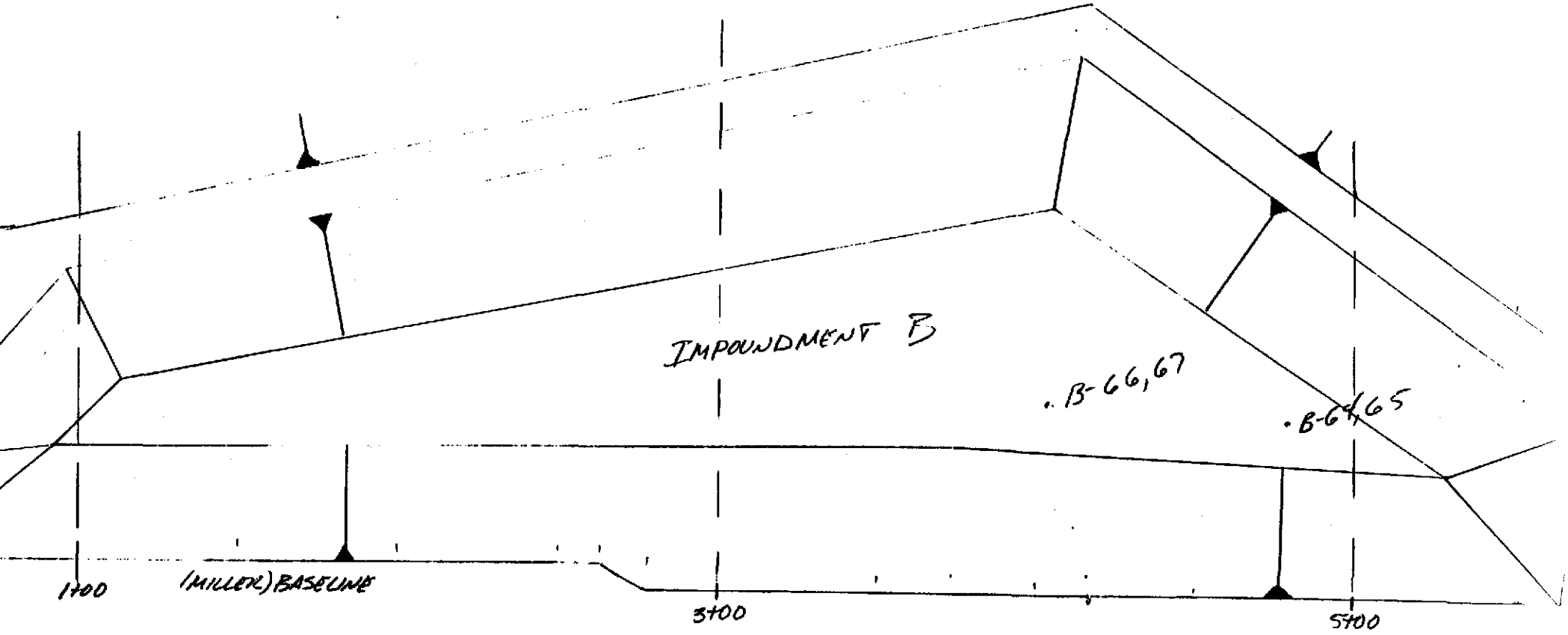
INTERNATIONAL TECHNOLOGY CORPORATION

By BF Date 3-26-91 Subject _____ Sheet No. 2 of 2

Chkd. By ____ Date ____ Proj. No. 435625



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INTERNATIONAL TECHNOLOGY CORPORATION

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By BF. Date 5-26-91 Subject M.C. VERIFICATION Sheet No. 2 of 2

Chkd. By ___ Date ___ Proj. No. 435425

SAMPLES WERE TAKEN TO 10" DEPTH BELOW NCC. DEN. GA. TEST AREAS INDICATED BELOW & OVEN DRIED @ 105° FOR 14 HRS. ALL WTS. ARE IN GRAMS.

#B-65 M.C. GA. 32°

TARE #1

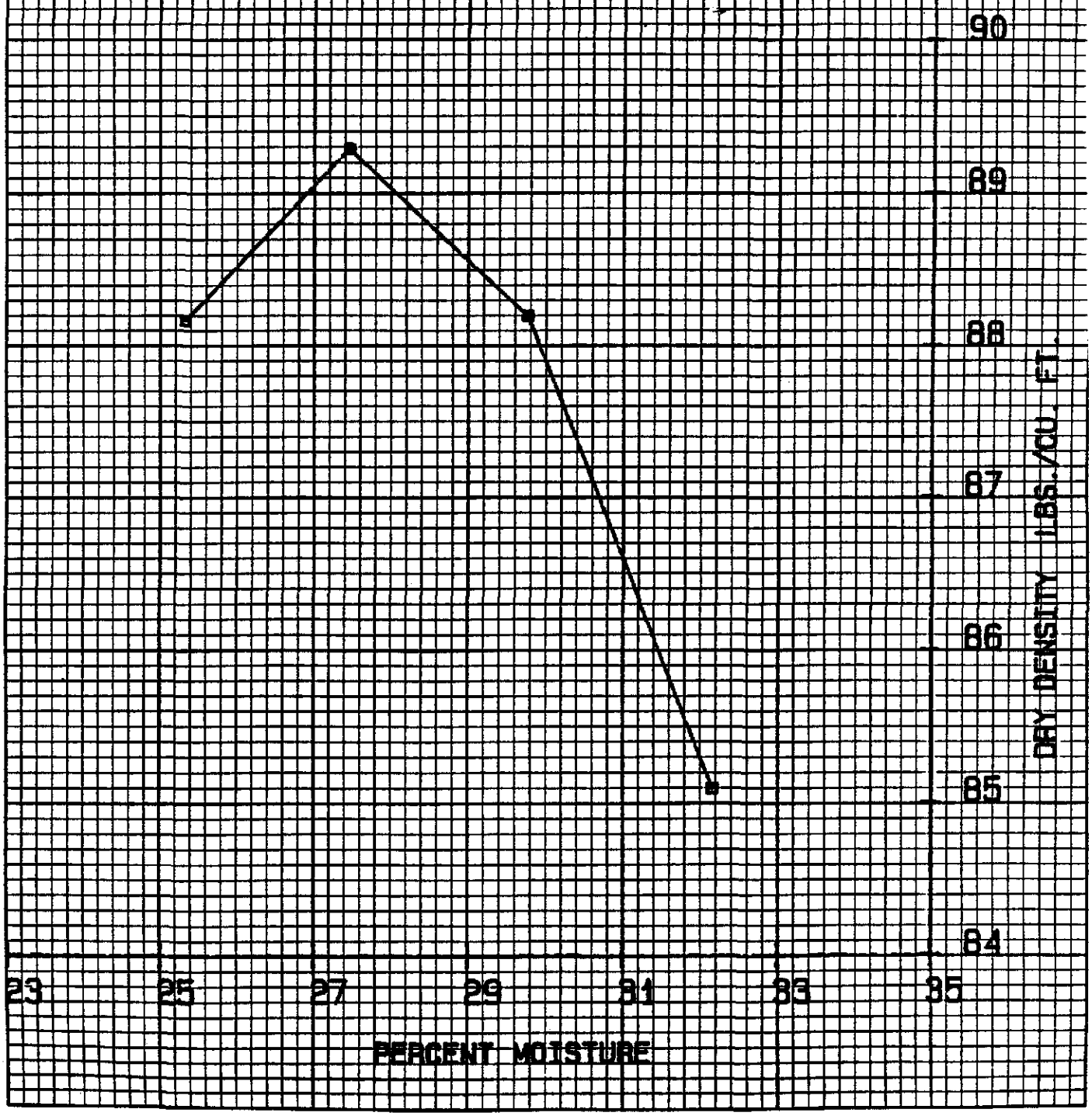
WT. CAN + WET SOIL	= 180.13
WT. CAN	= 8.28
WT. D. SOIL + CAN	= 138.00
WT. ~~DRY~~ SOIL	= 171.72
WT. DRY SOIL	= 129.62
WATER	= 42.13
WT. WATER/WT. DRY SOIL X 100	= 32.5

12MAR91 FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5280

MAX. DRY DENSITY - 89.3 LBS./CU. FT.
OPTIMUM MOISTURE - 27.4 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CONAR CHEM. CO.
PROJECT NO.: 435-425
DATE: 3-27-91

TESTED BY: Billy Fry
M.C. CORR-5 USED

TEST NUMBER	B-68	B-69	B-70	B-71						
STATION	3+00	3+00	4+00	4+00						
OFFSET	70'	70'	110'	110'						
MODE & DEPTH	12"									
COMPACTION METHOD	SHEEPS	FOOT	ROLLER							
NUMBER OF PASSES										
LIFT THICKNESS	N.A.	10"	N.A.	10"						
WET DENSITY (PCF)	107.1	111.2	105.5	110.5						
MOISTURE (PCF)	24.6	25.8	24.6	26.3						
DRY DENSITY (PCF)	82.4	85.4	80.9	84.2						
% MOISTURE	29.2	30.5	30.4	31.2						
MAX.DRY DENSITY STD.☑ MOD.☐	89.3									
OPTIMUM MOISTURE	27.4									
% RELATIVE COMPACTION	92.3	95.6	90.6	94.3						
MATERIAL DISCRIPTION	MH SOLIDIFIED BOTTOM SOILS.									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2176	0511	

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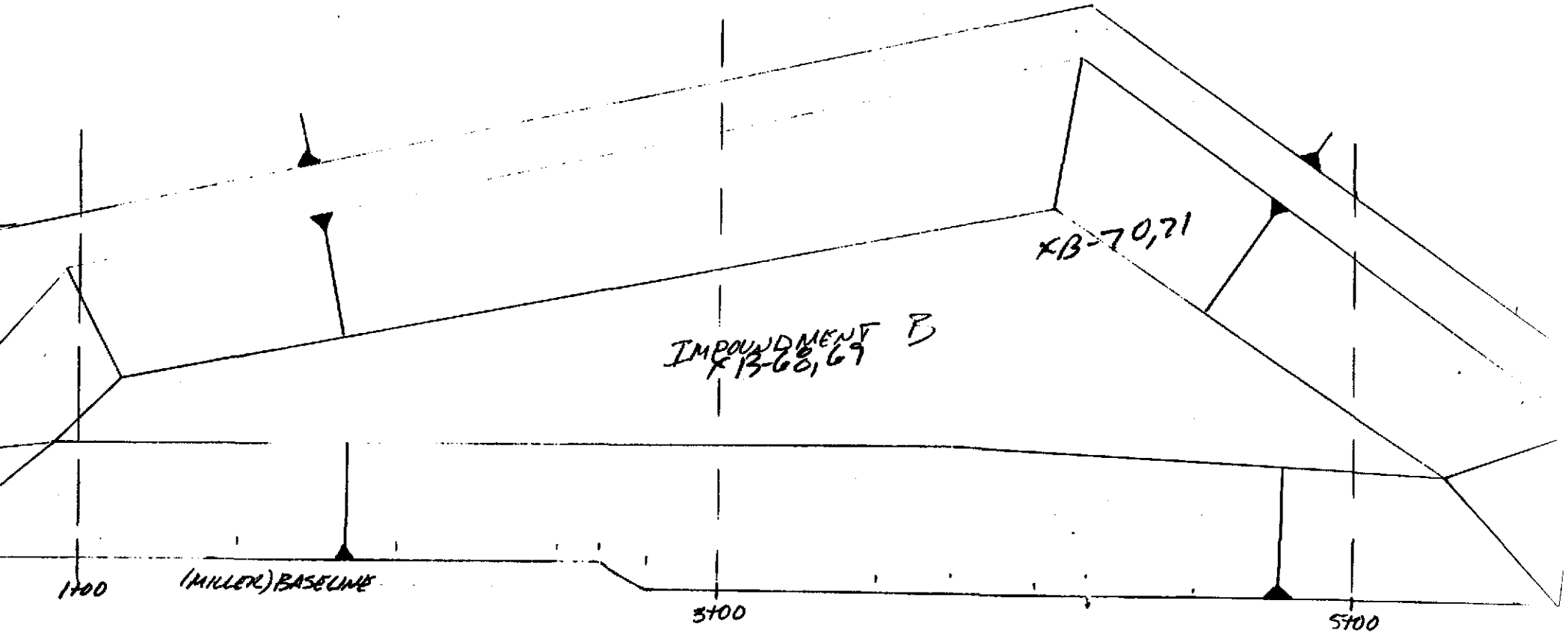
INTERNATIONAL TECHNOLOGY CORPORATION

By BE Date 3-27-91 Subject _____ Sheet No. 2 of 2

Chkd. By ____ Date _____ Proj. No. 435425



TS

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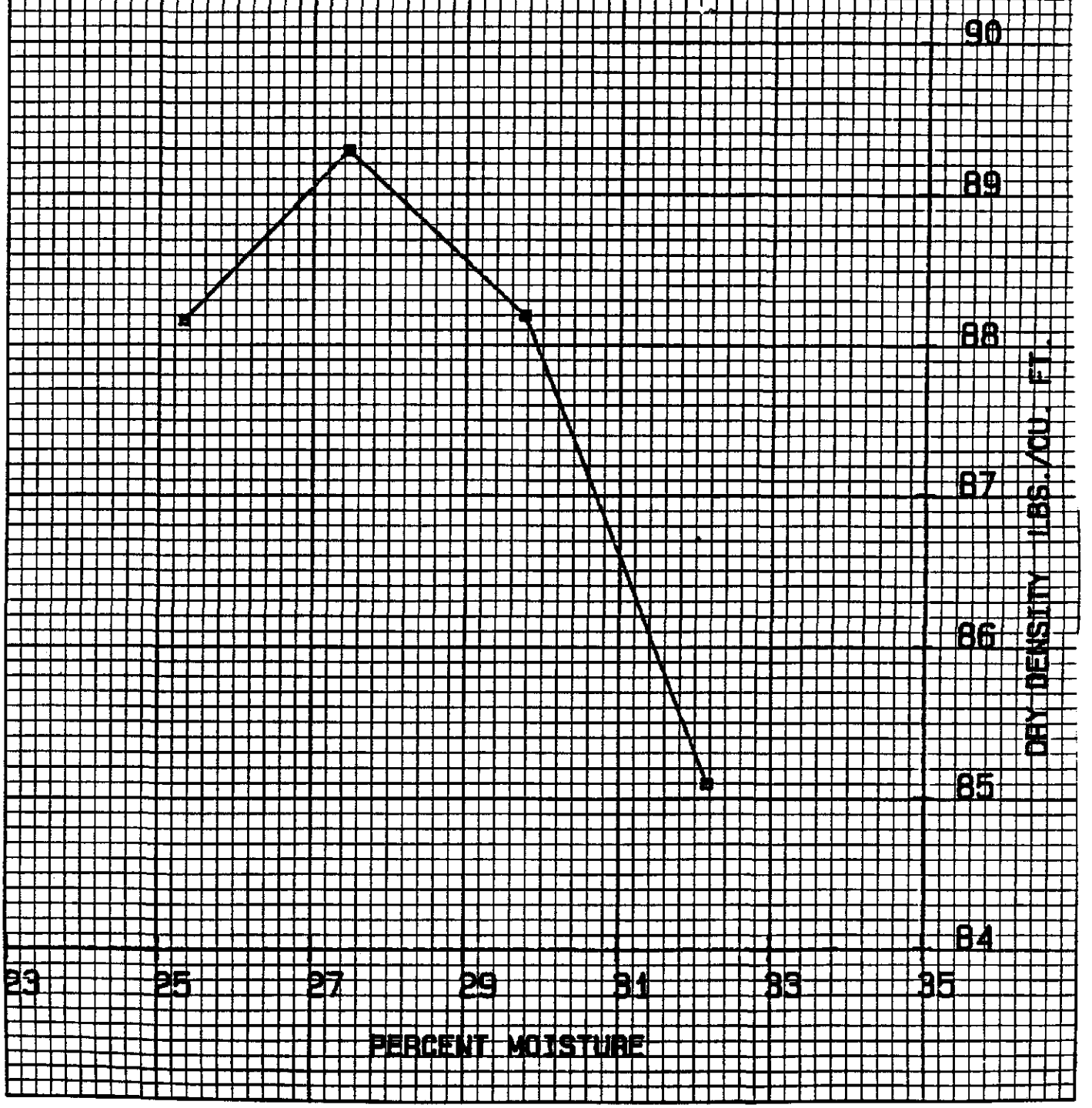
12MAR91 FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015
TYPE MATERIAL - SAMPLE P5280

MAX. DRY DENSITY - 89.3 LBS./CU. FT.
OPTIMUM MOISTURE - 27.4 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 8-23-91

TESTED BY: Billy Fr
M & CORR -5 USQD.

TEST NUMBER	B-72	B-73								
STATION	3+25	3+25								
OFFSET	55	55								
MODE & DEPTH	12"	12"								
COMPACTION METHOD	SHEEPS FOOT ROLLER									
NUMBER OF PASSES										
LIFT THICKNESS	1st NA.	2nd 10"								
WET DENSITY (PCF)	107.2	110.6								
MOISTURE (PCF)	24.5	25.4								
DRY DENSITY (PCF)	82.2	85.2								
% MOISTURE	29.8	29.8								
MAX.DRY DENSITY STD.☑ MOD.☐	89.3	→								
OPTIMUM MOISTURE	27.4	→								
% RELATIVE COMPACTION	92.6	95.4								
MATERIAL DISCRIPTION	MH SILTY BROWN SOILS.									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2172	0505	

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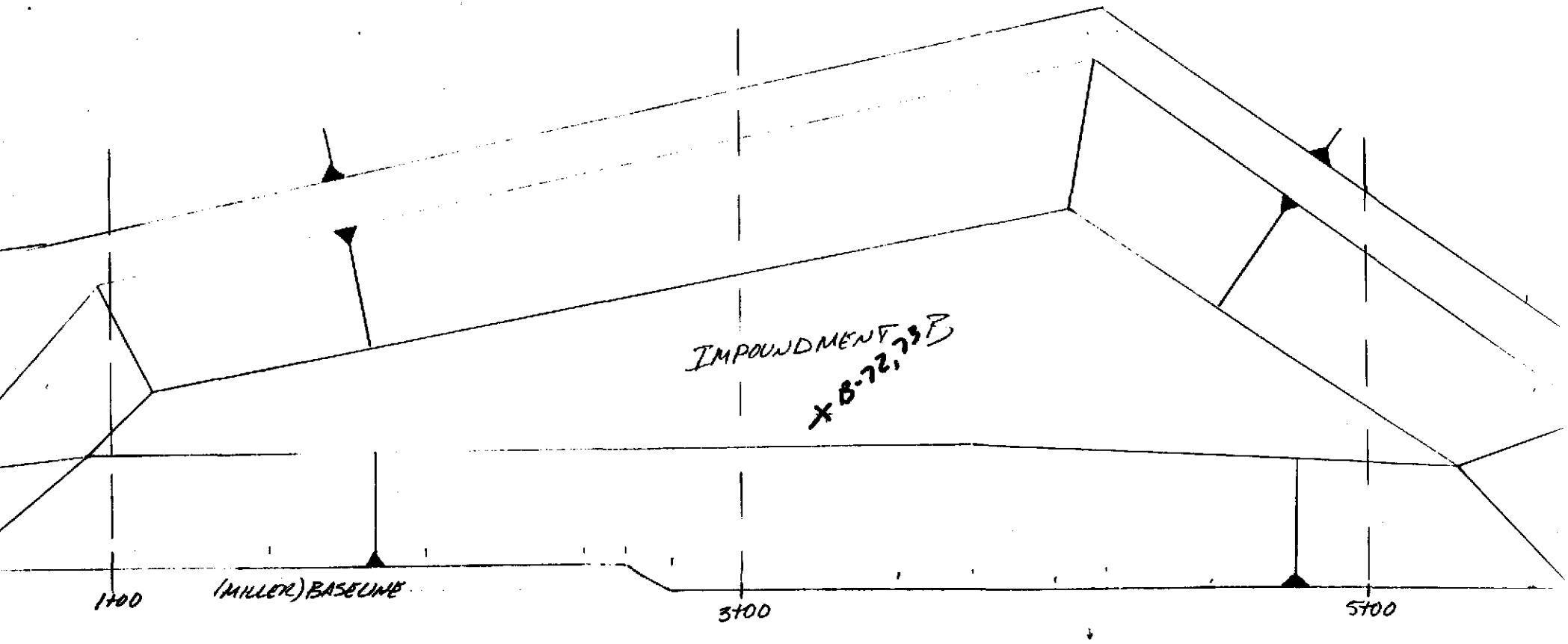
INTERNATIONAL TECHNOLOGY CORPORATION

By B.F. Date 4-3-91 Subject _____ Sheet No. ____ of ____

Chkd. By ____ Date ____ Proj. No. 435425



NTS

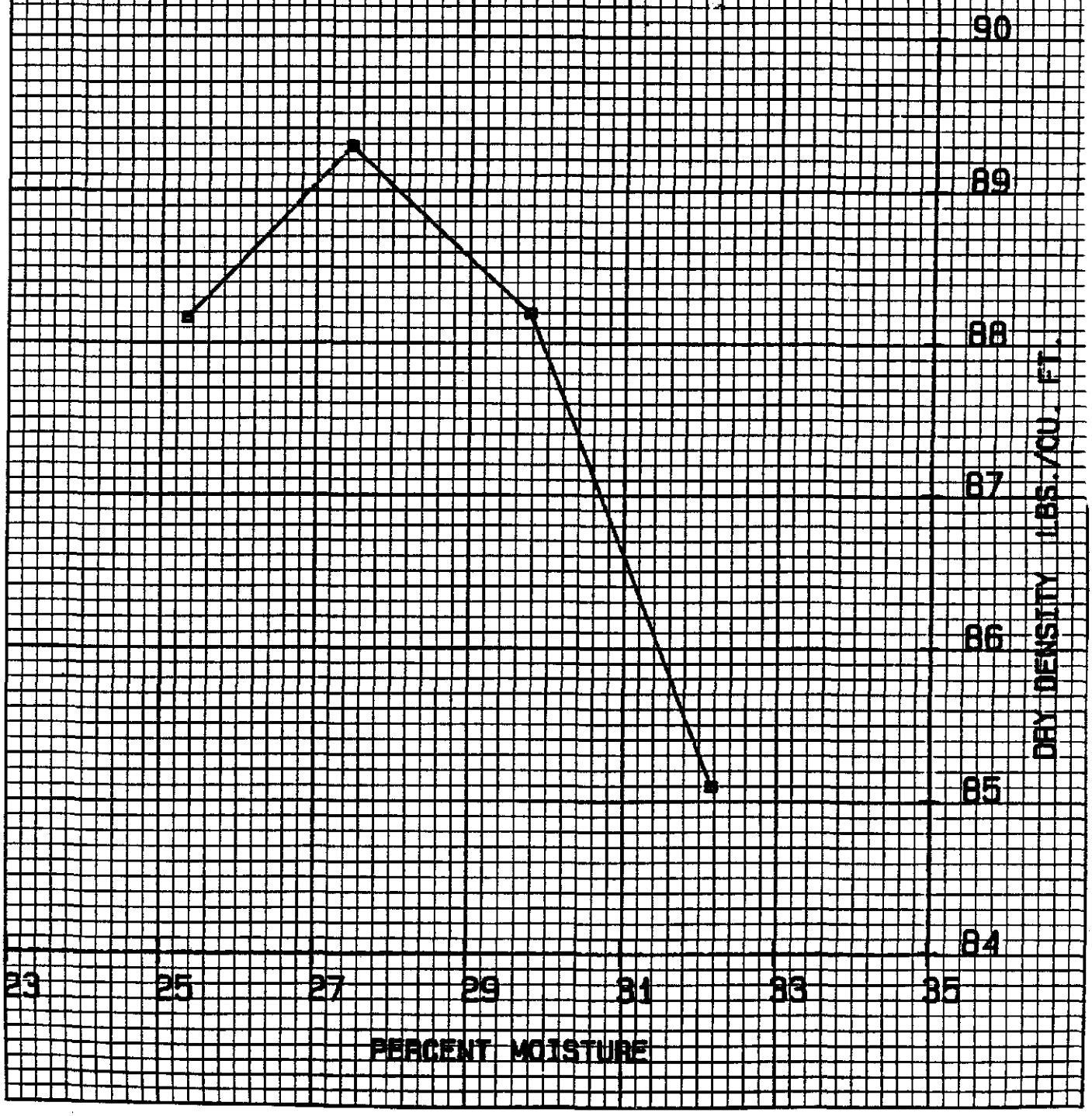
12MAR91

FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5280

MAX. DRY DENSITY - 89.3 LBS./CU. FT.
OPTIMUM MOISTURE - 27.4 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEMICAL CO.
PROJECT NO.: 435425
DATE: 06-12-91

TESTED BY: Billy Fry
USED -5 M.C. correction

TEST NUMBER	A/B-1	A/B-2	A/B-3							
STATION	1+00	1+00	1+00							
OFFSET	18	18	18							
MODE & DEPTH	10"	→	→							
COMPACTION METHOD	HAND TRAMP.									
NUMBER OF PASSES	3	→	→							
LIFT THICKNESS	10"	→	→							
WET DENSITY (PCF)	111.6	110.6	112.1							
MOISTURE (PCF)	25.6	25.6	25.1							
DRY DENSITY (PCF)	86.0	84.9	87.1							
% MOISTURE	29.8	30.2	28.8							
MAX.DRY DENSITY STD. ☑ MOD. ☐	89.3	→	→							
OPTIMUM MOISTURE	27.4	→	→							
% RELATIVE COMPACTION	96.3	95.1	97.5							
MATERIAL DISCRIPTION	MH SOLIDIFIED		BOTTOM	SULLS						

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2160	0501	

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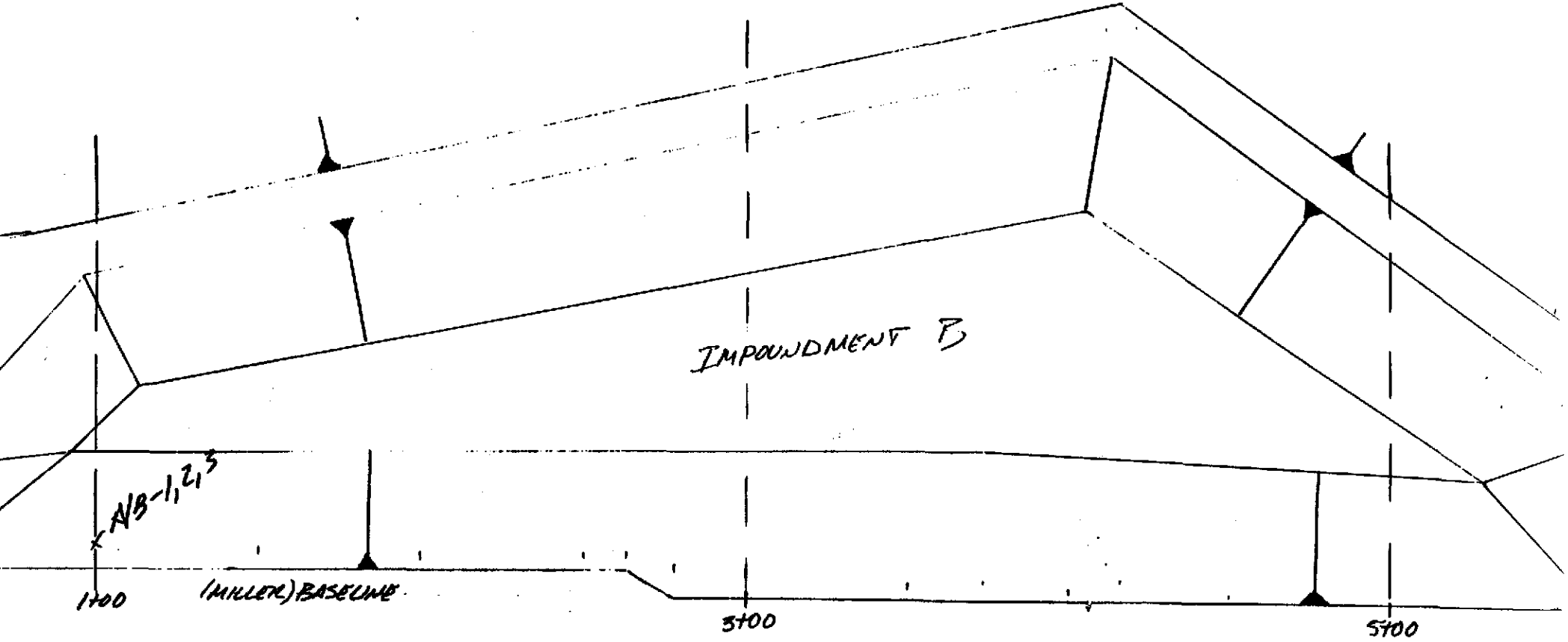
INTERNATIONAL TECHNOLOGY CORPORATION

By BF Date 6-12-91 Subject _____ Sheet No. 1 of 1

Chkd. By ____ Date ____ _____ Proj. No. 435425



NTS

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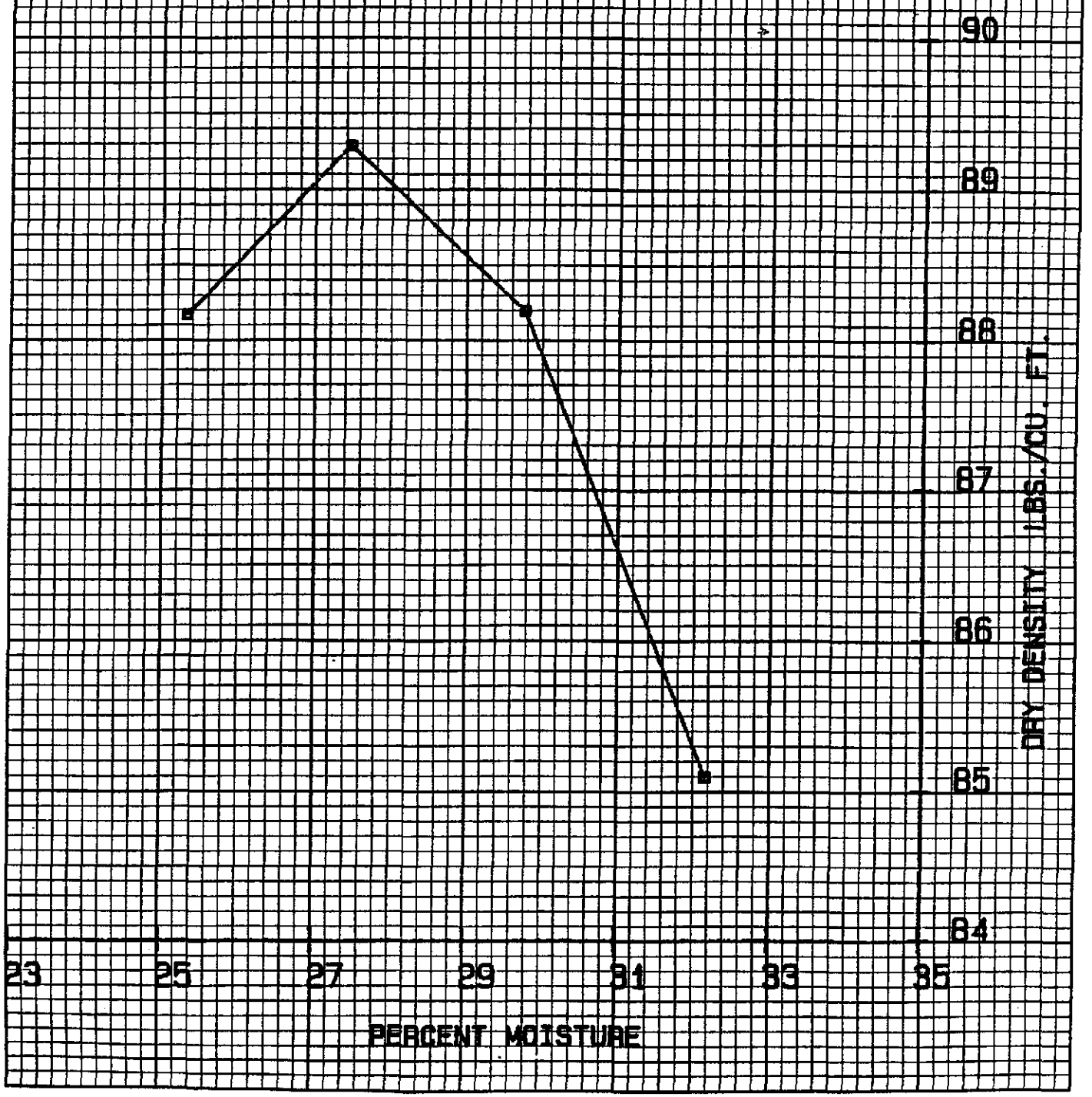
12MAR91 FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5280

MAX. DRY DENSITY - 89.3 LBS./CU. FT.
OPTIMUM MOISTURE - 27.4 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: Cooper Chemical Co.
PROJECT NO.: 435425
DATE: 6-14-91

TESTED BY: Billy Fry
USED -5 M.C. Correction

TEST NUMBER	A/B-4	A/B-5								
STATION	1100	1100								
OFFSET	18	18								
MODE & DEPTH	10"	→								
COMPACTION METHOD	HAND TAMP.									
NUMBER OF PASSES	4	→								
LIFT THICKNESS	10"	→								
WET DENSITY (PCF)	113.6	112.1								
MOISTURE (PCF)	27.8	25.7								
DRY DENSITY (PCF)	85.8	86.4								
% MOISTURE	32.4	29.8								
MAX.DRY DENSITY STD. ☑ MOD. ☐	89.3	→								
OPTIMUM MOISTURE	27.4	→								
% RELATIVE COMPACTION	96.1	96.3								
MATERIAL DISCRIPTION	MH SOLIDIFIED BOTTOM SOILS.									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2164	0503	

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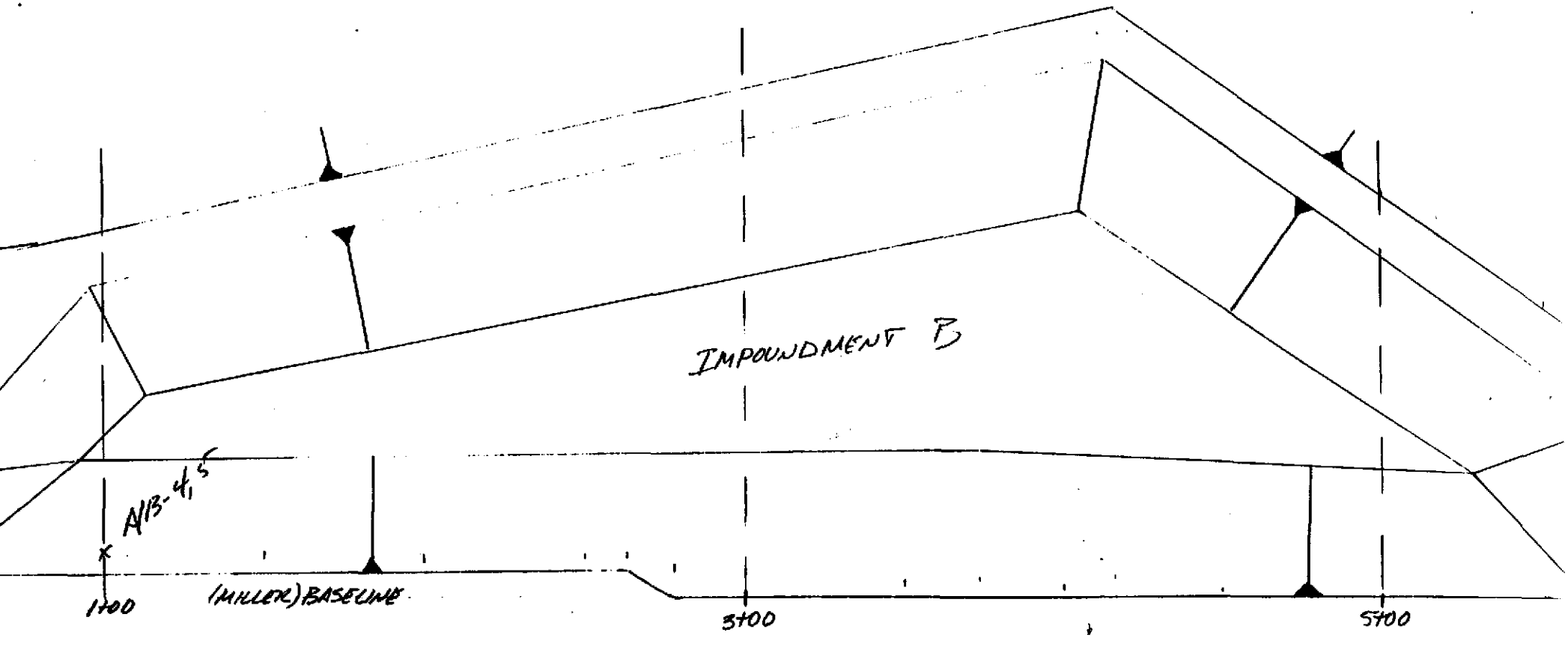
INTERNATIONAL TECHNOLOGY CORPORATION

By B.F. Date 6-14-91 Subject _____ Sheet No. 1 of 1

Chkd. By ____ Date ____ _____ Proj. No. 435425



NTS

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12MAR91

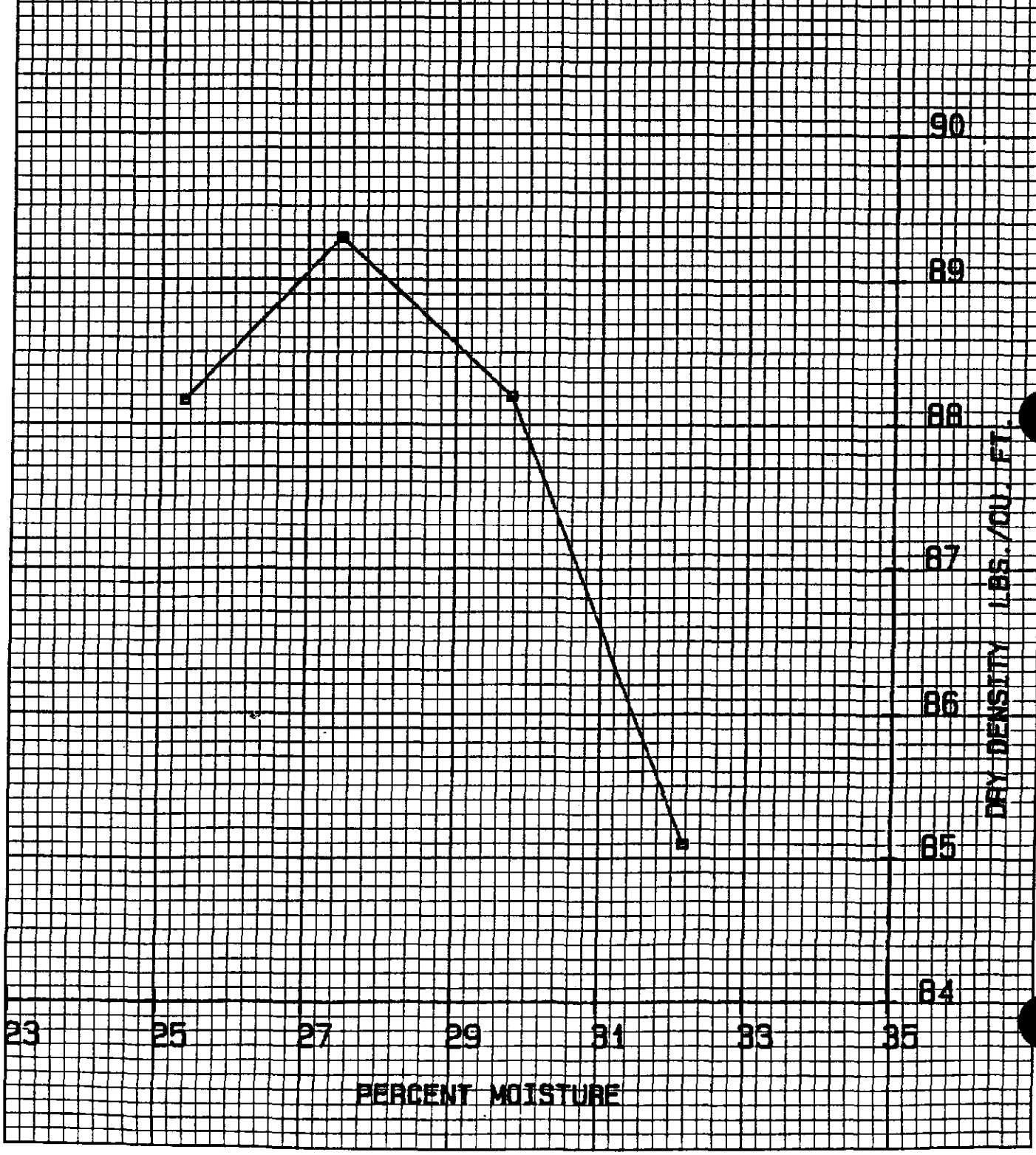
FIGURE 1

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5280

MAX. DRY DENSITY - 89.3 LBS./CU. FT.

OPTIMUM MOISTURE - 27.4 PERCENT



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INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 3-21-91

TESTED BY: Billy Fry
M.C. & CORR. - 9 USED

TEST NUMBER	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10
STATION	1+72	1+72	1+72	1+72	1+72	1+72	1+00	1+00	1+00	1+00
OFFSET	65	65	65	65	65	65	120	120	120	120
MODE & DEPTH	8"									
COMPACTION METHOD	SHEEPS	FOOT	ROLLER							
NUMBER OF PASSES	7									
LIFT THICKNESS	8"									
WET DENSITY (PCF)	111^{2}	111^{3}	110^{4}	111^{6}	110^{2}	110^{2}	116^{8}	114^{2}	113^{4}	115^{2}
MOISTURE (PCF)	27^{5}	27^{6}	27^{5}	27^{4}	26^{0}	28^{0}	27^{1}	27^{5}	27^{5}	27^{9}
DRY DENSITY (PCF)	83^{7}	83^{5}	82^{9}	84^{2}	82^{2}	82^{5}	89^{7}	86^{7}	85^{9}	87^{3}
% MOISTURE	32^{8}	33^{1}	33^{5}	32^{5}	34^{1}	34^{0}	30^{2}	31^{2}	32^{0}	31^{9}
MAX.DRY DENSITY STD. ☑ MOD. ☐	88^{9}									
OPTIMUM MOISTURE	29^{6}									
% RELATIVE COMPACTION	94^{8}	94^{6}	93^{9}	95^{3}	93^{1}	93^{4}	101^{6}	98^{2}	97^{3}	98^{9}
MATERIAL DISCRIPTION	SOLIDIFIED		BOTTOM	SOILS	MIX					

STANDARD COUNT	
DENSITY	MOISTURE
2158	0502

DENSITY GUAGE SERIAL NUMBER
7689

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INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 3-21-91

TESTED BY: Billy Fu
W.C. CORR-5 USED

TEST NUMBER	C-11	C-12	C-13	C-14	C-15	C-16	C-17	C-18		
STATION	0+62	0+62	0+62	0+62	1+85	1+85	1+85	1+85		
OFFSET	88	88	88	88	18	18	18	18		
MODE & DEPTH	8"									
COMPACTION METHOD	7									
NUMBER OF PASSES	8"									
LIFT THICKNESS	8"									
WET DENSITY (PCF)	109.6	111.2	111.3	109.0	111.4	110.7	111.8	110.9		
MOISTURE (PCF)	29.1	29.3	29.1	28.9	27.8	28.1	28.2	28.5		
DRY DENSITY (PCF)	80.5	81.9	82.3	80.3	83.6	82.6	83.5	82.4		
% MOISTURE	36.1	35.8	35.4	36.0	33.2	34.0	33.8	34.6		
MAX.DRY DENSITY STD.☑ MOD.☐	88.5									
OPTIMUM MOISTURE	29.6									
% RELATIVE COMPACTION	91.3	92.7	93.1	90.8	94.7	93.6	94.6	93.3		
MATERIAL DISCRIPTION	MH	SOLIDIFIED BOTTOM SOILS								

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2158	0502	

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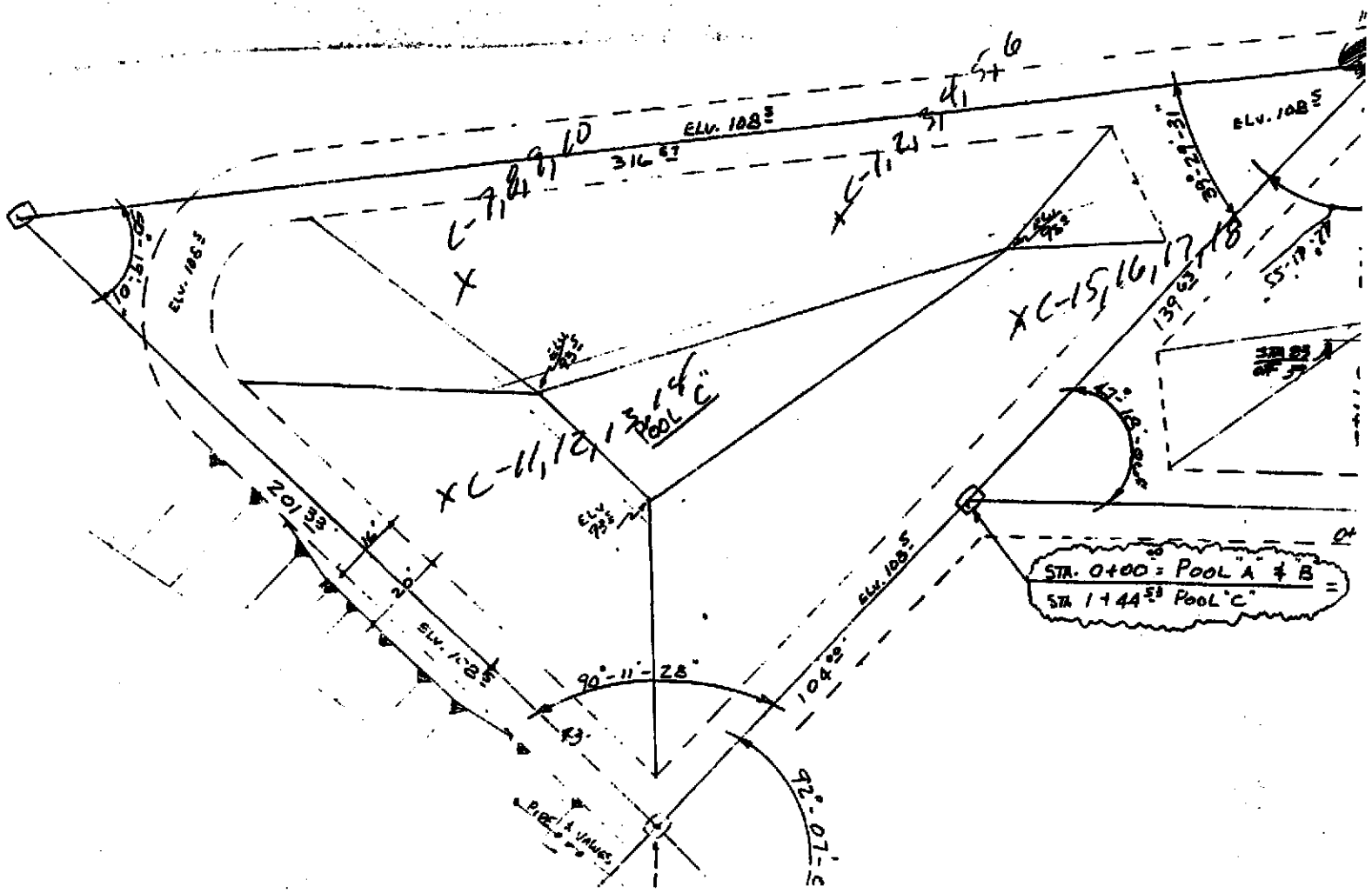
INTERNATIONAL TECHNOLOGY CORPORATION

By BF Date 3-21-91 Subject _____ Sheet No. 2 of 2

Chkd. By ____ Date ____ _____ Proj. No. 435425



INTERNATIONAL TECHNOLOGY CORPORATION

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By B.F. Date 5-21-91 Subject M.C. VERIFICATION Sheet No. 2 of 2

Chkd. By ____ Date ____ Proj. No. 435425

SAMPLES WERE TAKEN TO 10" DEPTH BELOW NUC. DEN. GA. TEST AREA INDICATED BELOW & MICROWAVE DRIED IN 5 MIN. INCREMENTS. ON HIGH. ALL WTS. ARE IN GRAMS.

C-15 M.C. GA. 332

TARE #1

WT. CAN + WET SOIL	= 279.05
WT. CAN	= 8.57
WT. DRY SOIL + CAN	= 212.50
WT. WET SOIL	= 270.68
WT. DRY SOIL	= 204.13
WATER	= 66.55

WT. WATER / WT. DRY SOIL x 100 = 32.6 %

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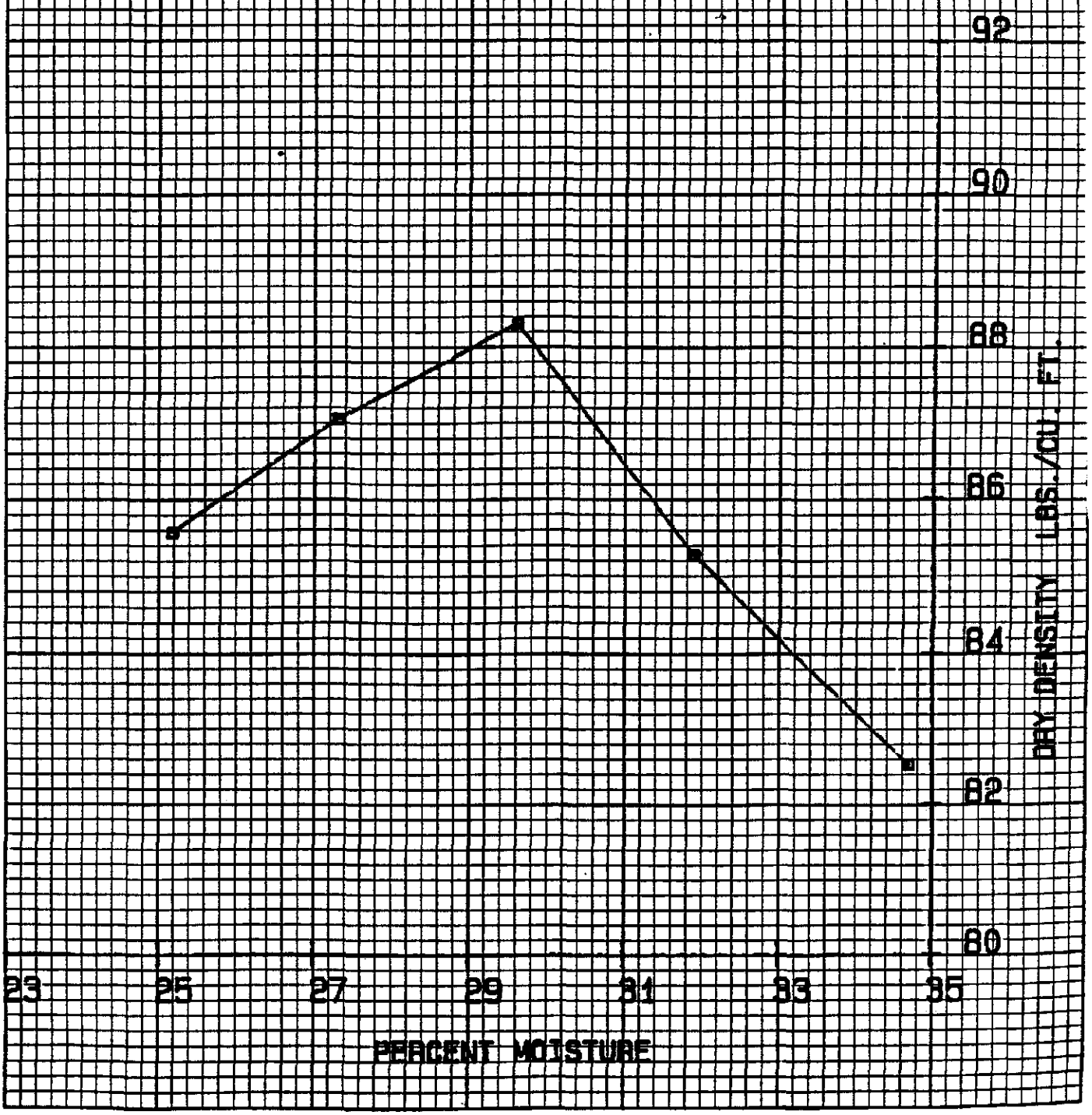
12MAR91 FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5281

MAX. DRY DENSITY - 88.3 LBS./CU. FT.
OPTIMUM MOISTURE - 29.6 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435425
DATE: 4-5-91

TESTED BY: Billy Fry
H.C. CORR. -5 USED

TEST NUMBER	C-19	C-20								
STATION	1+15	1+95								
OFFSET	60'	50'								
MODE & DEPTH	12"									
COMPACTION METHOD	SHEEPS	FOOT ROLLER								
NUMBER OF PASSES	5 →									
LIFT THICKNESS										
WET DENSITY (PCF)	109.2	109.9								
MOISTURE (PCF)	28.5	28.4								
DRY DENSITY (PCF)	80.5	81.5								
% MOISTURE	35.4	34.9								
MAX.DRY DENSITY STD. ☑ MOD. ☐	88.5 →									
OPTIMUM MOISTURE	29.6 →									
% RELATIVE COMPACTION	91.3	92.3								
MATERIAL DISCRIPTION	MH SOLID. BOTTOM SOILS									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2161	0506	

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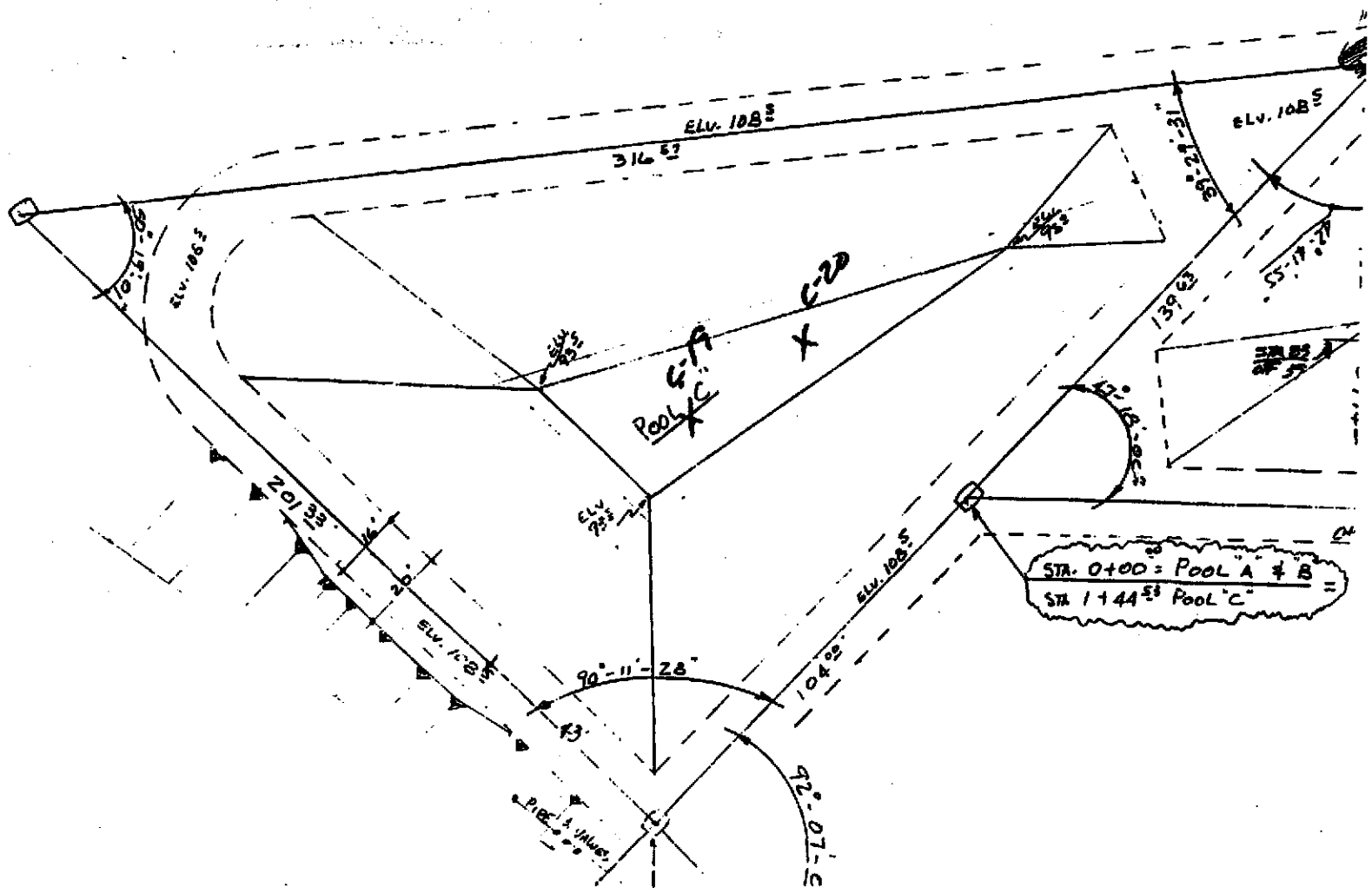
INTERNATIONAL TECHNOLOGY CORPORATION

By B.F. Date 4-5-91 Subject _____ Sheet No. 2 of 2

Chkd. By ____ Date ____ _____ Proj. No. 485425



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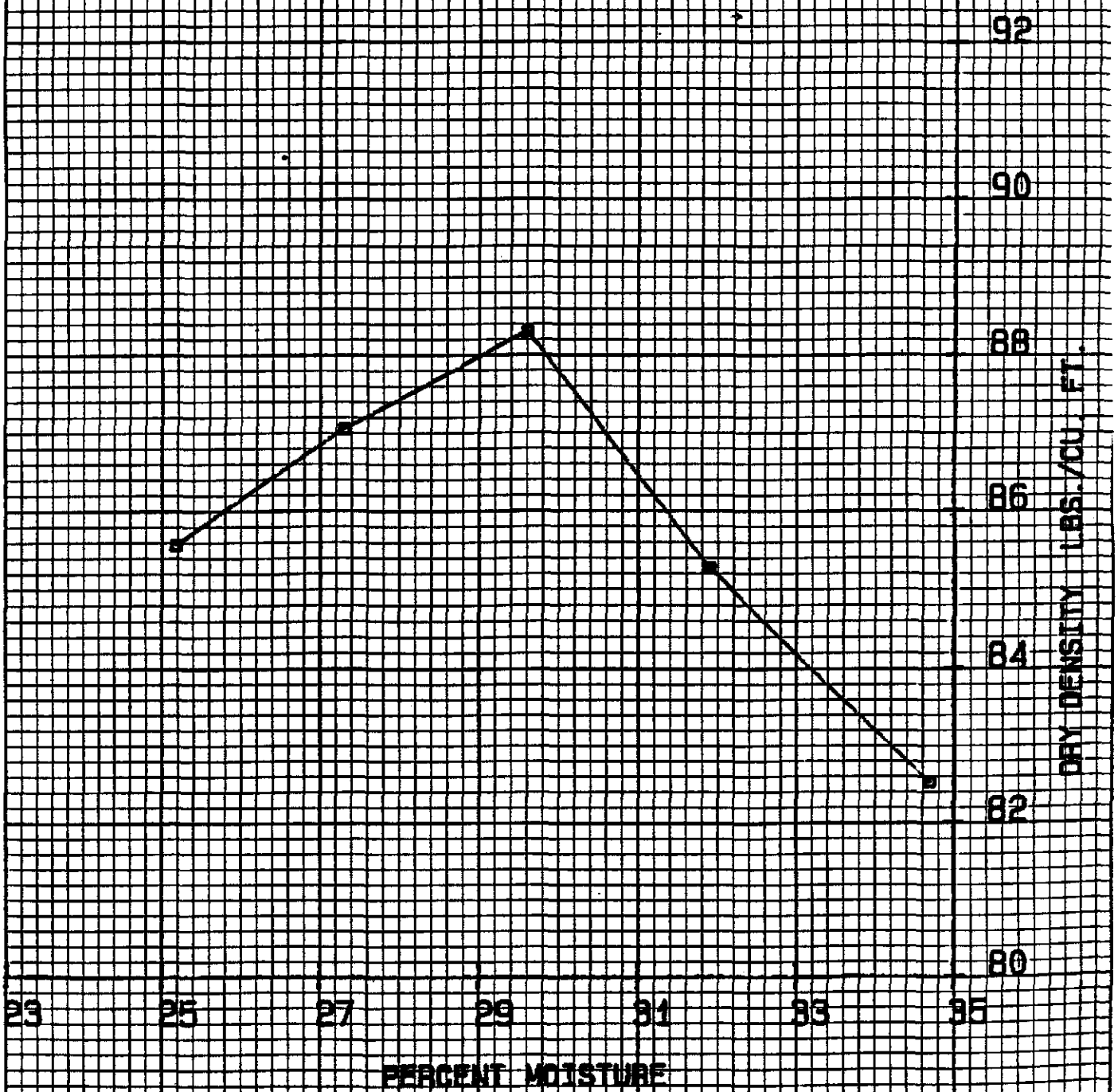
12MAR91 FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P52B1

MAX. DRY DENSITY - 88.3 LBS./CU. FT.
OPTIMUM MOISTURE - 29.6 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NO.: 435925
DATE: 4-10-91

TESTED BY: Billy Fry
NC. CORR. -5 USED

TEST NUMBER	NC-1	NC-2	NC-3							
STATION										
OFFSET										
MODE & DEPTH	8" →	→	→							
COMPACTION METHOD	HAND TAMP →		→							
NUMBER OF PASSES	3 →	→	→							
LIFT THICKNESS	10" →	→	→							
WET DENSITY (PCF)	109.3	110.8	110.0							
MOISTURE (PCF)	27.0	27.4	27.0							
DRY DENSITY (PCF)	82.2	83.4	83.0							
% MOISTURE	32.9	32.8	32.5							
MAX.DRY DENSITY STD.☑ MOD.☐	88.3	→	→							
OPTIMUM MOISTURE	29.6	→	→							
% RELATIVE COMPACTION	93.1	94.5	94.0							
MATERIAL DISCRIPTION	MH SAND. BOTTOM		SACS							

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2160	0504	

2 LIFTS BELOW CR. PIPE; 2ND LIFT ABOVE PIPE.

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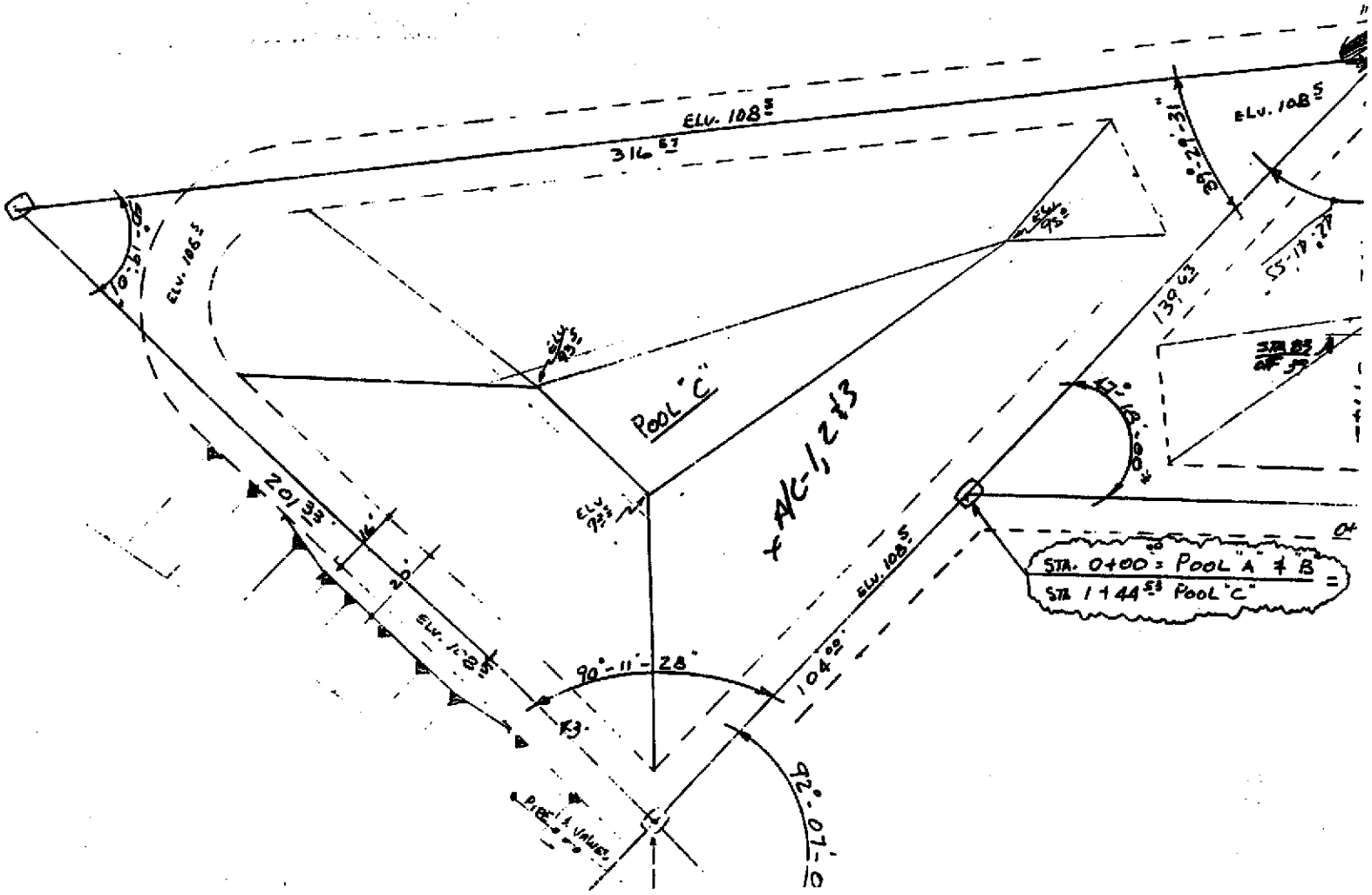
INTERNATIONAL TECHNOLOGY CORPORATION

By BF Date 4-10-91 Subject _____ Sheet No. 2 of 2

Chkd. By ____ Date ____ _____ Proj. No. 435425



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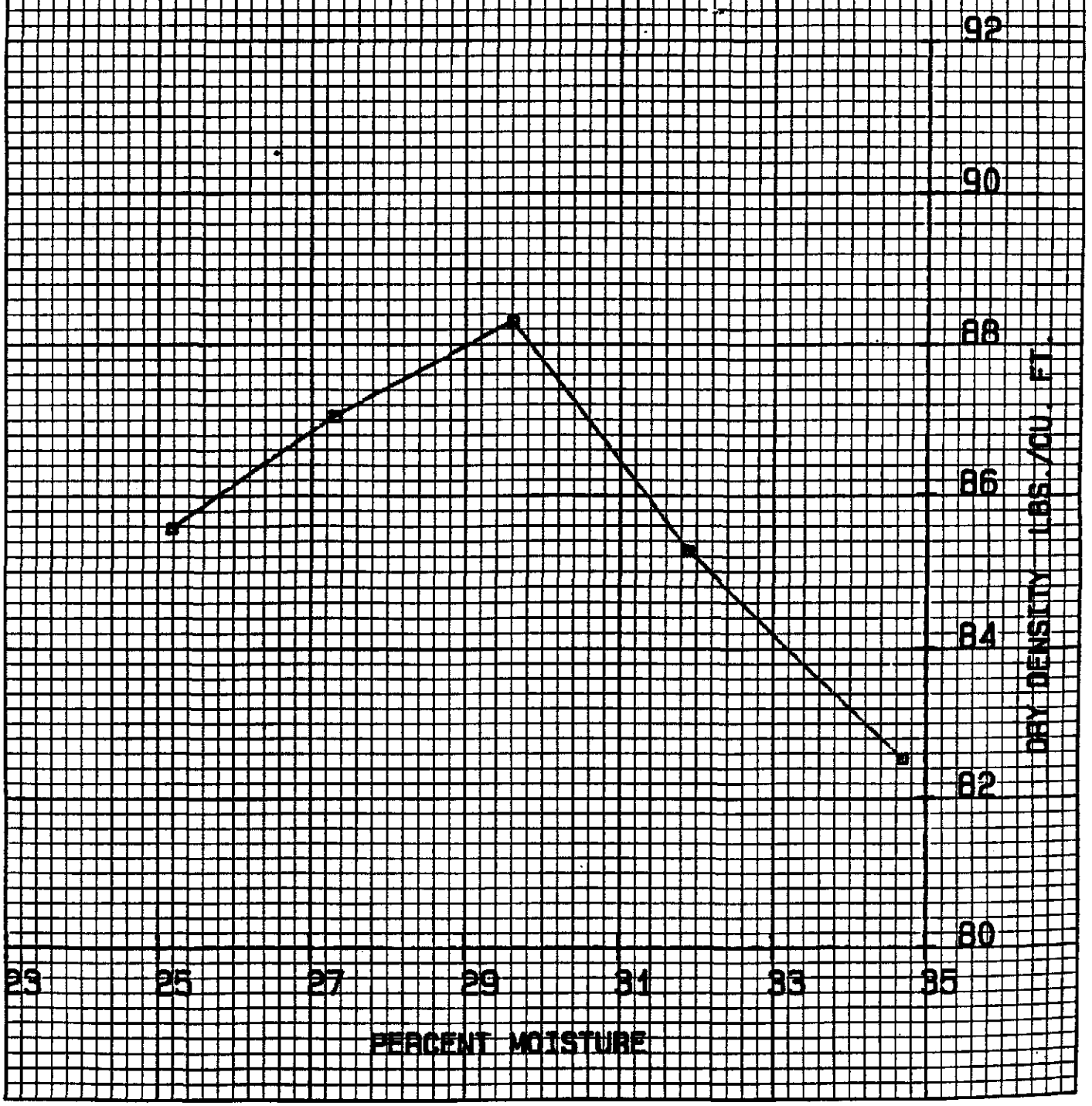
12MAR91 FIGURE 2

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5281

MAX. DRY DENSITY - 88.3 LBS./CU. FT.
OPTIMUM MOISTURE - 29.6 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: Geeda Che Co.
PROJECT NO.: 435425
DATE: 05-20-91

TESTED BY: Billy Fry
M.C.-5 USED

TEST NUMBER	B/C-1	B/C-2	B/C 3	B/C-4	B/C-5	B/C-6				
STATION	0+34	0+34	0+34	0+34	0+84	0+84				
OFFSET	58	58	58	58	55	55				
MODE & DEPTH	8"	→	→	→	→	→				
COMPACTION METHOD	Hand Tamp.	→	→	→	→	→				
NUMBER OF PASSES	4	→	→	→	→	→				
LIFT THICKNESS	8"	→	→	→	→	→				
WET DENSITY (PCF)	116.4	116.7	118.0	118.1	111.3	113.6				
MOISTURE (PCF)	27.9	25.8	26.4	26.5	25.6	28.7				
DRY DENSITY (PCF)	88.6	90.9	91.6	91.6	85.6	85.3				
% MOISTURE	31.5	28.2	28.8	29.0	30.0	33.2				
MAX.DRY DENSITY STD. ☐ MOD. ☐	95.4 pcf	→	→	→	→	→				
OPTIMUM MOISTURE	25.0%	→	→	→	→	→				
% RELATIVE COMPACTION	92.9	95.3	96.0	96.0	89.2	89.4				
MATERIAL DISCRIPTION	MIX SOLIDIFIED BOTTOM SOILS & BORROW SOILS.									

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2156	0506	

USE AVG. PROCTOR OF 95.4 PCF due to mixture of these soils as backfill

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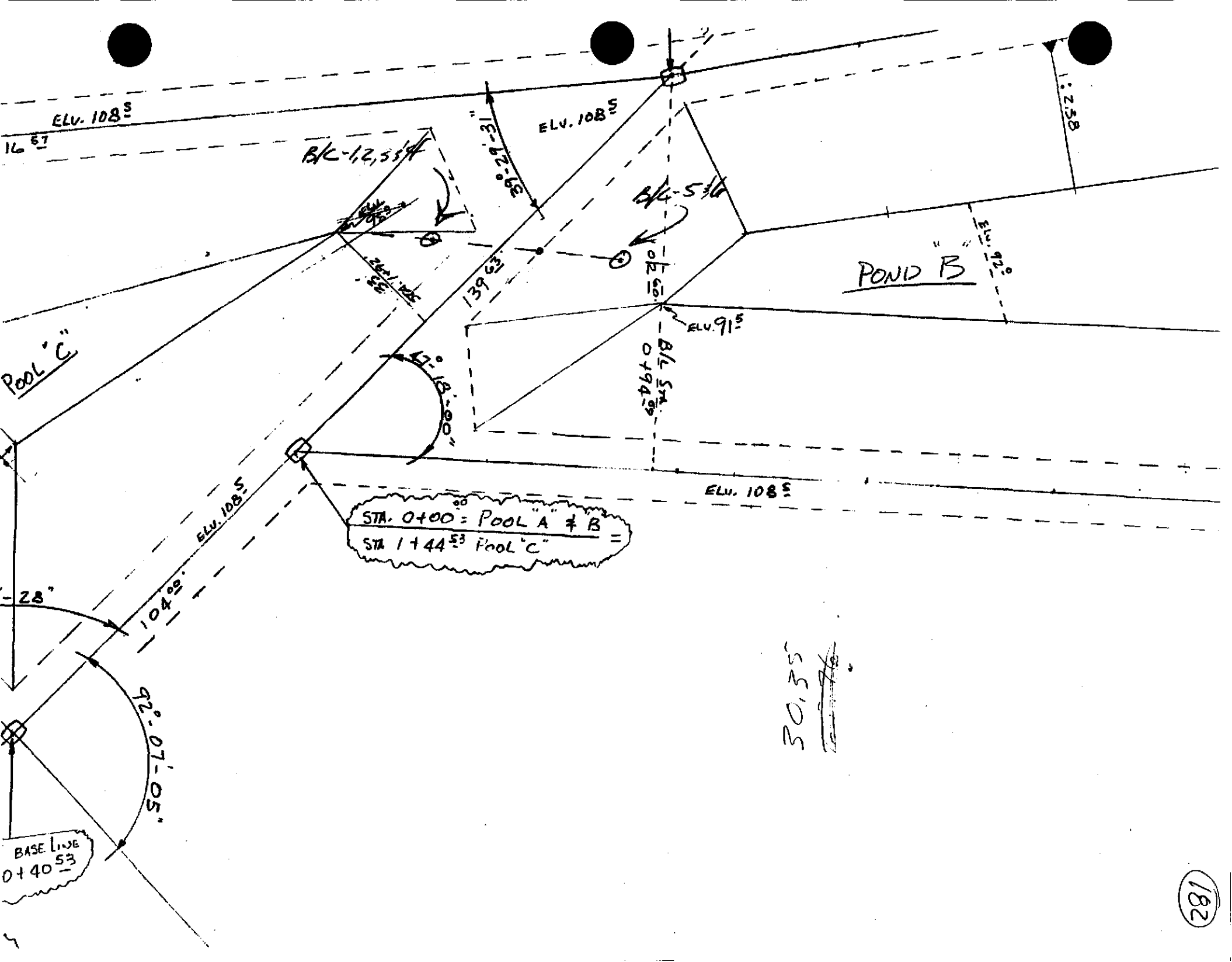
ELV. 108.5
16.57
B/C-1,2,5 & 4
ELV. 108.5
B/C-5 & 6
POND "B"
ELV. 92.0
ELV. 91.5
POOL "C"
ELV. 108.5
STA. 0+00 = POOL "A" & "B"
STA 1+44.53 POOL "C" =
ELV. 108.5
104.00
92°-07'-05"
BASE LINE
0+40.53
30.35

INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: Cedar Chem. Co.
PROJECT NO.: 435425
DATE: 05-30-91

TESTED BY: Billy [illegible]
USED -5 M.C. CORRECTION

TEST NUMBER	C-6-1A	C-6-1B	C-6-2	C-6-3						
STATION	0+60	0+60	0+60	0+60						
OFFSET	140	140	140	140						
MODE & DEPTH	10"	→	→	→						
COMPACTION METHOD	SHEEPS FOOT ROLLER	→	→	→						
NUMBER OF PASSES	5	→	→	→						
LIFT THICKNESS	10"	→	→	→						
WET DENSITY (PCF)	109.4	112.4	112.2	112.7						
MOISTURE (PCF)	32.1	29.7	29.5	30.5						
DRY DENSITY (PCF)	77.3	82.7	83.4	82.2						
% MOISTURE	41.5%	36.0	35.4	37.1						
MAX.DRY DENSITY STD.☑ MOD.☐	89.5	→	→	→						
OPTIMUM MOISTURE	27.4%	→	→	→						
% RELATIVE COMPACTION	86.0	92.6	93.4	92.0						
MATERIAL DISCRIPTION	M.H.	Pond & Eroded Soils								

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2159	0505	

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NUC. LOCATIONS - ⊙

S 0.0000 W
N 47.1800 W
HD=139.6300

L=94.6914
D=-102.6161

N2=94.6914
E2=-102.6161

N 12.3209 W
HD=327.9100

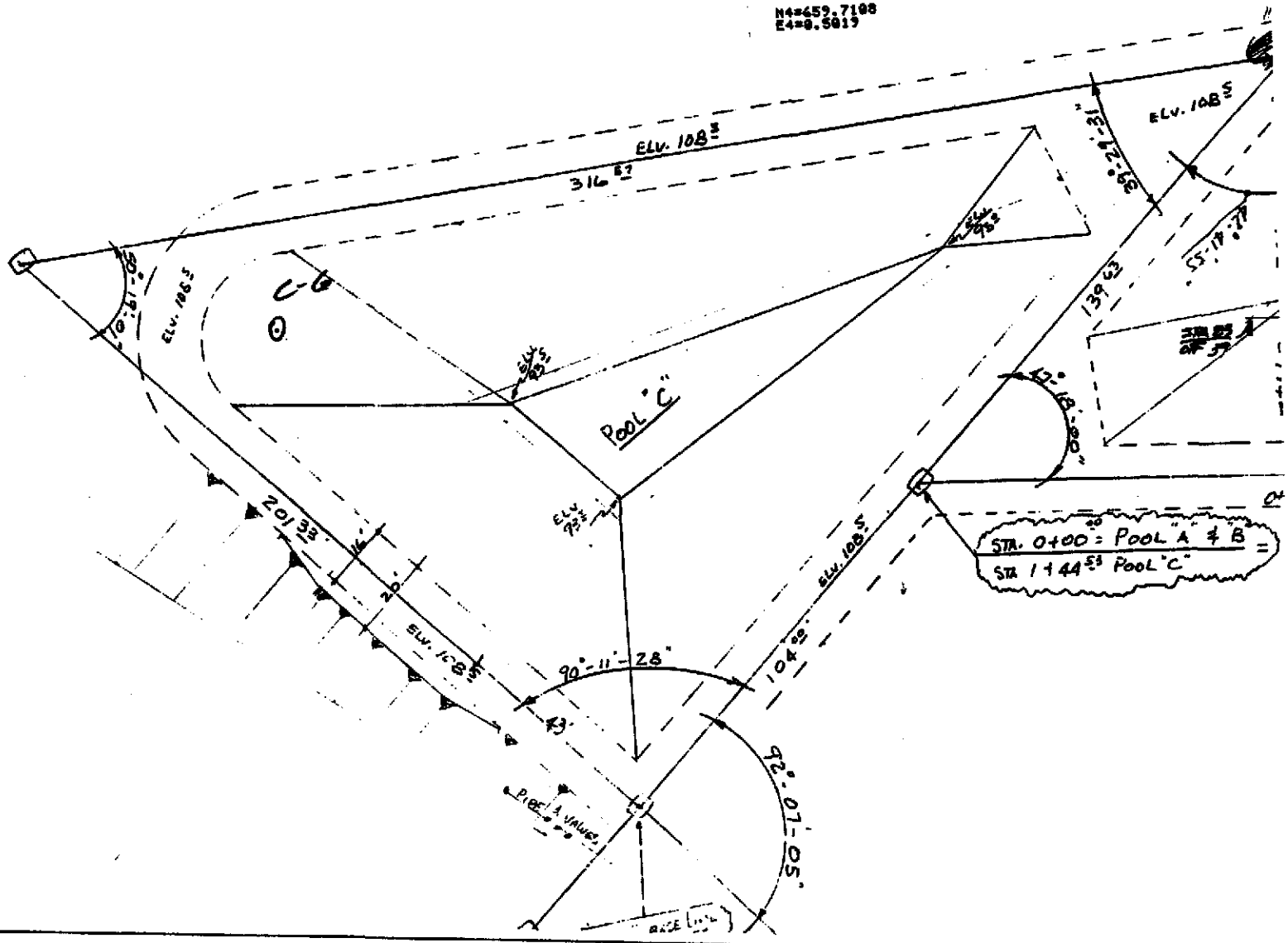
L=320.0928
D=-71.1729

N3=414.7842
E3=-173.7890

N 35.2609 E
HD=500.6100

L=244.9266
D=174.2909

N4=659.7108
E4=0.5019



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12MAR91

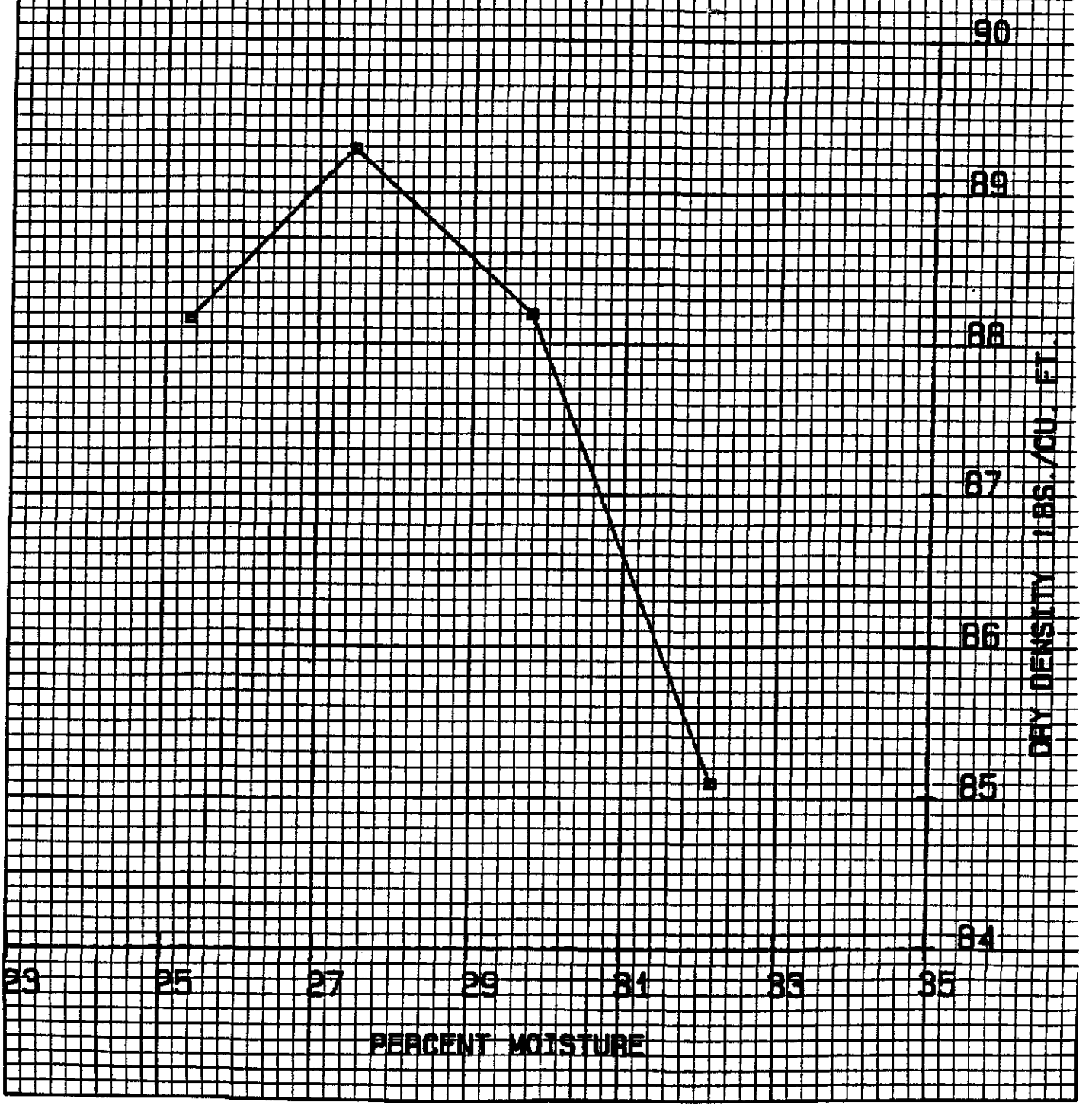
FIGURE

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5280

MAX. DRY DENSITY - 89.3 LBS./CU. FT.

OPTIMUM MOISTURE - 27.4 PERCENT



INTERNATIONAL TECHNOLOGY CORPORATION

NUCLEAR RELATIVE COMPACTION TEST DATA

PROJECT NAME: CEDAR CHEMICAL CO.
PROJECT NO.: 435425
DATE: 6-19-91

TESTED BY: Billy Fry
M.C. CORRECTION - 5 USED

TEST NUMBER	IN-1	IN-2	IN-3	IN-4						
STATION										
OFFSET										
MODE & DEPTH	10 →			→						
COMPACTION METHOD	HAND	TRAMP								
NUMBER OF PASSES	4 →			→						
LIFT THICKNESS	10" →			→						
WET DENSITY (PCF)	130^{2}	131^{0}	131^{7}	134^{1}						
MOISTURE (PCF)	29^{7}	30^{5}	30^{4}	31^{1}						
DRY DENSITY (PCF)	100^{4}	100^{4}	101^{5}	103^{0}						
% MOISTURE	29^{6}	30^{4}	30^{2}	30^{3}						
MAX.DRY DENSITY STD. ☑ MOD. ☐	106^{5} →			→						
OPTIMUM MOISTURE	27^{4} →			→						
% RELATIVE COMPACTION	94^{3}	94^{3}	95^{1}	96^{2}						
MATERIAL DISCRIPTION	CUESS	BORROW	SOILS.							

STANDARD COUNT		DENSITY GUAGE SERIAL NUMBER
DENSITY	MOISTURE	7689
2158	0505	

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NUC. LOCATIONS - ⊙

S 0.0000 W
N 47.1000 W
HD=139.6300

L=94.6914
D=-102.6161

N2=94.6914
E2=-102.6161

N 12.3209 W
HD=327.9100

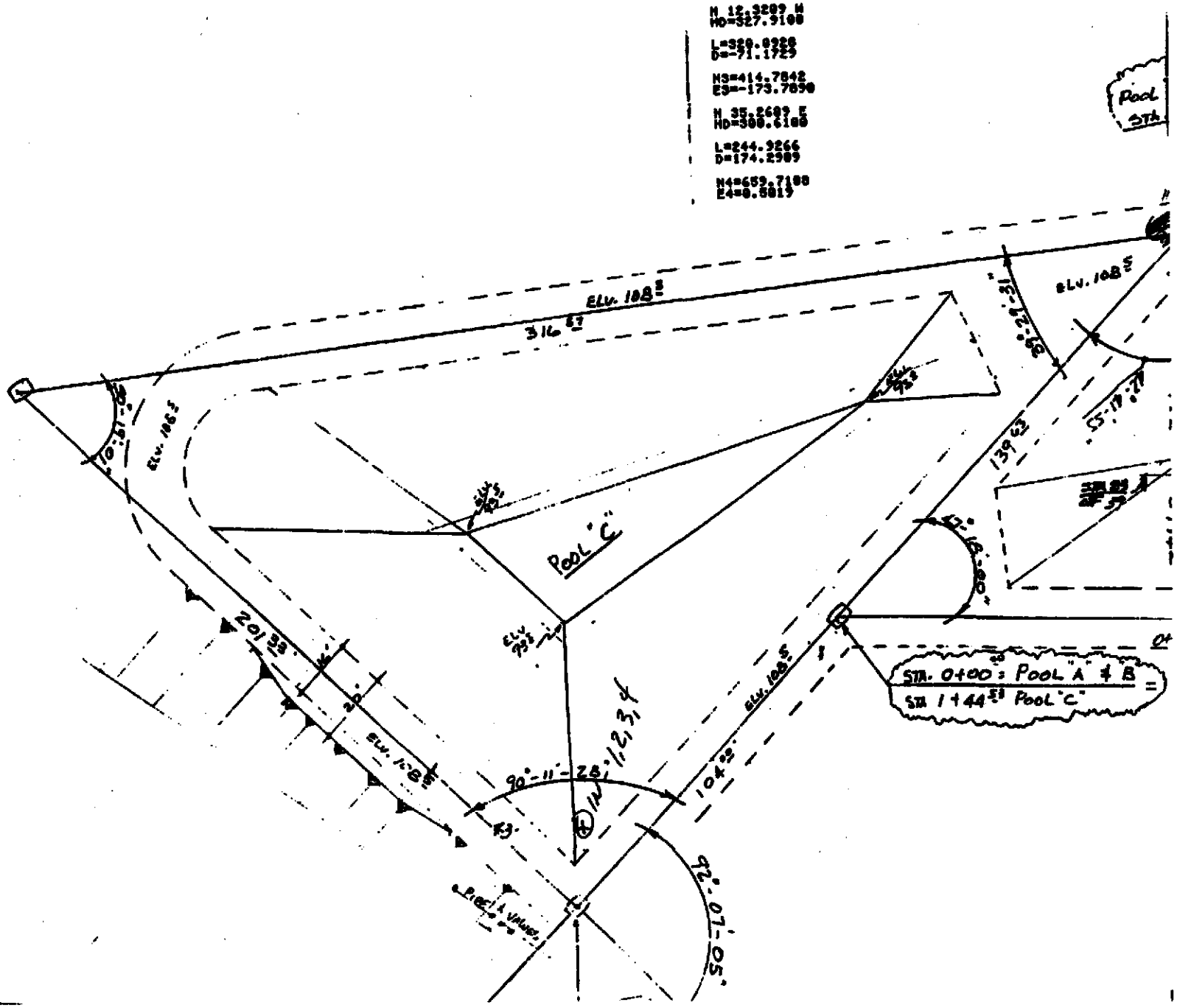
L=320.0328
D=-71.1729

N3=414.7842
E3=-173.7890

N 35.2609 E
HD=300.6100

L=244.9266
D=174.2989

N4=659.7100
E4=0.0019



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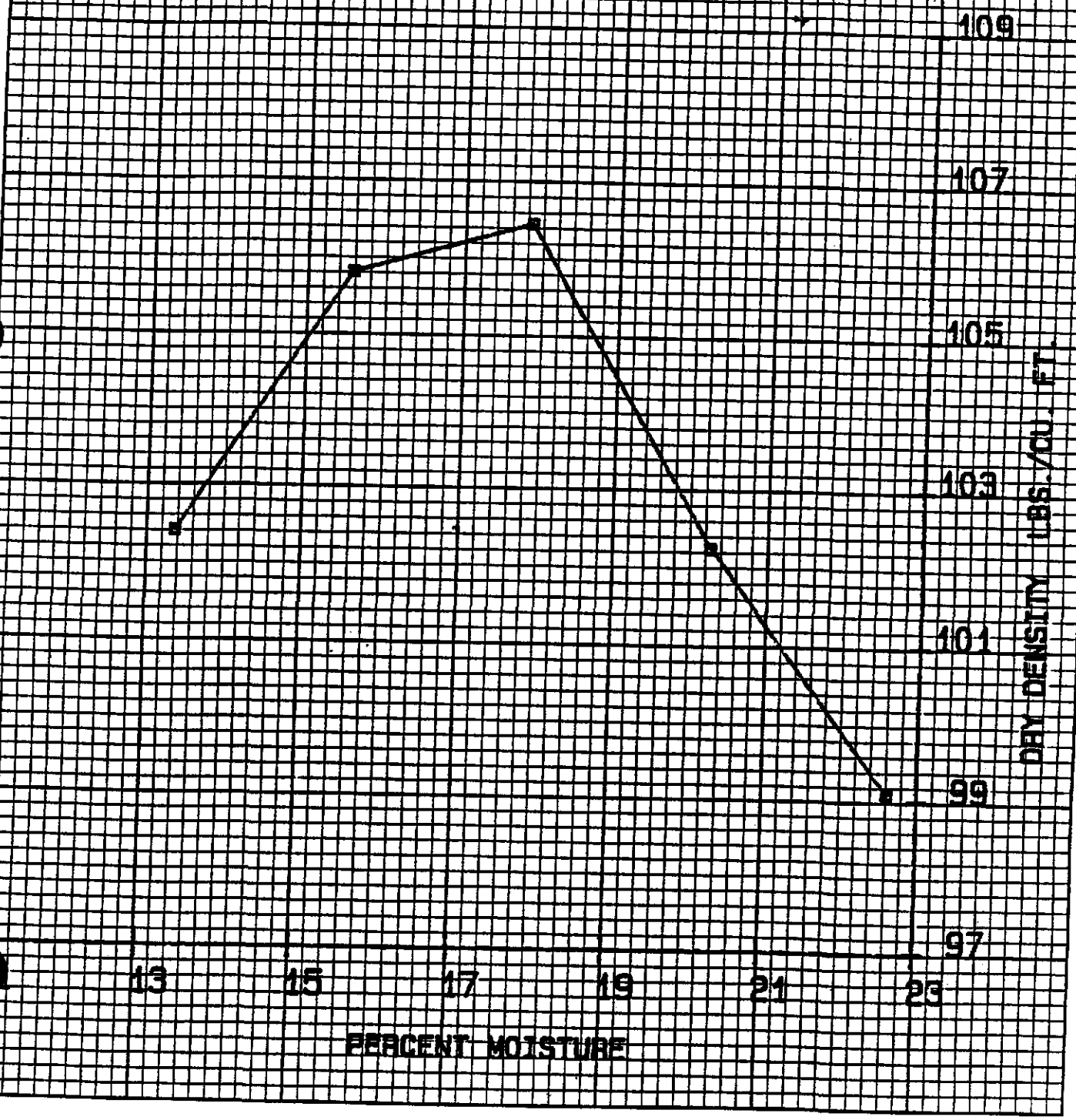
21MAR91

FIGURE 3

STANDARD PROCTOR COMPACTION TEST
FILE NO. 91-015

TYPE MATERIAL - SAMPLE P5282

MAX. DRY DENSITY - 106.5 LBS./CU. FT.
OPTIMUM MOISTURE - 17.9 PERCENT



CEDAR CHEMICAL CORPORATION

24th Floor • 5100 Poplar Avenue • Memphis, TN 38137 • 901-685-5348

REPLY TO: P.O. BOX 821003
VICKSBURG, MS 39182
(601) 636-1231

MAR 3 1 1992

Mr. Glen R. Landry, P.E.
Project Manager
International Technology Corp.
8687 United Plaza Blvd.
Building 9, Suite 103
Baton Rouge, LA 70809

March 30, 1992

Subject: Construction Status Report
Closure/Retrofit of Surface Impoundment
Cedar Chemical Corporation

Dear Mr. Landry:

Enclosed are results of sampling and analysis of the Cedar Chemical Pond bottom at various locations and times. Ponds A, B and C were sampled and analyzed for dinoseb, toxaphene, total arsenic, methyl parathion, bladex and atrazine as was requested by the Mississippi Bureau of Pollution Control. Analyses were performed on the sediment for both total constituent and constiuent in the leachate from the EP toxicity procedure in SW-846. Sampling locations are shown on the outline maps of each unit.

Additionally, Cedar was requested by the MSDEQ to analyze the sediments in Ponds B and C using the TCLP for toxicity. Results of those analyses are included in the report prepared by Woodward-Clyde.

Sincerely,

Steven T. Boswell

Steven T. Boswell
Dir. of Env. Affairs

STB: pc

APPENDIX D

WASTE SOLIDIFICATION VERIFICATION RESULTS

Table of Contents

Impoundment B Test Cylinders 1
Impoundment C Test Cylinders 9
Impoundment B Test Pits 13
Impoundment C Test Pits 17

SOLIDIFICATION POND B
TEST CYLENDERS

DATE & TIME TAKEN: 10-11-90 @ 1740
TEST CYLINDER #'S: TC-B1, TC-B2, TC-B3
TYPE EQUIPT USED TO SOLID.: 1 MITSUBISHI 200 PR. HOG
APR. VOL. SOLID. FOR THIS SAMPLE:
AREA TEST CYL. TAKEN: 4+20, 143

TEST:

PAINT FILTER TEST RUN: YES
PASS/FAIL: PASS

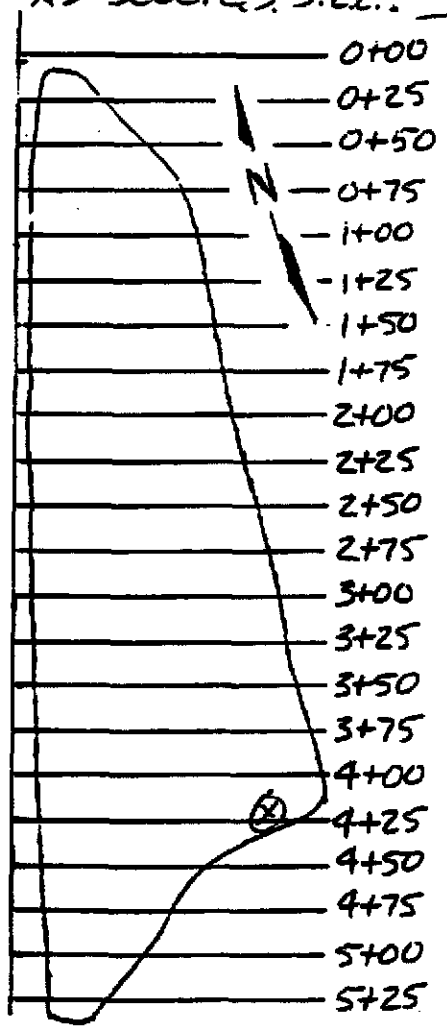
TEST RUN AS SPEC. C.S.5.22.: YES

	DATE & TIME	STRENGTH TONS/SQ. FT.	CYL. #
3 DAY	10-13-90	3.50	B1
7 DAY	10-14-90	4.50	B2
28 DAY	10-18-90	4.50+	B3

TEST INSTR: POCKET PENETROMETER

REMARKS:

TEST CRITERIA AS SPEC. C.S.5.2.2:
- TAKE 3 MOLDED CYL. IN 3"x6" CONT
1 SET OF 3 EVERY 1000 C.Y., VERIFY
STRENG OF 4.5 TSF IN 7 DAYS



POND B
SCALE 1" = 110'

BY Billy Frey

SOLIDIFICATION POND B
TEST CYLENDERS

DATE & TIME TAKEN: 10-15-90 @ 1100
TEST CYLINDER #'S: TC-B4, TC-B5, TC-B6
TYPE EQUIPT USED TO SOLID.: 1 ~~[illegible]~~ CASE / 225 ~~[illegible]~~ TR. HOG
APR. VOL. SOLID. FOR THIS SAMPLE:
AREA TEST CYL. TAKEN: 2+50, 90'

TEST:

	DATE & TIME	STRENGTH TONS/SQ. FT.	CYL. #
8 hr.	10/17/90	4.0	B4
2 hr.	10/18/90	4.5+	B5
DAY	10/22/90	4.5+	B6

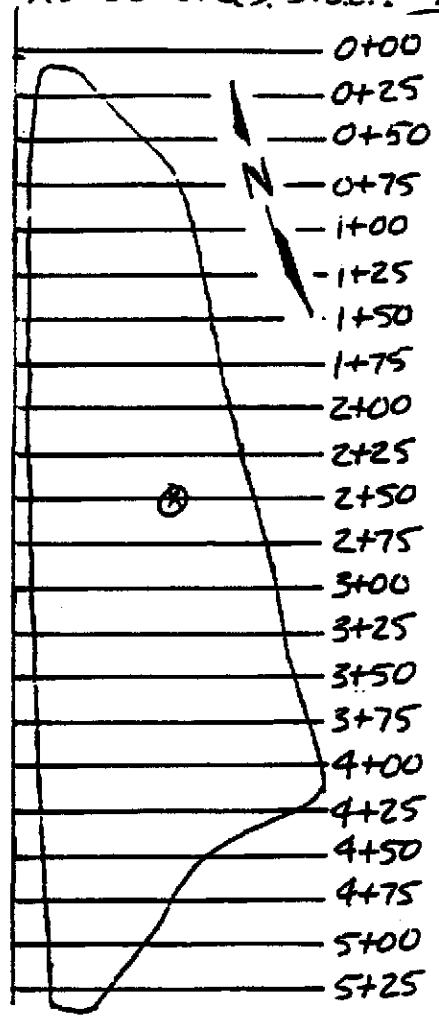
PAINT FILTER TEST RUN: YES
PASS/FAIL: PASS

TEST RUN AS SPEC. C.S.5.2.2.: YES

TEST INSTR: POCKET PENETROMETER

REMARKS:

TEST CRITERIA AS SPEC. C.S.5.2.2:
- TAKE 3 MOLDED CYL. IN 3"x6" cong.
1 SET OF 3 EVERY 1000 C.Y., VERIFY
STRENG OF 4.5 TSF IN 7 DAYS



POND B
SCALE 1"=110'

BY Billy Frey

SOLIDIFICATION POND B
TEST CYLENDERS

DATE & TIME TAKEN: 10-16-90
TEST CYLINDER #'S: TC-B7, TC-B8, TC-B9
TYPE EQUIPT USED TO SOLID.: 1 MITSUBISHI 280 PR. HOG
APR. VOL. SOLID. FOR THIS SAMPLE:
AREA TEST CYL. TAKEN: 3+75, 110'

TEST:

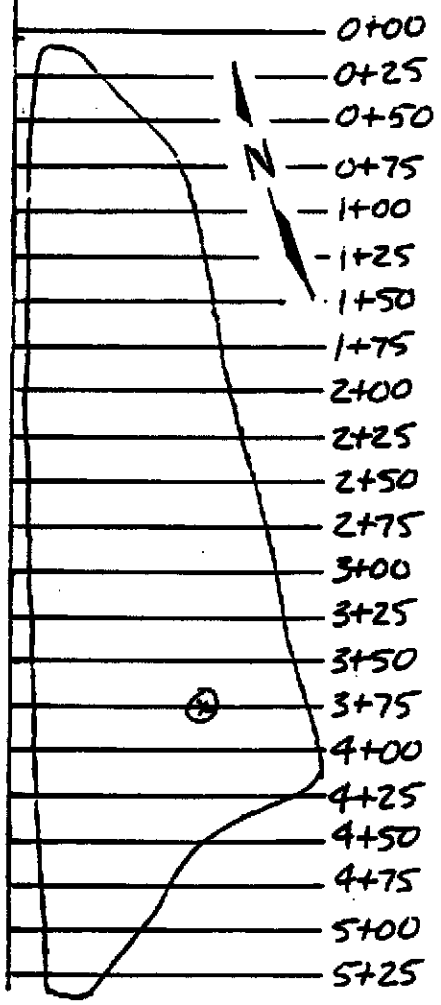
	DATE & TIME	STRENGTH TONS/SQ.FT.	CYL.#
28 hr	10-18-90	2.0 TSF	B7
72 hr.	10-19-90	2.5 TSF	B8
7 DAY	10-23-90	4.5 TSF	B9

PAINT FILTER TEST RUN: YES
PASS/FAIL: PASS

TEST RUN AS SPEC. C.S.5.2.2.: YES

TEST INSTR: POCKET PENETROMETER

REMARKS:



POND B
SCALE 1"=110'

TEST CRITERIA AS SPEC. C.S.5.2.2:
- TAKE 3 MOLDED CYL. IN 3"X6" CONT.
1 SET OF 3 EVERY 1000 C.Y., VERIFY
STRENG OF 4.5 TSF IN 7 DAYS

BY Billy Fry

(4)

SOLIDIFICATION POND B
TEST CYLENDERS

DATE & TIME TAKEN: 10-18-90@
TEST CYLINDER #'S: TC-B10, TC-B11, TC-B12
TYPE EQUIPT USED TO SOLID.: 1 MITSUBISHI 280 TR. HOE
APR. VOL. SOLID. FOR THIS SAMPLE:
AREA TEST CYL. TAKEN: STA. 2+20, OFF 65'

TEST:

DATE & TIME	STRENGTH TONS/SQ.FT.	CYL.#
10-20-90	1.0 TSF	B10
10-21-90	1.25 TSF	B11
10-25-90	2.5 TSF	B12

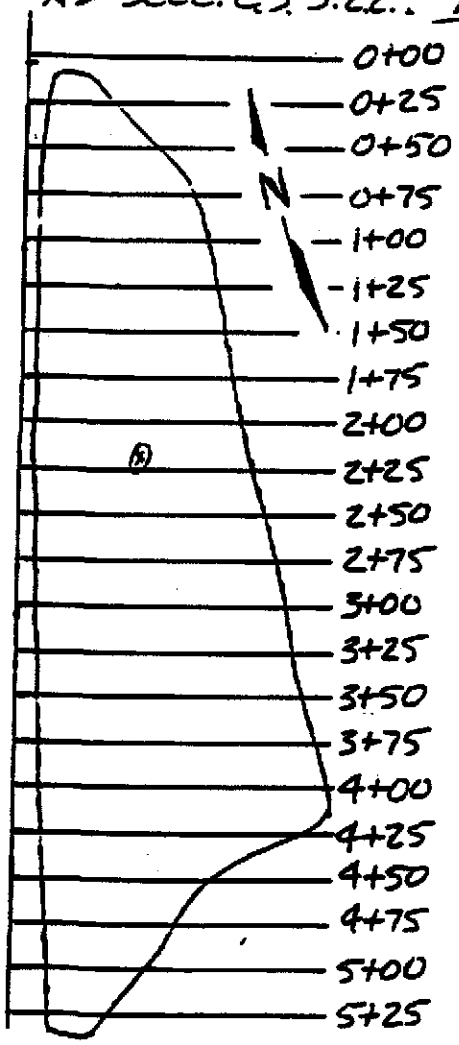
PAINT FILTER TEST RUN: YES
PASS/FAIL: FAIL

TEST RUN AS SPER. C.S. 5.22.: YES

TEST INSTR: POCKET PENETROMETER

REMARKS: TEST FAILED, MULLER WILL REMIX THIS AREA & 1 MORE SET OF CYL. TAKEN TO REVERIFY AREA IS PASSED CRITERIA

TEST CRITERIA AS SPER. C.S.5.2.2:
- TAKE 3 MOLDED CYL. IN 3"x6" cont.
1 SET OF 3 EVERY 1000 C.Y., VERIFY STRENG OF 4.5 TSF IN 7 DAYS



POND B
SCALE 1"=110'

BY Billy Frey

SOLIDIFICATION POND B
TEST CYLENDERS

DATE & TIME TAKEN: 10-25-90 @
TEST CYLINDER #'S: RTC-B10, RTC-B11, RTC-B12
TYPE EQUIPT USED TO SOLID.: 1 MITSUBISHI 200 TRACK.
APR. VOL. SOLID. FOR THIS SAMPLE:
AREA TEST CYL. TAKEN: STA. 2+00, OFF. 65

TEST:

PAINT FILTER TEST RUN: YES
PASS/FAIL: PASS

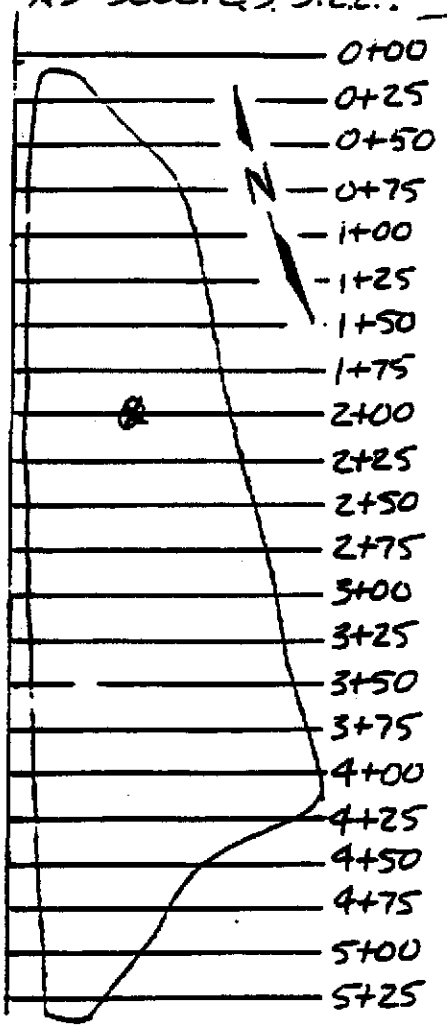
DATE & TIME	STRENGTH TONS/SQ. FT.	CYL. #
48 hr 10-27	3.2 TSF	RTC-B10
72 hr. 10-28	4.3 TSF	RTC-B11
7 DAY 11-01	4.5+ TSF	RTC-B12

TEST RUN AS SPEC. C.S.5.2.2.: YES

TEST INSTR: POCKET PENETROMETER

REMARKS:

TEST CRITERIA AS SPEC. C.S.5.2.2:
- TAKE 3 MOLDED CYL. IN 3"x6" cont
1 SET OF 3 EVERY 1000 C.Y., VERIFY
STRENG OF 4.5 TSF IN 7 DAYS



POND B
SCALE 1"=110'

BY Billy Fry

SOLIDIFICATION POND B
TEST CYLENDERS

DATE & TIME TAKEN: 10-24-90 @ 1150
TEST CYLINDER #'S: TC-B13, TC-B14, TC-B15
TYPE EQUIPT USED TO SOLID.: 1 ~~MULTI CUTS~~ CASE 11 ~~[illegible]~~ 225 TR. HOE
APR. VOL. SOLID. FOR THIS SAMPLE:
AREA TEST CYL. TAKEN: 3+62, 41

TEST:

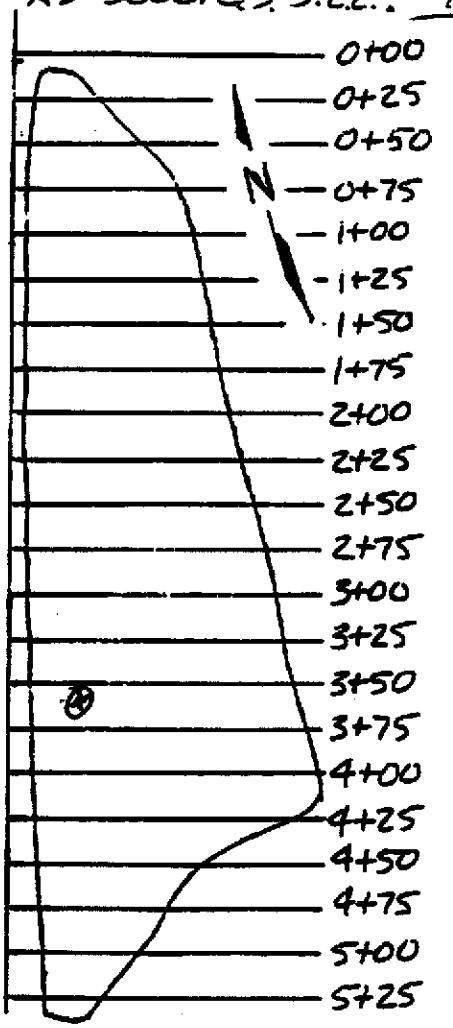
	DATE & TIME	STRENGTH TONS/SQ. FT.	CYL. #
28 hr	10-26-90	3.0 TSF	B13
72 hr.	10-27-90	3.7 TSF	B14
7 DAY	10-31-90	4.5+ TSF	B15

PAINT FILTER TEST RUN: YES
PASS/FAIL: PASS

TEST RUN AS SPEC. C.S.5.2.2.: YES

TEST INSTR.: POCKET PENETROMETER

REMARKS:



POND B
SCALE 1"=110'

TEST CRITERIA AS SPEC. C.S.5.2.2:
- TAKE 3 MOLDED CYL. IN 3"x6" cont.
1 SET OF 3 EVERY 1000 C.Y., VERIFY
STRENG OF 4.5 TSF IN 7 DAYS

BY Billy Fry

SOLIDIFICATION POND C
TEST CYLENDERS

DATE & TIME TAKEN: 10-29-90 1300
TEST CYLINDER #'S: TC-B16, TC-B17, TC-B18
TYPE EQUIPT USED TO SOLID.: 1 ~~MITSUBISHI~~ CASE 225
APR. VOL. SOLID. FOR THIS SAMPLE:
AREA TEST CYL. TAKEN: 2+98, 22

TEST:

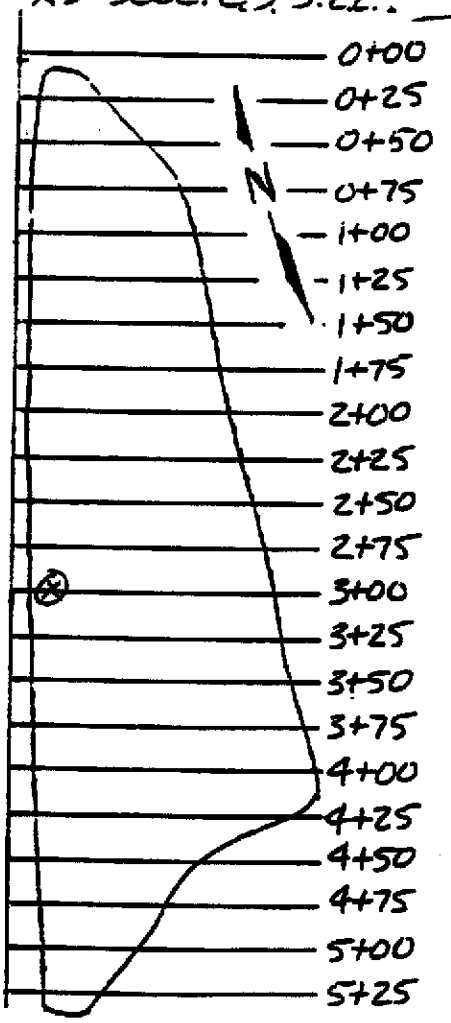
	DATE & TIME	STRENGTH TONS/SQ.FT.	CYL.#
28 hr	10-31-90	2.5 TSF	B16
72 hr.	11-01-90	2.5 TSF	B17
7DAY	11-05-90	4.5+TSF	B18

PAINT FILTER REST RUN: YES
PASS/FAIL: PASS

TEST RUN AS SPEC. C.S.5.22.: YES

TEST INSTR: POCKET PENETROMETER

REMARKS:



POND B
SCALE 1"=110'

TEST CRITERIA AS SPEC. C.S.5.2.2:
- TAKE 3 MOLDED CYL. IN 3"x6" cong
1 SET OF 3 EVERY 1000 C.Y., VERIFY
STRENG OF 4.5 TSF IN 7DAYS

BY Billy Frey

SOLIDIFICATION POND B
TEST CYLENDERS

DATE & TIME TAKEN: 10/30/90
TEST CYLINDER #'S: TC-B19, TC-B20, TC-B21
TYPE EQUIPT USED TO SOLID: CASE 225 TRACKHOE
APR. VOL. SOLID. FOR THIS SAMPLE:
AREA TEST CYL. TAKEN: STA. 3+00, OFF. 25

TEST:

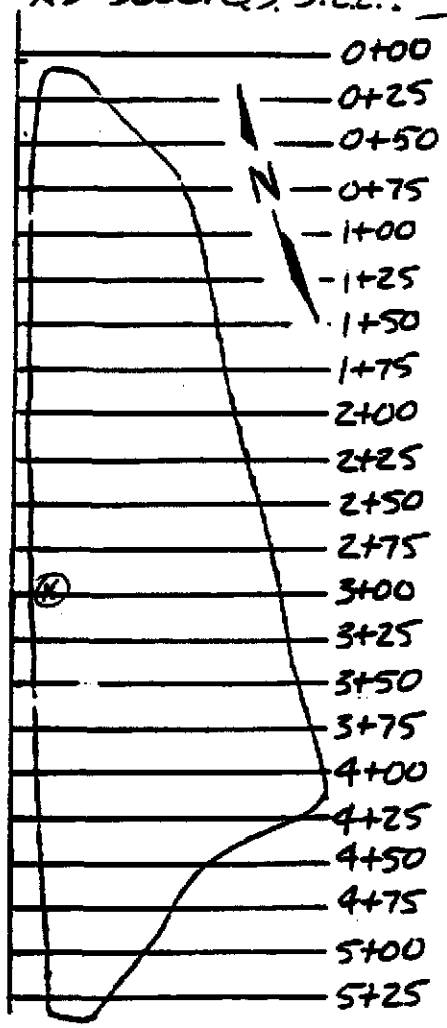
DATE & TIME	STRENGTH TONS/SQ.FT.	CYL.#
48 hr 11-02-90	2.8 TSF	TC-B19
72 hr. 11-03-90	4.5 TSF	TC-B20
7 DAY 11-06-90	4.5+ TSF	TC-B21

PAINT FILTER TEST RUN: YES
PASS/FAIL: PASS

TEST RUN AS SPEC. C.S.5.2.2.: YES

TEST INSTR: POCKET PENETROMETER

REMARKS:



POND B
SCALE 1"=110'

TEST CRITERIA AS SPEC. C.S.5.2.2:
- TAKE 3 MOLDED CYL. IN 3"x6" cont.
1 SET OF 3 EVERY 1000 C.Y., VERIFY
STRENG OF 4.5 TSF IN 7 DAYS

BY Billy Frey

SOLIDIFICATION POND C
TEST CYLENDERS

DATE & TIME TAKEN: 10-08-90 @ 1400
TEST CYLINDER #'S: TC-C1, TC-C2, TC-C3
TYPE EQUIPT USED TO SOLID.: 1 MITSUBISHI 2 EC TR. KO
APR. VOL. SOLID. FOR THIS SAMPLE: 1340 C.Y.
AREA TEST CYL. TAKEN: 0+15, 66 @ 0-6" DEPTH

TEST:

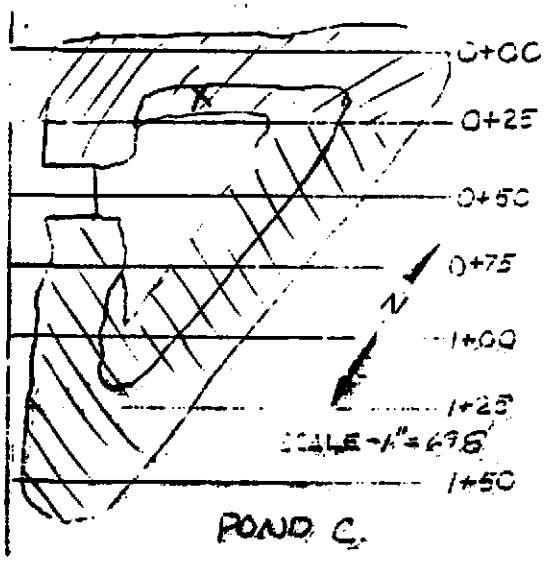
	DATE & TIME	STRENGTH TONS/SQ.FT.	CYL.#
48 hr	10/10/90 1330	0.4	C1
72 hr.	10/11/90 1600	0.5	C2
7 DAY	10/15/90	2.0	C3

PAINT FILTER-TEST RUN: Y
PASS/FAIL: FAIL

TEST RUN AS SPEC. CS 5.22.: Y

TEST INSTR: POCKET PENETROMETER

REMARKS: THIS AREA WAS RESOLIDIFIED.
& RETEST CYL. TAKEN 10/11/90



TEST CRITERIA AS SPEC. CS 5.2.2:
- TAKE 3 MOLDED CYL. IN 3"D x 6"LONG (SET) EVERY 1000 C.Y. MIN. 1 SET EACH IMPOUNDMENT. VERIFY STRENGTH OF 4.5 TSF IN 7 DAYS

BY: Billy Fry

SOLIDIFICATION POND C
TEST CYLENDERS

DATE & TIME TAKEN: 10/11/90 1730
TEST CYLINDER #'S: RTC-C1, RTC-C2, RTC-C3
TYPE EQUIPT USED TO SOLID.: 1 MITSUBISHI 280 PR. HOU
APR. VOL. SOLID. FOR THIS SAMPLE:
AREA TEST CYL. TAKEN: 0+15, 48

TEST:

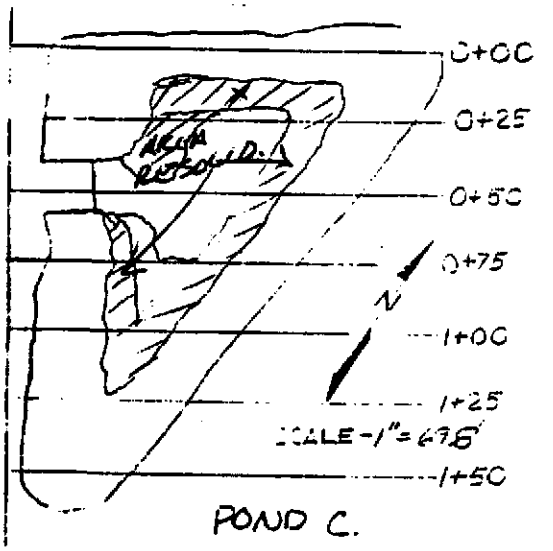
PAINT FILTER TEST RUN: Y
PASS/FAIL: PASS

	DATE & TIME	STRENGTH TONS/SQ.FT.	CYL.#
48 hr	10/13/90	1.0	RTC1
72 hr.	10/14/90	1.5	RTC2
7 DAY	10/18/90	4.5+	RTC3

TEST RUN AS SPEC. CS 5.2.2.: Y

TEST INSTR: POCKET PENETROMETER

REMARKS: TEST CYL. REFORMED DUE TO THIS AREA NOT (~~PASS~~) GAINING STRENGTH (SEE TC-C1, C2, C3). MILLER REMIXED THIS AREA AFTER GETTING HOTTER LIME KILN DUST.



POND C.

TEST CRITERIA AS SPEC. CS 5.2.2:
- TAKE 3 MOLDED CYL. IN 3"D x 6" LONG (SET) EVERY 1000 C.Y. MIN. 1 SET EACH IMPOUNDMENT. VERIFY STRENGTH OF 4.5 TSF IN 7 DAYS

BY: Billy Fry

SOLIDIFICATION POND C
TEST CYLENDERS

DATE & TIME TAKEN: 10/11/90 @ 1700
TEST CYLINDER #'S: TC-C4, TC-C5, TC-C6
TYPE EQUIPT USED TO SOLID.: 1 MITSUBISHI 280 TR. HOE
APR. VOL. SOLID. FOR THIS SAMPLE:
AREA TEST CYL. TAKEN: 0+42, 48

TEST:

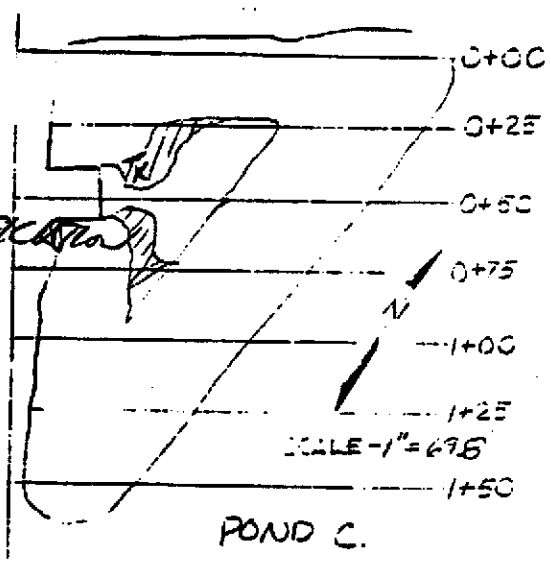
PAINT FILTER TEST RUN: Y
PASS/FAIL: FAIL

TEST RUN AS SPEC. CS 5.2.2.: Y

DATE & TIME	STRENGTH TONS/SQ.FT.	CYL.#
8 AM 10/13/90	1.0	C4
8 AM 10/14/90	1.1	C5
DAY 10/18/90	2.0	C6

TEST INSTR: POCKET PENETROMETER

REMARKS: TEST FAIL, WILL INFORM MILLER THIS AREA NEEDS RESOLIDIFICATION



TEST CRITERIA AS SPEC. CS 5.2.2:
- TAKE 3 MOLDED CYL. IN 3"D x 6" LONG (SET) EVERY 1000 C.Y. MIN. 1 SET EACH IMPOUNDMENT. VERIFY STRENGTH OF 4.5 TSF IN 7 DAYS

BY: Billy Frey

SOLIDIFICATION POND C
TEST CYLENDERS

DATE & TIME TAKEN: 10-16-90 1400
TEST CYLINDER #'S: RTC-C4, RTC-C5, RTC-C6
TYPE EQUIPT USED TO SOLID.: 1 ~~MITSUBISHI 330~~ CASE 225 TR. HOE
APR. VOL. SOLID. FOR THIS SAMPLE:
AREA TEST CYL. TAKEN: 0+48, 60

TEST:

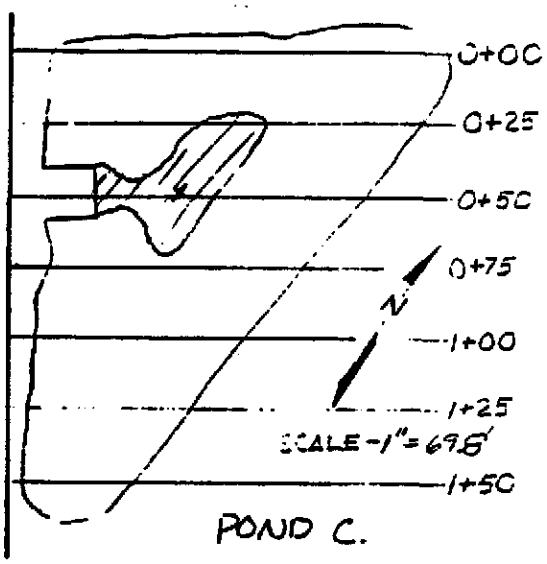
PAINT FILTER TEST RUN: YES
PASS/FAIL: PASS

	DATE & TIME	STRENGTH TONS/SQ.FT.	CYL.#
48 hr	10-18-90	1.0	C7
72 hr.	10-19-90	1.25	C8
7 DAY	10-23-90	4.5	C9

TEST RUN AS SPEC. C.S. 5.22.: YES

TEST INSTR: POCKET PENETROMETER

REMARKS:



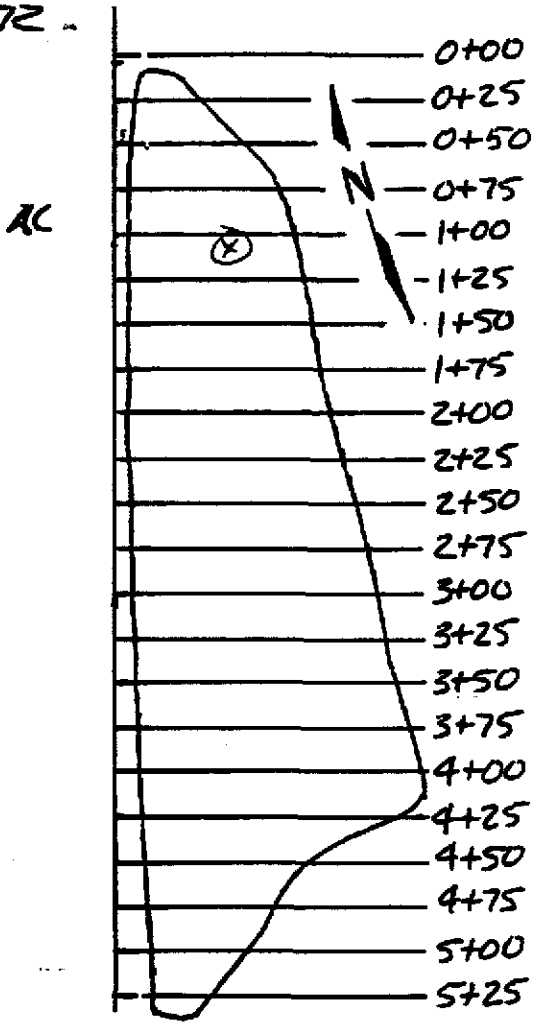
TEST CRITERIA AS SPEC. C.S. 5.2.2:
- TAKE 3 MOLDED CYL. IN 3"D x 6" LONG (SET) EVERY 1000 C.Y. MIN. 1 SET EACH IMPOUNDMENT. VERIFY STRENGTH OF 4.5 TSF IN 7 DAYS

BY: Billy Frey

SOLIDIFICATION POND B
TEST PITS

DATE & TIME: 11-07-90 @ 0640
DATE SOLID. AREA: 10-15-90
TEST PIT # & LOC: TP-B1 @ STA. 1+07, OFF. 63'
TYPE EQUIPT. USED TO SOLID.: 1 MITSUBISHI 280 TR. HOE.
TEST INSTR.: POCKET PENETROMETER.

DEPTH	STRENGTH TONS/SQ.FT	HOMOG.	SEEPAGE LEACHING
1'	4.5 TSF	YES	NO
2'	2.75 TSF	YES	NO
BOTTOM 2.25'	.5 (BOTTOM SOIL)		
AVG.	3.6 TSF		



POND B
SCALE 1" = 110'

REMARKS:

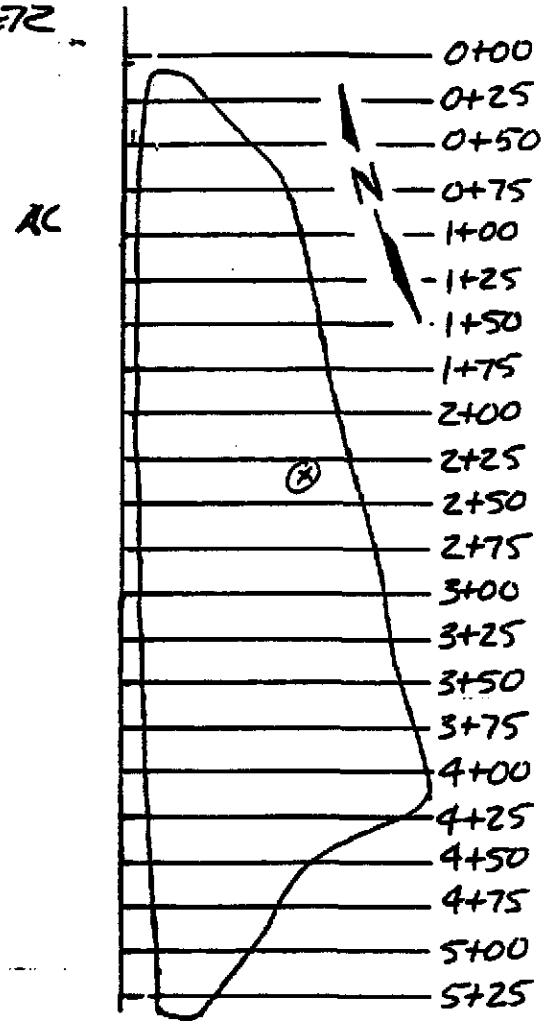
BY: BILLY FREY

TEST CRITERIA AS SPEC. C.S. 52.2:
- ONE TEST PIT EVERY 2000 C.Y. OF SEDIMENT SOLID. OR MIN. OF 2 PER IMPOUNDMENT. VERIFY NO SEEPAGE OR LEACHING.
- A TEST PIT AREA IN WHICH MOLDED CYLENDERS DO NOT REACH 4.5 T.S.F. IN 7 DAYS SHALL HAVE U.C.S. TESTED FOR > 1,500 P.S.F.

SOLIDIFICATION POND B
TEST PITS

DATE & TIME: 11-13-90
DATE SOLID. AREA: 10-15-90
TEST PIT # & LOC: TP-B3 @ STA 2+35, OFF 106'
TYPE EQUIPT. USED TO SOLID.: 1 MITSUBISHI 280 TR. HOE.
TEST INSTR.: POCKET PENETROMETER

DEPTH	STRENGTH TONS/SQ.FT	HOMOG.	SEEPAGE LEACHING
1'	4.5+TSF	YES	NO
2'	4.5+TSF	YES	NO
3'	3.2 TSF	YES	NO
BOTTOM 3.5' AVG.	4.1 TSF		



POND B
SCALE 1"=110'

REMARKS:

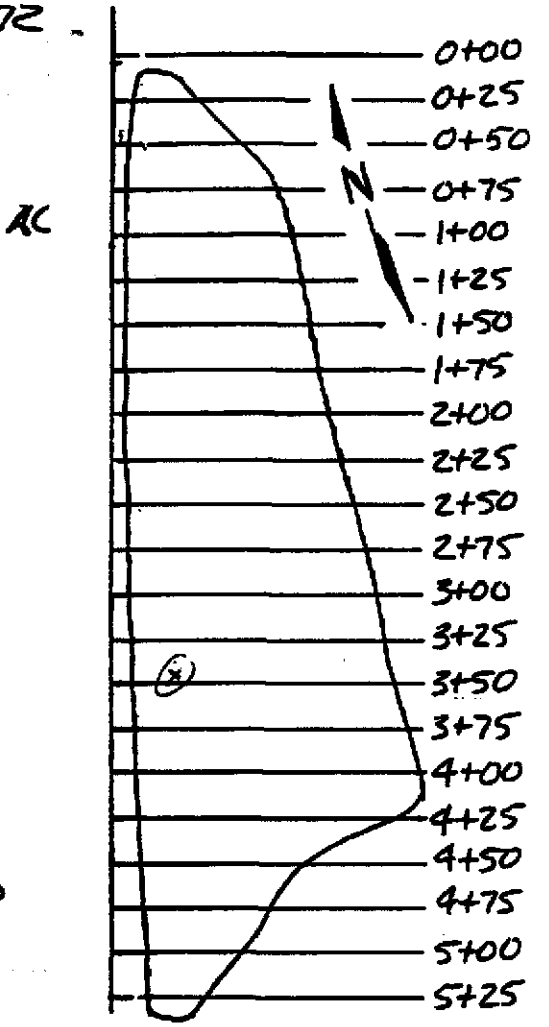
BY: BILLY FREY

TEST CRITERIA AS SPEC. C.S. 52.2:
- ONE TEST PIT EVERY 2000 C.Y. OF SEDIMENT SOLID. OR MIN. OF 2 PER IMPOUNDMENT. VERIFY NO SEEPAGE OR LEACHING.
- A TEST PIT AREA IN WHICH MOLDED CYLENDERS DO NOT REACH 4.5 T.S.F. IN 7 DAYS SHALL HAVE U.C.S. TESTED FOR > 1,500 P.S.F.

SOLIDIFICATION POND B
TEST PITS

DATE & TIME: 11-16-90
DATE SOLID. AREA: 10-26-90
TEST PIT # & LOC: TP-B4 @ STA 3+45, OFF. 35'
TYPE EQUIPT. USED TO SOLID.: 1 MITSUBISHI 280 TR. HOE.
TEST INSTR.: POCKET PENETROMETER

DEPTH	STRENGTH TONS/SQ.FT	HOMOG.	SEEPAGE LEACHING
1'	4.5+TSF	YES	NO
2'	4.2 TSF	YES	NO
3'	3.8 TSF.	YES	NO
4'	2.7 TSF	YES	NO
4.5'	.5 BOTTOM		YES
BOTTOM 4.5' AVG.	3.8 TSF		



POND B
SCALE 1"=110'

REMARKS: SOME GROUND WATER COMING UP BELOW PIT.

BY: BILLY FREY

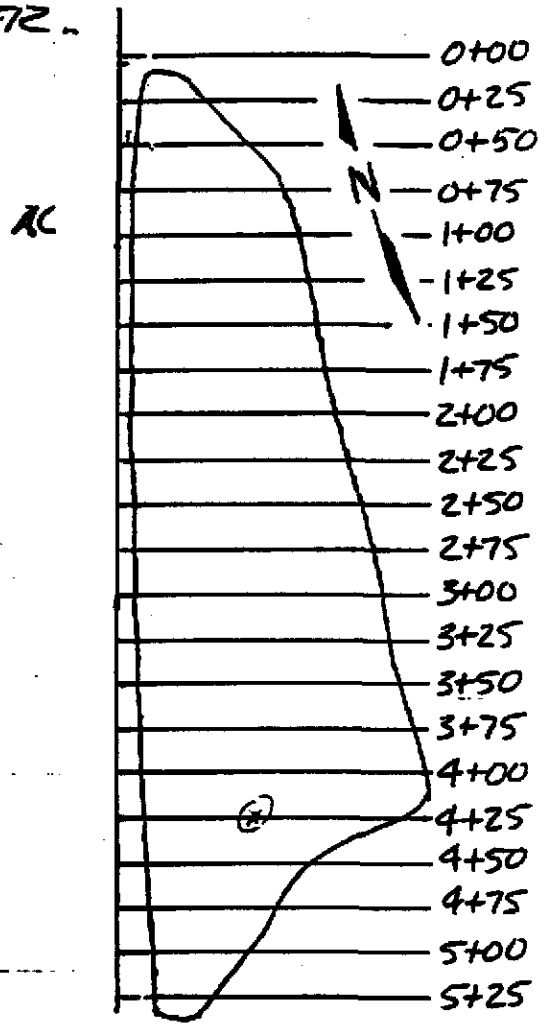
TEST CRITERIA AS SPEC. C.S. 52.2:
- ONE TEST PIT EVERY 2000 C.Y. OF SEDIMENT SOLID. OR MIN. OF 2 PER IMPOUNDMENT. VERIFY NO SEEPAGE OR LEACHING.
- A TEST PIT AREA IN WHICH MOLDED CYLENDERS DO NOT REACH 4.5 T.S.F. IN 7 DAYS SHALL HAVE U.C.S. TESTED FOR > 1,500 P.S.F.

SOLIDIFICATION POND B
TEST PITS

DATE & TIME: 11-26-90
DATE SOLID. AREA: 10-16-90
TEST PIT # & LOC: TP-B5 @ STA 4+25, OFF 7.5'
TYPE EQUIPT. USED TO SOLID.: 1 MITSUBISHI 280 TR. HOE.
TEST INSTR.: POCKET PENETROMETER.

DEPTH	STRENGTH TONS/SQ.FT	HOMOG.	SEEPAGE LEACHING
1'	4.5+TSF	YES	NO
2'	3.2 TSF		NO
3'	4.2 TSF		NO
4'	1.7 TSF		NO.
BOTTOM 4.2'			
AVG.	3.4 TSF		

REMARKS:



POND B
SCALE 1"=110'

BY: BILLY FREY

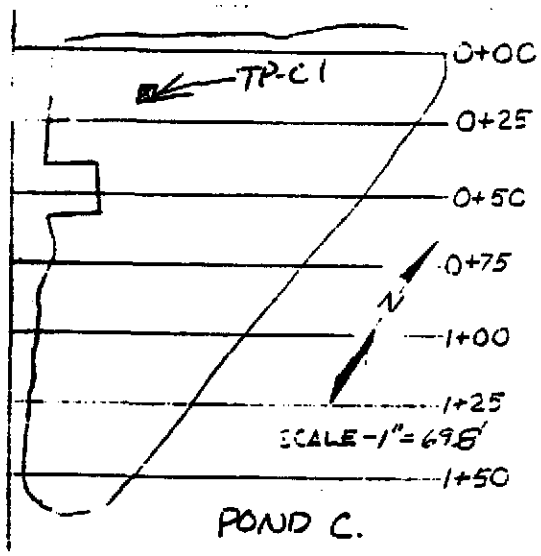
TEST CRITERIA AS SPEC. C.S. 52.2:
- ONE TEST PIT EVERY 2000 C.Y. OF SEDIMENT SOLID. OR MIN. OF 2 PER IMPOUNDMENT. VERIFY NO SEEPAGE OR LEACHING.
- A TEST PIT AREA IN WHICH MOLDED CYLENDERS DO NOT REACH 4.5 T.S.F. IN 7 DAYS SHALL HAVE U.C.S. TESTED FOR > 1,500 P.S.F.

SOLIDIFICATION POND C
TEST PITS

DATE & TIME: 10-09-90, 0900
DATE SOLID. AREA: 10-05-90
TEST PIT # & LOC: TP-C1, 0+15, 48
TYPE EQUIPT. USED TO SOLID.: 1 MITSUBISHI 280 TR. HOE.
TEST INSTR.: POCKET PENETROMETER.

DEPTH	STRENGTH TONS/SQ.FT
1'	2.4
2'	1.3
2.5'	.7
BOTTOM 3'	NO READING.
AVG.	1.5

VISUAL:
SEEPAGE OR LEACHING - NO



POND C.

REMARKS: THIS TEST PIT NOT TO CERTIFY AREA, PASS, FAIL ONLY TO VISUALLY LOOK @ CONSISTENCY & STRENGTH AFTER 4 DAYS

BY: BILLY FREY

TEST CRITERIA AS SPEC. C.S. 52.2:
- ONE TEST PIT EVERY 2000 C.Y. OF SEDIMENT SOLID. OR MIN. OF 2 PER IMPOUNDMENT. VERIFY NO SEEPAGE OR LEACHING.
- A TEST PIT AREA IN WHICH MOLDED CYLINDERS DO NOT REACH 4.5 T.S.F. IN 7 DAYS SHALL HAVE U.C.S TESTED FOR > 1,500 P.S.F.

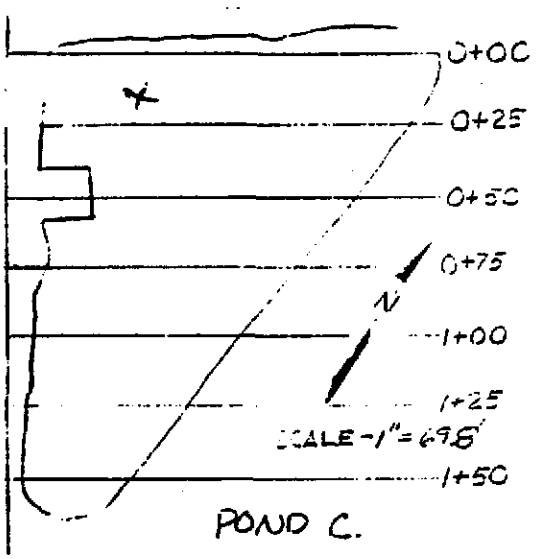
SOLIDIFICATION POND C
TEST PITS

DATE & TIME: 11-01-90
DATE SOLID. AREA: 10-03-90
TEST PIT # & LOC: TP-C1 ; 0+12, 49
TYPE EQUIPT. USED TO SOLID.: 1 MITSUBISHI 280 TR. HOE.
TEST INSTR.: POCKET PENETROMETER.

DEPTH	STRENGTH TONS/SQ.FT
1.0'	4.5 AVG. OF 3
2.3'	4.5 AVG. OF 3
3.2'	4.0 AVG. OF 3
BOTTOM 3.2	3.5 AVG. OF 3
AVG.	4.1 TSF.

VISUAL:
SEEPAGE OR LEACHING - NO

AVG. OF 3 PENETROMETER READINGS TAKEN @ 2 SIDES & 1 BOTTOM.



REMARKS: TEST PIT DUG @ AREA NOT DISTURBED BY RESOLIDIFICATION. RESOLIDIFIED AREA HAS NOT HAD TIME TO "SET UP" YET.

BY: BILLY FREY

TEST CRITERIA AS SPEC. C.S. 52.2:
- ONE TEST PIT EVERY 2000 C.Y. OF SEDIMENT SOLID. OR MIN. OF 2 PER IMPOUNDMENT. VERIFY NO SEEPAGE OR LEACHING.
- A TEST PIT AREA IN WHICH MOLDED CYLENDERS DO NOT REACH 4.5 T.S.F. IN 7 DAYS SHALL HAVE U.C.S. TESTED FOR > 1,500 P.S.F.

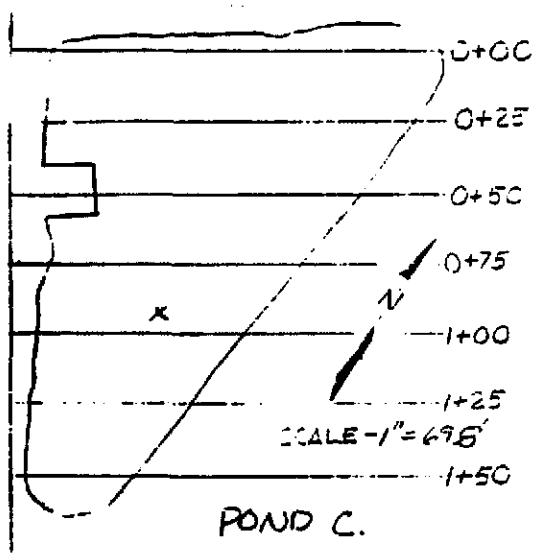
SOLIDIFICATION POND C
TEST PITS

DATE & TIME: 10-01-90
DATE SOLID. AREA: 10-08-90 & RESOLID. 10-30-90
TEST PIT # & LOC: TP-C2, 0+93, 52
TYPE EQUIPT. USED TO SOLID.: 1 MITSUBISHI 280 TR. HOE.
TEST INSTR.: POCKET PENETROMETER

DEPTH	STRENGTH TONS/SQ.FT
.9'	4.5 TSF
2.1'	4.5 TSF
3.0'	3.0 TSF
BOTTOM 3.0	2.5 TSF
AVG.	3.6 TSF

VISUAL:
SEEPAGE OR LEACHING: NO.

AVG. OF 3 PENETROMETER READINGS TAKEN @ 2 SIDES & 1 BOTTOM.



REMARKS: TEST PIT DUG @ AREA RESOLIDIFIED.

BY: BILLY FREY

TEST CRITERIA AS SPEC. C.S. 52.2:
- ONE TEST PIT EVERY 2000 CY. OF SEDIMENT SOLID. OR MIN. OF 2 PER IMPOUNDMENT. VERIFY NO SEEPAGE OR LEACHING.
- A TEST PIT AREA IN WHICH MOLDED CYLENDERS DO NOT REACH 4.5 T.S.F. IN 7 DAYS SHALL HAVE U.C.S. TESTED FOR > 1,500 P.S.F.

APPENDIX E

CONTRACTOR'S CERTIFICATES OF QUALITY CONTROL

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Gundle

Quality Assurance Certificate

RAILCAR : PLCX42521
MATERIAL : HDPE 060 MIL
BATCH # : 090491
ROLL # : 02012647

MANF. DATE : 09/04/1991
PROJECT NAME : CEDAR CHEMICAL CORP
MR NUMBER : 7056-01 PROJECT # : 7056-01
LOCATION : MEMPHIS TN 001

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	PER ROLL	54 to 66	62	D 1593
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.4	D 1603
Carbon Black Dispersion	1/SHIFT	A-1/A-2/B-1	A-1	D 3015
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.12	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.946	D 1505 A
Tensile Properties:				
T.S. Yield (psi)	2ND ROLL	2333 min	2687	D 638
T.S. Break (psi)	2ND ROLL	4000 min	4658	Type IV
Elong. Yield %	2ND ROLL	13 min	15	2 ipm
Elong. Break %	2ND ROLL	700 min	776	
Tear Resistance (lbs)	2ND ROLL	45 min	52	D 1004,Die C
Puncture Resistance (lbs)	2ND ROLL	80 min	93	FTMS 101,Method 2065

CERTIFIED BY:

R.J. Schaefer
Lab Manager

Gundle

Quality Assurance Certificate

RAILCAR : CHVX890452
MATERIAL : HDPE 060 MIL
BATCH # : 091691
ROLL # : 02012884

MANF. DATE : 09/16/1991
PROJECT NAME : CEDAR CHEMICAL CORP
MR NUMBER : 7056-01 PROJECT # : 7056-01
LOCATION : MEMPHIS TN 001

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	PER ROLL	54 to 66	61	D 1593
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.3	D 1603
Carbon Black Dispersion	1/SHIFT	A-1/A-2/B-1	A-2	D 3015
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.13	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.945	D 1505 A
Tensile Properties:				
T.S. Yield (psi)	2ND ROLL	2333 min	2438	D 638
T.S. Break (psi)	2ND ROLL	4000 min	4927	Type IV
Elong. Yield %	2ND ROLL	13 min	16	2 ipm
Elong. Break %	2ND ROLL	700 min	874	
Tear Resistance (lbs)	2ND ROLL	45 min	53	D 1004,Die C
Puncture Resistance (lbs)	2ND ROLL	80 min	99	FTMS 101,Method 2065

CERTIFIED BY:

R.J. Schaefer
Lab Manager

Gundle

(3)

Quality Control Certificate

RAILCAR : ACFX66339
MATERIAL : HDPE 060 MIL
BATCH # : 091891
ROLL # : 02012930

MANF. DATE : 09/18/1991
PROJECT NAME : CEDAR CHEMICAL CORP
MR NUMBER : 7056-01 PROJECT # : 7056-01
LOCATION : MEMPHIS TN 001

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	PER ROLL	54 to 66	60	D 1593
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.4	D 1603
Carbon Black Dispersion	1/SHIFT	A-1/A-2/B-1	A-1	D 3015
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.15	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.944	D 1505 A
Tensile Properties:				
T.S. Yield (psi)	2ND ROLL	2333 min	2646	D 638
T.S. Break (psi)	2ND ROLL	4000 min	4514	Type IV
Elong. Yield %	2ND ROLL	13 min	15	2 ipm
Elong. Break %	2ND ROLL	700 min	779	
Tear Resistance (lbs)	2ND ROLL	45 min	56	D 1004,Die C
Puncture Resistance (lbs)	2ND ROLL	80 min	90	FTMS 101,Method 2065

CERTIFIED BY:

R.J. Schaefer
Lab Manager

Gundle

(4)

Quality Control Certificate

RAILCAR : ACFX66339
MATERIAL : HDPE 060 MIL
BATCH # : 091991
ROLL # : 02012938

MANF. DATE : 09/19/1991
PROJECT NAME : CEDAR CHEMICAL CORP
MR NUMBER : 7056-01 PROJECT # : 7056-01
LOCATION : MEMPHIS TN 001

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	PER ROLL	54 to 66	60	D 1593
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.4	D 1603
Carbon Black Dispersion	1/SHIFT	A-1/A-2/B-1	A-1	D 3015
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.15	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.947	D 1505 A
Tensile Properties:				
T.S. Yield (psi)	2ND ROLL	2333 min	2469	D 638
T.S. Break (psi)	2ND ROLL	4000 min	4957	Type IV
Elong. Yield %	2ND ROLL	13 min	15	2 ipm
Elong. Break %	2ND ROLL	700 min	864	
Tear Resistance (lbs)	2ND ROLL	45 min	48	D 1004,Die C
Puncture Resistance (lbs)	2ND ROLL	80 min	94	FTMS 101,Method 2065

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(5)

Gundle

Quality Control Certificate

RAILCAR : UCFX-60226
MATERIAL : HDPE 060 MIL
BATCH # : 061891
ROLL # : 05009644

MANF. DATE : 06/18/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-03 PROJECT # : W004
LOCATION : VICKSBURG MS

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	PER ROLL	54 to 66	64	D 1593
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.2	D 1603
Carbon Black Dispersion	1/SHIFT	A-1/A-2/B-1	A-1	D 3015
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.14	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.948	D 1505 A
Tensile Properties:				
T.S. Yield (psi)	2ND ROLL	2300 min	2843	D 638
T.S. Break (psi)	2ND ROLL	4000 min	5060	Type IV
Elong. Yield %	2ND ROLL	13 min	16	2 ipm
Elong. Break %	2ND ROLL	700 min	863	
Tear Resistance (lbs)	2ND ROLL	45 min	55	D 1004,Die C
Puncture Resistance (lbs)	2ND ROLL	80 min	91	FTMS 101,Method 2065

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(6)

Gundle

Quality Assurance Certificate

RAILCAR : UCFX-60226
MATERIAL : HDPE 060 MIL
BATCH # : 061891
ROLL # : 05009645

MANF. DATE : 06/18/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-03 PROJECT # : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	PER ROLL	54 to 66	65	D 1593
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.2	D 1603
Carbon Black Dispersion	1/SHIFT	A-1/A-2/B-1	A-1	D 3015
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.14	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.948	D 1505 A
Tensile Properties:				
T.S. Yield (psi)	2ND ROLL	2300 min	2843	D 638
T.S. Break (psi)	2ND ROLL	4000 min	5060	Type IV
Elong. Yield %	2ND ROLL	13 min	16	2 ipm
Elong. Break %	2ND ROLL	700 min	863	
Tear Resistance (lbs)	2ND ROLL	45 min	55	D 1004,Die C
Puncture Resistance (lbs)	2ND ROLL	80 min	91	FTMS 101,Method 2065

CERTIFIED BY:

R.J. Schaefer
Lab Manager

7

Gundle

Quality Control Certificate

RAILCAR : RAIX-60736
MATERIAL : HDPE 060 MIL
BATCH # : 061991
ROLL # : 05009663

MANF. DATE : 06/19/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-03 PROJECT # : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	PER ROLL	54 to 66	59	D 1593
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.1	D 1603
Carbon Black Dispersion	1/SHIFT	A-1/A-2/B-1	A-2	D 3015
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.14	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.948	D 1505 A
Tensile Properties:				
T.S. Yield (psi)	2ND ROLL	2300 min	2600	D 638
T.S. Break (psi)	2ND ROLL	4000 min	4552	Type IV
Elong. Yield %	2ND ROLL	13 min	15	2 ipm
Elong. Break %	2ND ROLL	700 min	825	
Tear Resistance (lbs)	2ND ROLL	45 min	61	D 1004,Die C
Puncture Resistance (lbs)	2ND ROLL	80 min	102	FTMS 101,Method 2065

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(8)

Gundle

Quality Control Certificate

RAILCAR : RAIX-60736
MATERIAL : HDPE 060 MIL
BATCH # : 061991
ROLL # : 05009665

MANF. DATE : 06/19/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-03 PROJECT # : H004
LOCATION : VICKSBURG MS

TEST PARAMETER		TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness	(mils)	PER ROLL	54 to 66	59	D 1593
Carbon Black	(%)	1/SHIFT	2.0 to 3.0	2.5	D 1603
Carbon Black Dispersion		1/SHIFT	A-1/A-2/B-1	A-2	D 3015
Melt Index	(g/10 min)	1/SHIFT	0.30 max	0.14	D 1238 E
Density	(g/cm3)	1/SHIFT	0.940 min	0.947	D 1505 A
Tensile Properties:					
T.S. Yield	(psi)	2ND ROLL	2300 min	2764	D 638
T.S. Break	(psi)	2ND ROLL	4000 min	4778	Type IV
Elong. Yield	%	2ND ROLL	13 min	15	2 ipm
Elong. Break	%	2ND ROLL	700 min	828	
Tear Resistance	(lbs)	2ND ROLL	45 min	61	D 1004,Die C
Puncture Resistance	(lbs)	2ND ROLL	80 min	100	FTMS 101,Method 2065

CERTIFIED BY:

R. J. Schaefer
Lab Manager

(9)

Gundle

Quality Assurance Certificate

RAILCAR : RAIX-60736
MATERIAL : HDPE 060 MIL
BATCH # : 061991
ROLL # : 05009666

MANF. DATE : 06/19/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-03 PROJECT # : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	PER ROLL	54 to 66	60	D 1593
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.1	D 1603
Carbon Black Dispersion	1/SHIFT	A-1/A-2/B-1	A-2	D 3015
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.14	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.948	D 1505 A
Tensile Properties:				
T.S. Yield (psi)	2ND ROLL	2300 min	2764	D 638
T.S. Break (psi)	2ND ROLL	4000 min	4778	Type IV
Elong. Yield %	2ND ROLL	13 min	15	2 ipm
Elong. Break %	2ND ROLL	700 min	828	
Tear Resistance (lbs)	2ND ROLL	45 min	61	D 1004,Die C
Puncture Resistance (lbs)	2ND ROLL	80 min	100	FTMS 101,Method 2065

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(10)

Gundle®

Quality Control Certificate

RAILCAR : UCFX-60226
MATERIAL : HDPE 060 MIL
BATCH # : 061991
ROLL # : 05009649

MANF. DATE : 06/19/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-03 PROJECT # : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	PER ROLL	54 to 66	63	D 1593
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.7	D 1603
Carbon Black Dispersion	1/SHIFT	A-1/A-2/B-1	A-1	D 3015
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.14	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.945	D 1505 A
Tensile Properties:				
T.S. Yield (psi)	2ND ROLL	2300 min	2664	D 638
T.S. Break (psi)	2ND ROLL	4000 min	4755	Type IV
Elong. Yield %	2ND ROLL	13 min	15	2 ipm
Elong. Break %	2ND ROLL	700 min	803	
Tear Resistance (lbs)	2ND ROLL	45 min	54	D 1004,Die C
Puncture Resistance (lbs)	2ND ROLL	80 min	107	FTMS 101,Method 2065

CERTIFIED BY:

R. J. Schaefer
Lab Manager

(11)

Gundle®

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12889
ROLL # : 41847

MANF. DATE : 1/28/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	60	
Carbon Black (min %)	2 - 3	2.0	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.10	D 1238 E
Density (g/cm3)	0.94	.942	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	188	D638
T.S. Break (ppi)	240	303	Type IV
Elong. Yield (%)	13	13	2 ipm
Elong. Break (%)	700	773	
Tear Resistance (lbs)	45	60	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	111812	D 882
Puncture Resistance (lbs)	69	102	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

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(12)

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12589
ROLL # : 024959

MANF. DATE : 1/25/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	63	
Carbon Black (min %)	2 - 3	2.4	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.12	D 1238 E
Density (g/cm3)	0.94	.947	D 1505 A
Tensile Properties:			D638 Type IV 2 ipm
T.S. Yield (ppi)	140	178	
T.S. Break (ppi)	240	349	
Elong. Yield (%)	13	15	
Elong. Break (%)	700	879	
Tear Resistance (lbs)	45	61	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	113580	D 882
Puncture Resistance (lbs)	69	106	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

Gundle

(13)

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12589
ROLL # : 024961

MANF. DATE : 1/25/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	62	
Carbon Black (min %)	2 - 3	2.4	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.12	D 1238 E
Density (g/cm3)	0.94	.947	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	218	D638
T.S. Break (ppi)	240	405	Type IV
Elong. Yield (%)	13	14	2 ipm
Elong. Break (%)	700	849	
Tear Resistance (lbs)	45	70	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	111145	D 882
Puncture Resistance (lbs)	69	126	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

(14)

Gundle

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12889
ROLL # : 41837

MANF. DATE : 1/28/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	62	
Carbon Black (min %)	2 - 3	2.0	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.10	D 1238 E
Density (g/cm3)	0.94	.942	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	189	D638
T.S. Break (ppi)	240	354	Type IV
Elong. Yield (%)	13	17	2 ipm
Elong. Break (%)	700	911	
Tear Resistance (lbs)	45	59	D 1004, Die C
Dimensional Stability (212 degr, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	112689	D 882
Puncture Resistance (lbs)	69	106	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

(15)

Gundle®

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12789
ROLL # : 44417

MANF. DATE : 1/27/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	62	
Carbon Black (min %)	2 - 3	2.5	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.10	D 1238 E
Density (g/cm3)	0.94	.948	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	168	D638
T.S. Break (ppi)	240	281	Type IV
Elong. Yield (%)	13	14	2 ipm
Elong. Break (%)	700	761	
Tear Resistance (lbs)	45	54	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	115179	D 882
Puncture Resistance (lbs)	69	103	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

(16)

Gundle

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12889
ROLL # : 026030

MANF. DATE : 1/28/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	62	
Carbon Black (min %)	2 - 3	2.3	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.11	D 1238 E
Density (g/cm3)	0.94	.944	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	195	D638
T.S. Break (ppi)	240	368	Type IV
Elong. Yield (%)	13	15	2 ipm
Elong. Break (%)	700	875	
Tear Resistance (lbs)	45	61	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	114439	D 882
Puncture Resistance (lbs)	69	115	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

Gundle

(17)

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 11289
ROLL # : 41319

MANF. DATE : 1/12/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	62	
Carbon Black (min %)	2 - 3	2.1	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.16	D 1238 E
Density (g/cm3)	0.94	.945	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	184	D638
T.S. Break (ppi)	240	312	Type IV
Elong. Yield (%)	13	16	2 ipm
Elong. Break (%)	700	821	
Tear Resistance (lbs)	45	59	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	113580	D 882
Puncture Resistance (lbs)	69	102	FTMS No. 101B Method 2065

CERTIFIED BY

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

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(18)

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 11389
ROLL # : 41325

MANF. DATE : 1/13/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	58	
Carbon Black (min %)	2 - 3	2.3	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.16	D 1238 E
Density (g/cm3)	0.94	.948	D 1505 A
Tensile Properties:			D638 Type IV 2 ipm
T.S. Yield (ppi)	140	177	
T.S. Break (ppi)	240	294	
Elong. Yield (%)	13	16	
Elong. Break (%)	700	807	
Tear Resistance (lbs)	45	57	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	114439	D 882
Puncture Resistance (lbs)	69	103	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

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(19)

Quality Control Certificate

COPY	: Original	MANF. DATE	: 1/23/89
MATERIAL	: 60 MIL HDPE	PROJECT NAME	: VICKSBURG
BATCH #	: 12389	PROJECT NUMBER	: H004
ROLL #	: 41467	LOCATION	: VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	60	
Carbon Black (min %)	2 - 3	2.5	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.13	D 1238 E
Density (g/cm3)	0.94	.947	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	182	D638
T.S. Break (ppi)	240	300	Type IV
Elong. Yield (%)	13	16	2 ipm
Elong. Break (%)	700	786	
Tear Resistance (lbs)	45	56	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	111145	D 882
Puncture Resistance (lbs)	69	114	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

(20)

Gundle®

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12589
ROLL # : 41499

MANF. DATE : 1/25/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	62	
Carbon Black (min %)	2 - 3	2.3	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.11	D 1238 E
Density (g/cm3)	0.94	.948	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	188	D638
T.S. Break (ppi)	240	314	Type IV
Elong. Yield (%)	13	16	2 ipm
Elong. Break (%)	700	827	
Tear Resistance (lbs)	45	61	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	111812	D 882
Puncture Resistance (lbs)	69	110	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

Gundle®

(21)

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12589
ROLL # : 41800

MANF. DATE : 1/25/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	62	
Carbon Black (min %)	2 - 3	2.3	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.11	D 1238 E
Density (g/cm3)	0.94	.948	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	183	D638
T.S. Break (ppi)	240	343	Type IV
Elong. Yield (%)	13	16	2 ipm
Elong. Break (%)	700	886	
Tear Resistance (lbs)	45	61	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	114439	D 882
Puncture Resistance (lbs)	69	106	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

(22)

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Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12589
ROLL # : 41803

MANF. DATE : 1/25/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	63	
Carbon Black (min %)	2 - 3	2.3	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.11	D 1238 E
Density (g/cm3)	0.94	.948	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	188	D638
T.S. Break (ppi)	240	357	Type IV
Elong. Yield (%)	13	15	2 ipm
Elong. Break (%)	700	912	
Tear Resistance (lbs)	45	55	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	115179	D 882
Puncture Resistance (lbs)	69	120	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

Gundle

(23)

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12689
ROLL # : 41818

MANF. DATE : 1/26/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	61	
Carbon Black (min %)	2 - 3	2.5	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.12	D 1238 E
Density (g/cm3)	0.94	.949	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	222	D638
T.S. Break (ppi)	240	374	Type IV
Elong. Yield (%)	13	15	2 ipm
Elong. Break (%)	700	881	
Tear Resistance (lbs)	45	63	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	113580	D 882
Puncture Resistance (lbs)	69	112	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

(24)

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Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12889
ROLL # : 026025

MANF. DATE : 1/28/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	63	
Carbon Black (min %)	2 - 3	2.3	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.11	D 1238 E
Density (g/cm3)	0.94	.944	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	172	D638
T.S. Break (ppi)	240	332	Type IV
Elong. Yield (%)	13	17	2 ipm
Elong. Break (%)	700	870	
Tear Resistance (lbs)	45	58	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	116825	D 882
Puncture Resistance (lbs)	69	107	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

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(25)

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12889
ROLL # : 026011

MANF. DATE : 1/28/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	61	
Carbon Black (min %)	2 - 3	2.3	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.11	D 1238 E
Density (g/cm3)	0.94	.944	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	172	D638
T.S. Break (ppi)	240	337	Type IV
Elong. Yield (%)	13	17	2 ipm
Elong. Break (%)	700	884	
Tear Resistance (lbs)	45	59	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	113580	D 882
Puncture Resistance (lbs)	69	105	FTMS No. 101B Method 2065

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Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

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(26)

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 10589
ROLL # : 024560

MANF. DATE : 1/ 5/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	61	
Carbon Black (min %)	2 - 3	2.7	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.11	D 1238 E
Density (g/cm3)	0.94	.944	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	172	D638
T.S. Break (ppi)	240	338	Type IV
Elong. Yield (%)	13	14	2 ipm
Elong. Break (%)	700	856	
Tear Resistance (lbs)	45	54	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	111812	D 882
Puncture Resistance (lbs)	69	106	FTMS No. 101B Method 2065

CERTIFIED BY :

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Lab Supervisor

D. Wilkinson
Quality Manager

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(27)

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12789
ROLL # : 41822

MANF. DATE : 1/27/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	61	
Carbon Black (min %)	2 - 3	2.2	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.14	D 1238 E
Density (g/cm3)	0.94	.948	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	181	D638
T.S. Break (ppi)	240	318	Type IV
Elong. Yield (%)	13	13	2 ipm
Elong. Break (%)	700	829	
Tear Resistance (lbs)	45	59	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	113580	D 882
Puncture Resistance (lbs)	69	101	FTMS No. 101B Method 2065

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D. Wilkinson
Quality Manager

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(28)

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12789
ROLL # : 41823

MANF. DATE : 1/27/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	60	
Carbon Black (min %)	2 - 3	2.2	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.14	D 1238 E
Density (g/cm3)	0.94	.948	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	181	D638
T.S. Break (ppi)	240	321	Type IV
Elong. Yield (%)	13	13	2 ipm
Elong. Break (%)	700	818	
Tear Resistance (lbs)	45	57	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	113580	D 882
Puncture Resistance (lbs)	69	103	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

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Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 10589
ROLL # : 024564

MANF. DATE : 1/ 5/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	62	
Carbon Black (min %)	2 - 3	2.7	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.11	D 1238 E
Density (g/cm3)	0.94	.944	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	164	D638
T.S. Break (ppi)	240	292	Type IV
Elong. Yield (%)	13	14	2 ipm
Elong. Break (%)	700	794	
Tear Resistance (lbs)	45	52	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	113580	D 882
Puncture Resistance (lbs)	69	103	FTMS No. 101B Method 2065

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D. Wilkinson
Quality Manager

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Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 10589
ROLL # : 024556

MANF. DATE : 1/ 5/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	63	
Carbon Black (min %)	2 - 3	2.7	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.11	D 1238 E
Density (g/cm3)	0.94	.944	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	176	D638
T.S. Break (ppi)	240	265	Type IV
Elong. Yield (%)	13	15	2 ipm
Elong. Break (%)	700	727	
Tear Resistance (lbs)	45	55	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	111145	D 882
Puncture Resistance (lbs)	69	111	FTMS No. 101B Method 2065

CERTIFIED BY :

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D. Wilkinson
Quality Manager

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(31)

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12689
ROLL # : 024975

MANF. DATE : 1/26/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	61	
Carbon Black (min %)	2 - 3	2.4	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.12	D 1238 E
Density (g/cm3)	0.94	.947	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	180	D638
T.S. Break (ppi)	240	316	Type IV
Elong. Yield (%)	13	14	2 ipm
Elong. Break (%)	700	831	
Tear Resistance (lbs)	45	64	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	111145	D 882
Puncture Resistance (lbs)	69	107	FTMS No. 101B Method 2065

CERTIFIED BY :

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D. Wilkinson
Quality Manager

(32)

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Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12889
ROLL # : 026029

MANF. DATE : 1/28/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	62	
Carbon Black (min %)	2 - 3	2.3	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.11	D 1238 E
Density (g/cm3)	0.94	.944	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	185	D638
T.S. Break (ppi)	240	332	Type IV
Elong. Yield (%)	13	17	2 ipm
Elong. Break (%)	700	845	
Tear Resistance (lbs)	45	60	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	111812	D 882
Puncture Resistance (lbs)	69	113	FTMS No. 101B Method 2065

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D. Wilkinson
Quality Manager

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Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 13089
ROLL # : 44438

MANF. DATE : 1/30/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	59	
Carbon Black (min %)	2 - 3	2.1	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.10	D 1238 E
Density (g/cm3)	0.94	.949	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	178	D638
T.S. Break (ppi)	240	265	Type IV
Elong. Yield (%)	13	14	2 ipm
Elong. Break (%)	700	715	
Tear Resistance (lbs)	45	61	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	116825	D 882
Puncture Resistance (lbs)	69	106	FTMS No. 101B Method 2065

CERTIFIED BY :

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D. Wilkinson
Quality Manager

(34)

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Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 13089
ROLL # : 44431

MANF. DATE : 1/30/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	65	
Carbon Black (min %)	2 - 3	2.1	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.10	D 1238 E
Density (g/cm3)	0.94	.949	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	185	D638
T.S. Break (ppi)	240	303	Type IV
Elong. Yield (%)	13	13	2 ipm
Elong. Break (%)	700	796	
Tear Resistance (lbs)	45	67	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	115179	D 882
Puncture Resistance (lbs)	69	115	FTMS No. 101B Method 2065

CERTIFIED BY :

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Lab Supervisor

D. Wilkinson
Quality Manager

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Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 13089
ROLL # : 44432

MANF. DATE : 1/30/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	65	
Carbon Black (min %)	2 - 3	2.1	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.10	D 1238 E
Density (g/cm3)	0.94	.949	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	183	D638
T.S. Break (ppi)	240	281	Type IV
Elong. Yield (%)	13	13	2 ipm
Elong. Break (%)	700	728	
Tear Resistance (lbs)	45	62	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	113580	D 882
Puncture Resistance (lbs)	69	112	FTMS No. 101B Method 2065

CERTIFIED BY:

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Lab Supervisor

D. Wilkinson
Quality Manager

(36)

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Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12789
ROLL # : 41828

MANF. DATE : 1/27/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	61	
Carbon Black (min %)	2 - 3	2.2	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.14	D 1238 E
Density (g/cm3)	0.94	.948	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	188	D638
T.S. Break (ppi)	240	349	Type IV
Elong. Yield (%)	13	16	2 ipm
Elong. Break (%)	700	864	
Tear Resistance (lbs)	45	63	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	116825	D 882
Puncture Resistance (lbs)	69	107	FTMS No. 101B Method 2065

CERTIFIED BY :

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Lab Supervisor

D. Wilkinson
Quality Manager

Gundle

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12889
ROLL # : 41835

MANF. DATE : 1/28/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	63	
Carbon Black (min %)	2 - 3	2.0	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.10	D 1238 E
Density (g/cm3)	0.94	.942	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	177	D638
T.S. Break (ppi)	240	340	Type IV
Elong. Yield (%)	13	16	2 ipm
Elong. Break (%)	700	885	
Tear Resistance (lbs)	45	57	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	113580	D 882
Puncture Resistance (lbs)	69	101	FTMS No. 101B Method 2065

CERTIFIED BY :

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Lab Supervisor

D. Wilkinson
Quality Manager

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Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12889
ROLL # : 41834

MANF. DATE : 1/28/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKXBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	62	
Carbon Black (min %)	2 - 3	2.0	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.10	D 1238 E
Density (g/cm3)	0.94	.942	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	186	D638
T.S. Break (ppi)	240	314	Type IV
Elong. Yield (%)	13	17	2 ipm
Elong. Break (%)	700	806	
Tear Resistance (lbs)	45	58	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	111812	D 882
Puncture Resistance (lbs)	69	99	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

Gundle

(39)

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12889
ROLL # : 41836

MANF. DATE : 1/28/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	57	
Carbon Black (min %)	2 - 3	2.0	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.10	D 1238 E
Density (g/cm3)	0.94	.942	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	182	D638
T.S. Break (ppi)	240	308	Type IV
Elong. Yield (%)	13	15	2 ipm
Elong. Break (%)	700	830	
Tear Resistance (lbs)	45	55	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	115179	D 882
Puncture Resistance (lbs)	69	97	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

(40)

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Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12889
ROLL # : 41846

MANF. DATE : 1/28/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	61	
Carbon Black (min %)	2 - 3	2.0	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.10	D 1238 E
Density (g/cm3)	0.94	.942	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	192	D638
T.S. Break (ppi)	240	336	Type IV
Elong. Yield (%)	13	15	2 ipm
Elong. Break (%)	700	832	
Tear Resistance (lbs)	45	60	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	112689	D 882
Puncture Resistance (lbs)	69	108	FTMS No. 101B Method 2065

CERTIFIED BY :

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Lab Supervisor

D. Wilkinson
Quality Manager

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Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12389
ROLL # : 41466

MANF. DATE : 1/23/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	59	
Carbon Black (min %)	2 - 3	2.5	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.13	D 1238 E
Density (g/cm3)	0.94	.947	D 1505 A
Tensile Properties:			D638 Type IV 2 ipm
T.S. Yield (ppi)	140	175	
T.S. Break (ppi)	240	275	
Elong. Yield (%)	13	14	
Elong. Break (%)	700	750	
Tear Resistance (lbs)	45	53	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	114439	D 882
Puncture Resistance (lbs)	69	102	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phonangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

(42)

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Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 11689
ROLL # : 41377

MANF. DATE : 1/16/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	59	
Carbon Black (min %)	2 - 3	2.3	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.16	D 1238 E
Density (g/cm3)	0.94	.947	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	180	D638
T.S. Break (ppi)	240	270	Type IV
Elong. Yield (%)	13	15	2 ipm
Elong. Break (%)	700	741	
Tear Resistance (lbs)	45	58	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	113580	D 882
Puncture Resistance (lbs)	69	115	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

Gundle

(43)

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 13089
ROLL # : 026061

MANF. DATE : 1/30/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	63	
Carbon Black (min %)	2 - 3	2.9	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.12	D 1238 E
Density (g/cm3)	0.94	.949	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	183	D638
T.S. Break (ppi)	240	268	Type IV
Elong. Yield (%)	13	16	2 ipm
Elong. Break (%)	700	706	
Tear Resistance (lbs)	45	58	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	111812	D 882
Puncture Resistance (lbs)	69	96	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

(44)

Gundle

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 13089
ROLL # : 026044

MANF. DATE : 1/30/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	63	
Carbon Black (min %)	2 - 3	2.9	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.12	D 1238 E
Density (g/cm3)	0.94	.949	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	185	D638
T.S. Break (ppi)	240	330	Type IV
Elong. Yield (%)	13	15	2 ipm
Elong. Break (%)	700	801	
Tear Resistance (lbs)	45	64	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	113580	D 882
Puncture Resistance (lbs)	69	115	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

Gundle

(45)

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12789
ROLL # : 44419

MANF. DATE : 1/27/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	60	
Carbon Black (min %)	2 - 3	2.5	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.10	D 1238 E
Density (g/cm3)	0.94	.948	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	160	D638
T.S. Break (ppi)	240	312	Type IV
Elong. Yield (%)	13	14	2 ipm
Elong. Break (%)	700	871	
Tear Resistance (lbs)	45	56	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	111145	D 882
Puncture Resistance (lbs)	69	103	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

Gundle

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 11789
ROLL # : 44243

MANF. DATE : 1/17/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	63	
Carbon Black (min %)	2 - 3	2.3	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.15	D 1238 E
Density (g/cm3)	0.94	.948	D 1505 A
Tensile Properties:			D638 Type IV 2 ipm
T.S. Yield (ppi)	140	171	
T.S. Break (ppi)	240	272	
Elong. Yield (%)	13	14	
Elong. Break (%)	700	747	
Tear Resistance (lbs)	45	55	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	115179	D 882
Puncture Resistance (lbs)	69	105	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

(47)

Gundle

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 11289
ROLL # : 44156

MANF. DATE : 1/12/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	60	
Carbon Black (min %)	2 - 3	2.2	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.14	D 1238 E
Density (g/cm3)	0.94	.947	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	173	D638
T.S. Break (ppi)	240	330	Type IV
Elong. Yield (%)	13	16	2 ipm
Elong. Break (%)	700	913	
Tear Resistance (lbs)	45	52	D 1004, Die C
Dimensional Stability (212 degF, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	116825	D 882
Puncture Resistance (lbs)	69	107	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

(48)

Gundle

Quality Control Certificate

COPY : Original
MATERIAL : 60 MIL HDPE
BATCH # : 12589
ROLL # : 41802

MANF. DATE : 1/25/89
PROJECT NAME : VICKSBURG
PROJECT NUMBER : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	REQUIRED SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/-10%	63	
Carbon Black (min %)	2 - 3	2.3	D 1603
Carbon Black Dispersion	A-1	A-1	D 3015
Melt Index (g/10 min.)	0.3	.11	D 1238 E
Density (g/cm3)	0.94	.948	D 1505 A
Tensile Properties:			D638
T.S. Yield (ppi)	140	191	Type IV
T.S. Break (ppi)	240	261	2 ipm
Elong. Yield (%)	13	15	
Elong. Break (%)	700	724	
Tear Resistance (lbs)	45	58	D 1004, Die C
Dimensional Stability (212 deg F, 1 hour)	+/-2%	0	D 1204
Modulus of Elasticity (psi)	110000	114439	D 882
Puncture Resistance (lbs)	69	113	FTMS No. 101B Method 2065

CERTIFIED BY :

Darlene Phouangsavanh
Lab Supervisor

D. Wilkinson
Quality Manager

Gundle

(49)

Quality Control Certificate

RAILCAR : GOCX-58781
MATERIAL : HDPE 060 MIL
BATCH # : 101991
ROLL # : 02013498

MANF. DATE : 10/19/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-09 PROJECT # : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	PER ROLL	54 to 66	65	D 1593
Carbon Black (%)	1/SHIFT	2.0 min	2.3	D 1603
Carbon Black Dispersion	1/SHIFT	A-1/A-2/B-1	A-1	D 3015
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.13	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.946	D 1505 A
Tensile Properties:				
T.S. Yield (psi)	2ND ROLL	2333 min	2871	D 638
T.S. Break (psi)	2ND ROLL	4000 min	4606	Type IV
Elong. Yield %	2ND ROLL	13 min	16	2 ipm
Elong. Break %	2ND ROLL	700 min	798	
Tear Resistance (lbs)	2ND ROLL	45 min	63	D 1004,Die C
Puncture Resistance (lbs)	2ND ROLL	80 min	97	FTMS 101,Method 2065

CERTIFIED BY:

B.J. Schaefer
Lab Manager

Gundle

(50)

Quality Control Certificate

RAILCAR : ACFX-97153
MATERIAL : HDPE 030 MIL
BATCH # : 102191
ROLL # : 01012843

MANF. DATE : 10/21/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-10 PROJECT # : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	PER ROLL	27 to 33	28	D 1593
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.9	D 1603
Carbon Black Dispersion	1/SHIFT	A-1/A-2/B-1	A-1	D 3015
Melt Index (g/10 min)	1/SHIFT	0.30 min	0.13	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.947	D 1505 A
Tensile Properties:				
T.S. Yield (psi)	2ND ROLL	2300 min	2784	D 638
T.S. Break (psi)	2ND ROLL	4000 min	4903	Type IV
Elong. Yield %	2ND ROLL	13 min	13	2 ipm
Elong. Break %	2ND ROLL	700 min	752	
Tear Resistance (lbs)	2ND ROLL	22 min	22	D 1004,Die C
Puncture Resistance (lbs)	2ND ROLL	30 min	59	FTMS 101,Method 2065

CERTIFIED BY:

R.J. Schaefer
Lab Manager

Gundle®

Rec'd 2-27-92
B.F.

(51)

Quality Assurance Certificate

RAILCAR : RUSX12156
MATERIAL : HDPE 060 MIL
BATCH # : 022392
ROLL # : 02015628

MANF. DATE : 02/23/1992
PROJECT NAME : GUNDLE LINING
MR NUMBER : 5164-01 PROJECT # : 5164-01
LOCATION :

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	PER ROLL	54 to 66	60	D 7593
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.2	D 1603
Carbon Black Dispersion	1/SHIFT	A-1/A-2/B-1	A-1	D 3015
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.10	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.946	D 1505 A
Tensile Properties:				
T.S. Yield (psi)	2ND ROLL	2333	2790	D 638
T.S. Break (psi)	2ND ROLL	4000	4445	Type IV
Elong. Yield %	2ND ROLL	13	17	2 ipm
Elong. Break %	2ND ROLL	700	806	
Puncture Resistance (lbs)	2ND ROLL	80	110	FTMS 101,Method 2065
Tear Resistance (lbs)	2ND ROLL	45	52	D 1004,Die C

Rec'd 2-26-92
3 ROLLS CAP LINER
3'x360'x60mil

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(52)

Chevron Chemical Company
Orange, Texas 77630 • Phone (409) 886-7491

Orange Plant

August 20, 1991

Steve Severson
Gundle Lining Systems
1340 E. Richey Road
Houston, TX 77073

Dear Mr. Severson:

Following is the data on the subject material as determined by the Quality Control Department:

Product	9642T	Lot Number	A081029
Package	PLCX42521	Ship Date	08-19-91
Customer PO#	133534	Weight	175,050
Production Date	08-03-91		

Property	Value	Units
Melt Index	.14	gms/10 min
Density	0.9410	gms/cc
ESCR, 100 degrees C in 100% Igepal	in progress	hours

The data set forth herein has been carefully compiled by Chevron Chemical Company. However, there is no warranty of any kind, either express or implied, applicable to its use and the user assumes all risk and liability in connection therewith.

Sincerely,

G. G. Bertin
Supervisor
Quality Control

mc

cc: Mark Cadwalder

For inquiry, contact Customer Service at the following number:
Film, Coating, Pipe Applications: 1-800-231-3828
Molding Applications: 1-800-231-3828

(53)

Chevron

Chevron Chemical Company
Orange, Texas 77630 • Phone (409) 886-7491

Orange Plant

September 5, 1991

Steve Severson
Gundle Lining Systems
1340 E. Richey Road
Houston, TX 77073

Dear Mr. Severson:

Following is the data on the subject material as determined by the Quality Control Department:

Product	9642T	Lot Number	A081059
Package	CHVX890452	Ship Date	09-03-91
Customer PO#	133534	Weight	175,250
Production Date	08-06-91		

Property	Value	Units
Melt Index	.18	gms/10 min
Density	0.9400	gms/cc
ESCR, 100 degrees C in 100% Igepal	in progress	hours

The data set forth herein has been carefully compiled by Chevron Chemical Company. However, there is no warranty of any kind, either express or implied, applicable to its use and the user assumes all risk and liability in connection therewith.

Sincerely,

G. G. Bartin
Supervisor
Quality Control

ma

cc: Mark Cadwalder

For inquiry, contact Customer Service at the following number:
Film, Coating, Pipe Applications: 1-800-231-3826
Molding Applications: 1-800-231-3828

(58)

Quantum Chemical Corporation

Quantum

USI Division

3400 Ansmoss Road
P.O. Box 819
Clinton, IA 52732-0819

SEPTEMBER 05 1991

FAX: 713-230-6787

ATTENTION: STEVE SEVERSON

CERTIFICATE OF ANALYSIS

ORDER NUMBER: D855807
SHIPPED DATE: 09/03/91
CUSTOMER P.O. NUMBER: 133539
CUSTOMER NUMBER: 261099

SHIPPED TO: GUNDLE LINING SYSTEMS INC
1340 E RICHEY RD
WESTFIELD TX
77073

PRODUCT: LP20776 PETROTHENE LP 207-76
LOT NUMBER: I1SB54 RAILCAR: ACFX66339 WEIGHT SHIPPED: 175450 L

	TEST RESULT
DENSITY, G/CC @ 23 C	0.938
MELT INDEX, G/10MIN.	0.16

SINCERELY,

QC ENGINEER

(55)

POLYOLEFINS DIVISION

UNION CARBIDE

SEADRIFT PLANT

PRODUCT QUALITY REPORT

FAX NO. 713-875-6010
GUNDLE LINING SYSTEMS
WESTFIELD, TX 77073
ATTN: RAY MCCURDY

UNION CARBIDE CHEMICALS
AND PLASTICS COMPANY INC.
POLYOLEFINS DIVISION
P.O. BOX 186
PORT LAVACA, TEXAS 77979

MAY 15, 1991

PRODUCT NAME	DHDB-1525 NT
BLEND NUMBER	513363
QUANTITY, LBS.	190,700
CONTAINER	RAIX60736
CUSTOMER ORDER NO.	33016
UCC ORDER NO.	463739
SHIPPING DATE	05/14

SHIPPED TO: GUNDLE LINING SYSTEMS
WESTFIELD, TX

THE FOLLOWING TEST DATA WAS OBTAINED:

MELT INDEX I2	GTM	0.83
DENSITY ASTM	GCC	0.9390
MFI I21	GTM	18.

ANALYSIS NO. 1190511

Robert Soto

QUALITY CONTROL DEPARTMENT
SEADRIFT PLANT LABORATORY

56

PRODUCT QUALITY REPORT

FAX NO. 713-875-6010
GUNDLE LINING SYSTEMS, INC.
WESTFIELD, TX 77073
ATTN: RAY McCURDY

UNION CARBIDE CHEMICALS
AND PLASTICS COMPANY INC.
POLYOLEFINS DIVISION
P.O. BOX 186
PORT LAVACA, TEXAS 77979

MAY 7, 1991

PRODUCT NAME	DFDB-1525 NT
BLEND NUMBER	939004
QUANTITY, LBS.	171,500
CONTAINER	N/A UCFX 60226
CUSTOMER ORDER NO.	132540
UCC ORDER NO.	462874
SHIPPING DATE	05/02

SHIPPED TO: GUNDLE LINING SYSTEMS, INC.
WESTFIELD, TX

THE FOLLOWING TEST DATA WAS OBTAINED:

MELT INDEX I5	GTM	0.80
DENSITY ASTM	GCG	0.9385
MFI I21	GTM	20.

ANALYSIS NO. 1210501

Wayne Dagge

QUALITY CONTROL DEPARTMENT
SEADRIFT PLANT LABORATORY

57

Chevron

Chevron Chemical Company
P.O. Box 7400, Orange, TX 77631-7400 • Phone (409) 886-7491

Orange Plant

October 9, 1991

Steve Severson
Gundle Lining Systems
1340 E. Richey Road
Houston, TX 77073

Dear Mr. Severson:

Following is the data on the subject material as determined by the Quality Control Department:

Product	9642T	Lot Number	A081169
Package	GOCX58781	Ship Date	10-07-91
Customer PO#	134068	Weight	183,050
Production Date	08-13-91		

Property	Value	Units
Melt Index	.17	gms/10 min
Density	0.9397	gms/cc
ESCR, 100 degrees C in 100% Igepal	in progress	hours

The data set forth herein has been carefully compiled by Chevron Chemical Company. However, there is no warranty of any kind, either express or implied, applicable to its use and the user assumes all risk and liability in connection therewith.

Sincerely,

G. G. Bertin
Supervisor
Quality Control

gc

For inquiry, contact Customer Service at the following number:
Film, Coating, Pipe Applications: 1-800-231-3828
Molding Applications: 1-800-231-3828

UNION CARBIDE

SEADRIFT PLANT

(58)

EQ

PRODUCT QUALITY REPORT

GUNDLE LINING SYSTEMS INC.
TRACK ZTS NO. 1743-00
WESTFIELD, TX 77073
ATTN: STEVE SEVERSON
FAX NO. 713-875-6010

UNION CARBIDE CHEMICALS
AND PLASTICS COMPANY INC.
POLYOLEFINS DIVISION
P.O. BOX 186
PORT LAVACA, TEXAS 77979

JUNE 27, 1991

PRODUCT NAME	DHDB-1525 NT
BLEND NUMBER	225112
QUANTITY, LBS.	184,500
CONTAINER	ACFX97153
CUSTOMER ORDER NO.	33017
UCC ORDER NO.	463770
SHIPPING DATE	06/27

SHIPPED TO: GUNDLE LINING SYSTEMS INC.
WESTFIELD, TX

THE FOLLOWING TEST DATA WAS OBTAINED:

MELT INDEX		0.17
MELT FLOW INDEX	GTM	20.
DENSITY ASTM	GCC	0.9390

ANALYSIS NO. 160601

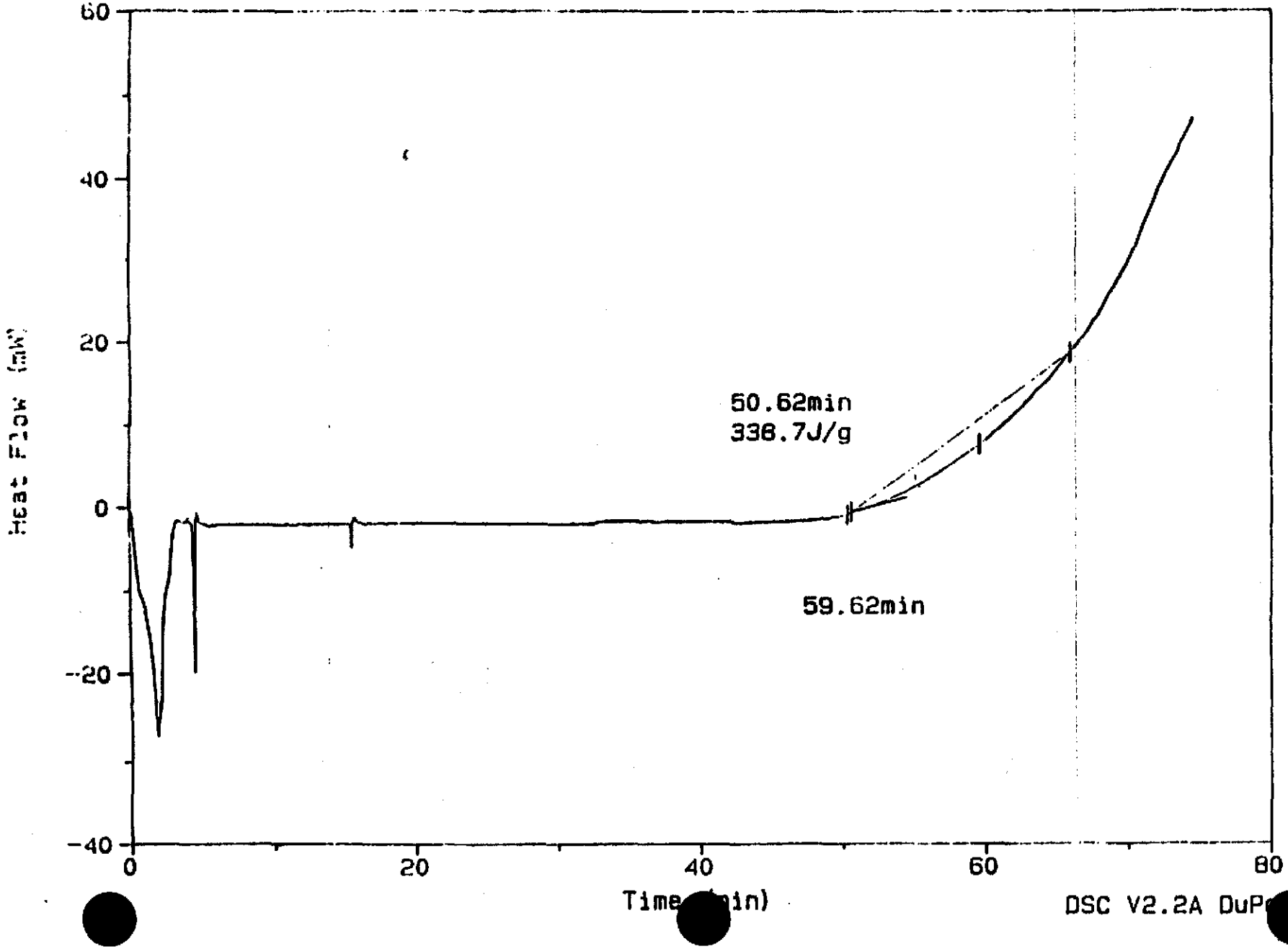
QUALITY CONTROL DEPARTMENT
SEADRIFT PLANT LABORATORY

(5)

Sample: 02012647(09/20/91) 60HDE
Size: 5.6000 mg
Method: OIT 180C @ 800 PSI
Comment: RAILCAR# PLCX-42521 / JOB#: H004

DSC

File: E:GLS-11.01
Operator: KHAMLA P.
Run Date: 09/26/91 22:09



DSC V2.2A DuPo 9900

(60)

File: E:GLS-11.01 Run Date: 09/26/91 22:09
Program: DSC V2.2A Run Number: 1

DuPont 9900 Thermal Analysis -- DSC Dual Sample

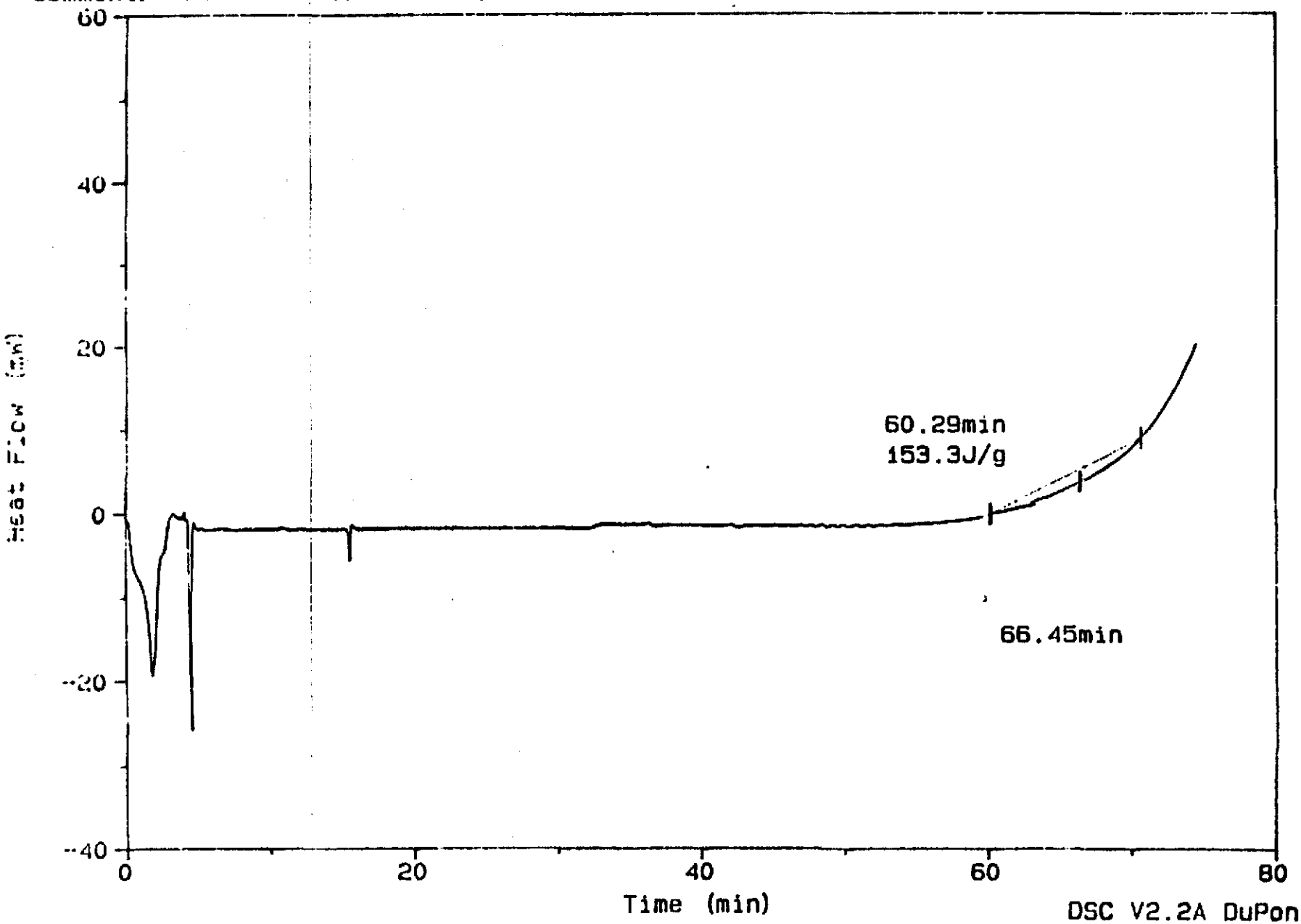
Sample: 02012647 (09/20/91) 60HDE
Size: 5.6000 mg
Cell Constant: 1.2732
Operator: KHAMLA P.
Method: OIT 180C @ 800 PSI
Comment: RAILCAR# PLCX-42521 / JOB#: H004

Peak	Start min	Onset min	Max min	Stop min	Area
	50.32	50.62	59.62	65.93	338.7 J/g

Sample: 02012884 (09/20/91) 60HDE
Size: 4.4000 mg
Method: OIT 180C @ 600 PSI
Comment: RAILCAR# PLCX-42521 / JOB#: H004

DSC

File: E:GLS-11.02
Operator: KHAMLA P.
Run Date: 09/26/91 22:09



DSC V2.2A DuPont 9900

(6)

(29)

DSC Standard

09/29/91 11:19:47 Page 1

File: E:GLS-11.02 Run Date: 09/26/91 22:09
Program: DSC V2.2A Run Number: 2

DuPont 9900 Thermal Analysis -- DSC Dual Sample

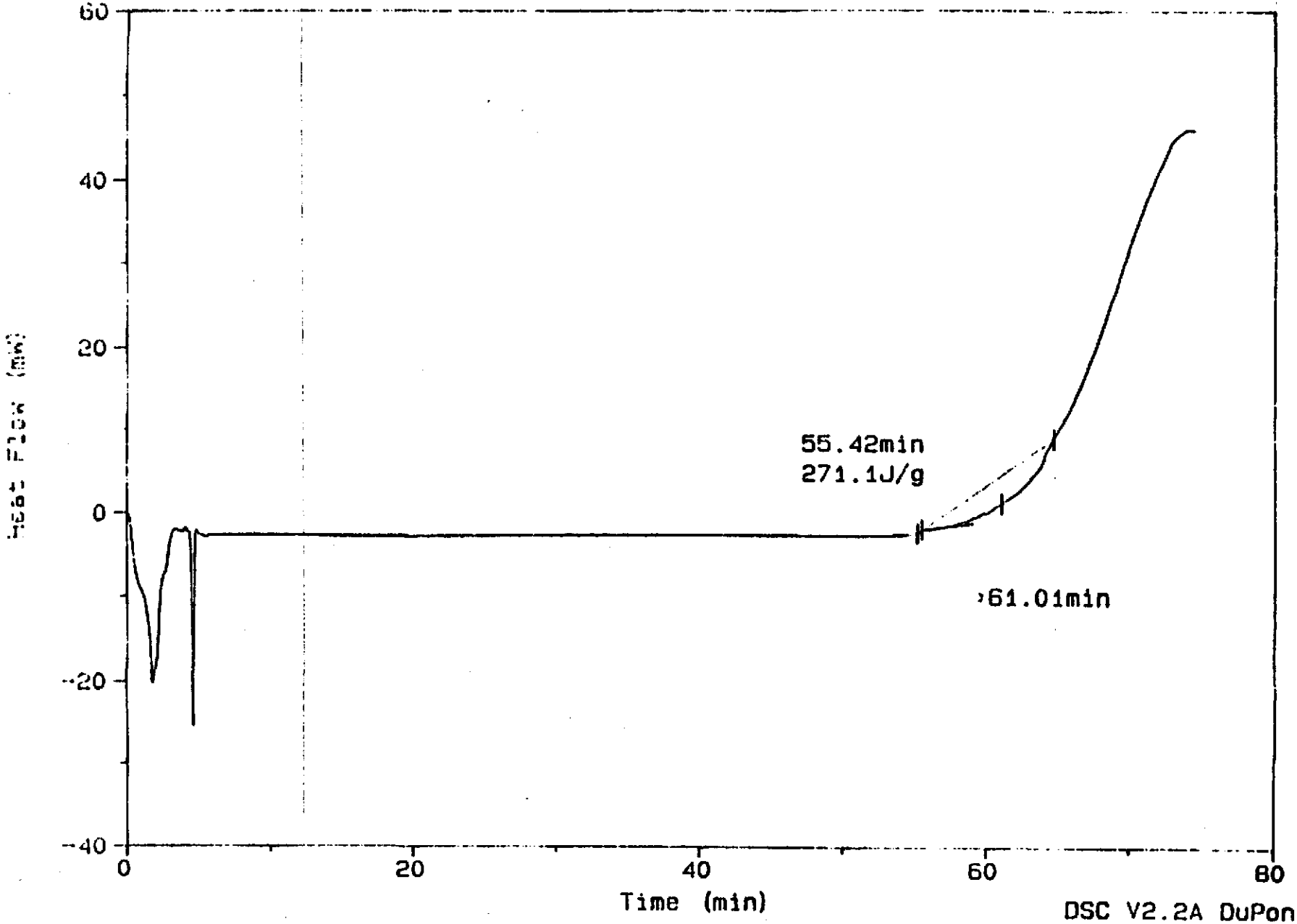
Sample: 02012884(09/20/91) 60HDE
Size: 4.4000 mg
Cell Constant: 1.3061
Operator: KHAMLA P.
Method: OIT 180C @ 800 PSI
Comment: RAILCAR# PLCX-42521 / JOB#: H004

Peak	Start min	Onset min	Max min	Stop min	Area
	60.16	60.29	66.45	70.69	153.3 J/g

Sample: 02012930 (09/20/91) 60HDE
Size: 4.8000 mg
Method: OIT 180C @ 800 PSI
Comment: RAILCAR# ACFX-66339 / JOB#: H004

DSC

File: E:GLS-11.03
Operator: KHAMLA P.
Run Date: 09/26/91 23:55



DSC V2.2A DuPont 9900

3

(63)

DSC Standard

File: E:GLS-11.03 Run Date: 09/26/91 23:55
Program: DSC V2.2A Run Number: 3

DuPont 9900 Thermal Analysis -- DSC Dual Sample

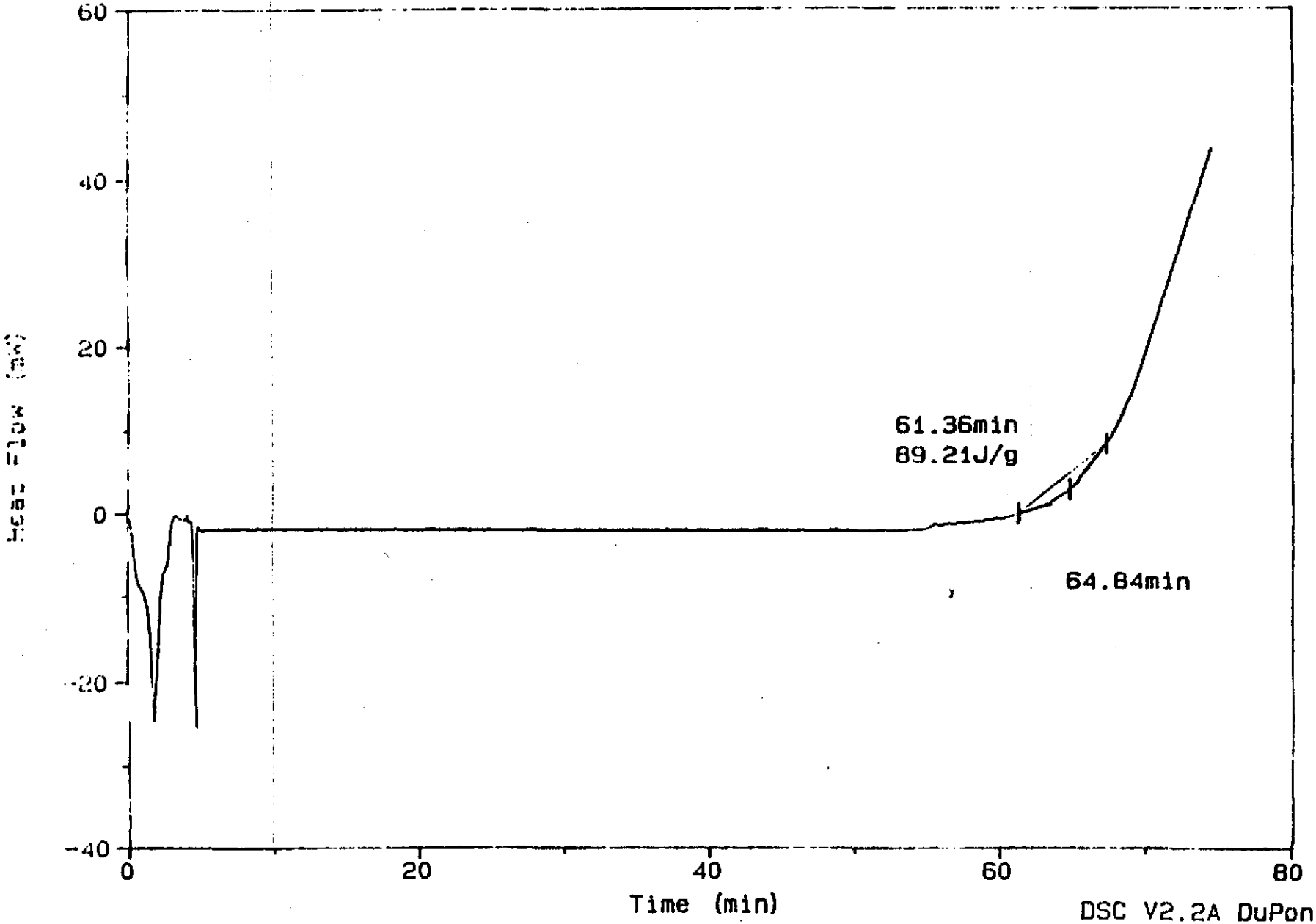
Sample: 02012930 (09/20/91) 60HDE
Size: 4.8000 mg
Cell Constant: 1.2732
Operator: KHAMLA P.
Method: OIT 180C @ 800 PSI
Comment: RAILCAR# ACFX-66339 / JOB#: H004

Peak	Start min	Onset min	Max min	Stop min	Area
	55.08	55.42	61.01	64.66	271.1 J/g

Sample: 02012938 (09/20/91) 60HDE
Size: 4.9000 mg
Method: OIT 180C @ 800 PSI
Comment: RAILCAR# CHEX-215 / JOB#: H004

DSC

File: E:GLS-11.04
Operator: KHAMLA P.
Run Date: 09/26/91 23:55



DSC V2.2A DuPont 9900

65

(66)

DSC Standard

File: E:GLS-11.04 Run Date: 09/26/91 23:55
Program: DSC V2.2A Run Number: 4

DuPont 9900 Thermal Analysis -- DSC Dual Sample

Sample: 02012938(09/20/91) 60HDE
Size: 4.9000 mg
Cell Constant: 1.3061
Operator: KHAMLA P.
Method: OIT 180C @ 800 PSI
Comment: RAILCAR# CHEX-215 / JOB#: H004

Peak	Start min	Onset min	Max min	Stop min	Area
	61.27	61.36	64.84	67.36	89.21 J/g

SOLVAY POLYMERS

Quality Polymers Through Technology and People

February 4, 1992

Gundle Lining Systems
Materials Manager
19103 Gundle Avenue
Houston, TX 77073
2306787

Listed below are the data on XF836 shipments:

Solvay Order Number:	0C5492
Customer PO:	134385
Date Shipped:	02/04/92
Ship To:	WESTFIELD, TX
Lot Number:	C11218F07A
Hopper Car Number:	RUSX 12156
Weight, Lbs.:	177,900

MELT INDEX	0.10
DENSITY	0.938
ESCR	*

*ESCR incomplete, we will advise.

Sincerely,

Dr. J. Lon Thompson
Quality Administration Manager

sab

Gundle

(68)

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 070391
ROLL # : 07003281

DATE : 07/03/1991
PROJECTC NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	209	D 1593
Carbon Black (%)	2.0 - 3.0	2.4	D 1603
Melt Flow Index	0.3 max	.11	D 1238 E
Density (gm/cm3)	.94 min	.946	D 1505 A
Tensile @ Break (MD) (lbs)	50	88	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	72	

* The above test result assures the quality of the following roll #:

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(69)

Gundle

Quality Assurance Certificate

MATERIAL : XL400G001
BATCH # : 032091
ROLL # : 09015481

DATE : 03/20/1991
PROJECTC NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	220	D 1593
Carbon Black (%)	2.0 - 3.0	2.3	D 1603
Melt Flow Index	0.3 max	.18	D 1238 E
Density (gm/cm3)	.94 min	.942	D 1505 A
Tensile @ Break (MD) (lbs)	50	128	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	40	

* The above test result assures the quality of the following roll #:
09015474, 09015475, 09015482

CERTIFIED BY:

R.J. Schaefer
Lab Manager

Gundle

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 062091
ROLL # : 09017065

DATE : 06/20/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	206	D 1593
Carbon Black (%)	2.0 - 3.0	2.5	D 1603
Melt Flow Index	0.3 max	.12	D 1238 E
Density (gm/cm3)	.94 min	.949	D 1505 A
Tensile @ Break (MD) (lbs)	50	92	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	66	

* The above test result assures the quality of the following roll #: 09017066

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R.J. Schaefer
Lab Manager

(21)

Gundle

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 062091
ROLL # : 09017060

DATE : 06/20/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	212	D 1593
Carbon Black (%)	2.0 - 3.0	2.5	D 1603
Melt Flow Index	0.3 max	.12	D 1238 E
Density (gm/cm3)	.94 min	.949	D 1505 A
Tensile @ Break (MD) (lbs)	50	132	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	70	

* The above test result assures the quality of the following roll #:
09017061, 09017062, 09017063, 09017064

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R.J. Schaefer
Lab Manager

Gundle

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 062091
ROLL # : 09017055

DATE : 06/20/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	210	D 1593
Carbon Black (%)	2.0 - 3.0	2.5	D 1603
Melt Flow Index	0.3 max	.12	D 1238 E
Density (gm/cm3)	.94 min	.949	D 1505 A
Tensile @ Break (MD) (lbs)	50	120	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	70	

* The above test result assures the quality of the following roll #:
09017056, 09017057, 09017058, 09017059

CERTIFIED BY:

R.J. Schaefer
Lab Manager

Gundle

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 062091
ROLL # : 09017050

DATE : 06/20/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	220	D 1593
Carbon Black (%)	2.0 - 3.0	2.3	D 1603
Melt Flow Index	0.3 max	.11	D 1238 E
Density (gm/cm3)	.94 min	.946	D 1505 A
Tensile @ Break (MD) (lbs)	50	134	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	66	

* The above test result assures the quality of the following roll #:
09017051, 09017052, 09017053, 09017054

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R.J. Schaefer
Lab Manager

(74)

Gundle

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 062091
ROLL # : 09017045

DATE : 06/20/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	213	D 1593
Carbon Black (%)	2.0 - 3.0	2.3	D 1603
Melt Flow Index	0.3 max	.11	D 1238 E
Density (gm/cm3)	.94 min	.946	D 1505 A
Tensile @ Break (MD) (lbs)	50	124	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	70	

* The above test result assures the quality of the following roll #: 09017046, 09017047, 09017048, 09017049

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R.J. Schaefer
Lab Manager

Gundle

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 062091
ROLL # : 09017040

DATE : 06/20/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	220	D 1593
Carbon Black (%)	2.0 - 3.0	2.3	D 1603
Melt Flow Index	0.3 max	.11	D 1238 E
Density (gm/cm3)	.94 min	.946	D 1505 A
Tensile @ Break (MD) (lbs)	50	116	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	76	

* The above test result assures the quality of the following roll #:
09017041, 09017042, 09017043, 09017044

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Lab Manager

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Gundle

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 062091
ROLL # : 09017035

DATE : 06/20/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	220	D 1593
Carbon Black (%)	2.0 - 3.0	2.3	D 1603
Melt Flow Index	0.3 max	.11	D 1238 E
Density (gm/cm3)	.94 min	.946	D 1505 A
Tensile @ Break (MD) (lbs)	50	112	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	80	

* The above test result assures the quality of the following roll #:
09017036, 09017037, 09017038, 09017039

CERTIFIED BY:

R.J. Schaefer
Lab Manager

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Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 061991
ROLL # : 09017003

DATE : 06/19/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	212	D 1593
Carbon Black (%)	2.0 - 3.0	2.7	D 1603
Melt Flow Index	0.3 max	.13	D 1238 E
Density (gm/cm3)	.94 min	.945	D 1505 A
Tensile @ Break (MD) (lbs)	50	106	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	68	

* The above test result assures the quality of the following roll #:
09017004, 09017005, 09017006, 09017007

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R.J. Schaefer
Lab Manager

Gundle

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 061991
ROLL # : 09017017

DATE : 06/19/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	216	D 1593
Carbon Black (%)	2.0 - 3.0	2.1	D 1603
Melt Flow Index	0.3 max	.10	D 1238 E
Density (gm/cm3)	.94 min	.948	D 1505 A
Tensile @ Break (MD) (lbs)	50	114	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	86	

* The above test result assures the quality of the following roll #:
09017018, 09017019, 09017020, 09017021

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Lab Manager

(79)

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Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 061991
ROLL # : 09017012

DATE : 06/19/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	220	D 1593
Carbon Black (%)	2.0 - 3.0	2.1	D 1603
Melt Flow Index	0.3 max	.10	D 1238 E
Density (gm/cm3)	.94 min	.948	D 1505 A
Tensile @ Break (MD) (lbs)	50	112	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	86	

* The above test result assures the quality of the following roll #:
09017013, 09017014, 09017015, 09017016

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(80)

Gundle

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 061991
ROLL # : 09017032

DATE : 06/19/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	217	D 1593
Carbon Black (%)	2.0 - 3.0	2.1	D 1603
Melt Flow Index	0.3 max	.10	D 1238 E
Density (gm/cm3)	.94 min	.948	D 1505 A
Tensile @ Break (MD) (lbs)	50	108	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	64	

* The above test result assures the quality of the following roll #: 09017033, 09017034

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R.J. Schaefer
Lab Manager

(81)

Gundle

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 061991
ROLL # : 09017027

DATE : 06/19/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	215	D 1593
Carbon Black (%)	2.0 - 3.0	2.1	D 1603
Melt Flow Index	0.3 max	.10	D 1238 E
Density (gm/cm3)	.94 min	.948	D 1505 A
Tensile @ Break (MD) (lbs)	50	122	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	76	

* The above test result assures the quality of the following roll #: 09017028, 09017031

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R.J. Schaefer
Lab Manager

(82)

Gundle

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 061991
ROLL # : 09017022

DATE : 06/19/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	230	D 1593
Carbon Black (%)	2.0 - 3.0	2.1	D 1603
Melt Flow Index	0.3 max	.10	D 1238 E
Density (gm/cm3)	.94 min	.948	D 1505 A
Tensile @ Break (MD) (lbs)	50	136	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	80	

* The above test result assures the quality of the following roll #:
09017023, 09017024, 09017025

CERTIFIED BY:

R.J. Schaefer
Lab Manager

Gundle

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 061991
ROLL # : 09017008

DATE : 06/19/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	217	D 1593
Carbon Black (%)	2.0 - 3.0	2.7	D 1603
Melt Flow Index	0.3 max	.13	D 1238 E
Density (gm/cm3)	.94 min	.945	D 1505 A
Tensile @ Break (MD) (lbs)	50	112	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	72	

* The above test result assures the quality of the following roll #:
09017009, 09017010, 09017011

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(84)

Gundle

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 061991
ROLL # : 09016998

DATE : 06/19/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	205	D 1593
Carbon Black (%)	2.0 - 3.0	2.7	D 1603
Melt Flow Index	0.3 max	.13	D 1238 E
Density (gm/cm3)	.94 min	.945	D 1505 A
Tensile @ Break (MD) (lbs)	50	132	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	70	

* The above test result assures the quality of the following roll #:
09016999, 09017000, 09017001, 09017002

CERTIFIED BY:

R.J. Schaefer
Lab Manager

Gundle

Quality Control Certificate

MATERIAL : XL400G001
BATCH # : 041291
ROLL # : 08012410

DATE : 04/12/1991
PROJECT NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	210	D 1593
Carbon Black (%)	2.0 - 3.0	2.3	D 1603
Melt Flow Index	0.3 max	.10	D 1238 E
Density (gm/cm3)	.94 min	.947	D 1505 A
Tensile @ Break (MD) (lbs)	50	116	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	72	

* The above test result assures the quality of the following roll #:
08012408, 08012409, 08012411

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(86)

Gundle

Quality Assurance Certificate

MATERIAL : XL400G001
BATCH # : 032091
ROLL # : 09015485

DATE : 03/20/1991
PROJECTC NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	209	D 1593
Carbon Black (%)	2.0 - 3.0	2.3	D 1603
Melt Flow Index	0.3 max	.18	D 1238 E
Density (gm/cm3)	.94 min	.942	D 1505 A
Tensile @ Break (MD) (lbs)	50	104	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	44	

* The above test result assures the quality of the following roll #: 09015488

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(87)

Gundle

Quality Assurance Certificate

MATERIAL : XL400G001
BATCH # : 040791
ROLL # : 08012157

DATE : 04/07/1991
PROJECTC NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	220	D 1593
Carbon Black (%)	2.0 - 3.0	2.1	D 1603
Melt Flow Index	0.3 max	.15	D 1238 E
Density (gm/cm3)	.94 min	.949	D 1505 A
Tensile @ Break (MD) (lbs)	50	134	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	44	

* The above test result assures the quality of the following roll #:
08012158, 08012159, 08012160, 08012161

CERTIFIED BY:

R.J. Schaefer
Lab Manager

Gundle

(88)

Quality Assurance Certificate

MATERIAL : XL400G001
BATCH # : 062091
ROLL # : 10012500

DATE : 06/20/1991
PROJECTC NAME : VICKSBURG CHEMICAL
PROJECT NUMBER : H004
LOCATION : VICKSBURG, MS

TEST PARAMETER	REQUIRED SPECIFICATION	TEST RESULT	ASTM TEST METHOD
Thickness, (mil)	200 to 265	221	D 1593
Carbon Black (%)	2.0 - 3.0	2.4	D 1603
Melt Flow Index	0.3 max	.13	D 1238 E
Density (gm/cm3)	.94 min	.942	D 1505 A
Tensile @ Break (MD) (lbs)	50	124	D 751 2 IPM 2"x 5" specimen
Tensile @ Break (TD) (lbs)	30	64	

* The above test result assures the quality of the following roll #:

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(89)

Gundle

Quality Control Certificate

MATERIAL : XL4000G001
BATCH # : 093091
ROLL # : 10013864

MANF. DATE : 09/30/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-08 PROJECT # : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	25,000 FT2	200 to 265	215	
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.6	D 1603
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.14	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.948	D 1505 A
Tensile Properties:				
T.S. @ Break (MD) lbs.	25,000 FT2	50 min	108	D751 2IPM/2"x5"SPEC.
T.S. @ Break (TD) lbs.	25,000 FT2	30 min	59	D751 2IPM/2"x5"SPEC.

* The above test results assure the quality of the following roll #:
10013865 10013866 10013867 10013868

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(90)

Gundle

Quality Control Certificate

MATERIAL : XL4000G001
BATCH # : 092791
ROLL # : 10013792

MANF. DATE : 09/27/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-08 PROJECT # : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	25,000 FT2	200 to 265	205	
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.6	D 1603
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.16	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.946	D 1505 A
Tensile Properties:				
T.S. @ Break (MD) lbs.	25,000 FT2	50 min	114	D751 2IPM/2"x5"SPEC.
T.S. @ Break (TD) lbs.	25,000 FT2	30 min	52	D751 2IPM/2"x5"SPEC.

* The above test results assure the quality of the following roll #:
10013793 10013794 10013795 10013796

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R.J. Schaefer
Lab Manager

(91)

Gundle

Quality Assurance Certificate

MATERIAL : XL4000G001
BATCH # : 092691
ROLL # : 10013774

MANF. DATE : 09/26/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-08 PROJECT # : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	25,000 FT2	200 to 265	210	
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.7	D 1603
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.15	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.947	D 1505 A
Tensile Properties:				
T.S. @ Break (MD) lbs.	25,000 FT2	50 min	100	D751 2IPM/2"x5"SPEC.
T.S. @ Break (TD) lbs.	25,000 FT2	30 min	59	D751 2IPM/2"x5"SPEC.

* The above test results assure the quality of the following roll #:
10013772 10013773 10013775

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Lab Manager

(92)

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Quality Assurance Certificate

MATERIAL : XL4000G001
BATCH # : 092791
ROLL # : 10013788

MANF. DATE : 09/27/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-08 PROJECT # : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	25,000 FT2	200 to 265	201	
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.6	D 1603
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.16	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.946	D 1505 A
Tensile Properties:				
T.S. @ Break (MD) lbs.	25,000 FT2	50 min	100	D751 21PM/2"x5"SPEC.
T.S. @ Break (TD) lbs.	25,000 FT2	30 min	60	D751 21PM/2"x5"SPEC.

* The above test results assure the quality of the following roll #:
10013787 10013789 10013790

CERTIFIED BY:

R.J. Schaefer
Lab Manager

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Quality Assurance Certificate

MATERIAL : XL4000G001
BATCH # : 092691
ROLL # : 10013776

MANF. DATE : 09/26/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-08 PROJECT # : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	25,000 FT2	200 to 265	210	
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.7	D 1603
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.15	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.947	D 1505 A
Tensile Properties:				
T.S. @ Break (MD) lbs.	25,000 FT2	50 min	100	D751 21PM/2"x5"SPEC.
T.S. @ Break (TD) lbs.	25,000 FT2	30 min	59	D751 21PM/2"x5"SPEC.

* The above test results assure the quality of the following roll #:
10013772 10013773 10013774 10013775

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(94)

Gundle

Quality Assurance Certificate

MATERIAL : XL4000G001
BATCH # : 092691
ROLL # : 10013781

MANF. DATE : 09/26/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-08 PROJECT # : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	25,000 FT2	200 to 265	202	
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.7	D 1603
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.15	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.947	D 1505 A
Tensile Properties:				
T.S. @ Break (MD) lbs.	25,000 FT2	50 min	95	D751 2IPM/2"x5"SPEC.
T.S. @ Break (TD) lbs.	25,000 FT2	30 min	55	D751 2IPM/2"x5"SPEC.

* The above test results assure the quality of the following roll #:
10013778 10013779 10013780

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(95)

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Quality Control Certificate

MANF. DATE : 09/26/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-08 PROJECT # : H004
LOCATION : VICKSBURG MS

MATERIAL : XL4000G001
BATCH # : 092691
ROLL # : 10013782

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	25,000 FT2	200 to 265	215	
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.7	D 1603
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.15	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.947	D 1505 A
Tensile Properties:				
T.S. @ Break (MD) lbs.	25,000 FT2	50 min	116	D751 2IPM/2"x5"SPEC.
T.S. @ Break (TD) lbs.	25,000 FT2	30 min	64	D751 2IPM/2"x5"SPEC.

* The above test results assure the quality of the following roll #:
10013783 10013784 10013785 10013786

CERTIFIED BY:

R.J. Schaefer
Lab Manager

Gundle

(96)

Quality Assurance Certificate

MATERIAL : XL4000G001
BATCH # : 093091
ROLL # : 10013855

MANF. DATE : 09/30/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-08 PROJECT # : H004
LOCATION : VICKSBURG MS

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	25,000 FT2	200 to 265	207	
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.6	D 1603
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.14	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.948	D 1505 A
Tensile Properties:				
T.S. @ Break (MD) lbs.	25,000 FT2	50 min	84	D751 2IPM/2"x5"SPEC.
T.S. @ Break (TD) lbs.	25,000 FT2	30 min	61	D751 2IPM/2"x5"SPEC.

* The above test results assure the quality of the following roll #:
10013856 10013857 10013858

CERTIFIED BY:

R.J. Schaefer
Lab Manager

Gundle

(97)

Quality Control Certificate

MANF. DATE : 09/30/1991
PROJECT NAME : VICKBURG CHEMICAL
MR NUMBER : 3897-08 PROJECT # : H004
LOCATION : VICKSBURG MS

MATERIAL : XL4000G001
BATCH # : 093091
ROLL # : 10013859

TEST PARAMETER	TESTING FREQUENCY	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM METHOD
Average Thickness (mils)	25,000 FT2	200 to 265	211	
Carbon Black (%)	1/SHIFT	2.0 to 3.0	2.6	D 1603
Melt Index (g/10 min)	1/SHIFT	0.30 max	0.14	D 1238 E
Density (g/cm3)	1/SHIFT	0.940 min	0.948	D 1505 A
Tensile Properties:				
T.S. @ Break (MD) lbs.	25,000 FT2	50 min	96	D751 21PM/2"x5"SPEC.
T.S. @ Break (TD) lbs.	25,000 FT2	30 min	65	D751 21PM/2"x5"SPEC.

* The above test results assure the quality of the following roll #:
10013860 10013861 10013862 10013863

CERTIFIED BY:

R.J. Schaefer
Lab Manager

(58)

QuLine

WOVEN DIVISION OF WELLMAN, INC.

January 10, 1992

Lewis Miller Construction Company, Inc.
P.O. Box 348
623 North Washington Street
Vicksburg, MI 39180
Attention: Gail Walker, CPA

Re - Q-80 User on Closure Retrofit Impoundment
Cedar Chemical, Vicksburg Plant

Letter of Compliance

This is to certify the QuLine Q-80 Geotextile supplied by Wellman meets or exceeds the following product specifications:

Property	Test Method	Value
Weight (oz/yd^2)	ASTM D-3776	8
Thickness (mils)	ASTM D-1777	110
Grab Strength (lbs.)	ASTM D-4632	225
Grab Elongation (%)	ASTM D-4632	95
Trap Tear Strength (lbs.)	ASTM D-4533	100
Puncture Strength (lbs.)	ASTM D-3787	125
Mullen Burst Strength (psi)	ASTM D-3786	430
Water Flow Rate (gal/min/ft^2)	ASTM D-4491	175
Permittivity (sec^{-1})	ASTM D-4491	2.38
Permeability (cm/sec)	ASTM D-4491	.38
Transmissivity (gal/min/ft width x 10^{-3})	ASTM D-4716	18
Apparent Opening Size	ASTM D-4751	70-100

Sincerely,
Wellman/QuLine Nonwovens

Tom Devlin

Tom Devlin
Manufacturing Manager

357 Madison Street • Denver, Colorado 80206 • Telephone (303) 322-3569 • FAX (303) 322-3581

Recycled Paper

(79)

MIRAFI

MIRAFI INC. P.O. BOX 240967/CHARLOTTE, N.C. 28224
PHONE (704) 523-7477 or (800) 438-1855 TELEX 216903 MRFI

MIRAFI 140NL CERTIFICATION

October 31, 1991

ATTN: Bill Brett
Lewis Miller Constr. Co. Inc.
P.O. Box 345
Vicksburg, MS 39185

Project: Chemical Plant
Qty.: 4 rolls

This is to certify that Mirafi 140NL is a nonwoven fabric of polypropylene filaments that meets or exceeds the following minimum property values as derived from quality monitoring test results.

PROPERTY/UNIT	MINIMUM AVERAGE[1] ROLL VALUE	TEST METHOD
Grab Strength, lbs.	90	ASTM D-4632-86[2]
Grab Elongation, %	50	ASTM D-4632-86[2]
Trapezoid Tear Strength, lbs.	30	ASTM D-4533-85[3]
Burst Strength, psi	185	ASTM D-3786-87[4]
Puncture Strength, lbs.	50	ASTM D-4833-88[5]
Apparent Opening Size (AOS) U.S. Standard Sieve	70-100	ASTM D-4751-87[5]
Permittivity, sec^{-1}	1.8	ASTM D-4491-85[6]
Water Flow Rate, gpm/sf	180	ASTM D-4491-85[6]
Ultraviolet Resistance, %	70	ASTM D-4355-84

[1] ASTM D-4632-86 supersedes ASTM D-1682-75
[2] ASTM D-4632-86 supersedes ASTM D-1682-75.
[3] ASTM D-4533-85 supersedes ASTM D-1117-80.
[4] ASTM D-4833-88 supersedes ASTM D-3787-80a.
[5] ASTM D-4751-87 supersedes COE CW02215-77.
[6] ASTM D-4491-85 supersedes CFMC GET-2.

Janice K. Mallinson
Janice K. Mallinson
Notary Public

Thomas Stephens
Thomas Stephens
Director, Geotechnical Products

My commission expires January 24, 1996

TS/jkm

To the best of our knowledge, the information contained herein is accurate. However, MIRAFI INC. cannot assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material and whether there is any infringement of patents is the sole responsibility of the user.

Users of any substance should satisfy themselves by independent investigation that the material can be used safely. We may have described certain hazards, but we cannot guarantee that these are the only hazards which exist.

Gundle Lining Construction Corp

Gundle

19103 Gundle Rd.
Houston, Texas 77073
U.S.A.

Phone: (713) 443-8564
Toll Free: (800) 435-2008
Telex: 4620281 GUNDLE HOU
Fax: (713) 875-6010

100

August 14, 1990

To Whom It May Concern:

RE: Gundle Job No. H004
Vicksburg Chemical
Certification of Tested Boots

This letter is to certify that the testing of all the boots for the job number H004 are completed. Each boot was pressurized and submerged in water for a period of ten to fifteen minutes. No visible sign of leaks appeared during this time period. We certify that the boots are leak free for this installation.

If you have any questions, please do not hesitate to contact me at (800) 435-2008, extension 863.

Sincerely,

Paul Rone

Paul Rone
Fabrication Manager

PR/rmb

(101)

PHILLIPS 66 COMPANY
PASADENA, TEXAS 77501-0792
BOX 792 PHONE: 713 475-3005

PHILLIPS PLASTICS RESINS
Houston Chemical Complex

December 22, 1988

JHV# 11237-88

FAX: 713-875-6010

Gundle Lining Systems Inc.
1340 East Richey Road
Houston, TX 77073

ATTN: Mr. Steve Severson

This letter will certify that the Marlex* resin shown below, as supplied by Phillips 66 Company, conforms to our manufacturing specification.

Type:	HHM TR-400
Lot Number:	0388199
P.O. Number:	19816
Date Shipped:	12/21/88
Package:	PSPX 2007
Quantity:	181350 lbs.
Melt Index:	.15 gm/10 min.
Density:	.937 gm/cc
ESCR, F/50:	>1000 hrs **
Low Temp. Brittleness: (ASTM D746)	<-180 degrees F **

Very truly yours,

PHILLIPS 66 COMPANY

J. H. Vaden
Quality Assurance Manager

* Reg. U.S. Pat. Off
** Nominal Value

PSN:JHV:ad

cc: QA-File-RC
D. E. Morgan

Gundle

(102)

Quality Control Certificate

RAILCAR : PSPX2007
MATERIAL : HDPE 060 MIL
BATCH # : 072790
ROLL # : 01005752

MANF. DATE : 07/27/1990
PROJECT NAME : AREA 300 FABRICATION
PROJECT NUMBER : 00300
LOCATION : AREA 300

TEST PARAMETER	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	54 min	64	D 1593
Carbon Black (%)	2.0 min.	2.4	D 1603
Melt Index (g/10 min)	.3 max	.16	D 1238 E
Density (g/cm3)	.94	.946	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	140	166	D638
T.S. Break (ppi)	240	290	Type IV
Elong. Yield (%)	13	13	2 ipm
Elong. Break (%)	700	794	
Tear Resistance (lbs)	45	55	D 1004, Die C
Puncture Resistance (lbs)	80	97	FTMS No. 101 Method 2065

CERTIFIED BY:

R Crenwelge

Rodney Crenwelge
Lab Manager

Gundle

(105)

MEMORANDUM

TO: Kevin Simms

FROM: Paul Rone

DATE: July 10, 1991

SUBJECT: Gundle Job No. H004
Vicksburg Chemical
Certification of Primary/Secondary Pipe Boot, 18" and 6" Pipe Boots

---

This letter is to certify that the testing of the pipe boots were pressure tested under 1 psi.. No visible sign of leaks appeared during this time period. We certify that these pipe boots are leak free for this installation.

If you have any questions, please do not hesitate to contact me at (800) 435-2008, extension 863.

Regards,

Paul Rone

Paul Rone
Fabrication Manager

PR/rmb

(104)

ADS

ADVANCED DRAINAGE SYSTEMS, INC.

2375 BENNINGHOFEN AVE. P.O. BOX 15213 HAMILTON, OHIO 45015 (513) 863-1384 FAX NO. (513) 863-5410

January 20, 1989

Mr. Keith Paxton
Louisiana Utility and Supply Company
P.O. Box 3531
Baton Rouge, Louisiana 70821

Re: Advanced Drainage Systems, Inc.
Certification of Compliance

Dear Mr. Paxton:

This will certify that the 4 inch I.D. corrugated polyethylene drainage pipe and fittings manufactured by Advanced Drainage Systems, Inc. for the following project complies with the requirements of AASHTO M252 and the additional provision of the Louisiana Department of Transportation.

Attached is a laboratory evaluation sheet of this product.

Quantity: 1750 linear feet of 4" I.D.

Sincerely,

Dean S. Carpenter

Dean S. Carpenter
Quality Control Manager

DSC/jv

Subscribed and sworn before me this 20th day of January, 1989.

Thomas W. Mathews

THOMAS W. MATHEWS
Notary Public, State of Ohio
My Commission expires July 12, 1989

ADS green
number 1 in the land

ADVANCED DRAINAGE SYSTEMS, INC.

4 inch I.D. Corrugated Polyethylene Pipe

Laboratory Evaluation

Attribute	Specification AASHTO M252	Test Result
Inside Diameter	3.940"/4.120"	4.070"
Perforations		
Slot Length	Maximum 1.25"	0.630"
Slot Width	Maximum 0.125"	0.060"
Water Inlet Area	Minimum 1.0 sq. in./ft.	4.00"
Pipe Stiffness		
5% Deflection	Minimum 35.0 psi	57.2 psi
Pipe Flattening	No damage @20% deflection	Pass
Elongation	5/10% Maximum	4.75%
Pipe Stiffness (Elongated)	Minimum 35.0 psi	N/A
Environmental Stress Cracking	No cracking	Pass
Low Temperature Flexibility	No cracking	Pass

(106)

PHILLIPS DRISCOPIPE, INC.
A SUBSIDIARY OF PHILLIPS 66 COMPANY

2929 NORTH CENTRAL EXPRESSWAY, SUITE 100
P. O. BOX 83-3886
RICHARDSON, TEXAS 75083 ● 214/783-2666

January 23, 1989

Keith
Baton Rouge
FAX 504-387-5256

Louisiana Utilities
P.O. Box 3531
Baton Rouge, Louisiana 70821

Attn: Keith Paxton:

Dear Mr. Paxton:

Regarding you purchase order #20432B-MS for the following items:

480' - 18" SDR 15.5 Driscopipe 1000
960' - 6" SDR 11 Driscopipe 1000
480' - 4" SDR 21 Driscopipe 1000
1 - 18" SDR 11 Tee
10 - 18" Flange Adapters
3 - 18" SDR 11 45° Ell
6 - 6" SDR 9.3 Caps
18 - 6" SDR 11-45° Ell
4 - 6" SDR 11 Flange Adapters

These items are in compliance with ASTM 1248, ASTM D3350 and ASTM F714 guidelines and voluntary standard requirements. These P.E. products above qualify as a Type III, Class C, Class 5 Grade P34 material and product, as is printed and discussed in the "Driscopipe Piping Systems" Booklet, page 3.

Thank you for your continued business.

Sincerely,

Harvey Svetlik

Harvey Svetlik

HS/rk(1/128)

attachment

(107)

BATON ROUGE BOLT, INC.

P.O. BOX 77360, BATON ROUGE, LA 70879
PH: (504) 296-5070 FAX: (504) 296-5075

January 23, 1989

LETTER OF CERTIFICATION

We certify that Louisiana Utility Supply Purchase Order #20435B-MS and Baton Rouge Bolt, Inc. #10093 do conform to the following specifications:

(1) 1-1/8 x 9 A193 GrB-7 Studs w/A194 Gr2H Nuts

(2) 3/4 x 4-1/2 A307 GrA Hex Machine Bolts w/A307 GrB Heavy Hex Nuts

(3) 5/8 x 4 A307 GrA Hex Machine Bolts w/A307 GrB Heavy Hex Nuts

Sincerely,

Allen A. Sanders
Owner

AAS/kds

Industrial Fasteners

5811 SIEGEN LN. (McCann Dr.), BATON ROUGE, LA 70809

(108)

Mueller
WATER & GAS PRODUCTS DIV.
A HUSSEY COMPANY

500 WEST ELDORADO STREET
P.O. BOX 671
DECATUR, ILLINOIS 62525-1808
217-423-4471

January 19, 1989

Louisiana Utilities
2056 Sorrel Avenue
Baton Rouge, LA 70821

Job: Vicksburg Chemical
Vicksburg, MS

TO WHOM IT MAY CONCERN:

This is to certify that the Mueller Co. A-2380-6 Gate Valves comply with AWWA C500 Standard.

Very truly yours,

Gary L. Bouc, P.E.
Division Manager - Engineering
Mueller Water & Gas Products Division

GLB:mlw

Subscribed and Sworn to before me
this 19th day of January, 1989.

NOTARY PUBLIC Mary Louise Wetherell

OFFICIAL SEAL
MARY LOUISE WETHERELL
NOTARY PUBLIC STATE OF ILLINOIS
MY COMMISSION EXP. JAN. 7,1993

ALBERTVILLE, ALABAMA 205-878-7930
CHATTANOOGA, TENNESSEE 615-698-8811
CLINTON, SOUTH CAROLINA 803-833-3151

PHONE 312-844-4000 • TELEX 720-424 • FAX 312-844-4124

[redacted]

HENRY PRATT COMPANY

creative engineering for fluid systems
401 SOUTH HIGHLAND AVENUE • AURORA, ILLINOIS 60507

TO: Louisiana Utilities Supplies

P.O. Box 3531

Baton Rouge, LA 70821

REF:

YOUR P.O. NO.: 204899B

PROJECT NAME: Lewis Miller Cont. / Cedar Chemical

PRATT REF: F-88220

HYDROSTATIC AND LEAKAGE TEST CERTIFICATION

Gentlemen:

Enclosed please find 3 (three) copies of your shop Leakage Test Certification and Hydrostatic Leakage Test Certification on the subject of valves.

We hereby certify that valve body described below was subjected to hydrostatic test at pressure as listed below and found to be free of defects which would cause it to be unsatisfactory for operation at said pressure.

The valve was subjected to hydrostatic test for leakage thru disc at pressure as listed below and found to be bubble tight.

Project:	Item	Amt	Size	Tag	Hydro PSI	Bubble PSI
Lewis Miller Cont Cedar Chemical	1	2	18"		300	150

NOTE: Testing is in compliance with AWWA C-504-87, Section #5
Leak Test duration 5 Minutes
Hydro Test duration 10 Minutes

DATE January 27 1989

Rodney Gundersdorf
Chief Inspector

(110)

[redacted]

HENRY PRATT COMPANY

creative engineering for fluid systems
401 SOUTH HIGHLAND AVENUE · AURORA, ILLINOIS 60507

TO: Louisiana Utilities Supplies

P.O. Box 3531

Baton Rouge, LA 70821

REF:

YOUR P.O. NO.: 204898

PROJECT NAME: Lewis Miller Cont. / Cedar Chemical

PRATT REF: F-88220

CERTIFICATE OF CONFORMANCE

WE HEREBY CERTIFY that to the best of our knowledge and belief the valve/valves indentified herein are manufactured under a controlled program and are in accordance with referenced specifications and applicable sections of AWWA C-504-87, and that the valve/valves were shop operated three (3) times and the complete assembly is workable

Rudolph Gundlach
Chief Inspector

DATE: 1-27-89

AWWA Proof-of-Design Test
Section 13, Paragraph 13.4.1

Valve Tested: 18" 2FII Date 5-26-81

Assembly No.: 67283

Job No.: 4-2539-1

The above valve was tested hydrostatically with the disc in closed position. Twice the specified shut-off pressure 300 psi was applied to one side of the disc and zero on the other. This test was made in each direction across the disc.

Test Result:

Inspection during the hydrostatic test revealed no leakage through the metal, and no permanent deformation was noticed on any part of the valve following the hydrostatic test.

H.B. Washburn
Senior Test Engineer

A.K. Wilson
Vice President, Engineering

State of Illinois

County of Kane

On this 25th day of August 1981

Notary Public

Joan M. Blasing

My Commission Expires June 15, 1982

Test Report
AWWA Proof-of-Design Test of 16" - 150B 2FII
Rubber Seat Butterfly Valve
October 10, 1972

Test Objective:

This test was performed to prove the cycle life of a Pratt 16" - 150B 2FII rubber seat Butterfly valve conforming to Class 150B of the AWWA C504-70, Section 13 specifications.

Description of Valve:

The valve tested was a Pratt 16" Model 2FII Assembly No. 65321, rubber seat Butterfly valve. This assembly conformed to the 150B designation of the AWWA C504 specification. The valve body, disc, shaft, and bearings were manufactured in accordance with Pratt Drawing Nos. B-304, B-337, B-331, and A-173, respectively.

All pertinent dimensions were measured either before or after the test and were found to be in agreement with the listed drawings.

Test Apparatus:

An MDT-4 cylinder operator with operating cycle of 75 sec. was mounted on the valve and flanged test heads were bolted to both end flanges. Both test heads were fitted with flanged openings for connection to the 10" water supply and discharge pipes. The operator was adjusted to assure automatic cycling of the disc through a ninety-degree arc of travel from the closed position, perpendicular to the water-way axis, to the full-open position and vice versa.

All of the test was performed at the Henry Pratt R&D Test Laboratory in Aurora, Illinois, where the test assembly was bolted into the test-hydroloop. The test-hydroloop included four centrifugal pumps with capacity of 2,000 gpm at a discharge pressure of 75 psi each. For the present test, a series parallel combination of the pumps were utilized to obtain a 150 psi shut-off pressure. With the test valve full-open, the rate of flow through the test loop was 3,750 gpm, as indicated by the flow meter. The discharge flow from the test valve was conducted back to the pump suction reservoir through approximately 20 feet of a 10" pipe having no intervening restrictions or throttle valves other than two ninety-degree elbows.

Test Method:

Before the cycle test was started, the test valve was bubble-tested and found to be bubble-tight at 150 psi air pressure. After the water pumps were started, the test valve was placed in cycling operation, then the pump discharge control valves were finally adjusted to produce 150 psi water pressure at the test valve inlet each time the valve reached full-closed position.

The valve was operated through 10,000 cycles, each cycle consisting of an opening operation while subjected to 150 psi inlet water pressure, travel to the full-open position, and back to full-closed position and full closure while subjected to 150 psi inlet water pressure.

Test Results:

After completion of 10,000 cycles imposed in the manner described under "Test Methods", the test valve was found to be bubble-tight at 150 psi air pressure. Inspection of the valve seat showed that it remained in excellent condition. The cycle test produced no noticable effects on any other part of the valve.

Conclusion:

1. The Pratt 16" Model 2F11 rubber seat Butterfly valve conforming to Class 150B of the AWWA C504 specifications successfully met the requirements of Paragraph 13.4.2 under Section 13 of the AWWA C504 specification.

2. The successful performance of the present test automatically proves the conformance of 3" thru 20" sizes of the Pratt Model 2F11 rubber seat Butterfly valves in all classes to Paragraph 13.4.2 of the AWWA C504 specifications.

I.S. Hukvari, P.E.
Manager, Test Laboratory

R.P. Soar
Vice President, Engineering

ISH:lb

State of Illinois

County of Kane

On this 13 day of October 1972

Notary Public

My Commission Expires March 15, 1975

(114)

American Excelsior Company
AN EMPLOYEE OWNED COMPANY
501 COOLIDGE ST. P.O. BOX 10532, NEW ORLEANS, LA 70181-0532, (504) 837-5834 FAX (504) 836-6871

December 19, 1991

Mr. James Conn
KNOWLES MATERIAL COMPANY
P.O. Box 1096
Jackson, MS 39205

Dear Mr. Conn:

This is to certify that 30 rolls of soil retention blankets shipped on our Invoice #193358, dated 12/31/90, and 3 boxes of staples, shipped on our Invoice #193358, dated 12/31/90, to Louis Miller Contractor, Vicksburg, Mississippi, meets the Mississippi state highway specifications for blankets and staples.

For use on project number: Cedar Chemical Company, Vicksburg, Mississippi

Yours truly,

Dennis W. Riebe

Dennis Riebe
Branch Manager
AMERICAN EXCELSIOR COMPANY

Suscribed and sworn before 19th day of December A.D., 1991.

NOTARY PUBLIC

My commission expires _____.

NOTARY PUBLIC

XCEL EXCELSIOR EROSION CONTROL BLANKETS

To Whom It May Concern:

We the manufacturer of XCEL Excelsior Erosion Control Blankets certify that the shipment of REGULAR XCEL EROSION CONTROL BLANKETS sent to: LEWIS MILLER CONSTRUCTION CO., INC.
112 rolls at 4.5' x 180'
Job # or Contract #: Job #330 (CLOSURE RETROFIT IMPOUNDMENT)

Location: CEDAR CHEMICAL - VICKSBURG MS

Meet the state specifications which are highlighted as follows:

1. Excelsior blanket is manufactured from pure Aspen wood and is covered by a photodegradable plastic netting on top. Mesh is no greater than 1"x 2".

2. We certify that 80% of the excelsior fibers are 6" or longer.

3. The mat is machine made to insure even distribution throughout the blanket.

4. We certify that all materials used in the XCEL Erosion Blanket are new.

5. The weight per blanket is 78 lbs. ± 8 lbs.

6. The netting has been entwined with the excelsior mat for maximum strength and ease in handling.

7. The wood from which the excelsior was cut has been properly cured to achieve adequately curled and barbed fiber.

Very Truly Yours,

PPS PACKAGING COMPANY

Robert Matthews,
Vice-President, Manufacturing

RM/dr

Gundle Lining Construction Corp

Gundle®

19103 Gundle Road
Houston, Texas 77073-3598
U.S.A.

Phone: (713) 443-8564
Toll Free: (800) 435-2008
Telex: 166657 GUNDLE HOU
FAX: (713) 875-6010

116

May 7, 1992

Joe Strawbridge
Lewis Miller Construction
623 North Washington Street
Vicksburg, Mississippi 39181

RE: Cedar Chemical Company, Vicksburg Plant, Gundle's Project Number H004
Certification of Installation for Ponds A, B, and C

Mr. Strawbridge:

Pursuant to the Closure/Retrofit Plan, Surface Impoundment System for the above referenced project, Section 5.8.4, Pages 5-18, Gundle Lining Construction Corporation certifies that the 60 mil HDPE liner was installed in accordance with the plans, specifications, and manufacturer's recommendations and addenda.

Sincerely,

Kevin Simms
Construction Manager

KS/cs

CC: Steve Boswell - Cedar Chemical Co.
Glen Landry - I.T. Corp.

116A

Gundle Lining Construction Corp

Gundle®

10103 Gundle Road
Houston, Texas 77073 3508
U.S.A.

Phone: (713) 443-8564
Toll Free: (800) 400-2000
Telex: 165507 GUNDLE HOU
FAX: (713) 875-6010

April 14, 1992

Joe Strawbridge
Lewis Miller Construction Company
623 North Washington Street
Vicksburg, Mississippi 39181

RE: Cedar Chemical Company, Vicksburg Plant, Gundle's Project Number H004

Mr. Strawbridge:

Pursuant to the Closure/Retrofit Plan Surface Impoundment System for the above reference project, *Section 5.5.1.2, Pages 5-8*, Gundle Lining Construction Corporation certifies that the 60 mil HDPE liner was installed in accordance with the plans, specifications, manufacturer's recommendations and addenda.

Sincerely,

Kevin Simms

Kevin Simms
Construction Manager

KS/cc

05/12/92 09:33 ☎875 6010 GUNDLE LINING --- IT CORPORATION 002

(117)

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 1

Date:
Project No.:
Project:

Sample Data

Location of Sample: Stockpile, Miller Hwy 80 Pit
Sample Description: Washed gravel
USCS Class:
AASHTO Class:
Liquid limit:
Plasticity index: NP

Notes

Remarks: Client:
Technician: Doss

Fig. No.:
Specification: ASTM Size 56 - 1"

Mechanical Analysis Data

	Initial
Dry sample and tare=	452.00
Tare =	0.00
Dry sample weight =	452.00

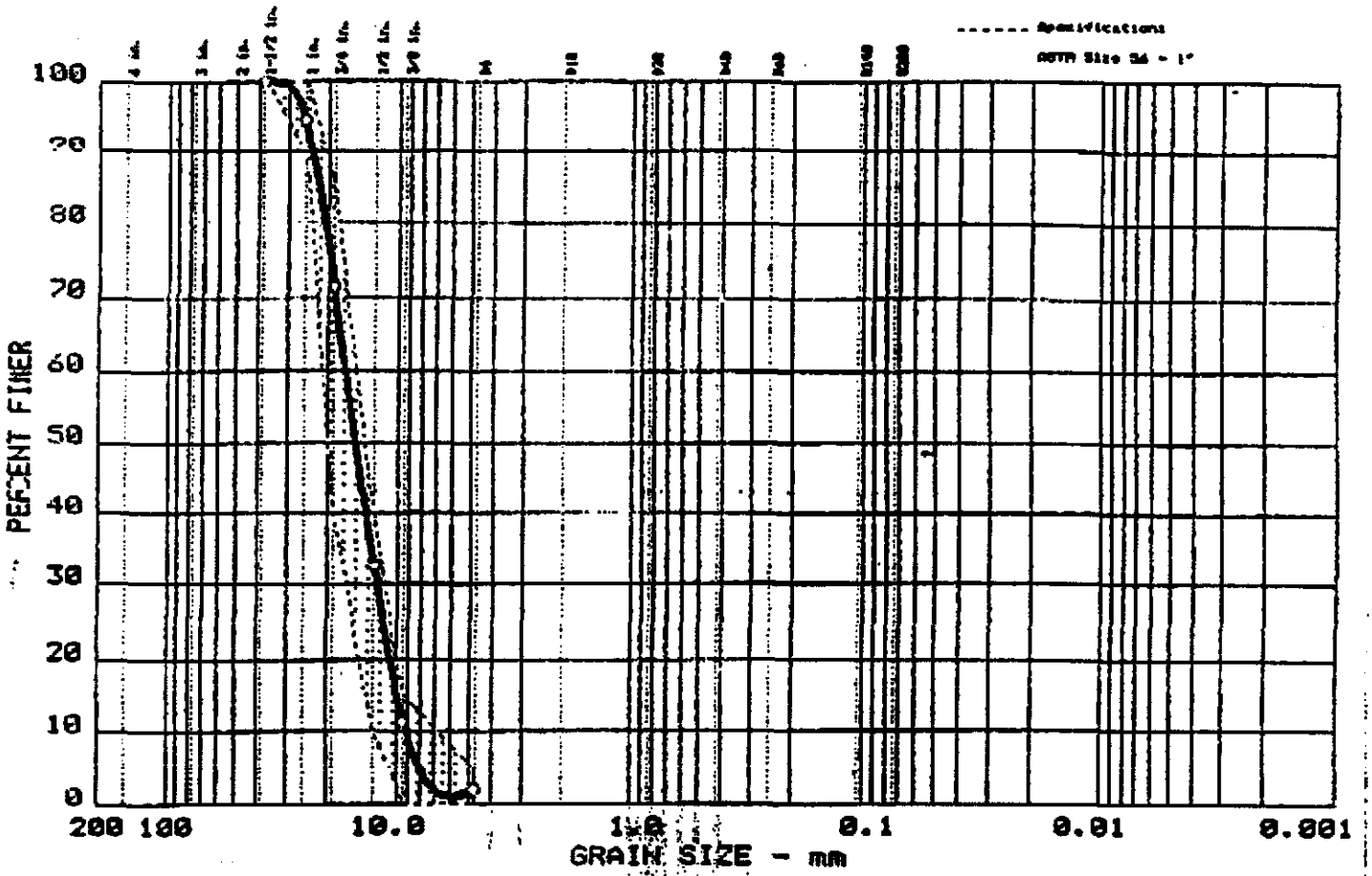
Tare for cumulative weight retained= 0

Sieve		Cumul. Wt. retained	Percent finer	Specification Limits, percent	Deviation, percent
1.5	inches	0.00	100.0	100.0 to 100.0	
1	inches	25.00	94.5	90.0 to 100.0	
0.75	inches	129.00	71.5	40.0 to 85.0	
0.5	inches	305.00	32.5	10.0 to 40.0	
0.375	inches	401.00	11.3	0.0 to 15.0	
4	inches	443.00	2.0		

Fractional Components

% + 3 in. = 0.0 % GRAVEL =100.0 % SAND = 0.0

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	98.0	2.0		

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O		NP	22.11	16.92	15.29	12.331	10.1391	9.2897	0.97	1.8

MATERIAL DESCRIPTION	USCS	AASHTO
O Washed gravel	GP	A-1-a

Project No.:
Project:
O Location: Stockpile, Miller Hwy 80 Pit

Date:

Remarks:
Client:
Technician: Doss

GRAIN SIZE DISTRIBUTION TEST REPORT
GEE & STRICKLAND, INC.

Figure No.

GRADATION TEST DATA SHEET

Quarry: WEST LAKE NEELY'S

Sample No.: 1

Type of Stone Tested: 90LB R/R

Date of Test: 10/30/91

Testing Rate: 50,000 Tons

Contractor: WEST MISSISSIPPI MAT. Location: BARGE PTT 7624

TEST REPRESENTS.

Contract No.	District	Tons
	TOTAL	

GRADATION

Stone Size (lbs)	Weight Retained	Individual % Retained	Cumulative % Ret.	Cumulative % Pass	Specification % Finer by wt
90	0	0	0	100	100
40	11450	22	22	78	50-100
20	19250	37	59	41	15-50
5	17700	34	93	7	0-15
	3640	7	100		
Total Weight	52040				

Remarks: STONE MEETS SPECIFICATIONS

I certify that the above stone sample is representative of the total tonnage covered by this test report:

Contractor Representative: Michael Hagan

Government Representative:

LMV FORM 502-R
Dec 87

(120)

MISSISSIPPI MATERIALS COMPANY
P.O. BOX 307
JACKSON, MS 39205
(601) 353-8366

CONCRETE MIX DESIGN 05/01/91

MIX ID : MS11 [5] 3000 PSI

CONTRACTOR : LEWIS MILLER CONSTRUCTION CO., INC.
PROJECT : CEDAR CHEMICAL - JOB NO. 330
SOURCE OF CONCRETE : M.M.C. - VICKSBURG
CONSTRUCTION TYPE : WASTE TREATMENT PROJECT
PLACEMENT : TRUCK/PUMP

WEIGHTS PER CUBIC YARD (SATURATED, SURFACE-DRY)		YIELD, CU FT
HOLNAM CEMENT - ASTM C-150 TYPE 1, LB	367	1.87
HOLNAM FLY ASH - ASTM C-618 CLASS C, LB	103	0.63
FINE AGGREGATE, LB	1279	7.79
COARSE AGGREGATE, LB	1821	11.36
WATER, LB (GAL-US)	233 (27.9)	3.73
AIR ENTRAINMENT, %	6.0 +/- 1.0	1.62
		=======
	TOTAL	27.00

POZZ. 300N - ASTM C-494 TYPE A, OZ-US	14.1
MB-VR - ASTM C-260, OZ-US	4.0
WATER/CEMENT RATIO, LBS/LB	0.50
SLUMP, IN	4.00
CONCRETE UNIT WEIGHT, PCF	140.9

The above mix will meet the specified strength in 28 days when placed, handled, and tested in accordance with current ASTM and ACI standards and recommended practices. Please include this office on the distribution list for concrete test reports.

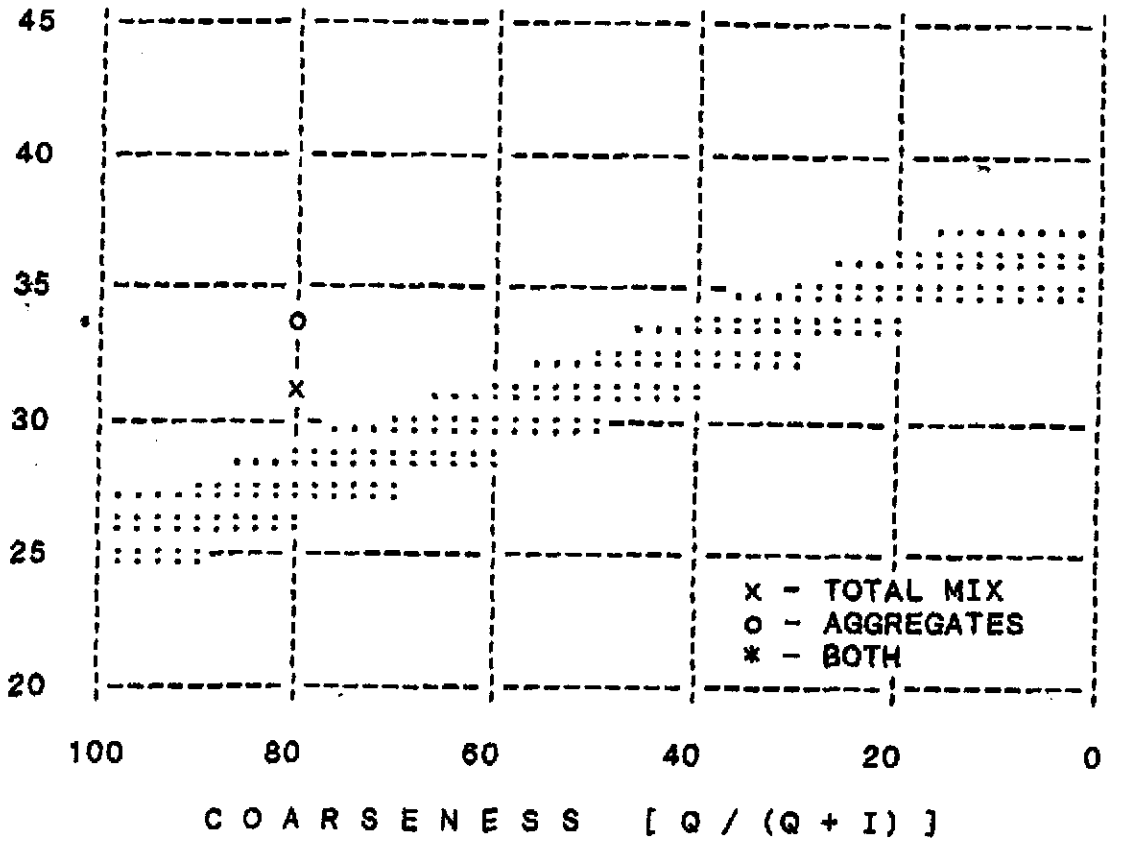
PREPARED BY : Rick Hardy

RICK HARDY

: 3000 PSI Mix: MS11 05/01/91

MIX ANALYSIS

MIX VOLUME, CU FT	27.00
COARSENESS (Q / (Q + I))	80.8
WORKABILITY	34.3
W - ADJUST	31.8
PERCENT MORTAR	53.4
TOTAL FINENESS MODULUS	5.44



MATERIALS CHARACTERISTICS

	STONE	SAND
DENSITY, SP G	2.57	2.63
% PASSING 3/8 " SIEVE	10.5	100.0
% PASSING # 8 SIEVE	0.6	83.4
FINENESS MODULUS	7.27	2.78
PERCENT OF AGGREGATE	59.3	40.7

MINERAL ADMIXTURE DENSITY, SP G 2.63

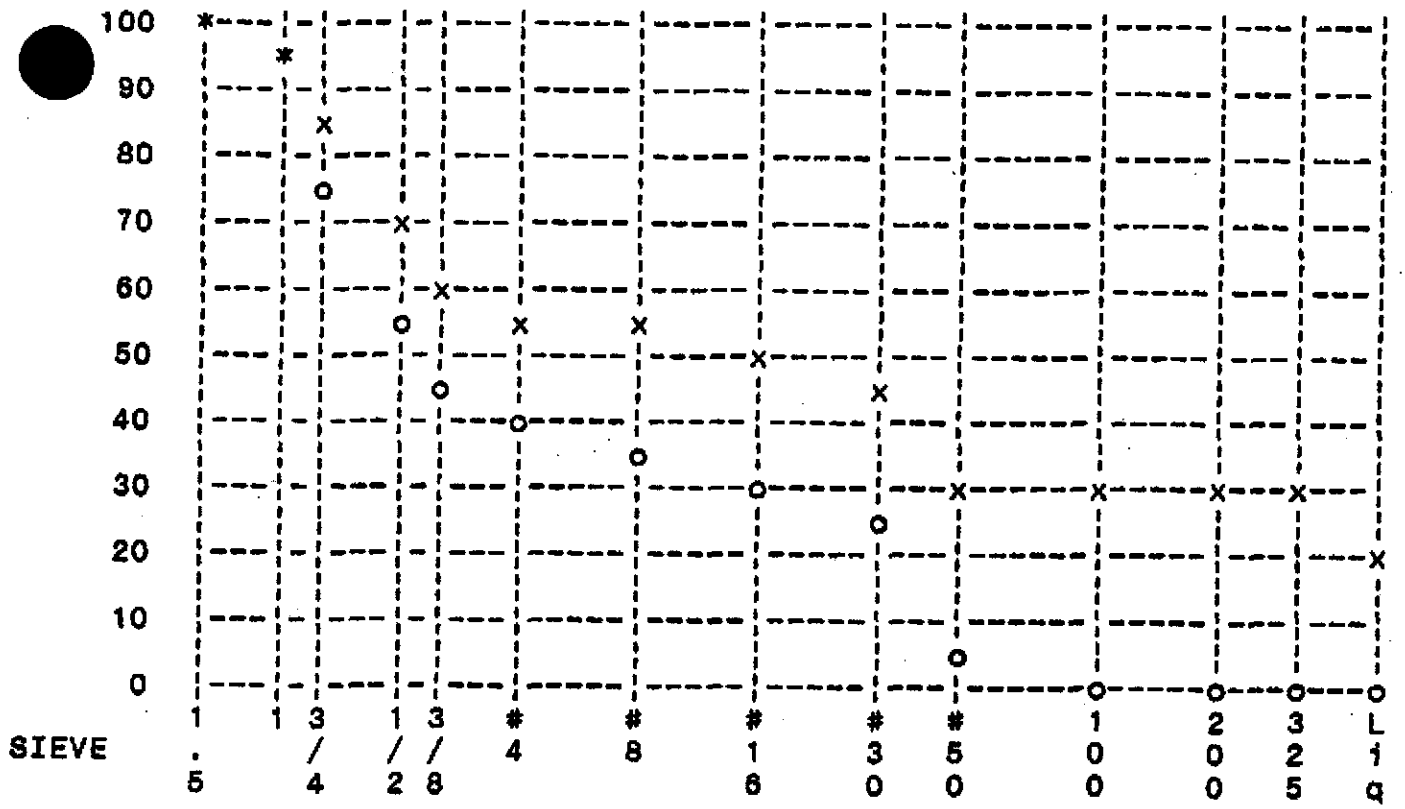
NO SEVERE EXPOSURE

I: 3000 PSI Mix: MS11 05/01/91

FULL GRADATION ANALYSIS

SIEVE	STONE	SAND	PASTE	TOTAL	AGGR
1-1/2 "	100.0			100.0	100.0
1 "	90.0			95.8	94.1
3/4 "	60.7			83.5	76.7
1/2 "	24.0			68.0	54.9
3/8 "	10.5	100.0		62.4	46.9
# 4	1.0	95.1		56.9	39.3
# 8	0.6	83.4		53.4	34.3
# 16	-	76.6		51.2	31.2
# 30	-	56.5		45.4	23.0
# 50	-	9.4		31.8	3.8
# 100	-	1.0		29.4	0.4
# 200	-	0.4	100.0	29.2	0.2
# 325	-	-	96.0	27.9	-
Liquid	-	-	68.2	19.8	-

GRADATION CHART



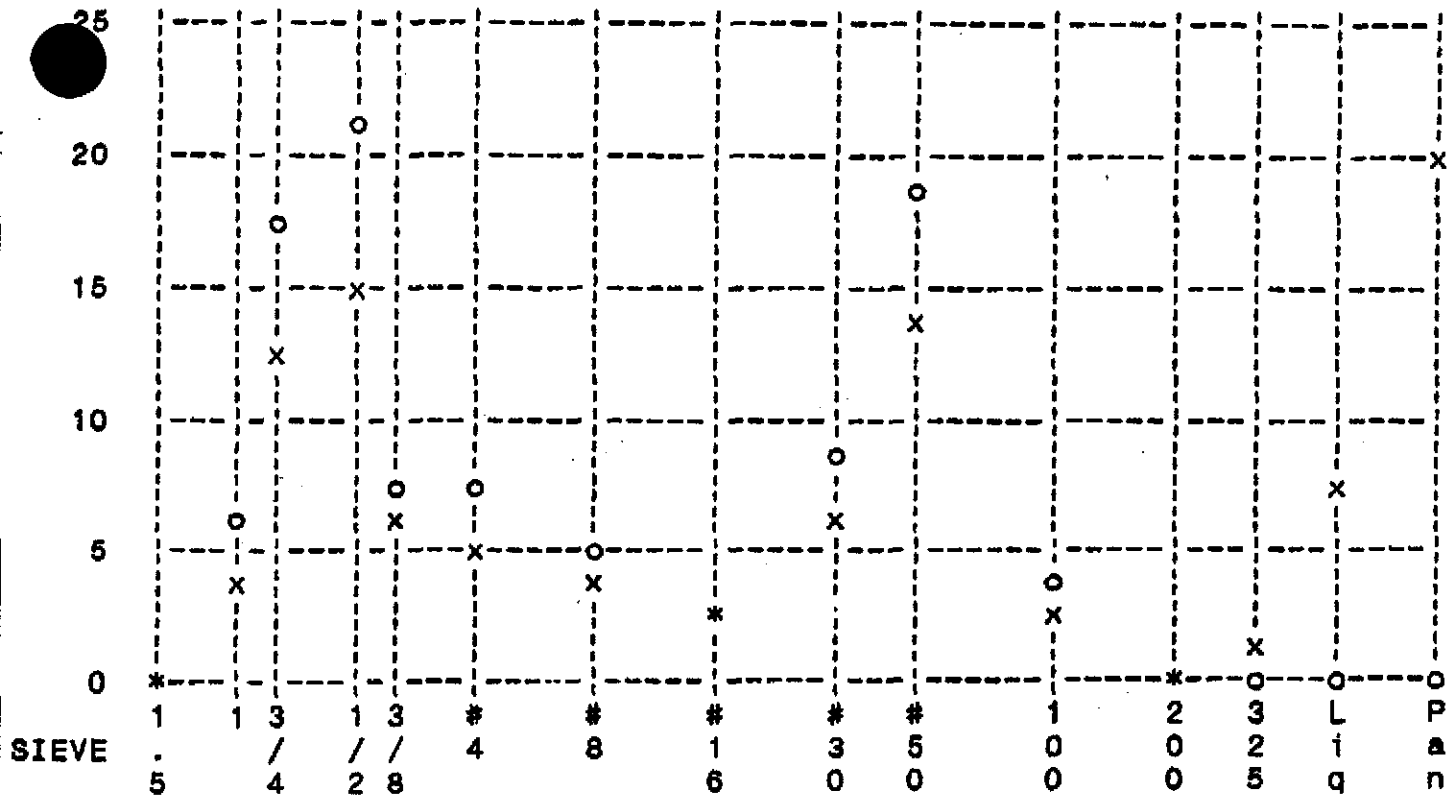
x - ALL COMPONENTS o - AGGREGATES * - BOTH

I: 3000 PSI Mix: MS11 05/01/91

MATERIALS DISTRIBUTION

SIEVE	STONE	SAND	PASTE	TOTAL	AGGR
1-1/2 "	100.0			0.0	-
1 "	90.0			4.2	5.9
3/4 "	60.7			12.3	17.4
1/2 "	24.0			15.4	21.8
3/8 "	10.5	100.0		5.7	8.0
# 4	1.0	95.1		5.4	7.6
# 8	0.6	83.4		3.5	5.0
# 16	-	76.6		2.2	3.1
# 30	-	56.5		5.8	8.2
# 50	-	9.4		13.6	19.2
# 100	-	1.0		2.4	3.4
# 200	-	0.4	100.0	0.2	0.2
# 325	-	-	96.0	1.3	0.2
Liquid	-	-	68.2	8.1	-

MATERIALS DISTRIBUTION CHART BY SIEVE



x - ALL COMPONENTS o - AGGREGATES * - BOTH

05/01/91

SI: 3000 PSI

Mix: MS11
DESIGN SUMMARY

MIX DESIGN ID : MS11 MODIFICATION NUMBER : 5
DESIGN COMPRESSIVE STRENGTH : 3000 PSI
EQUIVALENT FLEXURAL STRENGTH : - PSI

MAXIMUM AGGREGATE SIZE	AGGREGATE SHAPE
1 IN -- 25.0 MM	NATURAL GRAVEL

TOTAL AIR : 6.00 % +/- 1.00 SLUMP : 4.00 IN

WATER METHOD : MANUAL ENTRY

AMOUNT : 233 LB

CEMENT METHOD : MANUAL ENTRY

AMOUNT :	367	[367]	LB
W/C :	0.63	[0.50]	LBS/LB

MINERAL ADDITIVE METHOD : MANUAL ENTRY OF WEIGHT

ADDITIVE 1 : 103 [103] LB

SEVERE EXPOSURE CONDITIONS

NO SEVERE EXPOSURE
ACCEPT ACI RECOMMENDATION? -

COARSE AGGREGATE METHOD : W-ADJUST WORKABILITY FACTOR

ACI bbo	-	PERCENT STONE	59.3
W-ADJUST	31.8	PERCENT MORTAR	53.4
TOTAL FM	5.44	NRMCA FM	-

	AMOUNT, LB	FINENESS MODULUS
STONE 1	1821	7.27

FINE AGGREGATE METHOD : PRODUCE A SPECIFIC VOLUME

	AMOUNT, LB	FINENESS MODULUS
SAND 1	1279	2.78

MIX VOLUME : 27.00 CU FT

STONE BLENDED : No FULL GRADATION : Yes
SAND BLENDED : No DESIGN SAVED : Yes

APPENDIX F

GEOSYNTHETIC TEST RESULTS

Table of Contents

SWCA Bottom and Side Secondary Liner 1
SWCA Bottom and Side Primary Liner 3
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Impoundment Pond A Primary Liner 8
Impoundment Pond A Repairs 10
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Impoundment Pond B Secondary Liner 17
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Impoundment C Secondary 25
Impoundment C Primary 26
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SWCA Cap Liner 28
Impoundment A Repair 33

①

Gundle Lining Systems Inc

Gundle®

19103 Gundle Rd.
Houston, Texas 77073-2699
U.S.A.

Phone: (713) 443-8564
Toll Free: (800) 435-2008
Telex: 168867 GUNDLE HOU
Fax: (713) 875-6010

NO. 60404

TELEFAX TRANSMISSION

DATE: ~~2/18/92~~ 2/19/92 RCD 2-19-92 B.F.

TO: I.T. CORP.

FAX NO: 504-922-4513

CITY/STATE/COUNTRY:

ATTN: Billy Frey

FROM: Gundle Lining Systems, Inc.

FAX NO: (713) 875-6010

CONTACT: Kevin Simms

SUBJECT: Δ/S Lab Report # 6345 Secondary SWCA

Δ/S Lab Report # 7215 and 7236 Secondary Pond A

Total pages including cover page 4

PRODUCED BY SOUTHWEST DATA CORP. (713) 466-4900

(2)

Gundle

Laboratory Report # 6345

DATE: 08/29/1989

SUBJECT :

Quality control testing of site welds from VICKBURG CHEMICAL
VICKSBURG MS
H004

Product Type: HDPE 60 MIL

TEST METHOD:

[One Inch strips were used for peel and shear testing of welds.]
Peel test - ASTM D413. Shear test - ASTM D3083.

TEST RESULTS: (FTB = Film Tearing Bond)

Seam/Sample	Result Type	Peel Stress, ppi	Max Shear Stress, ppi
17-18/DS-2	FTB	122	184
13-14/DS-1	FTB	89	190
5-6/DS-4	FTB	135	202
8-9/DS-3	FTB	114	192
36-37/DS-5	FTB	118	199

CONCLUSION:

All welds passed.

CERTIFIED BY:

R.J. Schaefer
Lab Manager

COPY

LETTER OF TRANSMITTAL (3)

Gundle Lining Construction Corp
Specialty Applications

Gundle

Orig to # 330 S/C - Gundle
Steve Boswell

DATE September 14, 1989
Job No. H004
Attention Tim Tipple
Re Vicksburg Chem.

19103 Gundle Road
Houston, Texas 77073
U.S.A.

Phone: (713) 443-8564
Toll Free: (800) 435-2008
Telex: 4620281 GUNDLE HOU
Fax: (713) 875-6010

Lewis Miller Construction
623 N. Washington
Vicksburg, MS 39180

TRANSMIT VIA:
☒ U.S. Mail ☐ Express Mail
☐ Federal Express ☐ Bus
☐ Hand Deliver ☐ U.P.S.
☐ Other

GENTLEMEN: We are sending you ☒ attached ☐ under separate cover via the following:
☐ Shop drawings ☐ Prints ☐ Samples ☐
☐ Copy of letter ☐ Plans ☐ Specifications

Copies	Sheet No.	Description
2		Submatory Report #703516 + #6380

THESE ARE TRANSMITTED AS CHECKED BELOW:

☐ For approval
☒ For your use
☒ As requested
☐ For review and comment
☐ Approval as Submitted

☐ Approved as noted
☐ Returned for corrections
☐ Return
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☐ Prints returned after loan to us

☐ Resubmit ____ Copies for approval
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☐ Return ____ Corrected prints

REMARKS:

If enclosures are not as noted kindly notify us at once.

SIGNED Tracie Oakland / Rickenbacker

CC:

DATE Sept. 14, 1989

ENGINEER/CONTRACTOR

Gundle

Laboratory Report # 6356

DATE: 09/08/89

SUBJECT:

Quality control testing of site welds from VICKSBURG CHEM.
VICKSBURG, MS
H004

Product type: HDPE 060 MIL

TEST METHOD:

[ASTM D638 Type IV dumb-bells were used for peel and shear testing of the welds.]

TEST RESULTS: (FTB = Film Tearing Bond)

Seam/Sample	Result Type	Peel Stress, ppi	Max Shear Stress, ppi
P2/DS-6	FTB	89	177

CONCLUSION:
All welds passed

CERTIFIED BY:

Rodney Crenwelge
Lab Manager

Gundle

Laboratory Report # 6380

DATE: 09/08/89

SUBJECT:

Quality control testing of site welds from VICKSBURG CHEM.
VICKSBURG MS
H004

Product type: HDPE 060 MIL

TEST METHOD:

[ASTM D638 Type IV dumb-bells were used for peel and shear testing of the welds.]

TEST RESULTS: (FTB = Film Tearing Bond)

Sample/Seam	Result Type	Peel Stress, ppi	Max Shear Stress, ppi
1/33-34	FTB	147	194
10/20-21	FTB	97	210
11/29-20	FTB	109	193
12/12-13	FTB	163	208
13/10-11	FTB	120	200
8/29-30	FTB	107	195
9/25-26	FTB	109	203

CONCLUSION:

All welds passed.

CERTIFIED BY:

Rodney Crenwelge
Lab Manager

Gundle

Laboratory Report # 7215

DATE: 03/28/90

SUBJECT:

Quality control testing of site welds from VICKSBURG CHEM.
VICKSBURG MS
H004

Product type: HDPE 060 MIL

TEST METHOD:

(One Inch strips [illegible] used for peel and shear testing of [illegible]
Peel test - ASTM D41[illegible]. Shear test - ASTM D3083.

TEST RESULTS: (FTB = Film Tearing Bond)

Seam/Sample	Result Type	Peel Stress, ppi	Max Shear Stress, ppi
10A/1	PEEL	71	198
14A/4	FTB	81	169
10A/3	FTB	103	172
2A/2	FTB	121	172

CONCLUSION:

These welds failed:
10A/1

CERTIFIED BY:

Rodney Crenwelge
Lab Manager

(7)

Gundle

Laboratory Report # 7236

DATE: 04/03/90

SUBJECT:

Quality control testing of site welds from VICKSBURG CHEM.
VICKSBURG MS
H004

Product type: HDPE 060 MIL

TEST METHOD:

[One Inch strips were used for peel and shear testing of welds.]
Peel test - ASTM D413. Shear test - ASTM D3083.

TEST RESULTS: (FTB = Film Tearing Bond)

Seam/Sample	Result Type	Peel Stress, ppi	Max Shear Stress, ppi
10A/1-W	FTB	111	163
10A/1-E	FTB	127	182
28A/5	FTB	133	190

CONCLUSION:
All welds passed.

CERTIFIED BY:

R Crenwelge

Rodney Crenwelge
Lab Manager

LETTER OF TRANSMITTAL (8)

Gundle Lining Construction Corp

Gundle®

19103 Gundle Road
Houston, Texas 77073
U.S.A.

Phone: (713) 443-8564
Toll Free: (800) 435-2008
Telex: 4620281 GUNDLE HOU
Fax: (713) 875-6010

DATE 4-16-90
Job No. 4004
Attention Jim Temple
Re

Vicksburg Chemical
Rifle Range Road
Vicksburg, Ms 39180

TRANSMIT VIA:
☒ U.S. Mail ☐ Express Mail
☐ Federal Express ☐ Bus
☐ Hand Deliver ☐ U.P.S.
☐ Other

GENTLEMEN: We are sending you ☒ attached ☐ under separate cover via _____ the following:
☐ Shop drawings ☐ Prints ☐ Samples ☐
☐ Copy of letter ☐ Plans ☐ Specifications

Copies	Sheet No.	Description
		Lab Report #2246

THESE ARE TRANSMITTED AS CHECKED BELOW:
☐ For approval
☒ For your use
☒ As requested
☐ For review and comment
☐ Approval as Submitted
☐ Approved as noted
☐ Returned for corrections
☐ Return
☐ For bids due
☐ Prints returned after loan to us
☐ Resubmit ____ Copies for approval
☐ Submit ____ Copies for distribution
☐ Return ____ Corrected prints

REMARKS:

Enclosures are not as noted kindly notify us at once.

SIGNED Janice Richard

CC:

DATE 4-16-90

Gundle

Laboratory Report # 7246

DATE: 04/06/90

SUBJECT:

Quality control testing of site welds from VICKSBURG CHEM.
VICKSBURG MS
H004

Product type: HDPE 060 MIL

TEST METHOD:

[One Inch strips were used for peel and shear testing of welds.]
Peel test - ASTM D413. Shear test - ASTM D3083.

TEST RESULTS: (FTB = Film Tearing Bond)

Seam/Sample	Result Type	Peel Stress, ppi	Max Shear Stress, ppi
6B/1P	FTB	129	177
15B/2P	FTB	123	187
15B/3P	FTB	118	211
21B/4P	FTB	127	174
29B/5P	FTB	141	169

CONCLUSION:
All welds passed.

CERTIFIED BY:

Rodney Crenwelge
Lab Manager

encor
Environmental Consulting and Remediation

(10)

RECEIVED

September 11, 1990

IT Corporation, Inc.
1150 LeBlanc Road
Port Allen, LA 70767

Attention: Mr. Hewitt Beauvois

Project No. 90C112

GEOSYNTHETIC LABORATORY RESULTS
CEDAR CHEMICAL COMPANY
VICKSBERG, MISSISSIPPI

Gentlemen:

Enclosed please find test results for 4, sixty (60) mil geosynthetic seam samples. The samples were hand delivered to the ENCOR laboratory by an IT Corporation representative on September 5, 1990.

The seam samples were tested for seam peel adhesion and bonded seam shear strength. Tests were performed in accordance with ASTM D-413 and D-822 (as required by D-3083), respectfully, using a nominal 1-inch wide, straight specimen, and a separation rate of 2 inches per minute.

Due to insufficient material supplied only 4 test specimens were available for testing for Sample No. A4758, G-238.

If you have any questions concerning this information, please contact this office.

Sincerely,

ENCOR

Glen R. Landry

Glen R. Landry, P.E.

GRL:arp
Enclosures

C190.112

A Division of OSCA
12021 Lakeland Park Blvd. • Baton Rouge, LA 70809
(504) 756-2555 FAX: (504) 756-2562

ENCOR
LABORATORY RESULTS

7/90
ject No: 90C112

SPECIMEN NUMBER	SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		SEAM PEEL FORCE (PPI)	SEAM PEEL FAILURE	SEAM SHEAR THICKNESS (MILS)	SEAM SHEAR FORCE (PPI)	SEAM SHEAR FAILURE
SAMPLE ID							
A-4758,DS-R3,G-238							
1	65.70	63.70	138.66	FTB	65.50	217.36	FTB
2	65.90	62.90	143.37	FTB	65.70	220.96	FTB
3	65.60	63.30	109.55	FTB	65.80	221.17	FTB
4	66.10	63.10	118.90	FTB	65.50	219.37	FTB
5	-	-	-	-	-	-	-
AVE	65.82	63.25	127.62		65.62	219.71	
SD	0.22	0.34	16.05		0.15	1.76	
SAMPLE ID							
A-[illegible]59,DS-R1,G-137							
1	65.50	60.20	121.13	FTB	64.10	201.99	FTB
2	65.90	64.30	125.51	FTB	65.40	213.92	FTB
3	65.90	65.00	131.65	FTB	65.90	199.75	FTB
4	65.60	59.20	108.25	FTB	65.50	189.39	FTB
5	65.40	58.60	111.78	FTB	65.30	200.58	FTB
AVE	65.66	61.46	119.66		65.24	201.13	
SD	0.23	2.98	9.65		0.68	8.72	
SAMPLE ID							
A-4761,DS-R2,G-137							
1	64.60	61.60	103.51	FTB	64.50	212.91	FTB
2	64.30	64.40	140.08	FTB	64.60	213.35	FTB
3	64.70	64.70	109.32	FTB	64.70	210.03	FTB
4	64.90	62.30	109.82	FTB	64.70	205.49	FTB
5	65.10	63.10	131.57	FTB	65.00	216.67	FTB
AVE	64.72	63.22	118.86		64.70	211.69	
SD	0.30	1.33	15.97		0.19	4.19	

(12)

ENCOR
LABORATORY RESULTS

0[illegible]/90
Project No: 90C112

SPECIMEN NUMBER	SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		SEAM PEEL FORCE (PPI)	SEAM PEEL FAILURE	SEAM SHEAR THICKNESS (MILS)	SEAM SHEAR FORCE (PPI)	SEAM SHEAR FAILURE
SAMPLE ID							
A-4762,DS-R4,G-137							
1	62.00	63.40	93.36	FTB	62.80	197.84	FTB
2	62.20	63.10	106.09	FTB	62.80	198.24	FTB
3	62.20	62.80	106.95	FTB	62.10	200.39	FTB
4	62.10	62.30	103.77	FTB	61.90	199.92	FTB
5	61.70	61.10	118.36	FTB	62.30	198.72	FTB
AVE	62.04	62.54	105.71		62.38	199.02	
SD	0.21	0.90	8.92		0.41	1.09	

encor
Environmental Consulting and Remediation

(13)

September 19, 1990

IT Corporation, Inc.
1150 LeBlanc Road
Port Allen, LA 70767

Attention: Mr. Hewitt Beauvois

Project No. 90C112

GEOSYNTHETIC LABORATORY RESULTS
CEDAR CHEMICAL COMPANY
VICKSBURG, MISSISSIPPI

Gentlemen:

Enclosed please find test results for 1, sixty (60) mil geosynthetic seam sample. The sample was hand delivered to the ENCOR laboratory by an IT Corporation representative on September 10, 1990.

The seam sample was tested for seam peel adhesion and bonded seam shear strength. Tests were performed in accordance with ASTM D-413 and D-822 (as required by D-3083), respectfully, using a nominal 1-inch wide, straight specimen, and a separation rate of 2 inches per minute.

If you have any questions concerning this information, please contact this office.

Sincerely,

ENCOR

Glen R. Landry

Glen R. Landry, P.E.

GRL:kld
Enclosures

C290.112

A Division of OSCA
12021 Lakeland Park Blvd. • Baton Rouge, LA 70809
(504) 756-2555 FAX: (504) 756-2562

(14)

ENCOR
LABORATORY RESULTS

0[illegible]/90
P[illegible]ect No: 90C112

SPECIMEN NUMBER	SEAM PEEL THICKNESS TOP	SEAM PEEL THICKNESS BOTTOM	SEAM PEEL FORCE (PPI)	SEAM PEEL FAILURE	SEAM SHEAR THICKNESS (MILS)	SEAM SHEAR FORCE (PPI)	SEAM SHEAR FAILURE
SAMPLE ID							
P-4184,DS-R5,G-137							
1	65.00	59.20	150.74	FTB	65.40	199.01	FTB
2	66.30	59.40	133.60	FTB	65.70	200.46	FTB
3	66.30	59.50	141.88	FTB	65.20	198.08	FTB
4	64.90	59.40	149.15	FTB	62.30	175.93	FTB
5	63.40	58.60	102.87	FTB	64.90	197.20	FTB
AVE	65.18	59.22	135.65		64.70	194.13	
SD	1.20	0.36	19.54		1.37	10.25	

encor
Environmental Consulting and Remediation

(15)

July 12, 1991

IT Corporation, Inc.
1150 LeBlanc Road
Port Allen, LA 70767

Attention: Mr. Blaine Johnson

Project No. 90C112

GEOSYNTHETIC LABORATORY RESULTS
CEDAR CHEMICAL COMPANY
VICKSBURG, MISSISSIPPI

Gentlemen:

Enclosed please find test results for three (3), sixty (60) mil geosynthetic seam samples. The samples were delivered to the ENCOR laboratory by Federal Express on July 1, 1991.

The samples were tested for seam peel adhesion and bonded seam shear strength. Testing was performed in accordance with ASTM D-413 and D-882 (as required by D-3083), using a 1 inch x 8 inch specimen. The separation rate was 2 inches per minute for the peel test and 20 inches per minute for the shear test.

Test results are for three (3) double track welded seam samples. Break types were either film tear bond (FTB) or failure into the weld (peel or shear), as indicated. A copy of the Test Report was Faxed to Mr. Billy Frey on July 1, 1991.

If you have any question concerning this information, please contact this office.

Sincerely,

ENCOR

Sammie W. Fuller
Sammie W. Fuller
Laboratory Manager

Glen R. Landry
Glen R. Landry, P.E.

SWF/GRL:dkm

A Division of OSCA
12021 Lakeland Park Blvd. • Baton Rouge, LA 70809
(504) 756-2555 FAX: (504) 756-2562

ENCOR
LABORATORY RESULTS

(16)

0[illegible]/91 page 1
P[illegible]ct No: 90C112
I T CORP
CEDAR CHEMICAL COMPANY

SPECIMEN NUMBER	SEAM PEEL THICKNESS TOP	SEAM PEEL THICKNESS BOTTOM	SEAM PEEL FORCE TOP	SEAM PEEL FORCE BOTTOM	SEAM PEEL FAILURE TOP	SEAM PEEL FAILURE BOTTOM	SEAM SHEAR THICKNESS (MILS)	SEAM SHEAR FORCE (PPI)	SEAM SHEAR FAILURE
SAMPLE ID									
P-5283,DS-01,S-10/11									
1	61.0	61.5	122.9	117.1	FTB	FTB	61.20	171.06	FTB
2	59.8	60.2	136.2	123.3	FTB	FTB	62.10	178.20	FTB
3	61.0	60.8	132.6	130.4	FTB	FTB	60.40	175.27	FTB
4	61.2	61.8	125.8	137.1	FTB	FTB	62.60	176.37	FTB
5	62.3	62.8	131.9	117.3	FTB	FTB	-	-	-
AVE	61.0	61.4	129.9	125.0			61.58	175.22	
SD	0.8	0.9	5.4	8.6			0.97	3.03	
SA[illegible]E ID									
P-5284,DS-02,S-21/22									
1	59.9	63.4	104.0	109.8	PEEL	FTB	65.30	185.19	FTB
2	65.7	62.8	132.4	113.7	FTB	FTB	65.50	183.14	FTB
3	65.6	63.4	116.4	118.7	FTB	FTB	65.60	183.03	FTB
4	65.4	63.1	116.7	124.9	FTB	FTB	65.30	183.27	FTB
5	65.6	63.5	108.4	120.0	FTB	FTB	65.30	183.44	FTB
AVE	64.4	63.2	115.6	117.4			65.40	183.62	
SD	2.5	0.2	10.8	5.8			0.14	0.89	
SAMPLE ID									
P-5285,DS-03,S-31/32									
1	60.2	61.9	98.5	96.2	FTB	FTB	60.30	175.27	FTB
2	60.0	62.1	97.3	77.9	FTB	PEEL	60.10	170.91	FTB
3	60.4	61.7	100.0	118.1	FTB	FTB	60.40	175.96	FTB
4	60.2	61.9	73.5	94.2	PEEL	FTB	60.50	178.38	FTB
5	60.6	61.3	98.1	104.6	FTB	FTB	60.60	173.40	FTB
AVE	60.2	61.7	93.5	98.2			60.38	174.78	
[illegible]D	0.2	0.3	11.2	14.7			0.19	2.80	

encor
Environmental Consulting and Remediation

(17)

August 2, 1991

IT Corporation, Inc.
1150 LeBlanc Road
Port Allen, LA 70767

Attention: Mr. Blaine Johnson

Project No. 90C112

GEOSYNTHETIC LABORATORY RESULTS
CEDAR CHEMICAL COMPANY
VICKSBURG, MISSISSIPPI

Gentlemen:

Enclosed please find test results for 21 geosynthetic seam samples of 60 mil HDPE. The samples were delivered to the ENCOR laboratory by Federal Express on various dates between July 16, 1991 and July 26, 1991.

The samples were tested for seam peel adhesion and bonded seam shear strength. Testing was performed in accordance with ASTM D-413 and D-638 (as directed by D-3083), using a 1 inch x 8 inch specimen for the seam peel test and a 1/4 inch wide, Type IV dumbbell-shaped specimen for the seam shear test. The separation rate was 2 inches per minute for both tests.

Test results are for 13 double track and 8 single track welded seam samples. Break types were either film tear bond (FTB) or failure into the weld (peel or shear), as indicated. A copy of the Test Report was Faxed to Mr. Billy Frey on the same days that testing was completed.

Also enclosed is an invoice for Purchase Order No. T045472 to cover the Laboratory Testing Fees for these samples.

If you have any question concerning this information, please contact this office.

Sincerely,

ENCOR

Sammie W. Fuller

Sammie W. Fuller
Laboratory Manager

Glen R. Landry

Glen R. Landry, P.E.

SWF/GRL:dkm

A Division of OSCA
12021 Lakeland Park Blvd. • Baton Rouge, LA 70809
(504) 756-2555 FAX: (504) 756-2562

ENCOR
LABORATORY RESULTS

(18)

07/17/91 page 1
Project No: 90C112
I[illegible]CORP
C[illegible]R CHEMICAL COMPANY

SPECIMEN NUMBER	ASTM D413 SEAM PEEL THICKNESS TOP	THICKNESS BOTTOM (MILS)	FORCE (PPI)	FAILURE	ASTM D638 SEAM SHEAR THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID							
P-5286,DS-03B,S-21/SWCA							
1	64.00	66.30	92.15	PEEL	67.80	200.88	FTB
2	68.70	69.80	137.03	PEEL	66.80	194.98	FTB
3	69.70	67.40	111.06	FTB	63.30	182.70	FTB
4	71.60	64.30	115.52	FTB	63.90	180.86	FTB
5	68.20	62.80	114.60	FTB	66.80	181.03	FTB
AVE	68.44	66.12	114.07		65.72	188.09	
SD	2.80	2.72	15.96		1.99	9.25	
S[illegible]LE ID							
P-5288,DS-05B,S-16/17							
1	71.20	70.20	165.30	FTB	68.30	199.36	FTB
2	69.30	70.80	144.25	FTB	70.90	213.11	FTB
3	64.70	66.30	135.53	FTB	68.40	213.39	FTB
4	64.60	62.50	121.20	FTB	67.50	196.04	FTB
5	67.40	63.50	129.64	FTB	67.50	206.60	FTB
AVE	67.44	66.66	139.18		68.52	205.70	
SD	2.88	3.78	16.85		1.40	7.88	
SAMPLE ID							
P-5293,DS-09,S-17/39							
1	71.40	71.90	127.19	FTB	72.30	198.06	FTB
2	72.20	71.80	122.48	FTB	71.70	199.96	FTB
3	70.10	72.10	104.75	FTB	72.60	207.37	FTB
4	72.90	71.20	107.82	FTB	71.20	196.64	FTB
5	71.40	70.80	111.47	FTB	71.40	201.45	FTB
AVE	71.60	71.56	114.74		71.84	200.70	
SD	1.05	0.54	9.66		0.59	4.15	

ENCOR
LABORATORY RESULTS

07/17/91
Project No: 90C112
I[illegible]CORP
C[illegible]R CHEMICAL COMPANY

SPECIMEN NUMBER	ASTM D413 SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		FORCE TOP/BOTTOM (PPI)		FAILURE TOP/BOTTOM		ASTM D638 SEAM SHEAR THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID									
P-5287,DS-04,S-08/09									
1	59.3	63.4	135.6	120.1	FTB	FTB	60.40	224.51	FTB
2	58.7	64.5	136.0	128.7	FTB	FTB	60.40	241.41	FTB
3	58.5	63.4	131.1	115.0	FTB	FTB	60.50	248.26	FTB
4	57.9	63.7	129.2	130.0	FTB	FTB	60.30	242.36	FTB
5	57.9	64.2	119.7	134.8	FTB	FTB	60.30	233.99	FTB
AVE	58.4	63.8	130.3	125.7			60.38	238.11	
SD	0.5	0.4	6.5	8.0			0.08	9.13	
SA[illegible]LE ID (SC on SCL)									
P-5289,DS-05C,S-16/17									
1	65.2	60.4	133.7	137.5	FTB	FTB	61.80	228.01	FTB
2	65.1	59.5	139.8	127.4	FTB	FTB	60.30	230.35	FTB
3	64.5	59.8	129.9	139.5	FTB	FTB	59.80	240.85	FTB
4	63.7	59.1	132.5	105.1	FTB	FTB	61.90	241.51	FTB
5	64.1	60.1	137.0	137.9	FTB	FTB	61.80	237.89	FTB
AVE	64.5	59.7	134.6	129.5			61.12	235.72	
SD	0.6	0.5	3.8	14.4			0.99	6.18	
SAMPLE ID									
P-5290,DS-06,S-26/27									
1	65.4	60.1	123.0	126.1	FTB	FTB	61.70	270.48	FTB
2	66.1	59.1	118.0	124.5	FTB	FTB	62.40	284.72	FTB
3	65.7	59.8	121.1	115.8	FTB	FTB	62.40	292.71	FTB
4	65.5	59.8	120.0	120.5	FTB	FTB	61.90	291.58	FTB
5	65.9	59.1	148.5	113.6	FTB	FTB	61.60	273.78	FTB
AVE	65.7	59.5	126.1	120.1			62.00	282.65	
[illegible]D	0.2	0.4	12.6	5.3			0.38	10.15	

ENCOR
LABORATORY RESULTS

07/17/91
Project No: 90C112
I[illegible] CORP
C[illegible]R CHEMICAL COMPANY

SPECIMEN NUMBER	ASTM D413 SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		FORCE TOP/BOTTOM (PPI)		FAILURE TOP/BOTTOM		ASTM D638 SEAM SHEAR THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID									
P-5291,DS-07,S-39/40									
1	61.4	59.8	85.7	72.4	PEEL	PEEL	62.90	264.26	FTB
2	61.2	59.3	94.3	85.1	PEEL	PEEL	63.30	287.24	FTB
3	61.2	59.8	94.0	114.9	FTB	FTB	63.20	251.73	FTB
4	61.3	60.4	96.8	87.3	FTB	PEEL	62.70	252.33	FTB
5	61.3	60.5	81.6	114.0	PEEL	FTB	62.20	262.55	FTB
AVE	61.2	59.9	90.5	94.7			62.86	263.62	
SD	0.0	0.4	6.4	18.8			0.44	14.39	
S[illegible]LE ID									
P-5292,DS-08,S-49/50									
1	63.7	61.3	145.5	105.4	FTB	FTB	62.30	269.00	FTB
2	64.2	63.2	123.5	115.5	FTB	FTB	63.80	275.31	FTB
3	64.1	62.8	129.1	84.8	FTB	PEEL	63.30	255.77	FTB
4	64.2	63.3	119.0	90.9	FTB	FTB	62.10	264.29	FTB
5	64.1	63.7	125.6	109.1	FTB	FTB	63.40	268.56	FTB
AVE	64.0	62.8	128.5	101.1			62.98	266.58	
SD	0.2	0.9	10.1	12.8			0.74	7.21	

ENCOR
LABORATORY RESULTS

07/22/91 page 1
Project No: 90C112
I T CORP
C R CHEMICAL COMPANY

SPECIMEN NUMBER	ASTM D413 SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		FORCE TOP/BOTTOM (PPI)		FAILURE TOP/BOTTOM		ASTM D638 SEAM SHEAR THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID									
P-5295,DS-10,S-06/07									
1	58.8	60.7	107.1	112.4	FTB	FTB	59.50	208.99	FTB
2	58.7	60.3	129.4	124.0	FTB	FTB	59.40	219.46	FTB
3	58.7	60.6	106.2	118.3	FTB	FTB	59.20	224.58	FTB
4	58.8	60.9	137.4	114.6	FTB	FTB	59.20	222.56	FTB
5	58.9	60.8	129.2	115.3	FTB	FTB	58.90	223.85	FTB
AVE	58.7	60.6	121.9	116.9			59.24	219.89	
SD	0.0	0.2	14.2	4.4			0.23	6.40	
SAMPLE ID									
P-5296,DS-11,S-19/20									
1	67.9	66.9	117.3	109.9	FTB	PEEL	58.50	263.04	FTB
2	67.2	66.1	126.5	114.2	FTB	PEEL	58.70	261.01	FTB
3	67.2	66.1	116.9	109.6	FTB	PEEL	58.80	260.84	FTB
4	67.1	66.1	114.6	122.5	FTB	FTB	58.60	260.56	FTB
5	67.1	66.9	117.8	91.8	FTB	PEEL	58.50	255.80	FTB
AVE	67.3	66.4	118.6	109.6			58.62	260.25	
SD	0.3	0.4	4.5	11.2			0.13	2.68	
SAMPLE ID									
P-5297,DS-12,S-70/71									
1	57.6	60.7	141.0	120.7	FTB	FTB	60.40	262.55	FTB
2	57.6	60.5	139.2	126.0	FTB	FTB	60.20	264.77	FTB
3	57.2	59.8	134.8	116.2	FTB	FTB	60.40	262.74	FTB
4	57.4	59.5	137.2	119.3	FTB	FTB	60.30	265.30	FTB
5	57.6	59.9	139.2	123.2	FTB	FTB	60.20	262.58	FTB
AVE	57.4	60.0	138.3	121.1			60.30	263.59	
SD	0.1	0.5	2.3	3.7			0.10	1.33	

ENCOR
LABORATORY RESULTS

07/22/91
Project No: 90C112
I[illegible] CORP
C[illegible]R CHEMICAL COMPANY

SPECIMEN NUMBER	ASTM D413 SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		FORCE TOP/BOTTOM (PPI)		FAILURE TOP/BOTTOM		ASTM D638 SEAM SHEAR THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID									
P-5298,DS-13,S-79/80									
1	64.2	64.5	114.1	119.5	FTB	FTB	62.70	322.98	FTB
2	64.2	65.2	115.5	128.0	FTB	FTB	62.90	323.18	FTB
3	64.2	65.7	116.2	151.9	FTB	FTB	62.90	325.97	FTB
4	63.4	66.1	115.1	151.6	FTB	FTB	63.60	257.20	FTB
5	63.2	66.3	116.3	154.1	FTB	FTB	63.60	262.61	FTB
AVE	63.8	65.5	115.4	141.0			63.14	298.39	
SD	0.5	0.7	0.9	16.1			0.43	35.20	
S[illegible]E ID									
P-5299,DS-14,S-89/91									
1	62.2	62.8	99.0	120.5	FTB	FTB	63.20	236.67	FTB
2	61.6	62.8	103.6	116.3	FTB	FTB	63.20	243.08	FTB
3	61.7	62.5	98.7	106.4	FTB	FTB	63.30	246.59	FTB
4	61.8	62.6	102.2	109.5	FTB	FTB	63.20	247.39	FTB
5	62.1	62.6	100.1	106.8	FTB	FTB	63.10	250.21	FTB
AVE	61.8	62.6	100.7	111.9			63.20	244.79	
SD	0.2	0.1	2.1	6.2			0.07	5.20	
SAMPLE ID									
P-5300,DS-15,S-99/100									
1	64.8	65.3	116.0	145.0	FTB	FTB	64.30	246.97	FTB
2	64.5	65.3	117.0	140.1	FTB	FTB	64.10	250.31	FTB
3	64.6	65.5	121.7	143.2	FTB	FTB	64.30	259.56	FTB
4	64.6	65.5	139.5	134.9	FTB	FTB	64.30	240.18	FTB
5	64.2	65.6	121.5	128.7	FTB	FTB	64.30	257.70	FTB
AVE	64.5	65.4	123.1	138.4			64.26	250.94	
[illegible]D	0.2	0.1	9.5	6.6			0.09	7.94	

ENCOR
LABORATORY RESULTS

07/22/91
Project No: 90C112
I [illegible]CORP
C[illegible] CHEMICAL COMPANY

SPECIMEN NUMBER	ASTM D413 SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		FORCE TOP/BOTTOM (PPI)		FAILURE TOP/BOTTOM		ASTM D638 SEAM SHEAR THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID									
P-5301,DS-16,S-110/111									
1	60.7	63.9	105.8	112.3	FTB	FTB	58.60	251.98	FTB
2	60.7	63.6	124.1	107.9	FTB	FTB	58.40	242.79	FTB
3	60.8	63.7	114.1	112.6	FTB	FTB	58.30	252.20	FTB
4	61.5	64.1	116.3	111.3	FTB	FTB	58.30	258.04	FTB
5	61.5	64.3	127.4	112.4	FTB	FTB	58.10	250.83	FTB
AVE	61.0	63.9	117.5	111.3			58.34	251.17	
SD	0.4	0.2	8.5	1.9			0.18	5.46	
SA[illegible]E ID									
P-5303,DS-07,S-38/39									
1	61.1	60.4	79.3	107.6	PEEL	FTB	62.50	238.56	FTB
2	61.4	60.3	85.6	116.9	FTB	FTB	62.30	248.02	FTB
3	61.1	59.8	108.1	115.6	FTB	PEEL	62.50	247.39	FTB
4	60.6	59.8	80.2	127.9	PEEL	FTB	62.40	251.35	FTB
5	61.2	59.9	95.2	101.4	FTB	FTB	62.40	245.29	FTB
AVE	61.0	60.0	89.7	113.9			62.42	246.12	
SD	0.2	0.2	12.1	10.0			0.08	4.75	

ENCOR
LABORATORY RESULTS

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07/22/91
Project No: 90C112
I[illegible] CORP
[illegible]R CHEMICAL COMPANY

SPECIMEN NUMBER	ASTM D413 SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		FORCE (PPI)	FAILURE	ASTM D638 SEAM SHEAR THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID							
P-5302,DS-03B,S-21/SWCA							
1	66.40	67.80	159.10	FTB	67.80	203.58	FTB
2	66.20	67.80	145.54	FTB	67.10	202.59	FTB
3	66.40	67.80	157.80	FTB	67.50	194.90	FTB
4	66.40	67.90	158.34	FTB	67.40	195.93	FTB
5	66.50	67.70	153.24	FTB	67.30	200.58	FTB
AVE	66.38	67.80	154.80		67.42	199.52	
SD	0.11	0.07	5.66		0.26	3.91	

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ENCOR
LABORATORY RESULTS

07/24/91
Project No: 90C112
I[illegible] CORP
C[illegible]R CHEMICAL COMPANY

	ASTM D413 SEAM PEEL				ASTM D638 SEAM SHEAR		
SPECIMEN NUMBER	THICKNESS TOP/BOTTOM (MILS)		FORCE (PPI)	FAILURE	THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID							
P-5304,DS-11A,S-19/20							
1	63.40	63.80	133.61	FTB	59.50	183.95	FTB
2	61.20	61.80	147.78	FTB	59.20	184.99	FTB
3	61.50	61.90	139.69	FTB	59.30	185.99	FTB
4	61.80	61.80	118.47	FTB	59.10	187.18	FTB
5	61.30	63.20	128.44	FTB	58.90	182.89	FTB
AVE	61.84	62.50	133.60		59.20	185.00	
SD	0.90	0.94	11.11		0.22	1.68	
S[illegible]LE ID							
P-5305,DS-11B,S-19/20							
1	63.60	62.70	164.67	FTB	60.60	182.61	FTB
2	64.30	64.60	126.91	FTB	60.20	182.42	FTB
3	63.40	64.20	124.18	FTB	60.70	185.33	FTB
4	62.00	63.10	119.31	FTB	60.30	182.45	FTB
5	62.50	63.90	134.44	FTB	60.30	181.39	FTB
AVE	63.16	63.70	133.90		60.42	182.84	
SD	0.91	0.78	18.05		0.22	1.47	

ENCOR
LABORATORY RESULTS

07/29/91
Project No: 90C112
I[illegible]CORP
C[illegible] CHEMICAL COMPANY

SPECIMEN NUMBER	ASTM D413 SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		FORCE TOP/BOTTOM (PPI)		FAILURE TOP/BOTTOM		ASTM D638 SEAM SHEAR THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID									
P-5306,DS-17									
1	63.7	61.9	95.0	122.5	FTB	FTB	64.60	249.90	FTB
2	63.7	61.9	113.3	133.4	FTB	FTB	64.30	224.84	FTB
3	63.7	61.9	129.6	121.2	FTB	FTB	64.70	248.97	FTB
4	64.1	62.2	131.9	121.9	FTB	FTB	64.60	248.67	FTB
5	63.7	62.1	125.2	118.8	FTB	FTB	64.50	230.90	FTB
AVE	63.7	62.0	119.0	123.6			64.54	240.65	
SD	0.1	0.1	15.2	5.6			0.15	11.88	
S[illegible]E ID									
P-5307,DS-18									
1	65.3	64.2	109.7	123.3	FTB	FTB	64.60	223.78	FTB
2	65.3	64.3	112.3	130.8	FTB	FTB	64.60	229.87	FTB
3	65.6	64.6	127.7	137.2	FTB	FTB	64.60	230.47	FTB
4	65.7	64.5	114.0	108.1	FTB	FTB	64.80	225.83	FTB
5	65.4	64.4	113.8	107.5	FTB	FTB	64.50	220.42	FTB
AVE	65.4	64.4	115.5	121.4			64.62	226.07	
SD	0.1	0.1	7.0	13.3			0.11	4.21	

Gundle

(27)

Destructive Sample Report DS-9291

MATERIAL : HDE060G000
DATE: 07/11/91

Name: VICKBURG CHEMICAL
MR Number: H004
Location: VICKSBURG MS

TEST METHOD:

[One Inch strips were used for peel and shear testing of welds.]
Peel test - ASTM D413. Shear test - ASTM D3083.

Specifications:	Weld Method	#Coupons	Average Min	#Fails allowed	Specimen Min
Shear stress,ppi	FUS	1	126	1	126
Peel stress, ppi	FUS	2	98	1	98

Seam	Sample	Weld Type	Result Type	Peel Stress	Shear Stress
26-27	6	FUS	FTB	104	140
8-9	4	FUS	FTB	121	138
16-17	5	FUS	FTB	83	147
49-50	8	FUS	FTB	120	134
17-39	9	EXT	FTB	136	134
38-39	7	FUS	FTB	109	151

CONCLUSION:

These welds failed:
16-17/5

CERTIFIED BY:

R.J. Schaefer
Lab Manager

03/20/92 10:28 ☎875 6010 GUNDLE LINING ... 11 CORPORATION 002

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FAX TRANSMITTAL

TO: I T CORP

ATTN: Billy Frey

FAX NO.: 1-601-636-5767

FROM: ENCOR Lab
Baton Rouge

ENCOR PROJECT NO: 90C 112

TRANSMITTAL DATE: 10-25-91

No. of Pages (including this page):

REMARKS/DESCRIPTION OF TRANSMITTAL:

Geosynthetics Data.
Hard copy to be
forthcoming.

BY: Sam Fuller

ENCOR
A DIVISION OF OSCA/WARE LIND FURLOW ENGINEERS
12021 LAKELAND PARK BLVD. SUITE 120
BATON ROUGE, LOUISIANA
70809

PHONE: 504-756-2555

FAX: 504-756-2562

ENCOR
LABORATORY RESULTS

10/25/91 page 1
Project No: 90C112
CORP
VICKSBURG,MS
CEDAR CHEMICAL COMPANY

SPECIMEN NUMBER	ASTM D413 SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		FORCE TOP/BOTTOM (PPI)		FAILURE TOP/BOTTOM		ASTM D638 SEAM SHEAR THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID									
P-5324,DS-01,S-4/5									
1	60.4	60.8	126.9	124.6	FTB	FTB	59.40	236.70	FTB
2	60.3	61.4	117.3	133.0	FTB	FTB	59.30	218.57	FTB
3	60.2	61.1	127.5	117.9	FTB	FTB	59.60	257.92	FTB
4	60.3	60.9	129.3	132.7	FTB	FTB	59.50	242.24	FTB
5	60.1	60.3	122.8	148.7	FTB	FTB	59.30	209.23	FTB
AVE	60.2	60.9	124.7	131.4			59.42	232.93	
SD	0.1	0.4	4.8	11.5			0.13	19.32	
SAMPLE ID									
P-5325,DS-02,S-7/8									
1	61.3	62.3	114.1	132.7	FTB	FTB	61.90	233.44	FTB
2	60.7	62.1	125.3	129.2	FTB	FTB	62.20	228.46	FTB
3	61.1	61.8	143.8	135.6	FTB	FTB	62.40	232.31	FTB
4	61.1	61.7	124.1	139.5	FTB	FTB	61.80	223.89	FTB
5	61.2	62.1	115.5	115.7	FTB	FTB	62.00	239.43	FTB
AVE	61.0	62.0	124.6	130.5			62.06	231.51	
SD	0.2	0.2	11.8	9.1			0.24	5.80	
SAMPLE ID									
P-5326,DS-03,S-12/13									
1	61.8	62.0	113.2	104.7	FTB	FTB	61.90	210.97	FTB
2	62.2	61.9	117.1	111.3	FTB	FTB	62.20	199.88	FTB
3	62.2	62.2	118.8	108.6	FTB	FTB	62.50	218.94	FTB
4	62.1	62.3	118.8	113.4	FTB	FTB	62.20	216.00	FTB
5	61.8	62.1	118.3	110.8	FTB	FTB	62.10	229.29	FTB
AVE	62.0	62.1	117.2	109.7			62.18	215.02	
SD	0.2	0.1	2.3	3.3			0.22	10.79	

ENCOR
LABORATORY RESULTS

10/25/91 page 2
Project No: 90C112
[illegible] CORP
VICKSBURG,MS
CEDAR CHEMICAL COMPANY

SPECIMEN NUMBER	ASTM D413 SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		FORCE TOP/BOTTOM (PPI)		FAILURE TOP/BOTTOM		ASTM D638 SEAM SHEAR THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID									
P-5327,DS-04,S-16/17									
1	61.5	66.9	158.0	143.1	FTB	FTB	60.40	247.33	FTB
2	61.3	67.1	156.0	138.2	FTB	FTB	60.10	280.40	FTB
3	61.4	66.9	144.7	140.8	FTB	FTB	59.80	259.41	FTB
4	62.0	67.2	141.7	132.2	FTB	FTB	60.10	245.61	FTB
5	61.8	67.3	142.8	132.3	FTB	FTB	59.70	238.58	FTB
AVE	61.6	67.0	148.6	137.3			60.02	254.27	
SD	0.2	0.1	7.7	4.9			0.28	16.42	
SAMPLE ID									
P-5328,DS-05,S-19/20									
1	66.1	61.6	101.6	122.3	PEEL	FTB	65.10	283.56	FTB
2	66.1	61.7	106.3	122.4	PEEL	FTB	64.60	233.96	FTB
3	66.3	61.4	112.0	131.7	FTB	FTB	64.20	283.21	FTB
4	65.7	62.2	119.3	117.7	FTB	FTB	64.30	283.29	FTB
5	65.7	62.2	127.4	125.9	FTB	FTB	63.90	280.72	FTB
AVE	65.9	61.8	113.3	124.0			64.42	272.95	
SD	0.2	0.3	10.2	5.2			0.45	21.83	
SAMPLE ID									
P-5333,DS-05A,S-19/20									
1	65.4	62.8	104.5	117.4	PEEL	FTB	63.30	269.61	FTB
2	65.5	62.6	93.8	127.7	PEEL	FTB	63.20	277.95	FTB
3	65.5	62.4	105.9	120.1	PEEL	FTB	63.30	261.17	FTB
4	65.4	62.4	108.5	130.7	PEEL	FTB	62.70	275.14	FTB
5	65.5	62.3	106.7	126.8	PEEL	FTB	62.30	264.68	FTB
AVE	65.4	62.5	103.9	124.5			62.96	269.71	
SD	0.0	0.2	5.8	5.5			0.44	6.99	

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LABORATORY RESULTS

10/25/91
Project No: 90C112
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VICKSBURG,MS
CEDAR CHEMICAL COMPANY

SPECIMEN NUMBER	ASTM D413 SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		FORCE TOP/BOTTOM (PPI)		FAILURE TOP/BOTTOM		ASTM D638 SEAM SHEAR THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID									
P-5334,DS-05B,S-19/20									
1	64.7	60.6	119.8	119.0	FTB	FTB	63.20	268.91	FTB
2	64.9	61.7	103.7	126.4	FTB	FTB	64.30	274.90	FTB
3	64.4	61.3	113.7	122.7	FTB	FTB	63.30	268.56	FTB
4	65.0	61.4	120.0	122.2	FTB	FTB	63.60	273.31	FTB
5	64.7	61.4	120.5	124.3	FTB	FTB	63.80	270.99	FTB
AVE	64.7	61.2	115.6	122.9			63.64	271.33	
SD	0.2	0.4	7.1	2.7			0.44	2.75	
SAMPLE ID									
P-5335,DS-06,S-25/26									
1	66.5	64.0	130.1	134.3	FTB	FTB	68.10	268.58	FTB
2	66.1	65.2	130.3	144.4	FTB	FTB	68.40	284.24	FTB
3	64.5	70.0	145.9	136.4	FTB	FTB	67.70	261.22	FTB
4	63.4	75.5	156.2	164.3	FTB	FTB	66.50	209.72	FTB
5	66.1	75.5	148.5	160.8	FTB	FTB	64.70	242.58	FTB
AVE	65.3	70.0	142.2	148.0			67.08	253.27	
SD	1.3	5.4	11.5	13.8			1.51	28.58	

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ENCOR
LABORATORY RESULTS

10/25/91
Project No: 90C112
I[illegible] CORP
VICKSBURG,MS
CEDAR CHEMICAL COMPANY

	ASTM D413 SEAM PEEL				ASTM D638 SEAM SHEAR		
SPECIMEN NUMBER	THICKNESS TOP/BOTTOM (MILS)		FORCE (PPI)	FAILURE	THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID							
P-5336,DS-07,TIE-IN							
1	64.10	58.50	91.74	FTB	64.20	160.98	FTB
2	63.60	57.70	92.15	FTB	65.70	168.37	FTB
3	61.80	57.70	88.22	FTB	65.60	161.55	FTB
4	62.00	58.20	103.16	FTB	63.50	166.94	FTB
5	61.20	56.80	104.03	FTB	63.60	167.82	FTB
AVE	62.54	57.78	95.86		64.52	165.13	
SD	1.24	0.65	7.23		1.07	3.57	
SAMPLE ID							
P-5337,DS-08,TIE-IN/P-24							
1	62.50	57.70	121.40	FTB	66.40	187.45	FTB
2	62.20	58.90	127.60	FTB	66.50	174.89	FTB
3	62.20	60.60	100.98	FTB	66.20	181.56	FTB
4	62.80	61.30	99.22	FTB	66.10	187.48	FTB
5	63.20	64.20	110.50	FTB	65.10	172.66	FTB
AVE	62.58	60.54	111.94		66.06	180.81	
SD	0.43	2.49	12.44		0.56	6.90	

ENCOR
LABORATORY RESULTS

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ject No: 90C112
T CORP
KSBURG,MS
EDAR CHEMICAL COMPANY

SPECIMEN NUMBER	ASTM D413 SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		FORCE (PPI)	FAILURE	ASTM D882 SEAM SHEAR THICKNESS (MILS)	FORCE (PPI)	FAILUR
SAMPLE ID							
P-5350,DS-01							
1	65.00	62.30	97.14	FTB	68.80	184.77	FTB
2	64.90	62.40	99.89	FTB	69.10	190.26	FTB
3	64.80	62.30	112.88	FTB	69.10	188.83	FTB
4	64.90	62.50	111.70	FTB	69.00	187.02	FTB
5	64.90	62.30	103.05	FTB	68.70	192.81	FTB
AVE	64.90	62.36	104.93		68.94	188.74	
SD	0.07	0.09	7.05		0.18	3.07	
SAMPLE ID							
P-5351,DS-02							
1	65.50	63.70	76.86	FTB	68.30	179.37	FTB
2	65.50	63.10	57.77	FTB	68.40	175.72	FTB
3	65.40	63.40	32.55	FTB	68.70	172.70	FTB
4	65.40	63.50	57.13	FTB	68.20	182.18	FTB
5	65.50	63.20	68.42	FTB	68.40	183.31	FTB
AVE	65.46	63.38	58.54		68.40	178.66	
SD	0.05	0.24	16.67		0.19	4.43	

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FAX TRANSMITTAL

TO: I T CORP

ATTN: Glen Landry

FAX NO.: 504 - 922 - 4513

FROM: ENCOR Lab
Baton Rouge, La. 70809

ENCOR PROJECT NO: 90C112

TRANSMITTAL DATE: 3-6-92

No. of Pages (including this page): 4

REMARKS/DESCRIPTION OF TRANSMITTAL:

Geosynthetic Test Data.
Hard Copy to FOLLOW.

BY: Sammie W. Fuller

ENCOR
A DIVISION OF OSCA/WARE LIND FURLOW ENGINEERS
12021 LAKELAND PARK BLVD. SUITE 120
BATON ROUGE, LOUISIANA
70809

PHONE: 504-756-2555

FAX: 504-756-2562

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ENCOR
LABORATORY RESULTS

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Project No: 90C112
[redacted] CORP
VICKSBURG,MS
CEDAR CHEMICAL COMPANY

	ASTM D413 SEAM PEEL						ASTM D882 SEAM SHEAR		
SPECIMEN NUMBER	THICKNESS TOP/BOTTOM (MILS)		FORCE TOP/BOTTOM (PPI)		FAILURE TOP/BOTTOM		THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID									
P-5352,DS-01									
1	62.0	69.4	110.7	141.6	FTB	FTB	65.10	223.58	FTB
2	62.1	69.5	106.6	140.5	FTB	FTB	66.10	222.77	FTB
3	62.3	69.3	92.1	140.3	FTB	FTB	65.70	231.54	FTB
4	61.8	69.2	101.2	145.4	FTB	FTB	65.80	237.87	FTB
5	62.0	69.3	111.2	140.6	FTB	FTB	66.00	250.69	FTB
AVE	62.0	69.3	104.3	141.7			65.74	233.29	
SD	0.1	0.1	7.9	2.1			0.39	11.53	
SAMPLE ID									
P-5353,DS-02									
1	68.3	58.6	118.1	130.7	FTB	FTB	69.00	215.64	FTB
2	68.5	58.7	120.2	121.8	FTB	FTB	69.10	204.42	FTB
3	68.6	58.4	119.2	125.1	FTB	FTB	69.10	227.11	FTB
4	68.2	59.3	119.2	120.4	FTB	FTB	69.10	234.08	FTB
5	68.7	58.4	116.1	120.7	FTB	FTB	69.30	241.96	FTB
AVE	68.4	58.6	118.6	123.7			69.12	224.64	
SD	0.2	0.3	1.5	4.3			0.11	14.87	
SAMPLE ID									
P-5354,DS-03									
1	63.5	65.6	133.4	137.7	FTB	FTB	66.60	236.05	FTB
2	63.7	65.9	140.6	129.0	FTB	FTB	68.20	268.34	FTB
3	63.7	66.2	146.2	127.9	FTB	FTB	68.20	258.34	FTB
4	64.1	65.9	155.0	129.8	FTB	FTB	67.90	258.35	FTB
5	63.9	66.3	136.6	134.8	FTB	FTB	68.10	263.45	FTB
AVE	63.7	65.9	142.4	131.8			67.80	256.91	
SD	0.2	0.2	8.5	4.1			0.68	12.38	

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ENCOR
LABORATORY RESULTS

03/06/92
Project No: 90C112
[redacted]CORP
VICKSBURG,MS
CEDAR CHEMICAL COMPANY

SPECIMEN NUMBER	ASTM D413 SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		FORCE TOP/BOTTOM (PPI)		FAILURE TOP/BOTTOM		ASTM D882 SEAM SHEAR THICKNESS (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID									
P-5355,DS-04									
1	65.0	65.3	134.0	141.3	FTB	FTB	65.60	218.51	FTB
2	64.6	65.2	142.0	147.6	FTB	FTB	65.80	210.62	FTB
3	64.9	65.5	123.9	143.5	FTB	FTB	66.10	222.13	FTB
4	65.1	65.5	118.3	132.8	FTB	FTB	65.80	213.47	FTB
5	65.1	64.4	140.7	136.7	FTB	FTB	66.10	226.29	FTB
AVE	64.9	65.1	131.8	140.4			65.88	218.20	
SD	0.2	0.4	10.3	5.7			0.22	6.34	

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ENCOR
LABORATORY RESULTS

03/06/92 page 1

Project No: 90C112
[illegible]CORP
VICKSBURG,MS
CEDAR CHEMICAL COMPANY

SPECIMEN NUMBER	ASTM D413 SEAM PEEL THICKNESS TOP/BOTTOM (MILS)		FORCE (PPI)	FAILURE	ASTM D882 SEAM SHEAR THICKNESS$ (MILS)	FORCE (PPI)	FAILURE
SAMPLE ID							
P-5356,DS-05A							
1	63.50	63.90	130.29	FTB	63.10	177.58	FTB
2	63.60	63.30	129.34	FTB	63.00	184.86	FTB
3	63.60	63.90	133.94	FTB	-	-	-
4	63.70	63.90	121.45	FTB	-	-	-
5	63.80	66.30	109.94	FTB	-	-	-
AVE	63.64	64.26	124.99		63.05	181.22	
SD	0.11	1.17	9.57		0.07	5.15	
SAMPLE ID							
P-5357,DS-06							
1	63.40	57.30	90.29	FTB	62.10	183.73	FTB
2	63.20	59.20	105.67	FTB	62.20	188.30	FTB
3	63.30	61.10	105.70	FTB	62.20	192.34	FTB
4	63.20	61.40	122.05	FTB	61.90	190.80	FTB
5	63.40	62.80	116.58	FTB	62.30	189.73	FTB
AVE	63.30	60.36	108.06		62.14	188.98	
SD	0.10	2.14	12.20		0.15	3.29	

APPENDIX G

SAMPLE COLLECTION LOGS, CHAIN-OF-CUSTODY, REQUEST-FOR-ANALYSIS

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Sample Collection Logs 1
Chain-of-Custody 36
Request-for-Analysis 60

(1)

INTERNATIONAL TECHNOLOGY CORPORATION

DATE	SEE BELOW
TIME	
PAGE 1 OF 1	
PAGE	00001
PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME CEDAR CHEM-CO.

SAMPLE NO. SEE BELOW

SAMPLE LOCATION POND A RECONSTRUCT PRIMARY

SAMPLE TYPE 60 MIL. LINER CAP SEAM.

COMPOSITE ____ YES ✓ NO

COMPOSITE TYPE N/A

DEPTH OF SAMPLE N/A

WEATHER N/A

CONTAINERS USED	AMOUNT COLLECTED
N/A.	N/A

COMMENTS: SAMPLE SENT TO ENCOR TEST.
SHEAR ASTM D3083
PEEL ASTM D413

SAMPLE #	DS #	DATE WELDED	DATE & TIME COLLECTED	GUN #	
A4758	DS-R1	8-29-90	8-29-90 0930	137	
A4759	DS-R2	8-26-90	8-29-90 0930	137	R/A 239891
A47[illegible]61	DS-R3	8-30-90	8-31-90 0930	238	C/C 218205
A4762	DS-R4	8-31-90	8-31-90 1700	137	
P4184	DS-R5	9-4-90	9-5-90 1600	137	R/A 239918 C/C 174682

PREPARED BY: [signature]

(2)

INTERNATIONAL TECHNOLOGY CORPORATION

DATE	102390
TIME	SEE BELOW
PAGE 1 OF 1	
PAGE	00002
PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME: CEDAR CHEM. CO.

SAMPLE NO.: P5273 & P5274

SAMPLE LOCATION: SEE BELOW.

SAMPLE TYPE: SOLID. SEDIMENT (SOIL)

COMPOSITE: ____ YES ✓ NO

COMPOSITE TYPE: N/A

DEPTH OF SAMPLE: 0"-24"

WEATHER: 65° CLOUDY

CONTAINERS USED	AMOUNT COLLECTED
2-3½ gal. BKTS.	FULL

COMMENTS: TEST RUN ON SAMPLES ARE STANDARD PROCTOR ASTM D-698 ON POND B & C SOLIDIFIED SEDIMENT (w/LKD).

SAMPLE #P5273 TAKEN FROM POND C @ (0+21, 102) I.T. SECTION COORD. @ 0"-24" DEPTH.

SAMPLE #P5274 TAKEN FROM POND B @ (1+16 GE, 54) I.T. SECTION COORD. @ 0"-24" DEPTH.

PREPARED BY: [signature]

(3)

INTERNATIONAL TECHNOLOGY CORPORATION

DATE	10 3 1 9 0
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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME CEDAR CHEM. CO.

SAMPLE NO. PS275

SAMPLE LOCATION POND C

SAMPLE TYPE SOIL (SOLID. SED.)

COMPOSITE ✓ YES, ___ NO

COMPOSITE TYPE 0'-2' 3 LOC. POND C

DEPTH OF SAMPLE 0'-2'

WEATHER 80° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
1-3½ gal. BKT.	3½ gal.

COMMENTS: RUN STD. PROCTOR ANAL. ASTM-D-698 ON POND C RESOLIDIFIED DUE TO LOW STD. PROCTOR ANAL. ON PREV. SAMPLE.

SAMPLE TAKEN @ RANDOM AREAS (3) @ 0'-2' & COMBINED. TAKEN FROM COORD. (TT SECTION) 0+50, 28 ; 0+75, 84 & 1+00, 70.

R/A 170973
C/K 168658

PREPARED BY: Billy Fry

(4)

INTERNATIONAL TECHNOLOGY CORPORATION

DATE	01 22 91
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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME: CEDAR CHEM. CO.

SAMPLE NO. PS276 & PS277

SAMPLE LOCATION POND C BOTTOM (SEE BELOW)

SAMPLE TYPE FOUNDATION (SOIL)

COMPOSITE ____ YES ✓ NO

COMPOSITE TYPE N.A.

DEPTH OF SAMPLE SEE BELOW

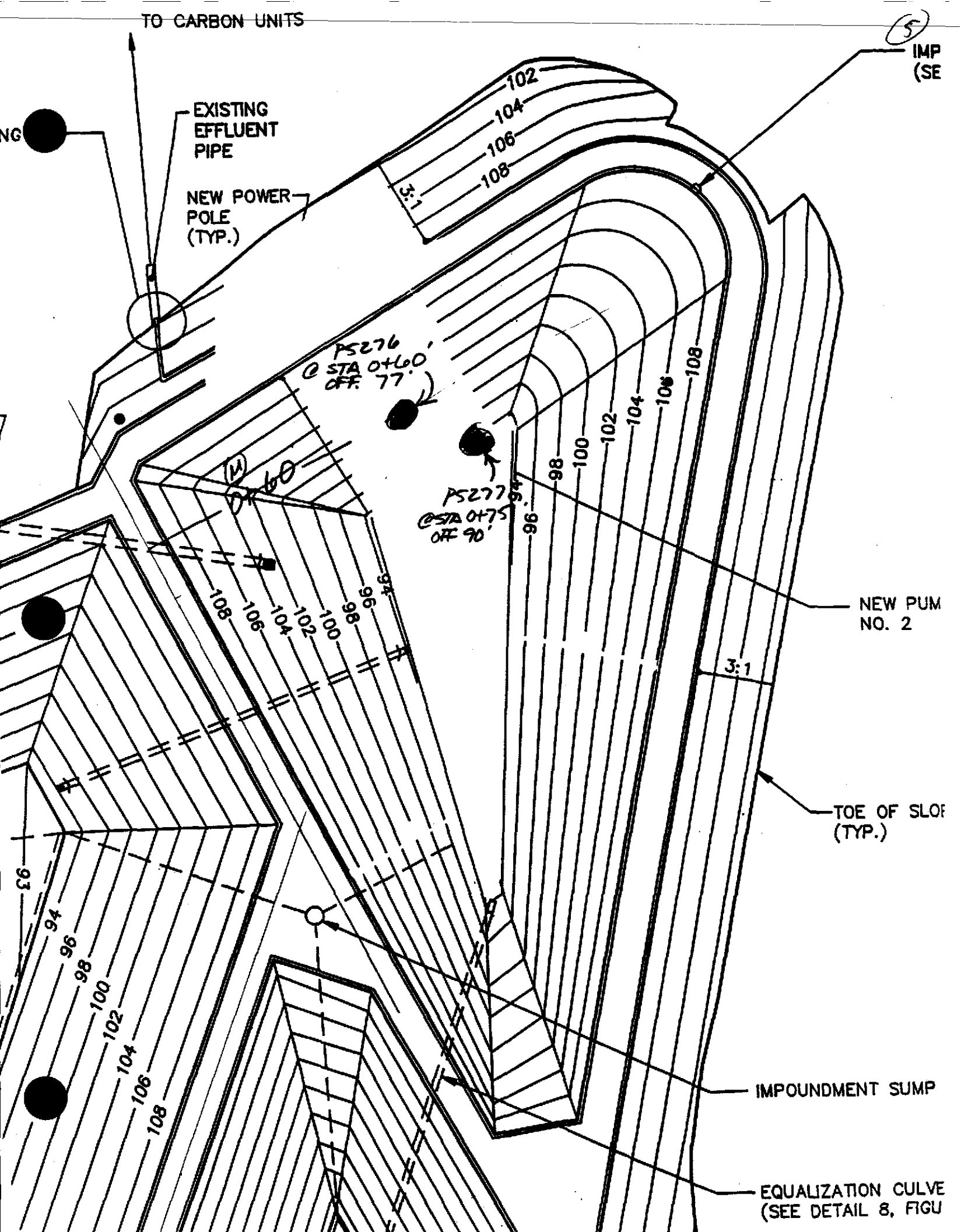
WEATHER 40° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
2-3" SHELBY TUBES	12" EA.

COMMENTS: STRENGTH TEST FOR FOUNDATION DESIGN OF POND C PUMP STATION

SAMPLE #'S	NULCOR COORDINATES	DEPTHS
PS276 -	STA. 0+60 OFF 77'	EL. 92'→93'
PS277 -	STA. 0+75 OFF. 90'	EL. 89'→90'

PREPARED BY: [signature]


TO CARBON UNITS
EXISTING EFFLUENT PIPE
NEW POWER POLE (TYP.)
NG
IMP (SE
102
104
106
108
3:1
PS276 @ STA 0+60' OFF. 77'
PS277 @ STA 0+75 OFF 90'
(M) 0+60
94
96
98
100
102
104
106
108
NEW PUM NO. 2
3:1
TOE OF SLOI (TYP.)
93
94
96
98
100
102
104
106
108
IMPOUNDMENT SUMP
EQUALIZATION CULVE (SEE DETAIL 8, FIGU

(6)

INTERNATIONAL TECHNOLOGY CORPORATION

DATE	02/19/91
TIME	1520
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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME: CEDAR CHEM. CO.

SAMPLE NO. P5278

SAMPLE LOCATION: POND C (SEE BELOW)

SAMPLE TYPE: SOILS (PUMP STATION FOUNDATION)

COMPOSITE: ✓ YES ___ NO

COMPOSITE TYPE: (SOILS) 2 [redacted] AREAS COMP.

DEPTH OF SAMPLE: 6-10 BGS @ (EL. 89-93)

WEATHER: 70° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
2-5 gal. BKTS.	FULL

COMMENTS: RUN STD PROCTOR ANAL. ASTM D698 ON COMPOSITE SAMPLE TAKEN FROM 2 LOCATIONS: & MIXED 15 % LKD (LKD TAKEN FROM SAME BARGE TO BE USED FOR FOUNDATION SOLIDIFICATION), RUN UNCONFINED COMPRESSION TEST ASTM D698 @ OPTIMUM M.C. @ 4 DAYS AFTER MIXING

— 2 —

POND C

RA. 170975
CC 168650

STA-0+60
OFF-75

STA-0+75
OFF-18

BASELINE

MILLER

PREPARED BY: Billy [illegible]

(7)

INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO. 435425	

SAMPLE COLLECTION LOG

PROJECT NAME CEDAR Chem Co.

SAMPLE NO. P5280 & P5281

SAMPLE LOCATION SEE BELOW

SAMPLE TYPE Solidified Underlying Soils

COMPOSITE ✓ YES ___ NO

COMPOSITE TYPE SOIL

DEPTH OF SAMPLE 0-4'

WEATHER 60° OVERCAST

CONTAINERS USED	AMOUNT COLLECTED
2-3½ gal.	FULL
BKTS.	

COMMENTS: TEST Run on Samples are Standard Proctor ASTM D-698 on Ponds B & C Solidified Underlying Soils For Use as Dike ~~on~~ soils

Sample # P5280 Taken From Pond B @ 2 random locations @ 0-4' and composited

Sample # P5281 Taken From Pond C @ 2 random locations @ 0-4' and composited

H/A # 250695
C/C # 182946

PREPARED BY: Billy Fry

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INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME CEDAR CHEM. CO.

SAMPLE NO. PS282

SAMPLE LOCATION BORROW PIT @ CEDAR CHEM. SOUTH PLANT.

SAMPLE TYPE SOIL (DIKE MAT.)

COMPOSITE ✓ YES ___ NO

COMPOSITE TYPE 3 RANDOM AREAS

DEPTH OF SAMPLE 1'-3'

WEATHER 60° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
PLASTIC BUCKET	16 QT.

COMMENTS: THIS SAMPLE TAKEN FROM VOID ON SITE BORROW PIT @ S. PLANT. SAMPLE TAKEN TO 1'-3' DEPTH INTO FILL DISCARDED 0'-1' @ 3 AREAS & COMPOSITED.
SENT TO B. ROCHE & ANALYZE FOR STANDARD PROCTOR ANAL. @ LOUIS CAPAZZOLI & ASSOC.

R/A 250696
C/C 182947

AIRBILL: 8040018624

PREPARED BY: [signature]

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INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME Cedar Chem. Co.

SAMPLE NO. P5283, P5284 & P5285

SAMPLE LOCATION SEE BELOW SWSA EXPANSION BOTTOM LINER SYSTEM

SAMPLE TYPE DESTRUCT/LINER

COMPOSITE ____ YES ✓ NO

COMPOSITE TYPE N/A

DEPTH OF SAMPLE N/A

WEATHER 92° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
N/A	3 - 10" X 12"

COMMENTS: 3 samples sent to ENCOR to test Tensile Strength for Peel & Shear ASTM # D638 and Thickness ASTM # D1593

SAMPLE #	FIELD #	SEAM #	
P5283	DS-1	10/11	SECONDARY
P5284	DS-2	21/22	PRIMARY
P5285	DS-3	31/32	PRIMARY

C/C 132988
R/A 250697

PREPARED BY: Billy Fry

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INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME Cedar Chem. Co.

SAMPLE NO. PS286 thru PS293

SAMPLE LOCATION SWCA bottom liner tie-in (Prim)/Pond B (secondary)

SAMPLE TYPE Destructive samples 60mil

COMPOSITE ___ YES ✓ NO

COMPOSITE TYPE N/A

DEPTH OF SAMPLE N/A

WEATHER 95° Clear

CONTAINERS USED	AMOUNT COLLECTED
N/A	8-8"x16"

COMMENTS: 2-inch destructive samples of welds sent to Enviro-Test for Peel ASTM-D413, Shear ASTM-D5083 and Thickness ASTM-D1593

SAMPLE #	FIELD #	LOCATION	WELD METHOD	SEAM #
PS286	DS-3B	SWCA Tie-in	EXTR.	21/SWCA EXT. TIE-IN
PS287	DS-4	Pond B sec	FUS.	8/9
PS288	DS-5A		EXTR	16/17
PS289	DS-5B		FUS.	16/17
PS290	DS-6			26/27
PS291	DS-7			39/40
PS292	DS-8			49/50
PS293	DS-9		EXTR.	17/39

NOTE: DS-5 FAILED FIELD LAB TESTS. I SEAM CAPPED I RUN DS-5A & DS-5B ON EACH SIDE OF CAPPED SEAM

RM-250698

C/C-168657

PREPARED BY: Billy Fry

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INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME Cedar Chem. Co.

SAMPLE NO. P5293

SAMPLE LOCATION SWCA Stockpiled solidified sediment

SAMPLE TYPE SOIL (SURD. SEDIMENT)

COMPOSITE ✓ YES ___ NO

COMPOSITE TYPE RANDOM, 5 AREAS

DEPTH OF SAMPLE N/A

WEATHER 95° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
1.5 gal. bkt.	FULL

COMMENTS: Run Standard Proctor Anal. ASTM D-698 on stockpiled solidified sediment removed from Ponds B & C. & Sent to Geo & Strickland (Warren County Eng.)

PREPARED BY: Billy Frey

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INTERNATIONAL TECHNOLOGY CORPORATION

DATE	07 18 91
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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME Cedar Chem. Co.

SAMPLE NO. P5295 → P5303 (ARCH) (ARCH)

SAMPLE LOCATION Pond C (Sec.), Pond B (Prim.), Silica Tie-in (Prim.), Pond B (Sec.)

SAMPLE TYPE Destruct samples Cont'd.

COMPOSITE ___ YES ✓ NO

COMPOSITE TYPE N/A

DEPTH OF SAMPLE N/A

WEATHER 98° PC.

CONTAINERS USED	AMOUNT COLLECTED
N/A	9-8" x 14"

COMMENTS: Cover Destruct samples of welds sent to Encotr & test for peel ASTM-D413, shear ASTM-D3083 and thickness ASTM-D1593

SAMPLE #	FIELD #	LOCATION	WELD METHOD	SEAM #
P5295	DS-10	Pond C sec.	Fusion	6/7
P5296	DS-11	"		19/20
P5297	DS-12	Pond B prim.		70/71
P5298	DS-13			79/80
P5299	DS-14			89/91
P5300	DS-15			99/100
P5301	DS-16			110/111
P5302	DS-3B [ARCH]	Silica tie-in	Extrudet	21/Silica tie-in
P5303	DS-7 [ARCH]	Pond B sec.	Fusion	

NOTE: DS-3B & DS-7 failed, test DS-3B & DS-7 archived samples for verification

R/A - 250699
C/C - 168653

PREPARED BY: Billy Fry

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INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME CEDAR CHEM. CO.

SAMPLE NO. P5304 & P5305

SAMPLE LOCATION POND C SECONDARY

SAMPLE TYPE DESTRUCT SAMPLES 60 mil.

COMPOSITE ___ YES ✓ NO

COMPOSITE TYPE N/A

DEPTH OF SAMPLE N/A

WEATHER 96° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
N/A	2-8"x14"

COMMENTS: LINER DESTRUCT SAMPLES OF WELDS SENT TO ENCOR & TEST FOR PEEL ASTM-D413, SHEAR ASTM D-3083 AND THICKNESS ASTM-D1593

SAMPLE #	FIELD #	LOCATION	WELD METHOD	SEAM #
P5304	DS-11A	POND C SECOND.	FUSION + EXTR.	19/20
P5305	DS-11B	" "	" "	19/20

NOTE: DS-11 FAILED PEEL. DS-11A & DS11B ARE TEST ON EXTER SIDE OF DESTRUCT SEAM THAT WAS EXTRUDED

RA- 250711
C/C- 168651

PREPARED BY: Billy Fry

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INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME Cedar Chem. Co.

SAMPLE NO. P5306 & P5307

SAMPLE LOCATION Pond C Primary

SAMPLE TYPE Liner destruct samples Comp.

COMPOSITE ___ YES ✓ NO

COMPOSITE TYPE —

DEPTH OF SAMPLE N/A

WEATHER 90° CLOUDY

CONTAINERS USED	AMOUNT COLLECTED
N/A	2-8"x12"

COMMENTS: LINER DESTRUCT SAMPLES OF WELDS SENT TO ENCOR & TEST FOR PEEL ASTM-D413, SHEAR ASTM-D3083 AND THICKNESS ASTM-D1593

SAMPLE #	FIELD #	LOCATION	WELD METHOD	SEAM #
P5306	DS-17	POND C (PRIM)	FUSION	
P5307	DS-18	" "	"	

R/A-170977
C/C-168652

PREPARED BY: Billy Fry

(15)

INTERNATIONAL TECHNOLOGY CORPORATION

DATE	07/31/91
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PROJECT NO.	435426

SAMPLE COLLECTION LOG

PROJECT NAME Cedar Chem. C.

SAMPLE NO. PS308

SAMPLE LOCATION MILLER ROCK YARD STOCKPILED #610 LIMESTONE

SAMPLE TYPE #610 LIMESTONE

COMPOSITE ✓ YES ___ NO

COMPOSITE TYPE 5 LOCATIONS IN STOCKPILE

DEPTH OF SAMPLE 0"-6"

WEATHER 93° Clear

CONTAINERS USED	AMOUNT COLLECTED
1-5gal. bkt.	FULL

COMMENTS: Sample taken from stockpiled #610 limestone from Miller Rock Yard & run sieve analy & Atterberg limits test for fraction of stone passing #40 sieve ASTM D4318.
~~[illegible]~~ Sample sent to Lee & Strickland (Warren County Eng.)

PREPARED BY: Billy Fry

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INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME CEDAR CHEM. CO.

SAMPLE NO. PS309, PS310, & PS311

SAMPLE LOCATION C. MILLER CON. CO. BORROW PIT (CONGLAKE) HWY 61N.

SAMPLE TYPE CLAY / LINER BORROW

COMPOSITE ✓ YES ___ NO

COMPOSITE TYPE CLAY LAYERS FROM EXA. PIT

DEPTH OF SAMPLE SEE BELOW

WEATHER 90° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
3-5 gal. buckets.	FULL EXA.

COMMENTS: CLAY LINER BORROW SAMPLES TAKEN FROM MILLER CON. CO. BORROW PIT OVR 4 PITS & COMPOSITED CLAY LAYERS INTO 3-5 gal. BUCKETS & SENT TO CAPAZOLI IN BTC.

- TEST 3 PER M. @ 0%, +2%, +4% OF OPT. M.C. @ BETWEEN 90% & 95% OF MAX. DRY DENSITY OF STD. PROCTOR.
- TEST 3 STD. PROCTOR ASTM D698
- TEST 3 ATTERBURG LIMITS FOR W_L, W_P, P.I. & M.C. & CLASSIFY BY USCS. ASTM D2487.
- DETERMINE SPECIFIC GRAVITY PER MOISTURE DENSITY
- TEST 2 UNCONFINED COMPRESSIVE STRENGTH TESTS @ OPT. M.C. @ BETWEEN 90% & 95% OF M.D.D. by STD. PROCTOR.

NOTE: SEE ATTACHED BORING LOG.

R/A - 250702
C/C - 182962

PREPARED BY: [signature]

INTERNATIONAL TECHNOLOGY CORPORATION

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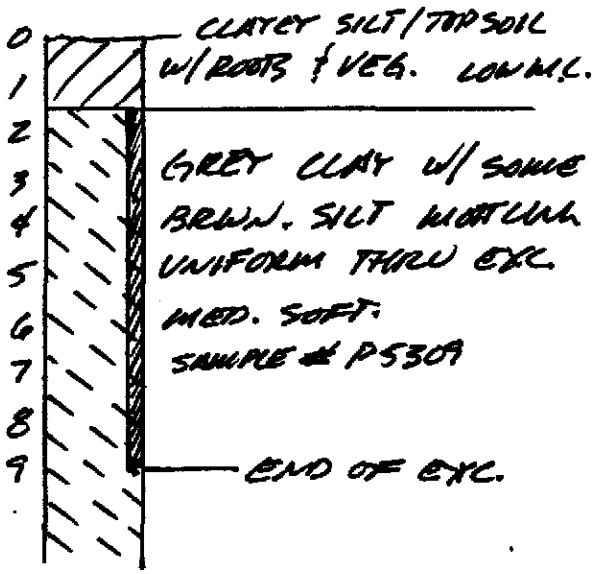
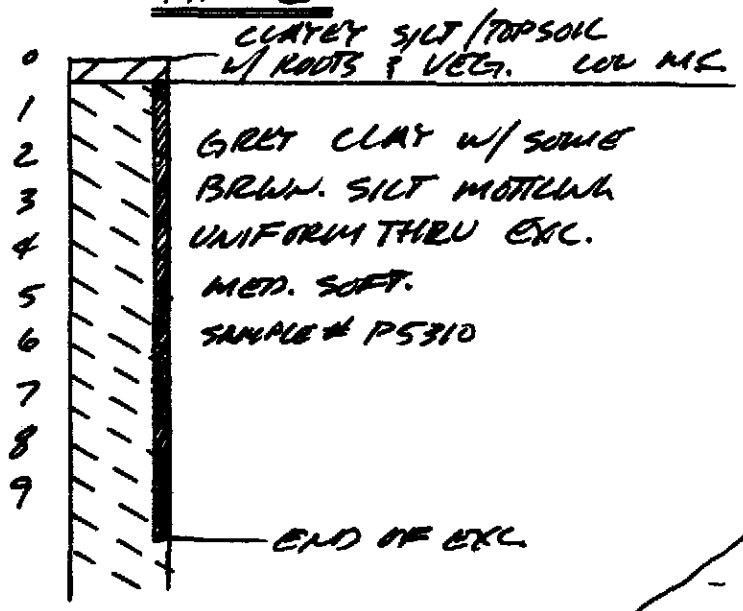
B.F. Date 8-6-91 Subject BORING LOG & LOCATIONS OF PITS @ CLAY BORROW PIT. Sheet No. 2 of 2

Chkd. By ____ Date ____ Proj. No. 435425

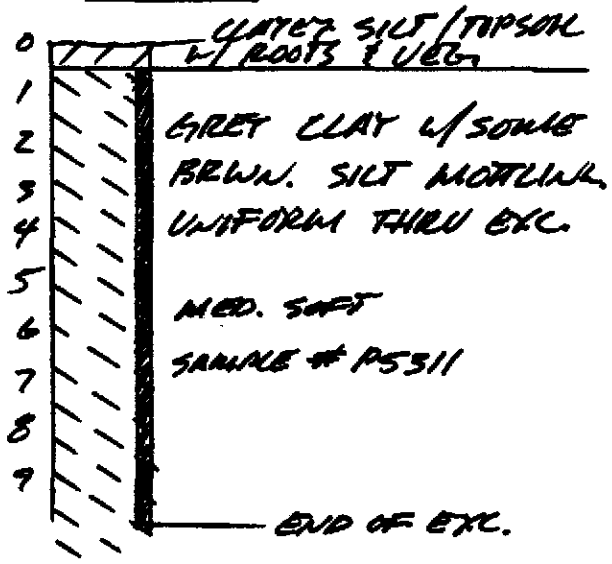
PIT #1

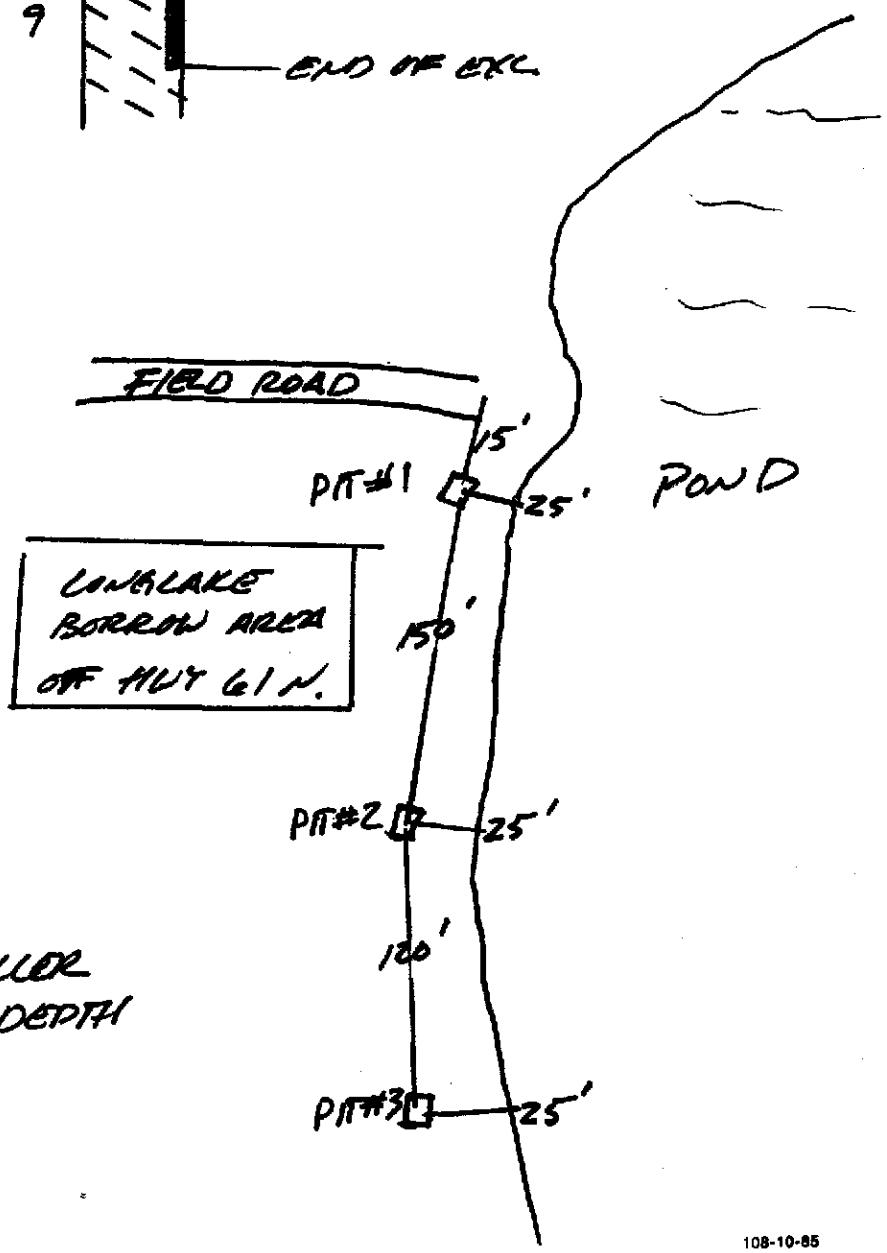


PIT #2



PIT #3





NOTE: PREVIOUS SAMPLES BY MILLER SHOWS CLAY TO EXTEND TO 18' DEPTH

LEGEND

COMP. SAMPLED

108-10-85

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INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME CEDAR CHEM. CO.

SAMPLE NO. P 5315

SAMPLE LOCATION SWCA IMPORTED CLAY FROM COWLLAKE BORROW PIT

SAMPLE TYPE CLAY (LINER)

COMPOSITE ✓ YES ___ NO

COMPOSITE TYPE GRAB FROM 4 TRUCKS

DEPTH OF SAMPLE N/A

WEATHER 75° RC.

CONTAINERS USED	AMOUNT COLLECTED
PLASTIC BAG	1 GAL.

COMMENTS: SAMPLE WAS TAKEN FROM 4 TRUCKS OF IMPORTED CLAY FROM COWLLAKE BORROW PIT (CLAY) & SENT TO GEE & STRICKLAND ENG. & TEST FOR GRAIN SIZE ANAL ASTM D-422 & ATTERBURG LIMITS W_L, W_P & PI ASTM D 4318 & USCS SOIL CLASSIFICATION ASTM D 2487 PER QC. SPECS 5.7.4.2 #1 OF 2

R/A 250708
C/C 182958

PREPARED BY: Billy Fry

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INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME: CEDAR CHEM. CO.

SAMPLE NO.: PS312, PS313 & PS314

SAMPLE LOCATION: SWCA CLAY CAP 1ST 6" LIFT SEE ATTACH FOR LOCATION.

SAMPLE TYPE: CLAY

COMPOSITE: ____ YES ✓ NO

COMPOSITE TYPE: N/A

DEPTH OF SAMPLE: 2"-4"

WEATHER: 70° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
3-DRIVE RINGS	FULL EA.

COMMENTS: TOOK 3 OF 5 SAMPLES TO BE TAKEN FROM THE 1ST 6" LIFT OF SWCA CLAY CAP & SENT TO LOUIS CAPPIZOLI & RUN PERMEABILITY TEST EPA #9100 TESTS TAKEN W/ 2 3/4" STD. DRIVE RINGS.

SAMPLE #	COORD'S				LIFT #
PS312	STA.	5+50	OFF.	120	1
PS313	"	4+00	"	140	1
PS314	"	4+25	"	55	1

SEE ATTACHED LOCATIONS

R/A - 170976
C/C - 182950

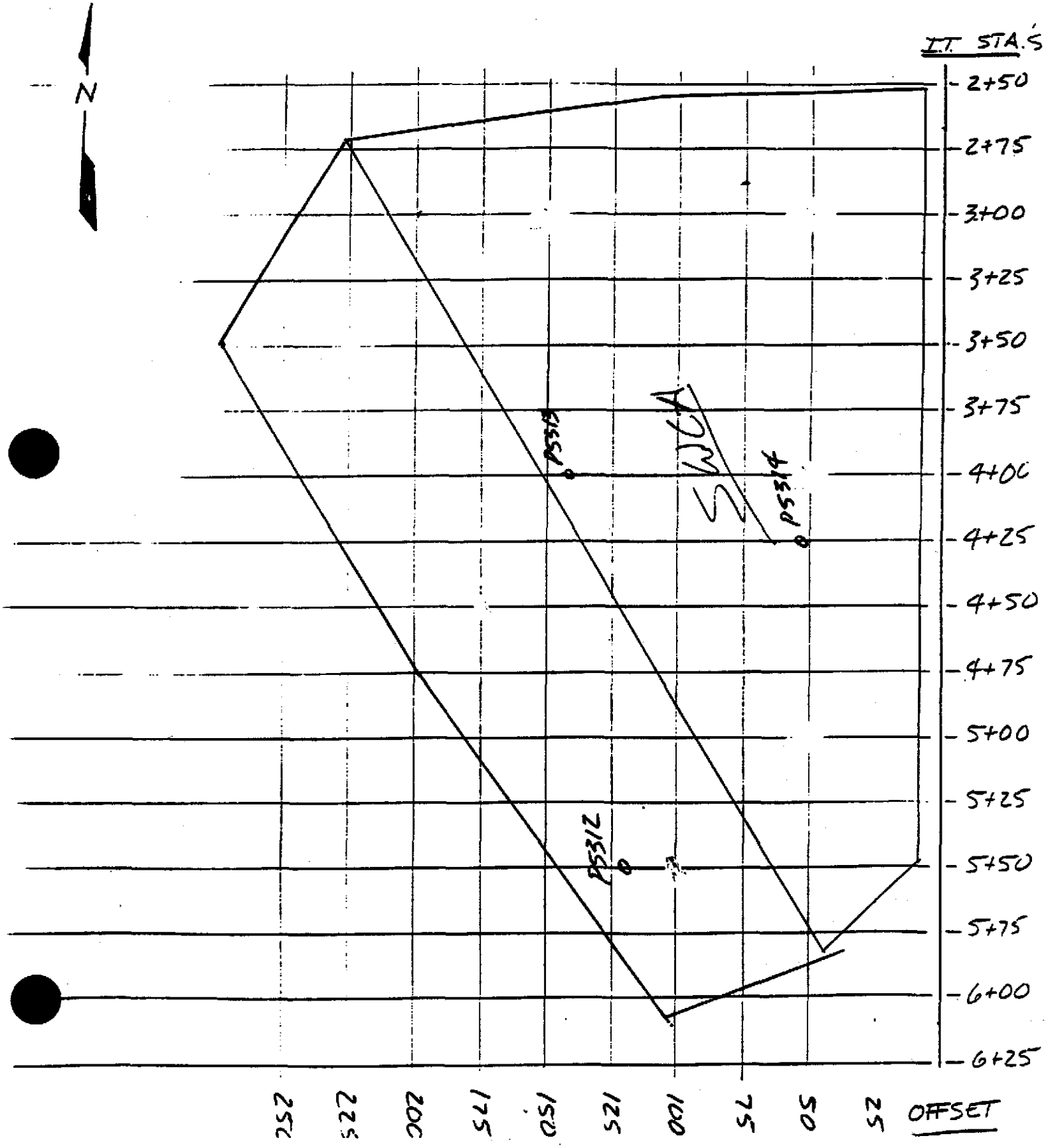
PREPARED BY: Billy Frey

INTERNATIONAL TECHNOLOGY CORPORATION

(20)

By BF Date 10-7-91 Subject DRILL RIG LOCATIONS Sheet No. 2 of 2

Chkd. By ____ Date ____ SWCA (PERM PZ315) Proj. No. 435425



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INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME CEDAR CHEM. CO.

SAMPLE NO. P5316

SAMPLE LOCATION SWCA IMPORTED CLAY FROM LONLAKE BORROW PIT

SAMPLE TYPE CLAY (LINER)

COMPOSITE ✓ YES ___ NO

COMPOSITE TYPE GRAB FROM 5 TRUCKS

DEPTH OF SAMPLE N/A

WEATHER 80° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
PLASTIC BAG	1 GAL.

COMMENTS: SAMPLE WAS TAKEN FROM 5 TRUCKS OF IMPORTED CLAY FROM LONLAKE BORROW PIT (CLAY) & SENT TO GEE & STRICKLAND CNL. & TEST FOR GRAIN SIZE ANAL. ASTM D 422 & ATTERBURG LIMITS W_n, W_p & PI ASTM D 4318 & USCS SOIL CLASSIFICATION ASTM D 2487 PER QC. SPECS 5.7.4.2

#2 of 2

R/A 250208
C/C 182958

PREPARED BY: Billy Fry

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INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME: CEDAR CHEMICAL CO.

SAMPLE NO.: PS317, PS318, PS319, PS320

SAMPLE LOCATION: SWCA CLAY CAP

SAMPLE TYPE: CLAY

COMPOSITE: ___ YES ✓ NO

COMPOSITE TYPE: N/A

DEPTH OF SAMPLE: 2'-4"

WEATHER: 78° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
4-DRIVE RINGS	FULL

COMMENTS: TOOK LAST 2 OF 5 SAMPLES TO BE TAKEN FROM THE 1ST LIFT OF SWCA CLAY CAP. ALSO TOOK FIRST 2 OF 5 SAMPLES TO BE TAKEN FROM THE SECOND LIFT OF CLAY & SENT TO CAPPIZZI & RUN PERMEABILITY TEST EPA # 9100, TESTS TAKEN W/ 2 3/8" STD. DRIVE RINGS.

SAMPLE #	COORD'S FT.		LIFT #
PS317	SOL. 5400' OFF.	200'	1
PS318	5400'	50'	1
PS319	4400'	200'	2
PS320	5400'	150'	2

SEE ATTACHED LOCATIONS

R/A - 250710

C/C - 182961

PREPARED BY: Billy Fry

INTERNATIONAL TECHNOLOGY CORPORATION

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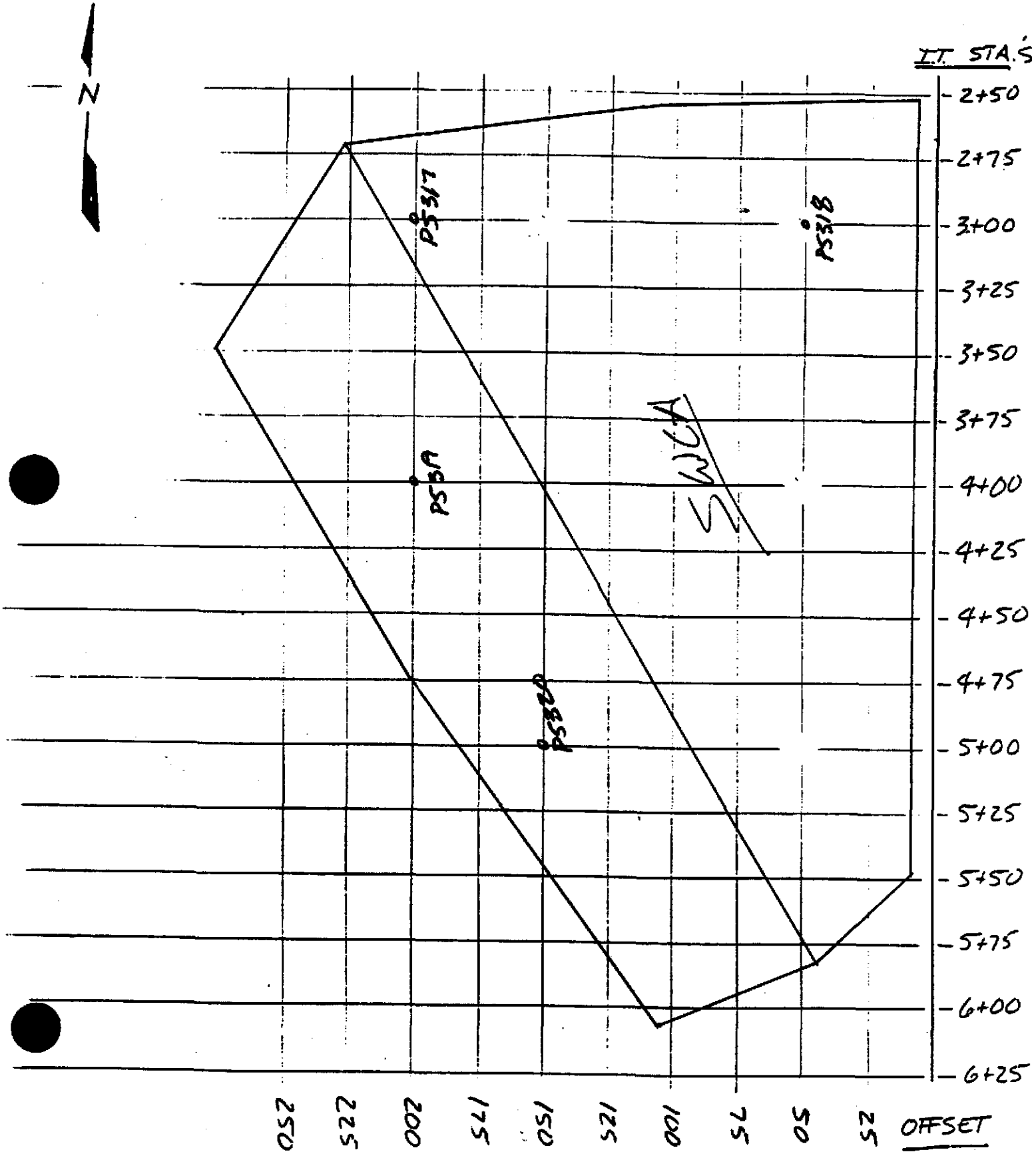
B.F. Date 10-15-91 Subject DRIVE RING LOCATIONS Sheet No. 2 of 2

Chkd. By ____ Date ____ SWCA (PERM TESTS) Proj. No. 435425



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INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME: CEDAR CHEM. CO.

SAMPLE NO.: PS329, PS330, PS331 & PS332

SAMPLE LOCATION: SWCA CLAY LINER "CAP"

SAMPLE TYPE: CLAY LINER

COMPOSITE: ___ YES ✓ NO

COMPOSITE TYPE: —

DEPTH OF SAMPLE: SEE BELOW

WEATHER: ___

CONTAINERS USED	AMOUNT COLLECTED
4- SHELBY TUBES	.019 cu ft ea.

COMMENTS: SAMPLES WERE TAKEN W/ SHELBY TUBE @ 2 LOCATIONS TO FULL DEPTH OF CLAY CAP & CUT FOR 1ST LIFT & 2ND LIFT SAMPLES SENT TO ARC & STRICKLAND ENG. & TEST UNCONFINED COMP. ON EACH.

SAMPLE #	COORDS STA.	OFF.	~~DEPTH~~ LIFT
PS329	5+25	100	1
PS330	"	"	2
PS331	5+25	150	1
PS332	"	"	2

R/A & C/C # 556065

PREPARED BY: [signature]

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INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME CEDAR CHEM. CO.

SAMPLE NO. P5324, P5325, P5326

SAMPLE LOCATION SWMA CAP

SAMPLE TYPE 60 mil. LINER (DESTRUCTS)

COMPOSITE ___ YES ✓ NO

COMPOSITE TYPE N/A

DEPTH OF SAMPLE N/A

WEATHER 70° P.C.

CONTAINERS USED	AMOUNT COLLECTED
N/A	5 @ 8x12

COMMENTS: LINER DESTRUCT SAMPLES OF WELDS SENT TO ENCOR & TEST FOR PEEL ASTM-D413; SHEAR ASTM-D3083; & THICKNESS ASTM-D1593.

THESE SAMPLES WERE TAKEN FROM SWMA SINGLE LINER CAP, CAP WAS FUSION WELDED & TIE-IN WAS EXTRUDED

SAMPLE #	FIELD #	LOCATION	WELD METHOD	SEAM #
P5324	DS-1	SWMA CAP	FUSION	4/5
P5325	DS-2			7/8
P5326	DS-3			12/13
P5327	DS-4			16/17
P5328	DS-5			19/20

P/A - 250707
C/C - 182958

PREPARED BY: Billy Fry

INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME: CEDAR CHEM. CO.

SAMPLE NO.: PS333, PS334, PS335, PS336, PS337

SAMPLE LOCATION: SLICA CAP

SAMPLE TYPE: LINER Coml DESTRUCTS.

COMPOSITE: ___ YES ✓ NO

COMPOSITE TYPE: N/A

DEPTH OF SAMPLE: N/A

WEATHER: 75° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
N/A	5-8x12

COMMENTS: LINER DESTRUCT SAMPLES OF WELDS SENT TO ENCOR & TEST FOR PEEL ASTM-D413, SHEAR ASTM-D3083; & THICKNESS ASTM D1593

THESE SAMPLES WERE TAKEN FROM SLICA SINGLE LINER CAP. CAP WAS FUSION WELDED & TIE-IN WAS EXTRUDED.

SAMPLE #	FIELD #	LOCATION	WELD METHOD	SEAM #
*PS333	DS-5A	SLICA CAP	FUSION	19/20
*PS334	DS-5B	↓	↓	19/20
PS335	DS-6			25/26
PS336	DS-7	SLICA CAP TIE-IN	EXTRUDED	TIE-IN
PS337	DS-8	" "	"	TIE-IN

DS-5B FAILED, EXTRUDED REST OF SEAM & W.T.

* NOTE: THESE SAMPLES WERE TAKEN 10' EACH SIDE OF FAILED DESTRUCT #DS-5

R/A - 250706

C/C - 182957

PREPARED BY: [signature]

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INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME CEDAR CHEM. CO.

SAMPLE NO. P5350 & P5351

SAMPLE LOCATION POND A PRIMARY REPAIR

SAMPLE TYPE 60mil

COMPOSITE ____ YES ✓ NO

COMPOSITE TYPE N/A

DEPTH OF SAMPLE N/A

WEATHER 45° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
———	2-6"x10"

COMMENTS: TOOK SAMPLE #DS-1 FROM WELDS MADE ON 1ST HALF OF RECONSTRUCT CAPS BY GUNDLE 1-14-92 THAT WERE MADE WHILE NO INSPECTOR WAS ON SITE. #DS-2 IS FROM WELDS MADE 1-15-92 WHILE I WAS ON SITE. SAMPLES SENT TO ENCORE & TEST FOR PEEL ASTM # D413 & SHEAR ASTM # D638 & THICKNESS

DESTRUCT #	SAMPLE #	GUNDLE SAMPLE #	GUN #	WELDER	TIME
DS-1	P5350	CP-14	65	SP	1110
DS-2	P5351	CP-15	65	SP	1120

SEAMER SP = SOM PHONE

R/A - 250205

C/C - 182953

PREPARED BY: Billy Fry

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PROJECT NO. 435425	

SAMPLE COLLECTION LOG

PROJECT NAME CEDAR CHEM. CO.

SAMPLE NO. P5352 DS-1

SAMPLE LOCATION POND A PRIMARY RECONSTRUCT

SAMPLE TYPE 60 mil. CLEAN DESTRUCT

COMPOSITE ____ YES ✓ NO

COMPOSITE TYPE NA

DEPTH OF SAMPLE NA

WEATHER 78° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
N/A	6X12

COMMENTS: DESTRUCT TAKEN FROM FUSION WELDED EDP TO RECONSTRUCT PRIMARY. TAKEN FROM AREA WELDED OVER DIRTY CLEAN. SENT TO ENCOR & PSI FOR SHEAR, PEEL & THICKNESS.

R/A & C/C 336068

PREPARED BY: Billy Fry

INTERNATIONAL TECHNOLOGY CORPORATION

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PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME CEDAR CHEM. CO.

SAMPLE NO. PS353 DS-2

SAMPLE LOCATION POND 18 PRIMARY RECONSTRUCT.

SAMPLE TYPE 60 mil liner destructs

COMPOSITE ___ YES ✓ NO

COMPOSITE TYPE N/A

DEPTH OF SAMPLE N/A

WEATHER 78° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
N/A	6"x12"

COMMENTS: DESTRUCT TAKEN FROM FUSION WELDED CAP TO RECONSTRUCT PRIMARY. SENT TO ENCOR 3' TEST FOR SHEAR, PER 3' THICKNESS.

R/A # CC 336068

PREPARED BY: Billy Frey

INTERNATIONAL TECHNOLOGY CORPORATION

DATE	03 02 92
TIME	1400
PAGE 1 OF 1	
PAGE	00026
PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME CEDAR CHEM. CO.

SAMPLE NO. P5354 DS-3

SAMPLE LOCATION POND A PRIMARY RECONSTRUCT.

SAMPLE TYPE 60 mil LINER DESTRUCT

COMPOSITE ____ YES ✓ NO

COMPOSITE TYPE NA

DEPTH OF SAMPLE NA

WEATHER 78° CLEAR

CONTAINERS USED	AMOUNT COLLECTED
NA	6"x12"

COMMENTS: DESTRUCT TAKEN FROM FUSION WELDED CAP TO RECONSTRUCT PRIMARY. SENT TO ENCOR & TEST FOR SHEAR, PEEL & THICKNESS.

R/A & C/C 33606i

PREPARED BY: Billy Fry

(31)

INTERNATIONAL TECHNOLOGY CORPORATION

DATE	03 02 92
TIME	1400
PAGE	1 OF 1
PAGE	0027
PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME Cedar Chem. Co.

SAMPLE NO. P5355 DS-9

SAMPLE LOCATION Pond A Primary Reconstruct.

SAMPLE TYPE 60 mil. Liner Destruct.

COMPOSITE ___ YES ✓ NO

COMPOSITE TYPE NA

DEPTH OF SAMPLE NA

WEATHER 78° Clear

CONTAINERS USED	AMOUNT COLLECTED
NA	6"x12"

COMMENTS: Destruct taken from fusion welded cap to reconstruct primary. Sent to Encor 3 test for shear, peel & thickness.

R/M 3 C/C 336068

PREPARED BY: Billy Frey

INTERNATIONAL TECHNOLOGY CORPORATION

DATE	03 02 92
TIME	1 4 0 0
PAGE 1 OF 1	
PAGE	00028
PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME Cedar Chem. Co.

SAMPLE NO. P5356 DS-5A

SAMPLE LOCATION Pond A Primary Reconstruct

SAMPLE TYPE 60 mil. Liner Destructs.

COMPOSITE ___ YES ✓ NO

COMPOSITE TYPE NA

DEPTH OF SAMPLE NA

WEATHER 78° Clear

CONTAINERS USED	AMOUNT COLLECTED
NA	6"X12"

COMMENTS: Destruct taken from extruded welded cap to reconstruct primary. This destruct taken from south toe area. DS-5 taken @ ~~east~~ west end of weld & DS-5A taken @ east end. ~~[illegible]~~ due to DS-5 failed field test. Seam was capped from DS-5A to end of seam west. Sample sent to Encor & test for peel, shear & thickness

RA #C/C 336068

PREPARED BY: Billy [illegible]

INTERNATIONAL TECHNOLOGY CORPORATION

DATE	03 04 92
TIME	1310
PAGE	1 OF 1
PAGE	00029
PROJECT NO.	435425

SAMPLE COLLECTION LOG

PROJECT NAME: CEDAR CHEMICAL CO.

SAMPLE NO.: PS357 DS-6

SAMPLE LOCATION: POND #1 PRIMARY RECONSTRUCT

SAMPLE TYPE: 60 mil. LINER DESTRUCT

COMPOSITE: ___ YES ✓ NO

COMPOSITE TYPE: NA

DEPTH OF SAMPLE: NA

WEATHER: 70° P.C.

CONTAINERS USED	AMOUNT COLLECTED
NA	6"x12"

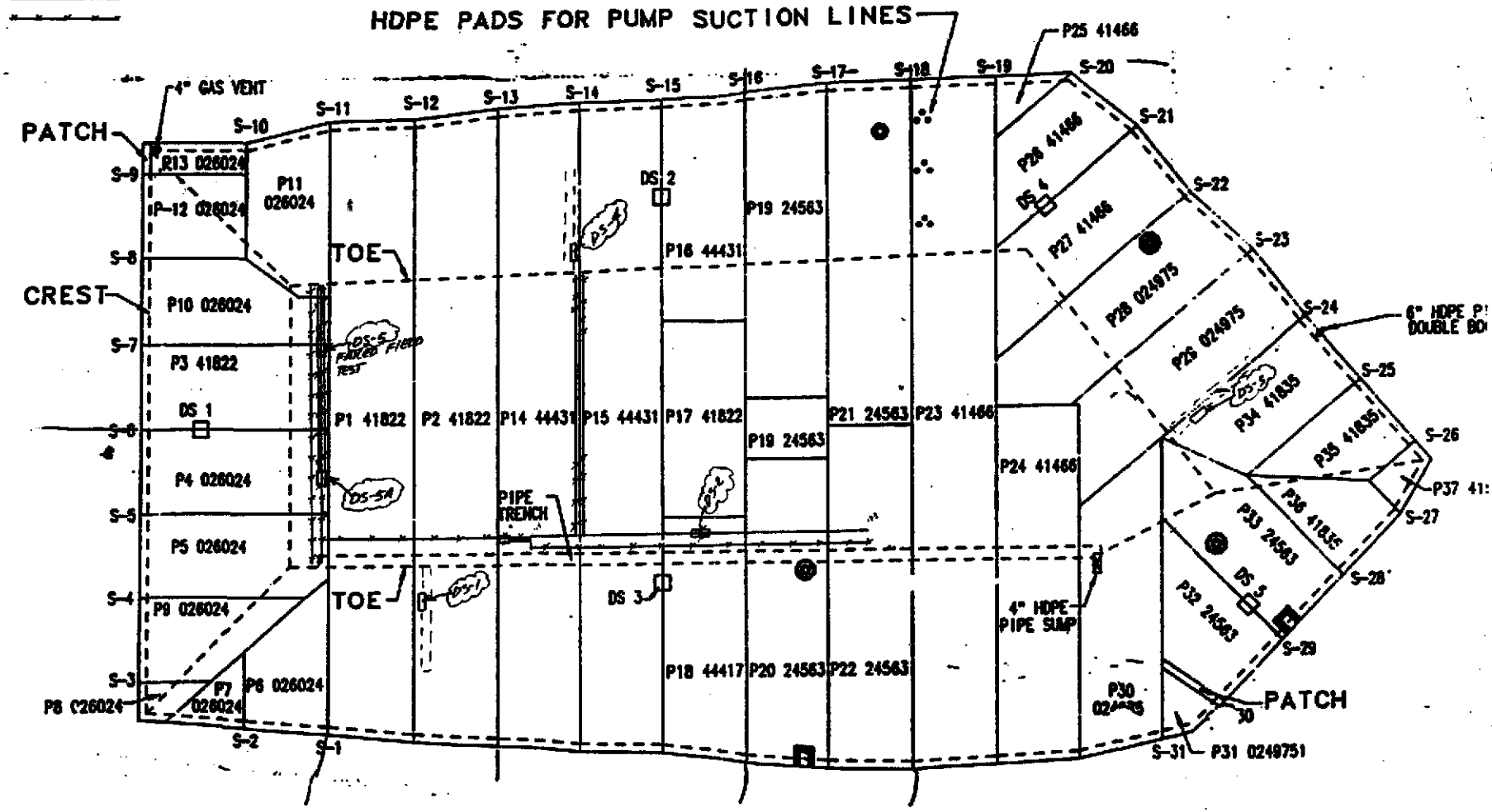
COMMENTS: DESTRUCT TAKEN FROM EXTRUDED WELDED CAP TO RECONSTRUCT PRIMARY. SENT TO ENCOR 3' TEST FOR SHEAR, PEEL & THICKNESS.

P/U & C/C 336069

PREPARED BY: Billy Frey

FUSION & EXTRUDED WELDS
MADE 5-2-92, SCALED FROM
ANCHOR TRENCH

LEGEND: FUSION ———
EXTRUDED - - - -

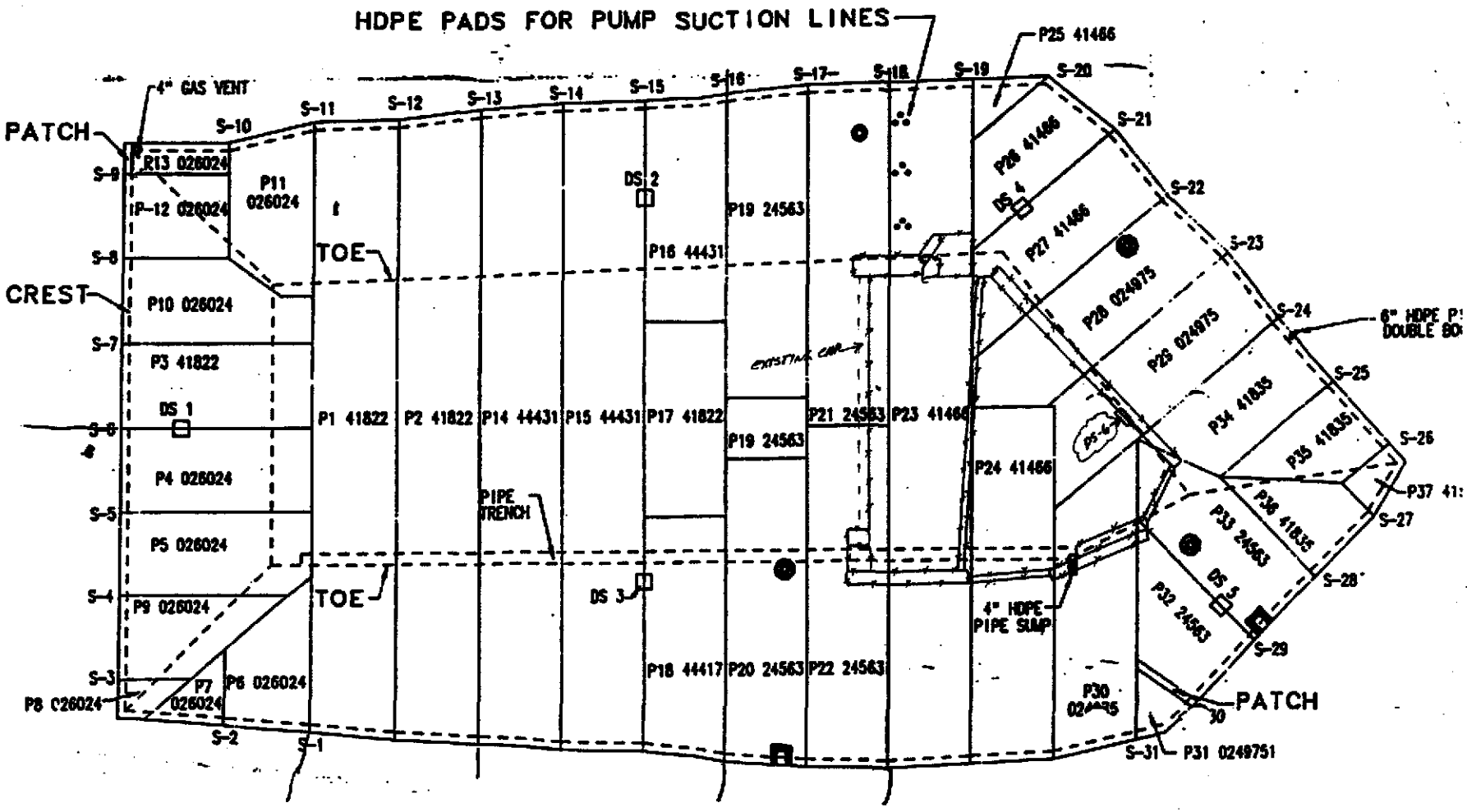


60 MIL HDPE-PRIMARY

SCALE AS NOTED

(35) FUSION & EXTRUDED WELDS MADE 3-3-92, SCALED FROM ANCHOR TRENCH.

LEGEND: FUSION ———
EXTRUDED -+-+-+-



60 MIL HDPE-PRIMARY

SCALE AS NOTED

36

INTERNATIONAL TECHNOLOGY CORPORATION

1150 La Blanc Rd Port Alan La 70767

636-5056 Miller Const Trailer

Or Alan Steve [redacted]swell

CHAIN-OF-CUSTODY RECORD

R/A Control No. 38990

C/C Control No. 43564

PROJECT NAME/NUMBER VICKSBURG CHEMICAL 435425

LAB DESTINATION GEE & STRICKLAND

SAMPLE TEAM MEMBERS M. DORAN / O. LOGUE

CARRIER/WAYBILL NO. HAND CARRIED

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition of Receipt (Name and Date)	Disposal Record No.
C	E. SIDE SWCA BOTTOM		Soil	Bucket		
D	W. SIDE SWCA BOTTOM		Soil	Bucket		

Special Instructions: SUGGEST WEARING SURGICAL GLOVES WHILE HANDLING MATERIAL

Possible Sample Hazards: POSSIBLE LOW LEVEL PESTICIDES

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: M. Doran ITC

Received By: J. Pearson

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

36

WHITE - To accompany samples
YELLOW - Field copy

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 2598

C/C Control No. 218203

PROJECT NAME/NUMBER CEDAR CHEM. CO.

LAB DESTINATION ENCOR

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO. HAND - CARRY

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
A4758 6238	POND-A RECONSTRUCT PRIMARY	8-29-90 0930	LINER (CAP)	N/A		
A4759 6137	"	" " 0930	"	"		
A4761 6137	"	8-31-90 0930	"	"		
A4762 6137	"	8-31-90 1700	"	"		

Special Instructions: ASAP

Possible Sample Hazards: NONE

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Frey IT

   Received By: H. Z. Kuel / IT / 9-5-90

2. Relinquished By: H. Z. Kuel / IT / 9-5-90 / 9:25

   Received By: Emile Ingercante / 9/5/90 / 9:25

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

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INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 23[redacted]8

C/C Control No. 174682

PROJECT NAME/NUMBER CEDAR CHEM. CO.

LAB DESTINATION ENCOR

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO. HAND-CARRY

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P4184	POND A RECONSTRUCT PRIM.	9-5-90 1600	LINER(CAP)	N/A		

Special Instructions: ASAP

Possible Sample Hazards: NONE

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Frey Jr.

   Received By: Emile Mercantes - ENCOR - 9/10/90 - 4:50 P.M.

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

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INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 170[illegible]2

C/C Control No. 168648

PROJECT NAME/NUMBER CEDAR CHEM. CO./435425

LAB DESTINATION CAPAZOLI

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO. Hand Carry

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5273	POND C (0+21,102) / SOLID SED.	10/23/90 1100	SOIL	5½ gal. BKT.		
P5274	POND B(/ SOLID SED.	10/23/90 1120	"	"		

Special Instructions: WEAR GLOVES & VENTILATE.

Possible Sample Hazards: Skin Irritant

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy E. Frey IT CORP. 10/23/90

Received By: Dubru / IT Corp / 10-25-90 / 0900

2. Relinquished By: Dubru / IT Corp / 10-25-90 /

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

WHITE - To accompany samples
YELLOW - Field copy

IT INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 170[illegible]3

C/C Control No. 168658

PROJECT NAME/NUMBER CEDAR CHEM/435425

LAB DESTINATION Cagnoyoli

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO. Hand Carry

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5275	POND C (COMPOSITE) / SOLID. SED.	10-31-90 1340	SOIL	3½ gal. BKT.		

Special Instructions: VENTILATE & WEAR GLOVES.

Possible Sample Hazards: WASTE CLASSIFIED AS NON HAZARDOUS, TRACES OF TOXIPHENE, CARBONTETRACHLORIDE, CHLORINE, CHLOROFORM & DINITRO BUTYL-PHENOL.

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Frey IT CORP. 10-31-90

   Received By: Dubre/IT/11-1-90/1300

2. Relinquished By: Dubre/IT/11-1-90/

   Received By: [illegible]/Colorado/11-1-90/2:39

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 170

C/C Control No. 168649

PROJECT NAME/NUMBER CENTRAL CHEM. CO / 435425

LAB DESTINATION LOUIS CAPOZZOLI

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO. 8040018593

Sample Number	Sample Location and Description (MILLER OFF.)	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5276	POND C BOTTOM STA 0+60, 77	01-22-91 1200	SOIL	SHELBY TUBE	92-93 FT (M.S.L)	
P5277	" " " STA 0+75, 90	" 1240	"	"	89-90 FT (M.S.L)	
~~P5278~~	~~STA 0+75, 65~~					
~~P5279~~						
	5" x 12'					

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy W. Frey IT. CORP.
   Received By: R Hardin 1/23/90 1000
2. Relinquished By: R Hardin 1/23/90
   Received By:
3. Relinquished By:
   Received by:
4. Relinquished By:
   Received By:

WHITE - To accompany samples
YELLOW - Field copy

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INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 252[redacted]5

C/C Control No. 182946

PROJECT NAME/NUMBER CEDAR CHEM. CO/435425

LAB DESTINATION LOUIS CAPAZZOLI & ASSOC.

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO. 8040018641 & 8040018630

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
PS280	POND B SOLID. BOTTOM. w/CLD	03-08-91/1600	SOIL	PL. BKT.		
PS281	POND C " " "	" 1800	"	"		

Special Instructions: VENTILATE WELL

Possible Sample Hazards: NON-HAZARDOUS, TRACES OF CARBON TETRACHLORIDE, CHLORINE, CHLOROFORM & DIMACES HAVE BEEN FOUND IN SAMPLE.

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Frey IT. CORP. 3/8/91
   Received By: R Haider IT Corp 3/11/91 900
2. Relinquished By: R Haider IT Corp. 3/11/91 1000
   Received By: [illegible] LOC&A 11MAR91@1115
3. Relinquished By: Jimmy R Kerry, L.J.C.&A. 3/14/91 1045
   Received by: C. Blaine Johnson, IT, 3/14/91/1045
4. Relinquished By: Billy Frey IT. CORP.
   Received By:

WHITE - To accompany samples
YELLOW - Field copy

(42)

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 250[illegible]

C/C Control No. 182947

PROJECT NAME/NUMBER CENTRAL CHEM. / 435425

LAB DESTINATION LOUIS CAPAZOLI & ASSOC.

SAMPLE TEAM MEMBERS FRET

CARRIER/WAYBILL NO. 8040018674

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5282	ON SITE BORROW PIT / DITCH SOIL	3/19/91 / 0900	SOIL	1 QT. PLASTIC	BUCKET	

Special Instructions:

Possible Sample Hazards: NONE.

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy [illegible] IT CORP. 3-19-91

   Received By: D. Harden / IT - 3-20-91

2. Relinquished By: Dubre / D. Harden, IT, 3-20-91

   Received By: [illegible]

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 2[illegible]97

C/C Control No. 182948

PROJECT NAME/NUMBER Celanese Co.

LAB DESTINATION ENCOR

SAMPLE TEAM MEMBERS FLEY

CARRIER/WAYBILL NO. 7866744281

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5283	SLICA EXTENSION SECONDARY	6-27-91	60 ml	N/A		
	DS-1 Sam 10/11					
P5284	SLICA EXTENSION PRIMARY					
	DS-2 Sam 21/22					
P5285	SLICA EXTENSION PRIMARY					
	DS-3 Sam 31/32					

Special Instructions:

Possible Sample Hazards: NONE

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Fey, I.T. CORP, 6-28-91

   Received By:

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 23[redacted]98

C/C Control No. 168657

PROJECT NAME/NUMBER Cedar Chem./435425

LAB DESTINATION ENCOR

SAMPLE TEAM MEMBERS FREY / DAVID BENOIT

CARRIER/WAYBILL NO.

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5286	SWA TRE-IN (PRIM.) DS-3B ~~[illegible]~~	7/8/91	LIQUID WASTE	N/A		
P5287	PAND B (SEC.) DS-4 8/9					
P5288	DS-5B 16/17					
P5289	DS-5C 16/17					
P5290	DS-6 26/27					
P5291	DS-7 39/40					
P5292	DS-8 49/50					
P5293	DS-9 17/39					

Special Instructions:

Possible Sample Hazards:

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Frey IT. Corp.

   Received By:

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 1209

C/C Control No. 168654

PROJECT NAME/NUMBER CLEAR CREEK/435425

LAB DESTINATION GEE & STRICKLAND (WARREN CTY. OHIO)

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO. HAND CARRY

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
PS294	SLICA STRICKLAND SOLID. SEDIMENT	7/10/91	SOIL/SOLID.	5gal. bkt		

Special Instructions: Wear half face respirator w/organic vapor cartridge & ventilate

Possible Sample Hazards: CLASSIFIED AS NON-HAZARDOUS SOLID SEDIMENT w/ CARBON TETRACHLORIDE, DINALCOS CHLORINE, TOXAPHENE & CHLOROFORM.

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Fry IT. CORP. 7/11/91 1430

Received By: Mel Carter Gee & STRICKLAND 7/11/91 1440

2. Relinquished By: Gee & Strickland Inc 7/11/91

Received By: Billy Fry IT. CORP. 7/12/91 1540

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

WHITE - To accompany samples
YELLOW - Field copy

(47)

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 25[redacted]97

C/C Control No. 168653

PROJECT NAME/NUMBER CEDAR CHEM. / 435425

LAB DESTINATION ENCOR

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO. 7866744895

Sample Number	Sample Location and Description	DS #'s	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5295	POND C SECONDARY	DS-10	7-18-91	LIQUID	N/A		
P5296	" "	DS-11					
P5297	POND B PRIMARY	DS-12					
P5298		DS-13					
P5299		DS-14					
P5300		DS-15					
P5301		DS-16					
P5302	SLICA TIE-IN (ARCH)	DS-33	7-8-91				
P5303	POND B SECONDARY (ARCH)	DS-7					

Special Instructions:

Possible Sample Hazards: NONE

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Frey, IT. CORP., 7-18-91

   Received By:

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

(47)

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INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 2[illegible]116

C/C Control No. 168651

PROJECT NAME/NUMBER CEDAR CHEM. CO.

LAB DESTINATION ENCOR

SAMPLE TEAM MEMBERS FREY / DAVE BRADY

CARRIER/WAYBILL NO. 7866744373

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5304	POND C (SECONDARY) DS-11A	7-22-91	60ml liner	N/A		
P5305	" " DS-11B	"	"	"		

Special Instructions:

Possible Sample Hazards: NONE

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Frey I.T. CORP. 7-23-91

   Received By:

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

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INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 17[illegible]7

C/C Control No. 168652

PROJECT NAME/NUMBER Cedar Chemical Co.

LAB DESTINATION ENCOR

SAMPLE TEAM MEMBERS Frey / Dave Brady

CARRIER/WAYBILL NO. 7866744362

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
PS306	Pond C (Armory) DS-17	7-25-91	Liquid	N/A		
PS307	" " DS-18	"	"	"		

Special Instructions:

Possible Sample Hazards: None

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Frey IT. CACA 1630

   Received By:

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 250

C/C Control No. 182949

PROJECT NAME/NUMBER CEDAR CHEM. Co.

LAB DESTINATION GEE & STRICKLAND / INHEREN CNTY ENG.

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO.

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5308	MILLER ROCK YARD / #6 TO SPALDRIES #610 / LIMESTONE	7/31/91	LIMESTONE	5gal. bkt.		

Special Instructions: NONE

Possible Sample Hazards: NONE

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Frey IT. CORP. 8/1/91

Received By:

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

WHITE - To accompany samples
YELLOW - Fi[illegible]py

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 250[illegible]2

C/C Control No. 182962

PROJECT NAME/NUMBER CEDAR CHEM. CO./435425

LAB DESTINATION LOUIS CAPAZOLLI & ASSOC.

SAMPLE TEAM MEMBERS FRET

CARRIER/WAYBILL NO. 7866744536, 7866744325, 7866744340

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
PS309	LONG LAKE CLAY PIT-1	8-6-91	CLAY	PLASTIC BKT.		
PS310	BORROW AREA PIT-2	↓	↓	↓		
PS311	HUT GIN. PIT-3	↓	↓	↓		

Special Instructions:

Possible Sample Hazards: NONE

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Frey IT. CORP. 8-6-91

   Received By:

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 170776

C/C Control No. 132950

PROJECT NAME/NUMBER CEDAR CREEK CS/435425

LAB DESTINATION LOUIS CAPPIZZOLI & ASSOC

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO. 8646375091

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5312	SINGLE CLAY CAP	10-7-91 1500	CLAY	DRIVE RING		
P5313	1ST LIFT 6"	1515				
P5314		1530				

Special Instructions:

Possible Sample Hazards: NONE

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Frey

   Received By:

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 250 [illegible]

C/C Control No. 182959

PROJECT NAME/NUMBER CEDAR CHEM. / 435425

LAB DESTINATION GEE & STRICKLAND ENG.

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO. HAND CARRY

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5315	SWCA BORROW CLAY OFF TRKS	10-04-91 1340	CLAY	1 gal. bag		
P5316	" " " "	10-11-91 1500	"	" "		

Special Instructions:

Possible Sample Hazards: NONE

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy L. Frey IT CORP. 10-22-91

   Received By:

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 250710

C/C Control No. 182961

PROJECT NAME/NUMBER CEDAR CHEM CO./435425

LAB DESTINATION LOUIS CAPPIZOLI & ASSOC.

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO.

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5317	SWCA CLAY CAP 1ST	10-15-91 1310	CLAY	DRIVE RING		
P5318	6" LIFT (2 OF 5)	1350				
P5319	SWCA CLAY CAP 2ND	1420				
P5320	6" LIFT (2 OF 5)	1540				

Special Instructions:

Possible Sample Hazards: NONE

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Frey

Received By:

2. Relinquished By:

Received By:

3. Relinquished By:

Received by:

4. Relinquished By:

Received By:

WHITE - To accompany samples
YELLOW - Field copy

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 250709

C/C Control No. 182960

PROJECT NAME/NUMBER CEDAR CHEM CO/435425

LAB DESTINATION LOUIS CAPPIZZULLI & ASSOC.

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO. 8646375124

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5321	SOIL CLAY CAP	10-17-91 1450	CLAY	DRIVE RING		
P5322	2ND LIFT 6"	10-17-91 1520	↓	↓		
P5323		10-18-91 0740	↓	↓		

Special Instructions:

Possible Sample Hazards: NONE

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Frey / IT. CORP. / 10-18-91

   Received By:

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 25[redacted]7

C/C Control No. 182958

PROJECT NAME/NUMBER CEDAR CHEM. CO.

LAB DESTINATION ENCOR

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO. 8646375194

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5324	SLUG CAP [redacted] DS-1 5'4/5	10-22-91	LINER Gomi.	N/A		
P5325	↓ DS-2 5'7/8	↓	↓	↓		
P5326	DS-3 5'12-13					
P5327	DS-4 5'16/17					
P5328	DS-5 5'19/20					

Special Instructions:

Possible Sample Hazards: NONE

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy W. Frey IT. CORP. 10-22-91

   Received By:

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 36066
Page 1 of 1

Project Name/No. 1 CEDAR CHEM/435425
Sample Team Members 2 FREY
Profit Center No. 3 5526
Project Manager 4 BLAINE JOHNSON
Purchase Order No. 6 [redacted]
Required Report Date 11 ASAP

Samples Shipment Date 7 10/18/91
Lab Destination 8 GEL: STRKLAND
Lab Contact 9 RITZ GEE
Project Contact/Phone 12 601/636/5056
Carrier/Waybill No. 13 HAND CARRY

Bill to: 5 CEDAR CHEM. CO.
RIFLE RANGE RD.
VICKSBURG MISS. 39180

Report to: 10 SAME AS BILL

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Preservative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
P5329	LIFT 1 CLAY (SILICA CAP)	10/17/91	SHELBY TUBE	3"x6"	NONE	RUN UNCONFINED	FOR LAB USE ONLY	
P5330	LIFT 2					COMPRESSION TEST		
P5331	LIFT 1					ON EACH SAMPLE		
P5332	LIFT 2							
							FOR LAB USE ONLY	

COPY

Special Instructions: 23

Possible Hazard Identification: 24
Non-hazard ☑ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: 25
Return to Client ☐ *Disposal by Lab ☐ Archive _____ (mos.)

Turnaround Time Required: 26
Normal ☑ Rush ☐

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by 28 (Signature/Affiliation) Billy Frey / IT CORP	Date: 10/18/91 Time: 1130	1. Received by 28 (Signature/Affiliation) E. Cen	Date: 10/18/91 Time: 1150
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments: 29

Write to accompany samples

Yellow: Field copy

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 23[illegible]06

C/C Control No. 182957

PROJECT NAME/NUMBER CEDAR CHEM. CO.

LAB DESTINATION ENCOR

SAMPLE TEAM MEMBERS FREY

CARRIER/WAYBILL NO. 8646375146

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5333	SWCA CAP DS-5A S-19/20	10-24-91	60 mil liner	N/A		
P5334	DS-5B S-19/21					
P5335	DS-[illegible] S-[illegible]					
P5336	SWCA CAP TIE-IN DS-[illegible] TIE-IN					
P5337	" " DS-8 TIE-IN					
	S-25/26					

Special Instructions:

Possible Sample Hazards: NONE

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy W. Frey; E.T. CORP; 10-24-91

   Received By:

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

(59)

INTERNATIONAL TECHNOLOGY CORPORATION

CHAIN-OF-CUSTODY RECORD

R/A Control No. 25[illegible]5

C/C Control No. 182953

PROJECT NAME/NUMBER Cedar Chem. / 435425

LAB DESTINATION ENCOR

SAMPLE TEAM MEMBERS FRET

CARRIER/WAYBILL NO.

Sample Number	Sample Location and Description	Date and Time Collected	Sample Type	Container Type	Condition on Receipt (Name and Date)	Disposal Record No.
P5350	Pond A Primary caps DS-1	1-15-92 1110	Gomit./cap	N/A		
P5351	" " " DS-2	1-15-92 1120	" "	"		

Special Instructions:

Possible Sample Hazards: None

SIGNATURES: (Name, Company, Date and Time)

1. Relinquished By: Billy Fang / 1-15-92 / IT. Corp / 1350 to FedEx

   Received By:

2. Relinquished By:

   Received By:

3. Relinquished By:

   Received by:

4. Relinquished By:

   Received By:

WHITE - To accompany samples
YELLOW - Field copy

(35)

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 36068
Page 1 of 1

Project Name/No. [1] CEDAR CHEM. 435425
Sample Team Members [2] FREY
Profit Center No. [3] 3526
Project Manager [4] GLEN LANDRY
Purchase Order No. [6] 9373230
Required Report Date [11] ASAP

Samples Shipment Date [7] 3-2-92
Lab Destination [8] ENCOR
Lab Contact [9] SAM FULLER
Project Contact/Phone [12] BILLY FREY 601-636-1231
Carrier/Waybill No. [13] 1535178842

Bill to: [5] I.T. CORP.
1150 LEFLEURE RD.
PORT ALLEN LA. 70767

Report to: [10] HARD COPY TO BILL
& FAX TO BILLY FREY 601-636-5767

White: To accompany samples
Yellow: Field copy

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Pre-servative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
PS352	LINER DESTRUCT 60mil. / POND A DS-1 FUS	3-2-92/1400	N/A	6"X12"	N/A	TEST PEEL ASTM (D-413)		
PS353	DS-2 FUS					TEST SHEAR ASTM (D-638)		
PS354	DS-3 FUS					TEST THICKNESS ASTM		
PS355	DS-4 FUS							
PS356	DS-5A FUS							

COPY

FOR LAB USE ONLY

FOR LAB USE ONLY

Special Instructions: [23] DO NOT TEST SAMPLE DS-5 ONLY DS-5A.

Possible Hazard Identification: [24]
Non-hazard ☑ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: [25]
Return to Client ☐ Disposal by Lab ☑ Archive ____ (mos.)

Turnaround Time Required: [26]
Normal ☐ Rush ☑

QC Level: [27]
I. ☐ II. ☐ III. ☐ Project Specific (specify): ____

1. Relinquished by [28] (Signature/Affiliation) Billy Frey I.T. Corp.	Date: 3-2-92 Time: 1600	1. Received by [28] (Signature/Affiliation) FED-X	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments: [29]

*See back of form for special instructions.

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INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document 333069
Page 1 of 1

Project Name/No. 1 CEDAR CHEM / 435425
Sample Team Members 2 FREY
Profit Center No. 3 3526
Project Manager 4 GLEN LANDRY
Purchase Order No. 6
Required Report Date 11 ASAP

Samples Shipment Date 7 3-4-92
Lab Destination 8 ENCOR
Lab Contact 9 SAM FULLER
Project Contact/Phone 12 601-636-1231
Carrier/Waybill No. 13 1535178875

Bill to: 5 IT. CORP.
1150 LEBLANC RD.
PORT ALLEN LA. 70767

Report to: 10 HARD COPY TO SAME AS BILL. & FAX TO BILLY F. 601-636-5767

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Preservative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
P5357	LINER / POND B DESTR. / DSG EXT 60 mil.	3/4/92 1310	NA	6X12	NA	TEST PEEL ASTM D-413		
						TEST SHEAR ASTM D638		
						TEST THICKNESS		

FOR LAB USE ONLY

FOR LAB USE ONLY

COPY

Special Instructions: 23

Possible Hazard Identification: 24
Non-hazard ☑ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: 25
Return to Client ☐ Disposal by Lab ☐ Archive _____ (mos.)

Turnaround Time Required: 26
Normal ☐ Rush ☑

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify): _____

1. Relinquished by 28 (Signature/Affiliation) Billy Frey IT Corp.	Date: 3-4-92 Time: 1400	1. Received by 28 (Signature/Affiliation) Fed-X	Date: 3-9-92 Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments: 29

009 CEDAR CHEMICAL VICKSBURG DIV. 11:17 02/25/92

IT INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

990

R/A Control No.
C/C Control No. 43564

PROJECT NAME: VICKSBURG CHEMICAL
PROJECT NUMBER: 435425
PROJECT MANAGER: M. RICHARDSON
BILL TO: VICKSBURG CHEMICAL, RIFLE RANGE RD, VICKSBURG, MS

PURCHASE ORDER NO.

DATE SAMPLES SHIPPED
LAB DESTINATION: GEE & STRICKLAND
LABORATORY CONTACT: PHIL GEE
SEND LAB REPORT TO: IT CORP, 1150 LEBLANC RD, PORT ALLEN LA 70767

DATE REPORT REQUIRED
PROJECT CONTACT: MIKE DORAN
PROJECT CONTACT PHONE NO. 1-800-321-5479

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
C	Soil	5GAL BUCKET	—	STD. PROCTOR, ATTERBERG LIMIT	
D	Soil	5GAL BUCKET	—		

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)
Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)
Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)
Return to Client ✓ Disposal by Lab _____

FOR LAB USE ONLY
Received By J. Pearson Date/Time 5/26/89 1:10 p.m.

WHITE - Original, to accompany samples
YELLOW - Field copy

90C 112

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 239891
C/C Control No. 218203

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 3526
PROJECT MANAGER: HEWITT BEAUVOIS
BILL TO: IT CORP
1150 LE BLANC RD
PORT ALLEN, LA 70767
PURCHASE ORDER NO.: 054079

DATE SAMPLES SHIPPED: 9-5-90
LAB DESTINATION: ENCOR
LABORATORY CONTACT:
SEND LAB REPORT TO: IT. CORP.
1150 LEBLANC RD.
DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: HEWITT BEAUVOIS
PROJECT CONTACT PHONE NO.: 1-800-321-5479

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
A4758 G-238	LINER (CAP)	N/A	N/A	(SHEAR TEST (ASTM D3083)	
A4759 G139				PEEL TEST (ASTM D413))	
A4761 G137				EACH TEST MENTIONED ABOVE	
A4762 G137				SHALL BE DONE ON ALL 4	
				SAMPLES	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal ____ Rush ✓ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I ____ II ____ III ____ Project Specific ____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ✓ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other ____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client ____ Disposal by Lab X Archive ____ (Indicate number of months.)

FOR LAB USE ONLY
Received by Emile Mercanto Date/Time 9/5/90 — 9:25

WHITE - Original, to accompany samples
YELLOW - Field copy

126A-10-85

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INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 239918
C/C Control No. 174682

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 3526
PROJECT MANAGER: HEWITT BEAUVOIS
BILL TO: IT. CORP.
1150 LEBLANC RD.
PORT ALLEN LA.
PURCHASE ORDER NO.: 054079

DATE SAMPLES SHIPPED:
LAB DESTINATION: ENCOR
LABORATORY CONTACT:
SEND LAB REPORT TO: IT. CORP.
1150 LEBLANC RD.
DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: HEWITT BEAUVOIS
PROJECT CONTACT PHONE NO.: 1-800-521-5479

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P4184	LINER (GOOD)	N/A	NONE	SHEAR TEST (ASTM D5085)	
				PEEL TEST (ASTM D413)	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal _____ Rush ✓ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I _____ II _____ III _____ Project Specific _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ✓ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client _____ Disposal by Lab X Archive _____ (Indicate number of months.)

FOR LAB USE ONLY
Received by Emile Mercante Date/Time 9/10/90 — 4:50 P.M.

WHITE - Original, to accompany samples
YELLOW - Field copy

126A-10-85

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 170[illegible]2
C/C Control No. 168[illegible]8

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROJECT MANAGER: HEWITT BEAUVAIS
BILL TO: I.T. CORP.
1150 LEBLANC RD.
PORT ALLEN, LA. 70767
PURCHASE ORDER NO. 054190

DATE SAMPLES SHIPPED: 10/23/90
LAB DESTINATION: CAPAZOLI
LABORATORY CONTACT: Mike Kahn
SEND LAB REPORT TO: I.T. CORP.
SAME AS BILL
DATE REPORT REQUIRED: ASAP - 10/29/90
PROJECT CONTACT: HEWITT BEAUVAIS / LAKE HAYDER
PROJECT CONTACT PHONE NO. 504-344-8530

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5273	SOIL	3½ GAL.	NONE.	STANDARD PROCTOR	RUN TEST ON BOTH
P5274	SOIL	"	"	ASTM D-698	SAMPLES

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal X Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard X Flammable _____ Skin Irritant X Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client _____ Disposal by Lab X

FOR LAB USE ONLY

Received By [illegible] Date/Time [illegible]

WHITE - Original, to accompany samples
YELLOW - Field copy

65

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 17[illegible]73
C/C Control No. 168658

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROJECT MANAGER: HEWITT BEAUVAIS
BILL TO: I.T. CORP
1150 LEBLANC RD.
PORT ALLEN LA. 70767

PURCHASE ORDER NO.: 435425

DATE SAMPLES SHIPPED: 10-31-90
LAB DESTINATION:
LABORATORY CONTACT:
SEND LAB REPORT TO: I.T. CORP.
SAME AS BILL

DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: HEWITT BEAUVAIS
PROJECT CONTACT PHONE NO.: (800) 321-5479 / 344-8530

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5275	SOIL	3½ gal.	NONE	STANDARD PROCTOR ANAL. D-698	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal ____ Rush ✓ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard ✓ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other SEE COC (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client ____ Disposal by Lab ✓

FOR LAB USE ONLY

Received By [signature] Date/Time 11-1-90 / 2:59

WHITE - Original, to accompany samples
YELLOW - Field copy

66

IT INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 17[illegible]4
C/C Control No. 168[illegible]

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROJECT MANAGER: STAN CAMPBELL
BILL TO: I.T. CORP.
1150 LEBLANC RD.
PORT ALLEN LA. 70767

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 1/23
LAB DESTINATION: Lewis Capozzoli
LABORATORY CONTACT: Mike Kohn
SEND LAB REPORT TO: IT CORP.
SAME AS BILL

DATE REPORT REQUIRED: ASAP → 1/28/91
PROJECT CONTACT: STAN CAMPBELL
PROJECT CONTACT PHONE NO.: 1-800-321-5479/344-8530

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5276	SOIL	5" ⌀ x 12"	NONE	UCT on TX + CU	
P5277	"	"	"	UCT on TX → CU	
~~P5278~~					
~~P5279~~					
	(W) (A) 6C				

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard ✓ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client _____ Disposal by Lab _____

FOR LAB USE ONLY

Received By [illegible] Date/Time _____

WHITE - Original, to accompany samples
YELLOW - Field copy

(67)

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 250035

C/C Control No. 182946

PROJECT NAME: CEDAR CHEMICAL CO.

PROJECT NUMBER: 435425

PROFIT CENTER NUMBER: 3526

PROJECT MANAGER: STAN CAMPBELL

BILL TO: IT. CORPORATION
1150 LEBLANC RD.
PORT ALLEN LA. 70767

PURCHASE ORDER NO. 014028

DATE SAMPLES SHIPPED: 3/8/91

LAB DESTINATION: LOUIS CAPAZOLI & ASSOC.

LABORATORY CONTACT: Mike Kohn

SEND LAB REPORT TO: SAME AS BILL

DATE REPORT REQUIRED: ASAP — 3/13/91

PROJECT CONTACT: LAKE HAIDER / ADRIAN GHAN

PROJECT CONTACT PHONE NO. 344-8530

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5280	SOIL	16 QUARTS	NONE	RUN STANDARD PROCTOR	
P5281	"	"	"	ANAL. ASTM # D698	
				ON EACH SAMPLE	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)

Normal ✓ **Rush** _____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)

I _____ **II** _____ **III** _____ **Project Specific** _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)

Non-hazard ✓ **Flammable** _____ **Skin Irritant** _____ **Highly Toxic** _____ **Other** _____ **(Please Specify)**

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)

Return to Client ✓ **Disposal by Lab** _____ **Archive** _____ **(Indicate number of months.)**

FOR LAB USE ONLY

Received by [signature] LOC of A **Date/Time** 11 MAR 91 @ 1115

WHITE - Original, to accompany samples
YELLOW - Field copy

126A-10-85

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INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 250096
C/C Control No. 182947

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 3526
PROJECT MANAGER: STAN CAMPBELL
BILL TO: IT. CORP.
1150 LEBLANC RD.
PORT ALLEN LA. 70767

PURCHASE ORDER NO.

DATE SAMPLES SHIPPED: 03-19-91
LAB DESTINATION: LOUIS CAPARULI & ASSOC.
LABORATORY CONTACT: MIKE KUHN
SEND LAB REPORT TO: SAME AS BILL
DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: LAKE ANDERZ/ADRIAN CHAN
PROJECT CONTACT PHONE NO. 344-8530

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
PS282	SOIL	16 QUARTS	NONE	RUN STANDARD PROCTOR	
				ANAL. ASTM # D698	
				+ -200 ASTM D422	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal ✓ Rush _____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I _____ II _____ III _____ Project Specific _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ✓ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client _____ Disposal by Lab _____ Archive _____ (Indicate number of months.)

FOR LAB USE ONLY
Received by _____ Date/Time _____

WHITE - Original, to accompany samples
YELLOW - Field copy

126A-10-85

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INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 250697
C/C Control No. 182948

PROJECT NAME: Cedar Chem. Co.
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 3526
PROJECT MANAGER: BLAINE JOHNSON
BILL TO: IT. CORP. 1150 LEBLANC RD. PORT ALLEN LA. 70767
PURCHASE ORDER NO.: 04543

DATE SAMPLES SHIPPED: 6-28-91
LAB DESTINATION: ENCOR
LABORATORY CONTACT: SAM FULLER
SEND LAB REPORT TO: IT. CORP. 1150 LEBLANC RD. PORT ALLEN LA. 70767
DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: BLAINE JOHNSON
PROJECT CONTACT PHONE NO.: 800-321-5479

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5283	60 mil liner	N/A	NONE	DETERMINE TENSILE STRENGTH	
P5284	↓	↓	↓	FOR PEAK & SHEAR PER	
P5285	↓	↓	↓	ASTM D882 (EACH SAMPLE)	
				DETERMINE THICKNESS PER	
				ASTM	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal _____ **Rush** _____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I _____ **II** _____ **III** _____ **Project Specific** _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ✓ **Flammable** _____ **Skin Irritant** _____ **Highly Toxic** _____ **Other** _____ **(Please Specify)**

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client _____ **Disposal by Lab** _____ **Archive** _____ **(Indicate number of months.)**

FOR LAB USE ONLY
Received by _____ **Date/Time** _____

WHITE - Original, to accompany samples
YELLOW - Field copy

126A-10-85

(22)

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 250698
C/C Control No. 168657

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 3526
PROJECT MANAGER: BLAINE JOHNSON
BILL TO: IT. CORP.
1150 LEBLANC RD.
PORT ALLEN LA. 70767
PURCHASE ORDER NO.: P.O. # T045472

DATE SAMPLES SHIPPED: 07-15-91
LAB DESTINATION: ENCOR
LABORATORY CONTACT: SAM FULLER
SEND LAB REPORT TO: SAME AS BILL
DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: BLAINE JOHNSON / BILLY FREY
PROJECT CONTACT PHONE NO.: 344-8530 / 601-636-5056

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5286	CLEAR 60ml	N/A	N/A	Test Peel ASTM-D413	SAMPLE P5286,
P5287				Test Shear ASTM-D3083	P5288, ~~[illegible]~~
P5288				Test Thickness ASTM-	& P5293 ARE
P5289				D1593 each	EXTRUDED SEAM
P5290				sample.	& REST ARE HOT
P5291					FUSION SEAMS.
P5292					
~~[illegible]~~					
P5293					

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal _____ Rush _____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I _____ II _____ III _____ Project Specific _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ✓ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client _____ Disposal by Lab ✓ Archive _____ (Indicate number of months.)

FOR LAB USE ONLY
Received by _____ Date / Time _____

WHITE - Original, to accompany samples
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126A-10-85

(12)

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 170[illegible]8

C/C Control No. [illegible]

PROJECT NAME: CEDAR CHEM. CO.

PROJECT NUMBER: 435425

PROJECT MANAGER: BLAINE JOHNSON

BILL TO: CEDAR CHEM. CO.
RIFLE RANGE RD.
VICKSBURG MISS 39181

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 7/11/91

LAB DESTINATION: GEE & STRICKLAND ENG.

LABORATORY CONTACT: JOE STRICKLAND

SEND LAB REPORT TO: SAME AS BILL

DATE REPORT REQUIRED: ASAP

PROJECT CONTACT: STEVE BUSBEE / BILLY FREY

PROJECT CONTACT PHONE NO.: 601-636-5256

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5294	SOIL / SOLID, SEMI-SOLID	5 gal.	NONE	RUN STD PRIORITY ANAL ASTM D-698	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal ✓ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard ✓ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other SEE C/C (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client ✓ Disposal by Lab _____

FOR LAB USE ONLY

Received By [illegible] Date/Time 7/11/91 [illegible]

WHITE - Original, to accompany samples
YELLOW - [illegible] copy

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INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 250699
C/C Control No. 168653

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 3526
PROJECT MANAGER: BLAINE JOHNSON
BILL TO: IT. CORPORATION
1150 LEBLANC RD.
PORT ALLEN LA. 70767

PURCHASE ORDER NO.

DATE SAMPLES SHIPPED: 07-18-91
LAB DESTINATION: ENCOR
LABORATORY CONTACT: SAM FULLER
SEND LAB REPORT TO: SAME AS BILL
DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: BLAINE JOHNSON / BILLY FREY
PROJECT CONTACT PHONE NO.

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5295	LINER GEOMEM. DISTRICTS	N/A	NONE	TEST PEEL ASTM-D413	SAMPLE P5302
P5296				TEST SHEAR ASTM-D3083	ARE EXTRUDED
P5297				TEST THICKNESS ASTM-	SEAMS & THE REST
P5298				D1593	ARE FUSION
P5299					
P5300					
P5301					
P5302					
P5303					

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal _____ Rush _____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I _____ II _____ III _____ Project Specific _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ✓ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client ✓ Disposal by Lab _____ Archive _____ (Indicate number of months.)

FOR LAB USE ONLY
Received by _____ Date/Time _____

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126A-10-85

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INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 250711
C/C Control No. 168651

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 3526
PROJECT MANAGER: BLAINE JOHNSON
BILL TO: I.T. CORP.
1150 LEBLANC RD.
PORT ALLEN LA. 70767

PURCHASE ORDER NO.

DATE SAMPLES SHIPPED: 7-23-91
LAB DESTINATION: ENCOR
LABORATORY CONTACT: SAM FULLER
SEND LAB REPORT TO: SAME AS BILL

DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: BLAINE JOHNSON / BILLY FREY
PROJECT CONTACT PHONE NO. 344-8530 / 601-636-5056

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5304	LINER COUPON	N/A	NONE	TEST PEEL ASTM-D413	
P5305	" "	N/A	"	TEST SHEER ASTM-D3083	
				TEST THICKNESS ASTM-D1593	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal ✓ **Rush** _____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I _____ II _____ III _____ **Project Specific** _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ✓ **Flammable** _____ **Skin Irritant** _____ **Highly Toxic** _____ **Other** _____ **(Please Specify)**

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client ✓ **Disposal by Lab** _____ **Archive** _____ **(Indicate number of months.)**

FOR LAB USE ONLY
Received by _____ **Date / Time** _____

WHITE - Original, to accompany samples
YELLOW - Field copy

126A-10-85

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 1[illegible]77
C/C Control No. 162652

PROJECT NAME: CEDAR CHEM CO.
PROJECT NUMBER: 435425
PROJECT MANAGER: BLAINE JOHNSON
BILL TO: IT. CORP.
1150 LEBLANC RD.
PORT ALLEN LA. 70767

PURCHASE ORDER NO.:

DATE SAMPLES SHIPPED: 7-25-91
LAB DESTINATION: ENCOR
LABORATORY CONTACT: SAM FULLER
SEND LAB REPORT TO: IT. CORP
SAME AS BILL

DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: BLAINE JOHNSON / BILLY FREY
PROJECT CONTACT PHONE NO.: 344-8530 / 601-636-5056

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
PS306	LINER 60mil	N/A	NONE	TEST PEEL ASTM D413	
PS307	"	"	"	TEST SHEAR ASTM D3083	
				TEST THICKNESS ASTM D1593	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal ✓ **Rush** ____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard ✓ **Flammable** ____ **Skin Irritant** ____ **Highly Toxic** ____ **Other** ____ **(Please Specify)**

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client ✓ **Disposal by Lab** ____

FOR LAB USE ONLY

Received By ____ **Date/Time** ____

WHITE - Original, to accompany samples
YELLOW - Field copy

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INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 250100
C/C Control No. 182949

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 3526
PROJECT MANAGER: BLAINE JOHNSON
BILL TO: CEDAR CHEM. CO.

PURCHASE ORDER NO.

DATE SAMPLES SHIPPED: 8-1-91
LAB DESTINATION: GEE & STRICKLAND ENV. (WARREN OH
LABORATORY CONTACT: JOE STRICKLAND
SEND LAB REPORT TO: SAME AS BILL
DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: BILLY FREY / BLAINE JOHNSON
PROJECT CONTACT PHONE NO. 636-5056 / 800 321-5479

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
PS308	#610 LIMESTONE	5 gal.	NONE	RUN SIEVE ANAL. & ATTERBERG	
				LIMITS ASTM D4318 FOR	
				FRACTION OF STONE PASSING	
				#40 SEIVE.	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal ✓ Rush _____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I _____ II _____ III _____ Project Specific _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ✓ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client _____ Disposal by Lab ✓ Archive _____ (Indicate number of months.)

FOR LAB USE ONLY
Received by [signature] Date/Time Aug 1st 1991 3:30pm.

WHITE - C[illegible]al, to accompany samples
YELLOW - [illegible]d copy

126A-10-86

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INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 250702
C/C Control No. 182962

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 3526
PROJECT MANAGER: BLAINE JOHNSON
BILL TO: IT. CORP.
1150 CONSLANE RD.
PORT. ALLEN GA. 70767

PURCHASE ORDER NO.

DATE SAMPLES SHIPPED: 8-6-91
LAB DESTINATION: CAPAZOLLI & ASSOC.
LABORATORY CONTACT: MIKE KOHN
SEND LAB REPORT TO: SAME AS BILL

DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: BLAINE JOHNSON/BILLY FREY
PROJECT CONTACT PHONE NO. 344-8530

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5309	CLAY/UNDER MARROW	5 gal.	NONE	SEE ATTACHED SHEET FOR INSTRUCTIONS ON TESTING.	
P5310	↓	↓	↓		
P5311	↓	↓	↓		

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal _____ Rush _____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I _____ II _____ III _____ Project Specific _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ✓ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client ✓ Disposal by Lab _____ Archive _____ (Indicate number of months.)

FOR LAB USE ONLY
Received by _____ Date/Time _____

WHITE - Original, to accompany samples

126A-10-85

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 17[illegible]76
C/C Control No. 182950

PROJECT NAME: CEDAR CHEM CO.
PROJECT NUMBER: 435425
PROJECT MANAGER: BLAINE JOHNSON
BILL TO: I.T. CORP.
1150 LEBLANC RD.
PORT ALLEN LA 70767

PURCHASE ORDER NO. 939 000

DATE SAMPLES SHIPPED: 10 8 91
LAB DESTINATION: LOUIS CAPPIZOLI & ASSOC
LABORATORY CONTACT: MIKE KOHN
SEND LAB REPORT TO: ~~SAME AS~~ BILL
DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: BLAINE JOHNSON / BILLY FRET
PROJECT CONTACT PHONE NO. 922-4510 / 601-636-5056

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5312	CLAY	.01 CF	NONE	TEST PERMEABILITY	
P5313	↓	↓	↓	EPA # 9100 ON ALL	
P5314	↓	↓	↓	3 SAMPLES	

FAX (601)

TURNAROUND TIME REQUIRED: (Rush must be approved by the Project Manager.)

Normal _____ Rush _____ (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances)

Nonhazard ✓ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, and disposal.)

Return to Client _____ Disposal by Lab ✓

FOR LAB USE ONLY

Received By _____ Date/Time _____

WHITE - Original, to accompany samples
YELLOW - Field copy

(6)

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 250708
C/C Control No. 182959

PROJECT NAME: CEDAR CHEM. Co.
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 5526
PROJECT MANAGER: BLAINE JOHNSON
BILL TO: CEDAR CHEM. Co.
P.O. BOX 821003
VICKSBURG MISS. 39182

PURCHASE ORDER NO.

DATE SAMPLES SHIPPED: 10-22-91
LAB DESTINATION: GEE & STRICKLAND
LABORATORY CONTACT: PHIL GEE
SEND LAB REPORT TO: SAME AS BILL
DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: BILL FREY / BLAINE JOHNSON
PROJECT CONTACT PHONE NO. 636-5056 / 1-800-321-5479

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5315	CLAY (BORROW)	1 gal.	NONE	GRAIN SIZE ANAL.	RUN ANAL.
P5316	" "	"	"	ASTM D 422; ATTERBURG	ON EACH
				LIMITS, W_L, W_P & PI.	SAMPLE
				ASTM D 4318; USCS	
				SOIL CLASSIFICATION	
				ASTM D 2487	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal ✓ Rush ____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I ____ II ____ III ____ Project Specific ____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ✓ Flammable ____ Skin Irritant ____ Highly Toxic ____ Other ____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client ____ Disposal by Lab ✓ Archive ____ (Indicate number of months.)

FOR LAB USE ONLY
Received by [signature] Date/Time 2:PM

WHITE - Original, to accompany samples
YELLOW - Field copy

126A-10-85

75

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 250710
C/C Control No. 182961

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 3526
PROJECT MANAGER: BLAINE JOHNSON
BILL TO: IT. CORPORATION
1180 LEBLANC RD.
PORT ALLEN LA. 70767

PURCHASE ORDER NO.

DATE SAMPLES SHIPPED: 10-15-91
LAB DESTINATION: CAPPIZOLI & ASSOC.
LABORATORY CONTACT: MIKE KOHN
SEND LAB REPORT TO: ~~SAME AS~~
BILL
DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: BLAINE JOHNSON / BILLY FREY
PROJECT CONTACT PHONE NO.: 922-4500 / 601-636-5056

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
PS317	CLAY	.01 CU FT.	NONE	TEST PERMEABILITY	
PS318		DRIVE RING.		EPA # 9100 ON ALL	
PS319				4 SAMPLES, TEST DRY DEN.	
PS320				& M.C.	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal _____ Rush ✓ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I _____ II _____ III _____ Project Specific _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ✓ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client _____ Disposal by Lab ✓ Archive _____ (Indicate number of months.)

FOR LAB USE ONLY
Received by _____ Date / Time _____

126A-10-85

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 250709
C/C Control No. 182960

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 3526
PROJECT MANAGER: BLAINE JOHNSON
BILL TO: IT CORPORATION
1150 LEBLANC RD.
PORT ALLEN LA. 70767

PURCHASE ORDER NO.

DATE SAMPLES SHIPPED: 10-18-91
LAB DESTINATION: LOUIS CAPPIZOLI & ASSOC
LABORATORY CONTACT: MIKE KOHN
SEND LAB REPORT TO: SAME AS BILL
DATE REPORT REQUIRED: ASAP RUSH
PROJECT CONTACT: BLAINE JOHNSON / BILLY FRET
PROJECT CONTACT PHONE NO. 922-4510 / 601-636-5056

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
PS321	CLAY	.01 CU. FT.	NONE	TEST PERMEABILITY	
PS322	↓	DR. RINGS	↓	EPA # 9100; TEST	
PS323	↓	↓	↓	DRY DEN. & M.C. ON	
				EACH SAMPLE	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal _____ Rush ✓ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I _____ II _____ III _____ Project Specific _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ✓ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client _____ Disposal by Lab ✓ Archive _____ (Indicate number of months.)

FOR LAB USE ONLY
Received by _____ Date/Time _____

WHITE - Original, to accompany samples

126A-10-85

INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 250707
C/C Control No. 182958

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 3526
PROJECT MANAGER: BLAINE JOHNSON
BILL TO: IT. CORPORATION
11520 LEBLANC RD.
PORT ALLEN LA. 70767
PURCHASE ORDER NO. P.O.# 939029

DATE SAMPLES SHIPPED: 10-22-91
LAB DESTINATION: ENCOR
LABORATORY CONTACT: SAM FULLER
SEND LAB REPORT TO: SAME AS BILL
DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: BLAINE JOHNSON / BILLY FRE
PROJECT CONTACT PHONE NO. 922-4510 / 601-636-5056

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5324	LINER 60mil.	N/A	NONE	TEST PEEL ASTM D413	RUN ALL
P5325				TEST SHEAR ASTM D3083	ANAL ON
P5326				TEST THICKNESS ASTM D1593	EACH SAMPL
P5327					
P5328					

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal _____ Rush ✓ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I _____ II _____ III _____ Project Specific _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ✓ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client _____ Disposal by Lab _____ Archive _____ (Indicate number of months.)

FOR LAB USE ONLY
Received by _____ Date/Time _____

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126A-10-85

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INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 250706
C/C Control No. 182957

PROJECT NAME: CEDAR CHEM. CO.
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 3526
PROJECT MANAGER: BLAINE JOHNSON
BILL TO: I.T. CORPORATION
1150 LEBLANC RD.
PORT ALLEN LA. 70767
PURCHASE ORDER NO. 939029

DATE SAMPLES SHIPPED: 10-24-91
LAB DESTINATION: ENCOR
LABORATORY CONTACT: SAM FULLER
SEND LAB REPORT TO: SAME AS
BRL
DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: BILL FREY / BLAINE JOHNSON
PROJECT CONTACT PHONE NO. 601-636-5066 / 504-922-4510
FAX # 601-636-5967

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5333	LINER 60 mil	N/A	N/A	TEST PEEL ASTM D413	
P5334	↓	↓	↓		
P5335					
P5336					
P5337					

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal _____ **Rush** _____ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I _____ **II** _____ **III** _____ **Project Specific** _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard _____ **Flammable** _____ **Skin Irritant** _____ **Highly Toxic** _____ **Other** _____ **(Please Specify)**

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client _____ **Disposal by Lab** _____ **Archive** _____ **(Indicate number of months.)**

FOR LAB USE ONLY
Received by _____ **Date / Time** _____

WHITE - Original, to accompany samples
YELLOW - Field copy

126A-10-88

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INTERNATIONAL TECHNOLOGY CORPORATION

REQUEST FOR ANALYSIS

R/A Control No. 230705
C/C Control No. 182953

PROJECT NAME: CEDAR CHEM./435425
PROJECT NUMBER: 435425
PROFIT CENTER NUMBER: 3526
PROJECT MANAGER: GLEN LANDRY
BILL TO: IT. CORP
1150 LE BLANC RD.
PORT ALLEN LA. 70767
PURCHASE ORDER NO.: P.O.# 939249

DATE SAMPLES SHIPPED: 1-15-92
LAB DESTINATION: ENCOR
LABORATORY CONTACT: SAM FULLER
SEND LAB REPORT TO: SAME AS BILL
DATE REPORT REQUIRED: ASAP
PROJECT CONTACT: GLEN LANDRY / BILLY FRET
PROJECT CONTACT PHONE NO.: 504-922-4570 / 601-636-8056

Sample No.	Sample Type	Sample Volume	Preservative	Requested Testing Program	Special Instructions
P5350	60ml LINER	N/A	N/A	TEST PEEL ASTM D413	RUN TEST ON
P5351	" "	"	"	TEST SHEAR ASTM D638	ALL SAMPLES
				TEST THICKNESS	

TURNAROUND TIME REQUIRED: (Rush must be approved by the Laboratory Project Manager.)
Normal _____ **Rush** ✓ (Subject to rush surcharge.)

QC LEVEL: (Levels II and III subject to surcharge; project-specific requirements must be submitted to lab before beginning work.)
I _____ II _____ III _____ **Project Specific** _____

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)
Non-hazard ✓ **Flammable** _____ **Skin Irritant** _____ **Highly Toxic** _____ **Other** _____ **(Please Specify)**

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping, archive and disposal.)
Return to Client _____ **Disposal by Lab** _____ **Archive** _____ **(Indicate number of months.)**

FOR LAB USE ONLY
Received by _____ **Date / Time** _____

WHITE - Original, to accompany samples
YELLOW - Field copy

126A-10-85

(19)

APPENDIX H

VARIANCE AND DESIGN MODIFICATIONS REPORTS

INTERNATIONAL
TECHNOLOGY
CORPORATION

Variance Report

PROJECT NAME: Cedar Chemical Co. PROJECT NUMBER: 435425

INSTRUCTIONS:

VARIANCE DESCRIPTION: Changed invert elevation of Impoundment B/Impoundment C equalization pipe to 97 feet elevation.

LOCATION	DATE
Impoundment B/Impoundment C dike	3/21/91

PAS/3-92/CEDAR/design

INTERNATIONAL
TECHNOLOGY
CORPORATION

Variance Report

PROJECT NAME: Cedar Chemical Co. PROJECT NUMBER: 435425

INSTRUCTIONS:

VARIANCE DESCRIPTION: Removed eroded soils from lined Impoundment A, with hydraulic mud pump and pumped into pit excavated into the SWCA waste and removed surface water and solidified in place and recompacted.

LOCATION	DATE
Impoundment A and SWCA	8/9/91

PAS/3-92/CEDAR/design

INTERNATIONAL
TECHNOLOGY
CORPORATION

Variance Report

PROJECT NAME: Cedar Chemical Co. PROJECT NUMBER: 435425

INSTRUCTIONS:

VARIANCE DESCRIPTION: Sand placed behind bridging in the Impoundment C LD/RS sump area to fill voids and preclude stresses in the liner.

LOCATION	DATE
LD/RS Sump Area of Impoundment C	7/29/91

PAS/3-92/CEDAR/design

INTERNATIONAL
TECHNOLOGY
CORPORATION

Variance Report

PROJECT NAME: Cedar Chemical Co. PROJECT NUMBER: 435425

INSTRUCTIONS:

VARIANCE DESCRIPTION: Used pea gravel in lieu of clean wash sand as stated in the construction specifications 3.7.2 for the gas venting trench.

LOCATION	DATE
SWCA Gas Venting System Trench	9/19/91

PAS/3-92/CEDAR/design

INTERNATIONAL
TECHNOLOGY
CORPORATION

Variance Report

PROJECT NAME: Cedar Chemical Co. PROJECT NUMBER: 435425

INSTRUCTIONS:

VARIANCE DESCRIPTION: Placed mirafi 140 NL fabric under rip-rap for the SWCA drainage ditch.

LOCATION	DATE
SWCA Drainage Ditch, West of SWCA	11/26/91

PAS/3-92/CEDAR/design

INTERNATIONAL
TECHNOLOGY
CORPORATION

Variance Report

PROJECT NAME: Cedar Chemical Co. PROJECT NUMBER: 435425

INSTRUCTIONS:

VARIANCE DESCRIPTION: Seeding mixture was changed from 30#/acre of bahia, and 50#/acre of cereal rye to 180#/acre of winter wheat. The hulled bermuda and 13-13-13 fertilizer remained the same.

LOCATION	DATE
SWCA Slopes, Top, and Disturbed Area of Closure	11/16/91

PAS/3-92/CEDAR/design

INTERNATIONAL
TECHNOLOGY
CORPORATION

Variance Report

PROJECT NAME: Cedar Chemical Co. PROJECT NUMBER: 435425

INSTRUCTIONS:

VARIANCE DESCRIPTION: Allowed Gundle to weld liner in below 50°F weather with special provisions of warming liner with liester before welding.

LOCATION	DATE
Impoundment A Primary Repair	1/15/92

PAS/3-92/CEDAR/design

INTERNATIONAL
TECHNOLOGY
CORPORATION

Variance Report

PROJECT NAME: Cedar Chemical Co. PROJECT NUMBER: 435425

INSTRUCTIONS:

VARIANCE DESCRIPTION: Changed specifications to allow 6-inches of #610 limestone to be placed on access road in lieu of 1-foot of DGA road mix and not use filter fabric under road material.

LOCATION	DATE
Access Road North of Impoundments A and C	11/25/91

PAS/3-92/CEDAR/design

INTERNATIONAL
TECHNOLOGY
CORPORATION

Variance Report

PROJECT NAME: Cedar Chemical Co. PROJECT NUMBER: 435425

INSTRUCTIONS:

VARIANCE DESCRIPTION: Concrete pads and protective posts not constructed around gas vent riser pipes for Impoundments A, B, and C. Due to access roads not built to support pads.

LOCATION	DATE
Impoundment A Gas Vent Riser	2/2/92
Impoundment B Gas Vent Riser	2/2/92
Impoundment C Gas Vent Riser	2/2/92

PAS/3-92/CEDAR/design

INTERNATIONAL
TECHNOLOGY
CORPORATION

DESIGN MODIFICATION

PROJECT NO.: 435425 **DATE:**

PROJECT NAME: Cedar Chemical Co. **PAGE:** 1 of 1

DESIGN MODIFICATION NO.: 1

DESCRIPTION OF DESIGN MODIFICATION: The soft bottom soils of Impoundments B and C were solidified with approximately 12 percent lime kiln dust to wet density soils by weight for the first phase of solidification. These soils were used for dike construction. After the dike construction, the foundation soils were solidified with approximately 18 percent lime kiln dust to wet density soils by weight for the second phase (foundation soils) solidification. These soils were solidified to 3-foot depths over the interior foundation area and cut 4 feet into the toe of the dikes and 4 feet deep to 15 foot width into the interior of the foundation area.

INTERNATIONAL
TECHNOLOGY
CORPORATION

DESIGN MODIFICATION

PROJECT NO.: 435425 **DATE:**

PROJECT NAME: Cedar Chemical Co. **PAGE:** 1 of 1

DESIGN MODIFICATION NO.: 2

DESCRIPTION OF DESIGN MODIFICATION: The locations of the exterior dikes of Impoundment B and Impoundment C were changed to conform to the existing dikes as not to disturb good existing vegetation and scopes. Only horizontal control changed, not elevations. See as-built plan layout for changes.

INTERNATIONAL
TECHNOLOGY
CORPORATION

DESIGN MODIFICATION

PROJECT NO.: 435425 **DATE:**

PROJECT NAME: Cedar Chemical Co. **PAGE:** 1 of 1

DESIGN MODIFICATION NO.: 3

DESCRIPTION OF DESIGN MODIFICATION: The SWCA was redesigned to accommodate the extra volume of sediments removed from Impoundments A, B, and C. The existing contours of the hill west of the existing SWCA footprint were regraded to approximately 5H to 1V slopes. The SWCA slopes were kept to 3H to 1V slopes for the north and east slopes, the top of the SWCA was redesigned to flow from east to west into the SWCA drainage ditch and the west slope was redesigned to approximately 2H to 1V slopes. The SWCA footprint was extended west on the hill and moving the SWCA drainage ditch west to conform to the new expansion. The tie-in of the bottom liner system was made by cutting the primary liner, welding the expanded secondary liner to the existing secondary liner and welding the primary extension liner to the existing primary liner. Reference the as-built plan drawing no. 1 for actual construction.

INTERNATIONAL
TECHNOLOGY
CORPORATION

DESIGN MODIFICATION

PROJECT NO.: 435425 **DATE:**

PROJECT NAME: Cedar Chemical Co. **PAGE:** 1 of 1

DESIGN MODIFICATION NO.: 4

DESCRIPTION OF DESIGN MODIFICATION: A second pump station was built at the northeast corner of Impoundment C. Two pumps were located on the pump pad with 2 suction pipes placed up the north east slope supported by 4 pipe stands with foundation pads. 1-foot square by 2-inch thick HDPE plates were imbedded in the foundation pads and the primary and secondary liners welded to them. An open pipe trench was constructed across the north access road with grating to allow visual inspection of the piping.

INTERNATIONAL
TECHNOLOGY
CORPORATION

DESIGN MODIFICATION

PROJECT NO.: 435425 **DATE:** 10/28/91

PROJECT NAME: Cedar Chemical Co. **PAGE:** 1 of 1

DESIGN MODIFICATION NO.: 5

DESCRIPTION OF DESIGN MODIFICATION: 30 mil HDPE liner was placed over the Impoundment A/SWCA and Impoundment B/SWCA dikes and welded the cap primary liner to preclude infiltration into the dikes. See as-built drawing no. 5 for details of construction.

INTERNATIONAL
TECHNOLOGY
CORPORATION

DESIGN MODIFICATION

PROJECT NO.: 435425 **DATE:**

PROJECT NAME: Cedar Chemical Co. **PAGE:** 1 of 1

DESIGN MODIFICATION NO.: 6

DESCRIPTION OF DESIGN MODIFICATION: Groundwater removal system consisting of 3-foot square by 2-feet deep excavations below LD/RS sump areas (lowest point of impoundments) with pea gravel wrapped in fabric with 1-inch riser pipes for removal of groundwater. One system was installed for each impoundment.

APPENDIX I

BOTTOM VERIFICATION SAMPLING

CEDAR CHEMICAL CORPORATION

24th Floor • 5100 Poplar Avenue • Memphis, TN 38137 • 901-685-5348

REPLY TO: P.O. BOX 821003
VICKSBURG, MS 39182
(601) 636-1231

MAR 3 1 1992

Mr. Glen R. Landry, P.E.
Project Manager
International Technology Corp.
8687 United Plaza Blvd.
Building 9, Suite 103
Baton Rouge, LA 70809

March 30, 1992

Subject: Construction Status Report
Closure/Retrofit of Surface Impoundment
Cedar Chemical Corporation

Dear Mr. Landry:

Enclosed are results of sampling and analysis of the Cedar Chemical Pond bottom at various locations and times. Ponds A, B and C were sampled and analyzed for dinoseb, toxaphene, total arsenic, methyl parathion, bladex and atrazine as was requested by the Mississippi Bureau of Pollution Control. Analyses were performed on the sediment for both total constituent and constiuent in the leachate from the EP toxicity procedure in SW-846. Sampling locations are shown on the outline maps of each unit.

Additionally, Cedar was requested by the MSDEQ to analyze the sediments in Ponds B and C using the TCLP for toxicity. Results of those analyses are included in the report prepared by Woodward-Clyde.

Sincerely,

Steven T. Boswell

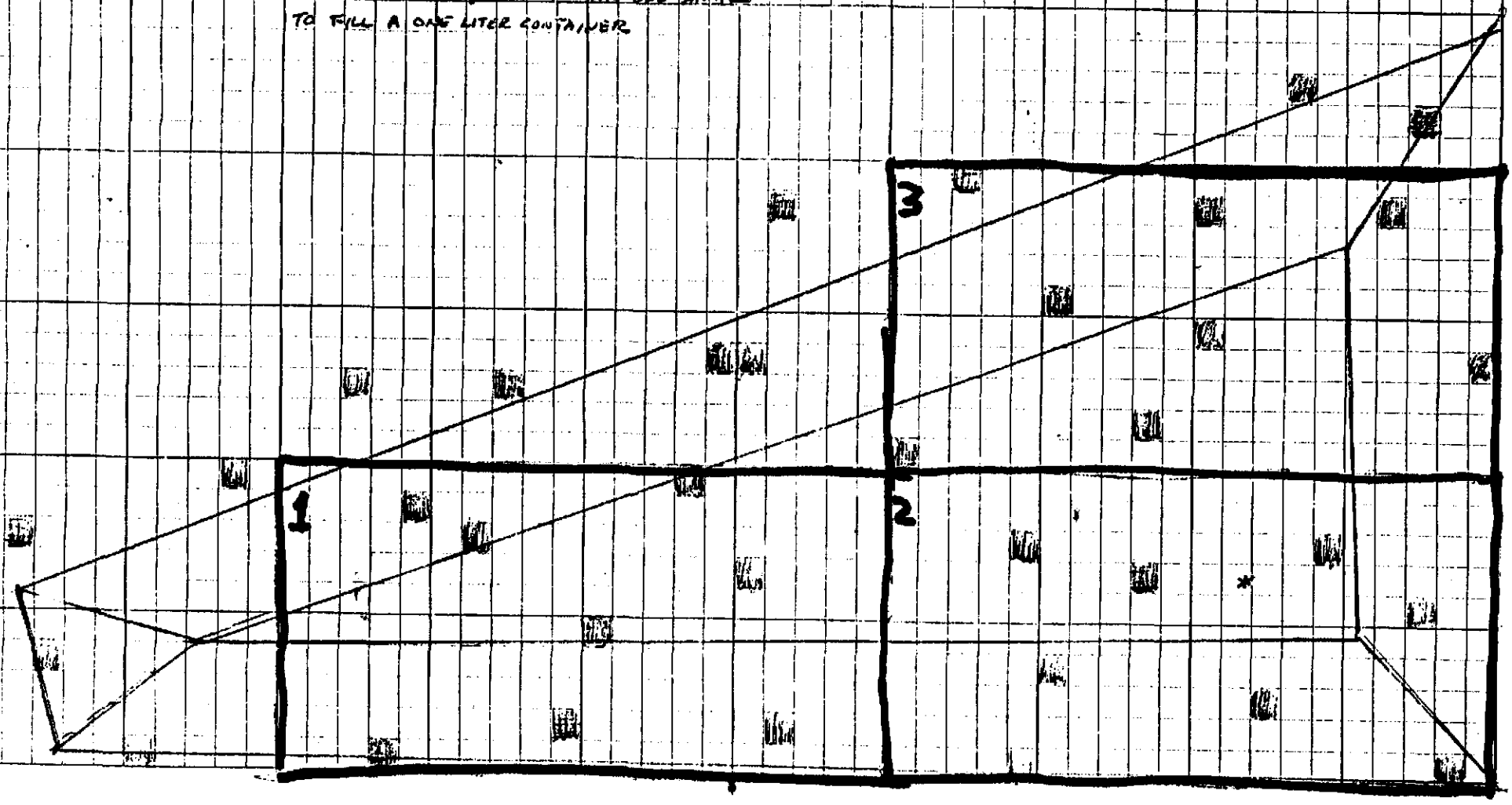
STB: pc

Steven T. Boswell
Dir. of Env. Affairs

SWCA SAMPLING PLAN

PROGRAM
```
5 HOME
10 X = RND(3)*25
15 PRINT INT(X+1)
```

EACH LOCATION WILL BE SAMPLED USING A 3/4" SOIL SAMPLER TO A DEPTH OF 12". SAMPLES IN EACH BLOCK WILL BE COMPOSITED INTO ONE SAMPLE TO FILL A ONE LITER CONTAINER



ENVIRONMENTAL PROTECTION SYSTEMS
P.O. Box 20382 • 165 Upton Drive • Jackson, MS 39209 • Telephone (601) 922-8242 • FAX (601) 922-9163

LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHE DATE: 06/28/89
LOCATION: VICKSBURG, MS 39180 PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 06/06/89
REPORT NO.: 7511
PROJECT NO.:
PAGE NO.: 1

TEST RESULTS	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTRO		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE DEVIATIO
TEST RESULTS FOR SAMPLE LOG NUMBER:		10183.00									
Arsenic, Total	mg/kg	7.9				BSC	06/08/89	16:00	0.200	100	0
Atrazine	mg/kg	227				SCP	06/12/89	08:00	1.67	90	5
Bladex	mg/kg	<50				SCP	06/12/89	08:00	1.67	103	23
Dinitrobutylphenol	mg/kg	<0.3				SCP	06/15/89	08:00	NA	NA	NA
Methyl Parathion	mg/kg	<50				SCP	06/12/89	08:00	0.83	102	4
Toxaphene	mg/kg	50				SCP	06/12/89	08:00	0.83	87	NA

SUPPLEMENT INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:	COLLECTION DATE/TIME:	CERTIFICATION:
10183.00 SOIL SAMPLE #3 FOR TOTAL PARAMETERS	06/01/89 06/01/89 UNK	John Brownard, Quality Assurance and Quality Control; Herbert A. Johnston, Analytical and Biomalytical Services

This report applies only to the sample investigated and is not necessarily indicative of the quality of apparently identical or similar samples. The liability of the laboratory is limited to the amount paid for the report by the client. The client assumes all liability for the further distribution of this report or its content and by making such distribution agrees to hold the laboratory harmless against all claims of persons so informed of the contents hereof.

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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHE DATE: 06/28/89
LOCATION: VICKSBURG, MS 39180 PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 06/06/89
REPORT NO.: 7510
PROJECT NO.:
PAGE NO.: 1

TEST RESULTS	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTRO		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE DEVIATIO
TEST RESULTS FOR SAMPLE LOG NUMBER:		101B1.00									
Arsenic, Total	mg/kg	<0.3				BSC	06/08/89	16:00	0.200	100	0
Atrazine	mg/kg	389				SCP	06/12/89	08:00	1.67	90	5
Bladex	mg/kg	91				SCP	06/12/89	08:00	1.67	103	23
Dinitrobutylphenol	mg/kg	28.6				SCP	06/15/89	08:00	NA	NA	NA
Methyl Parathion	mg/kg	<50				SCP	06/12/89	08:00	0.83	102	4
Toxaphene	mg/kg	22				SCP	06/12/89	08:00	0.83	87	NA

SUPPLEMENT INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:	COLLECTION DATE/TIME:	CERTIFICATION:
101B1.00 SOIL SAMPLE #2 FOR TOTAL PARAMETERS	06/01/89 06/01/89 UNK	John Brownard, Quality Assurance and Quality Control; Herbert A. Johnston, Analytical and Bio-Analytical Services

This report applies only to the sample investigated and is not necessarily indicative of the quality of apparently identical or similar samples. The liability of the laboratory is limited to the amount paid for the report by the client. The client assumes all liability for the further distribution of this report or its content and by making such distribution agrees to hold the laboratory harmless against all claims of persons so informed of the contents hereof.

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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEMDATE: 06/28/89
LOCATION: VICKSBURG, MS 39180 PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 06/06/89
REPORT NO.: 7509
PROJECT NO.:
PAGE NO.: 1

TEST RESULTS	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTRO		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE DEVIATIO
TEST RESULTS FOR SAMPLE LOG NUMBER:		10179.00									
Arsenic, Total	mg/kg	6.4				BSC	06/08/89	16:00	0.200	100	0
Atrazine	mg/kg	770				SCP	06/12/89	08:00	1.67	90	5
Bladex	mg/kg	<50				SCP	06/12/89	08:00	1.67	103	23
Dinitrobutylphenol	mg/kg	<0.3				SCP	06/15/89	08:00	NA	NA	NA
Methyl Parathion	mg/kg	<50				SCP	06/12/89	08:00	0.83	102	4
Toxaphene	mg/kg	134				SCP	06/12/89	08:00	0.83	87	NA

SUPPLEMENT INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:	COLLECTION DATE/TIME:	CERTIFICATION:
10179.00 SOIL SAMPLE #1 FOR TOTAL PARAMETERS	06/01/89 06/01/89 UNK	John Broussard, Quality Assurance and Quality Control; Herbert R. Johnston, Analytical and Bio-Analytical Services

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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHE DATE: 06/26/89
LOCATION: VICKSBURG, MS 39180 PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 06/06/89
REPORT NO.: 7463 PAGE NO.: 1
PROJECT NO.:

TEST RESULTS	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTROL		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE % DEVIATION
TEST RESULTS FOR SAMPLE LOG NUMBER:		10180.00									
Arsenic, Total Leachable	mg/l	0.03				BSC	06/08/89	16:00	0.200	100	0
Atrazine, Total Leachable	ug/l	93000				SCP	06/13/89	10:50	NA	NA	NA
Bladex, Total Leachable	ug/l	100000				SCP	06/13/89	10:50	NA	NA	NA
Dinitrobutylphenol, Total Leachable	mg/l	0.36				SCP	06/09/89	09:30	0.1	88	NA
Methyl Parathion, Total Leachable	ug/l	<100				SCP	06/13/89	10:50	25	85	NA
Toxaphene, Total Leachable	ug/l	<24				SCP	06/13/89	10:50	25	87	NA

SUPPLEMENT INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:
10180.00 SOIL SAMPLE #1 FOR LEACHABLE PARAMETERS

COLLECTION DATE/TIME:
06/01/89-06/01/89 UNK

CERTIFICATION:
L. R. Hudnall
Quality Assurance and Quality Control
John Bromnard
Analytical and Bio-Analytical Services

This report applies only to the sample investigated and is not necessarily indicative of the quality of apparently identical or similar samples. The liability of the laboratory is limited to the amount paid for the report by the client. The client assumes all liability for the further distribution of this report or its content and by making such distribution agrees to hold the laboratory harmless against all claims of persons so informed of the contents hereof.

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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEM
LOCATION: VICKSBURG, MS 39180
DATE: 06/26/89
PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 06/06/89
REPORT NO.: 7464
PROJECT NO.:
PAGE NO.: 1

TEST RESULTS	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTRO		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE DEVIATIO
TEST RESULTS FOR SAMPLE LOG NUMBER:		10182.00									
Arsenic, Total Leachable	mg/l	0.04				BSC	06/08/89	16:00	0.200	100	0
Atrazine, Total Leachable	ug/l	66000				SCP	06/13/89	10:50	NA	NA	NA
Bladex, Total Leachable	ug/l	45000				SCP	06/13/89	10:50	NA	NA	NA
Dinitrobutylphenol, Total Leachable	mg/l	10.5				SCP	06/09/89	09:30	0.1	88	NA
Methyl Parathion, Total Leachable	ug/l	<100				SCP	06/13/89	10:50	25	85	NA
Toxaphene, Total Leachable	ug/l	<24				SCP	06/13/89	10:50	25	87	NA

SUPPLEMENT INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:
10182.00 SOIL SAMPLE #2 FOR LEACHABLE PARAMETERS

COLLECTION DATE/TIME:
06/01/89 06/01/89 UNK

CERTIFICATION:

L. R. Hudnall
Quality Assurance and Quality Control

John Broussard
Analytical and Bio-Analytical Services

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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEM
LOCATION: VICKSBURG, MS 39180
DATE: 06/26/89
PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 06/06/89
REPORT NO.: 7465
PROJECT NO.:
PAGE NO.: 1

TEST RESULTS	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTRO		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE DEVIATIO
TEST RESULTS FOR SAMPLE LOG NUMBER:		10184.00									
Arsenic, Total Leachable	mg/l	<0.03				BSC	06/08/89	16:00	0.200	100	0
Atrazine, Total Leachable	ug/l	45000				SCP	06/13/89	10:50	NA	NA	NA
Bladex, Total Leachable	ug/l	22000				SCP	06/13/89	10:50	NA	NA	NA
Dinitrobutylphenol, Total Leachable	mg/l	0.17				SCP	06/09/89	09:30	0.1	88	NA
Methyl Parathion, Total Leachable	ug/l	<100				SCP	06/13/89	10:50	25	85	NA
Toxaphene, Total Leachable	ug/l	<24				SCP	06/13/89	10:50	25	87	NA

SUPPLEMENT INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:	COLLECTION DATE/TIME:	CERTIFICATION:
10184.00 SOIL SAMPLE #3 FOR LEACHABLE PARAMETERS	06/01/89 06/01/89 UNK	L.R. Hudnall, Quality Assurance and Quality Control; John Broussard, Analytical and Bio-Analytical Services

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CEDAR CHEMICAL CORPORATION

24th Floor • 5100 Poplar Avenue • Memphis, TN 38137 • 901-685-5348

REPLY TO: P.O. BOX 3
VICKSBURG, MS 39181
(601) 636-1231

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
P 850 518 309

Mr. Toby Cook
Environmental Engineer
Mississippi Department of Environmental Quality
Bureau of Pollution Control
2380 Highway 80 West
Jackson, MS 39204

March 23, 1990

Re: Cedar Chemical Corporation
South Pond Closure Project

Dear Mr. Cook:

Please find enclosed copies of the sediment analyses for Area "A" of the South Pond at the Cedar Chemical Vicksburg Plant. The sediments were analyzed for total constituents and for the extractable amounts using the Extraction Procedure described in 40 CFR 261, Appendix II.

If there are any questions concerning this matter, please contact me.

Sincerely,

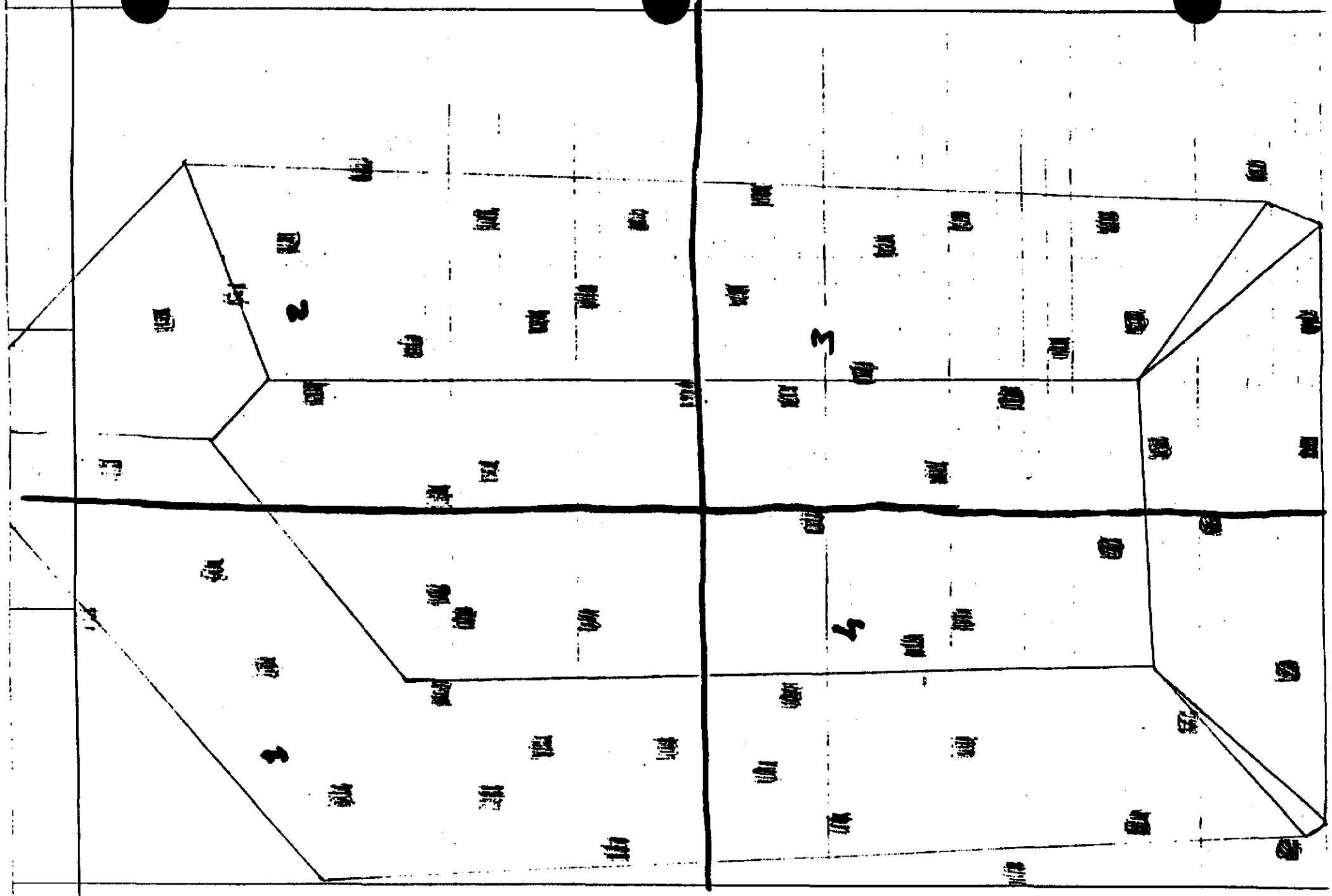
Steven T. Boswell
Director of Env. Affairs

STB: pc

xc: Mr. Ahlers
Mr. Madsen

SAMPLING POINTS

EACH ZONE TO BE COMPOSITED TO [illegible] ONE LITER CONTAINER



From: American Laboratories and
Research Services, Inc.
P.O. Box 15609
Hattiesburg, MS 39402-5609
601-264-9320

Date: December 30, 1990

To: Mr. Steven Boswell
Cedar Chemical Company
P.O. Box 3
Vicksburg, MS 39180

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA02377

Sample location: VICKS Cedar Impoundment A - Area 1

Collected by: S BOSWELL Collection date: 10/18/89 Time:

Laboratory submittal date: 10/20/89 Time: 19:00

Received by: RLH Validated by: RLH

Parameter: Selected Pesticides
Method reference: SW846 8080
Result: see appended report
Date started: 11/05/89 Date finished: 11/22/89
Time started: 03:46 Analyst: RLH

Parameter: Arsenic
Method reference: EPA 206.2
Result: 22 mg/Kg MDL or sensitivity: .002
Date started: 10/30/89 Date finished: 10/30/89
Time started: 14:00 Analyst: SPF

Parameter: Selected Pesticides by EP TOX
Method reference: EPA
Result: see appended report
Date started: 11/05/89 Date finished: 11/22/89
Time started: 01:27 Analyst: RLH

Sample I.D. AA02377 (continued)

Parameter: Arsenic by EP TOX
Method reference:
Result: .027 mg/L
Date started: 10/30/89
Time started: 14:00

MDL or sensitivity: .002
Date finished: 10/30/89
Analyst: SPF

Data for Selected Pesticides ug/Kg

Component Name	Concentration	Component MDL
Atrazine, total	380000	100
Dinoseb, total	95000	100
Methyl Parathion, total	Not Det	90
Bladex, total	32000	100
Toxaphene, total	Not Det	200

Data for Selected Pesticides by EP TOX ug/L

Component Name	Concentration	Component MDL
Atrazine, EPTOX	36000	20
Dinoseb, EPTOX	12000	20
Methyl Parathion, EPTOX	Not Det	20
Bladex, EPTOX	1500	20
Toxaphene, EPTOX	Not Det	60

Comments:
Reference Lab Report No. R923.

If there are any questions regarding this data, please call.

Ricky L. Hatton, Ph.D.
Vice President

Reviewed By: James W. Pinson, Ph.D.
President

From: American Laboratories and
Research Services, Inc.
P.O. Box 15609
Hattiesburg, MS 39402-5609
601-264-9320

Date: December 30, 1990

To: Mr. Steven Boswell
Cedar Chemical Company
P.O. Box 3
Vicksburg, MS 39180

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA02378

Sample location: VICKS Cedar Impoundment A - Area 2

Collected by: S BOSWELL Collection date: 10/18/89 Time:

Laboratory submittal date: 10/20/89 Time: 19:00

Received by: RLH Validated by: RLH

Parameter: Selected Pesticides
Method reference: SW846 8080
Result: see appended report
Date started: 11/05/89 Date finished: 12/22/89
Time started: 04:21 Analyst: RLH

Parameter: Arsenic
Method reference: EPA 206.2
Result: 27 mg/Kg MDL or sensitivity: .002
Date started: 10/30/89 Date finished: 10/30/89
Time started: 14:00 Analyst: SPF

Parameter: Selected Pesticides by EP TOX
Method reference: EPA
Result: see appended report
Date started: 11/05/89 Date finished: 12/22/89
Time started: 02:02 Analyst: RLH

Sample I.D. AA02378 (continued)

Parameter: Arsenic by EP TOX
Method reference:
Result: .093 mg/L
Date started: 10/30/89
Time started: 14:00

MDL or sensitivity: .002
Date finished: 10/30/89
Analyst: SPF

Data for Selected Pesticides ug/Kg

Component Name	Concentration	Component MDL
Atrazine, total	520000	100
Dinoseb, total	11000	100
Methyl Parathion, total	100	90
Bladex, total	5800	100
Toxaphene, total	Not Det	200

Data for Selected Pesticides by EP TOX ug/L

Component Name	Concentration	Component MDL
Atrazine, EPTOX	81000	20
Dinoseb, EPTOX	1300	20
Methyl Parathion, EPTOX	Not Det	20
Bladex, EPTOX	430	20
Toxaphene, EPTOX	Not Det	60

Comments:
Reference Lab Report No. R923.

If there are any questions regarding this data, please call.

Ricky L. Hatton, Ph.D.
Vice President

Reviewed By: James W. Pinson, Ph.D.
President

From: American Laboratories and
Research Services, Inc.
P.O. Box 15609
Hattiesburg, MS 39402-5609
601-264-9320

Date: December 30, 1990

To: Mr. Steven Boswell
Cedar Chemical Company
P.O. Box 3
Vicksburg, MS 39180

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA02379

Sample location: VICKS Cedar Impoundment A - Area 3

Collected by: S BOSWELL Collection date: 10/18/89 Time:

Laboratory submittal date: 10/20/89 Time: 19:00

Received by: RLH Validated by: RLH

Parameter: Selected Pesticides
Method reference: SW846 8080
Result: see appended report
Date started: 11/05/89 Date finished: 12/22/89
Time started: 04:56 Analyst: RLH

Parameter: Arsenic
Method reference: EPA 206.2
Result: 16 mg/Kg MDL or sensitivity: .002
Date started: 10/30/89 Date finished: 10/30/89
Time started: 14:00 Analyst: SPF

Parameter: Selected Pesticides by EP TOX
Method reference: EPA
Result: see appended report
Date started: 11/05/89 Date finished: 12/22/89
Time started: 02:02 Analyst: RLH

Sample I.D. AA02379 (continued)

Parameter: Arsenic by EP TOX
Method reference:
Result: .065 mg/L
Date started: 10/30/89
Time started: 14:00

MDL or sensitivity: .002
Date finished: 10/30/89
Analyst: SPF

Data for Selected Pesticides ug/Kg

Component Name	Concentration	Component MDL
Atrazine, total	480000	100
Dinoseb, total	1500	100
Methyl Parathion, total	Not Det	90
Bladex, total	3100	100
Toxaphene, total	Not Det	200

Data for Selected Pesticides by EP TOX ug/L

Component Name	Concentration	Component MDL
Atrazine, EPTOX	86000	20
Dinoseb, EPTOX	300	20
Methyl Parathion, EPTOX	Not Det	20
Bladex, EPTOX	600	20
Toxaphene, EPTOX	Not Det	60

Comments:
Reference Lab Report No. R923.

If there are any questions regarding this data, please call.

Ricky L. Hatton, Ph.D.
Vice President

Reviewed By: James W. Pinson, Ph.D.
President

From: American Laboratories and
Research Services, Inc.
P.O. Box 15609
Hattiesburg, MS 39402-5609
601-264-9320

Date: December 30, 1990

To: Mr. Steven Boswell
Cedar Chemical Company
P.O. Box 3
Vicksburg, MS 39180

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA02380

Sample location: VICKS Cedar Impoundment A - Area 4

Collected by: S BOSWELL Collection date: 10/18/89 Time:

Laboratory submittal date: 10/20/89 Time: 19:00

Received by: RLH Validated by: RLH

Parameter: Selected Pesticides
Method reference: SW846 8080
Result: see appended report
Date started: 11/05/89 Date finished: 12/22/89
Time started: 05:30 Analyst: RLH

Parameter: Arsenic
Method reference: EPA 206.2
Result: 18 mg/Kg MDL or sensitivity: .002
Date started: 10/30/89 Date finished: 10/30/89
Time started: 14:00 Analyst: SPF

Parameter: Selected Pesticides by EP TOX
Method reference: EPA
Result: see appended report
Date started: 11/05/89 Date finished: 12/22/89
Time started: 03:12 Analyst: RLH

Sample I.D. AA02380 (continued)

Parameter: Arsenic by EP TOX
Method reference:
Result: .041 mg/L
Date started: 10/30/89
Time started: 14:00

MDL or sensitivity: .002
Date finished: 10/30/89
Analyst: SPF

Data for Selected Pesticides ug/Kg

Component Name	Concentration	Component MDL
Atrazine, total	1200000	100
Dinoseb, total	22000	100
Methyl Parathion, total	190	90
Bladex, total	59000	100
Toxaphene, total	Not Det	200

Data for Selected Pesticides by EP TOX ug/L

Component Name	Concentration	Component MDL
Atrazine, EPTOX	66000	20
Dinoseb, EPTOX	2200	20
Methyl Parathion, EPTOX	Not Det	20
Bladex, EPTOX	4400	20
Toxaphene, EPTOX	Not Det	60

Comments:
Reference Lab Report No. R923.

If there are any questions regarding this data, please call.

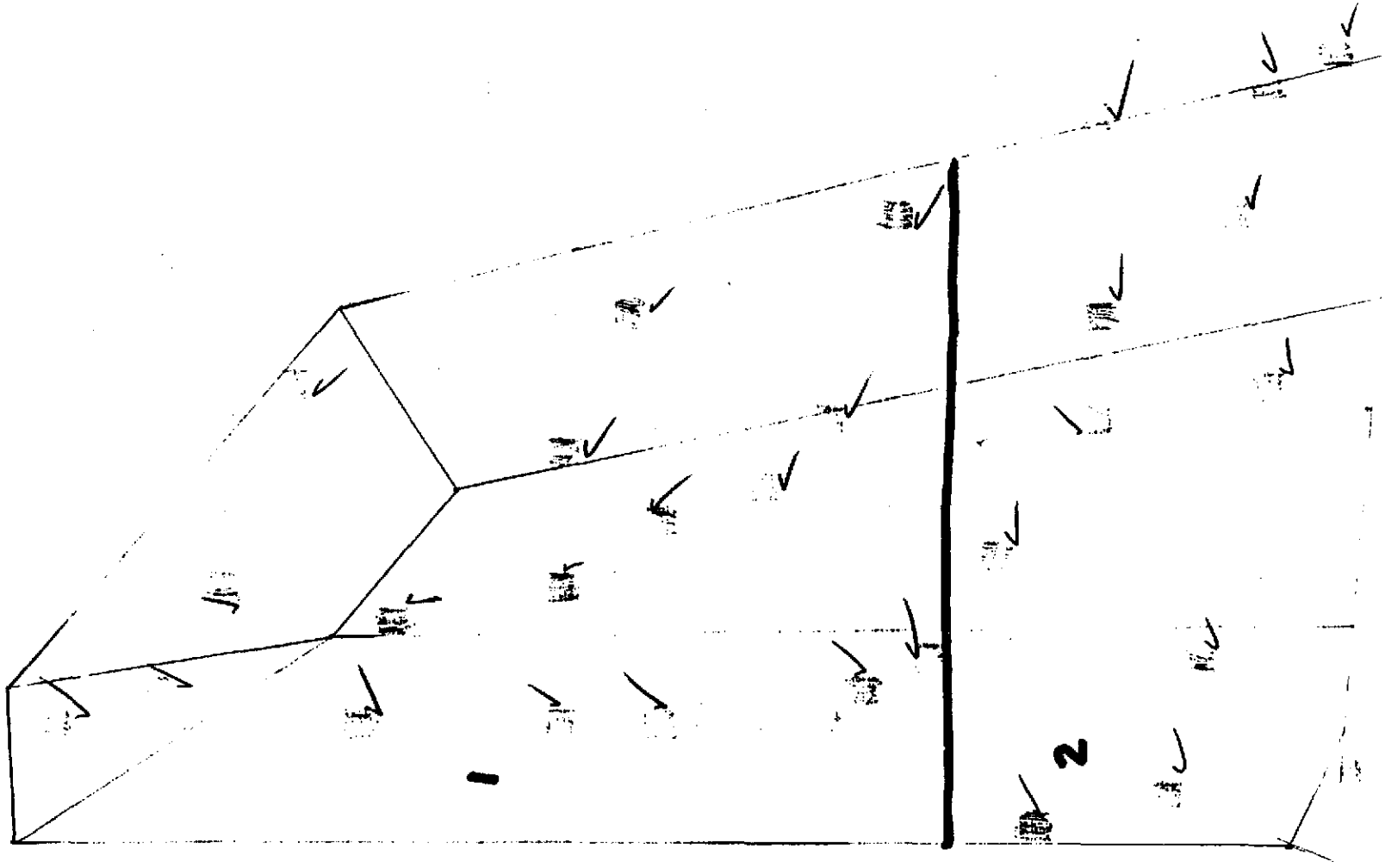
Ricky L. Hatton, Ph.D.
Vice President

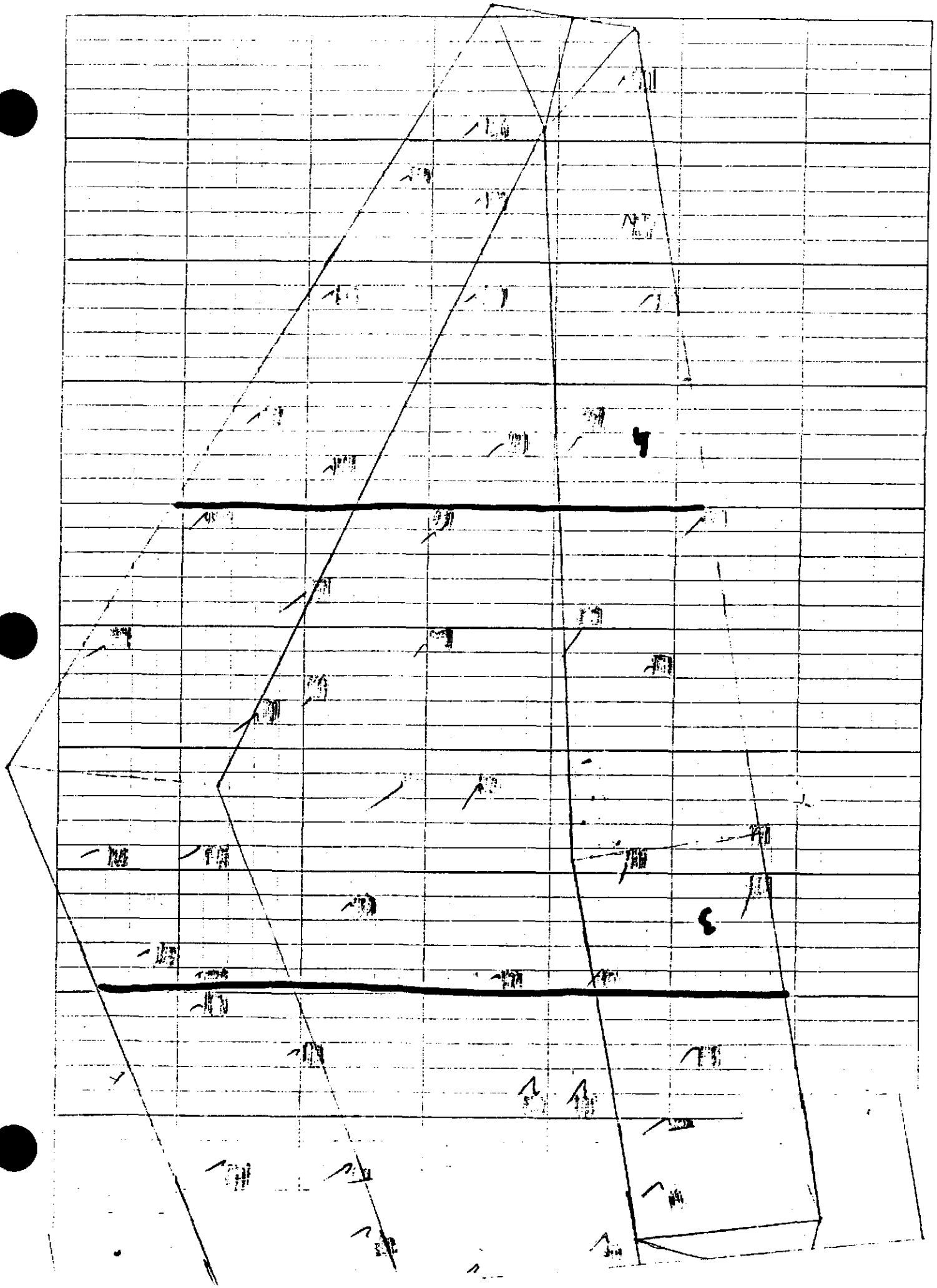
Reviewed By: James W. Pinson, Ph.D.
President

IMPOUNDMENT B SAMPLING PLAN

ALL LOCATIONS TO BE SAMPLED TO A DEPTH OF 12"
USING A 3/4" SOIL SAMPLER

EACH ZONE TO BE COMPOSITED TO FILL A ONE LITER CONTAINER

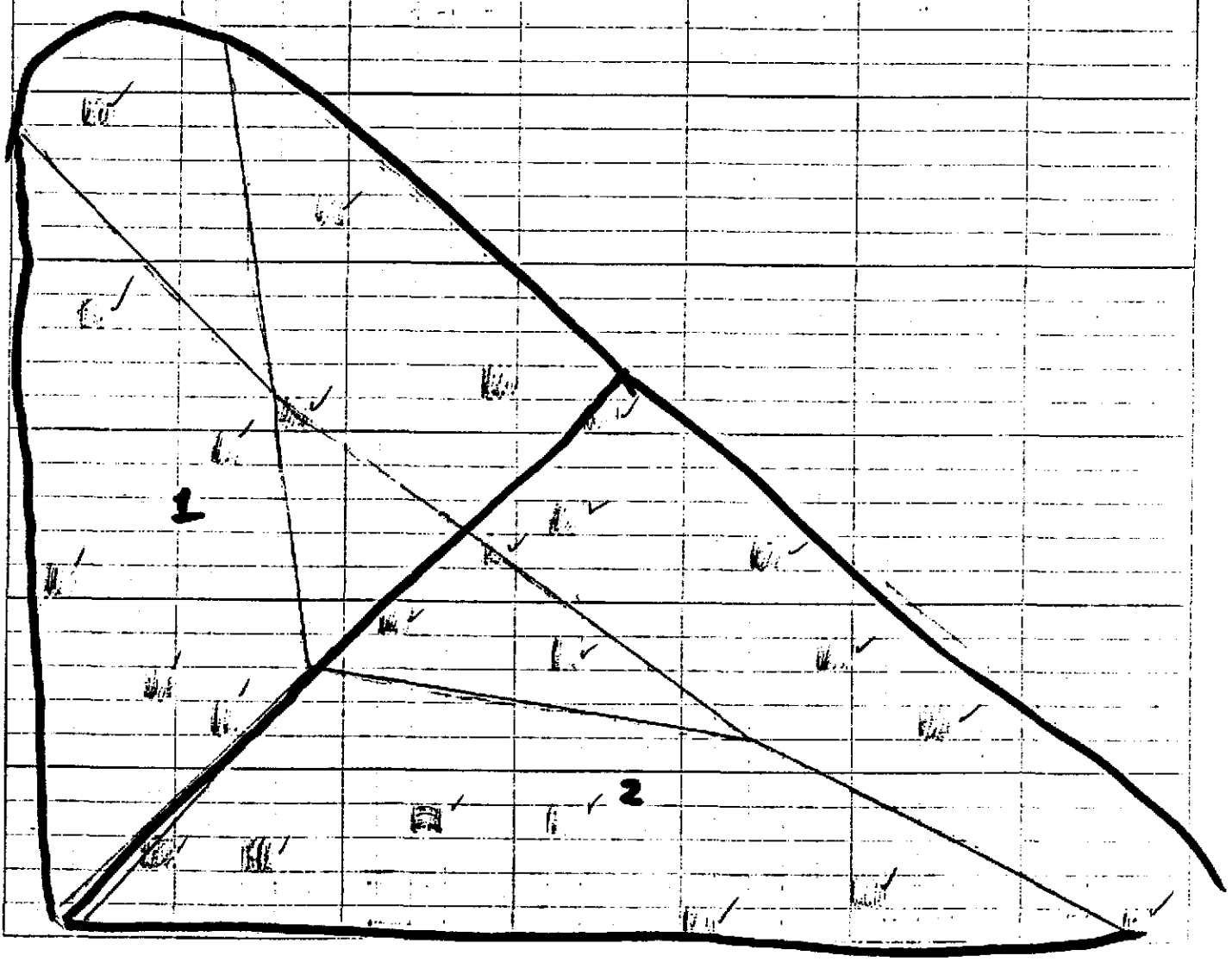




IMPOUNDMENT C
SAMPLING PLAN

ALL LOCATIONS TO BE SAMPLED USING A 3/4" SOIL SAMPLER TO A DEPTH OF 12"

EACH ZONE TO BE COMPOSITED INTO ONE SAMPLE TO FILL A ONE LITER CONTAINER



EPS Analytical Services
5360 I-55 North • Jackson, MS 39211 • Telephone (601) 956-1400 • FAX (601) 956-2365

LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEM DATE: 05/15/91
LOCATION: VICKSBURG, MS 39180 PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 04/10/91
REPORT NO.: 19625 PAGE NO.: 1
PROJECT NO.:

ANALYTE	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTROL		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE % DEVIATION
TEST RESULTS FOR SAMPLE LOG NUMBER:		25044.00									
Dinitrobutylphenol, TCLP Leachable	mg/l	0.11				KLG	04/16/91	11:15	250	119	14
Arsenic, TCLP Leachable	mg/l	0.4				BSC	04/17/91	11:30	0.200	98	0
Atrazine, TCLP Leachable	mg/l	<1.5				SCP	04/13/91	11:00	0.25	146	0
Bladex, TCLP Leachable	mg/l	<0.01				SCP	04/13/91	11:00	0.25	146	0
Methyl Parathion, TCLP Leachable	mg/l	<0.01				SCP	04/13/91	11:00	0.25	146	0
Toxic Characteristic Leaching Procedure	NA	YES				WAS	04/11/91	17:00	NA	NA	NA
Toxaphene, TCLP Leachable	mg/l	<0.0001				SCP	04/13/91	11:00	0.25	146	0

SUPPLEMENTARY INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:
25044.00 SOUTH POND - B1

COLLECTION DATE/TIME:
04/08/91 04/08/91 16:00

CERTIFICATION:
Sandra C Pittman
Quality Assurance and Quality Control
Ray Hudnall
Analytical Services

This report applies only to the sample(s) analyzed. The liability of the laboratory is limited to the amount paid for the report by the client. The client assumes all liability for the further distribution of this report or its content and by making such distribution agrees to hold the laboratory harmless against all claims of persons as informed of the contents h

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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEM DATE: 05/15/91
LOCATION: VICKSBURG, MS 39180 PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 04/10/91
REPORT NO.: 19626
PROJECT NO.:
PAGE NO.: 1

ANALYTE	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTROL		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE % DEVIATION
TEST RESULTS FOR SAMPLE LOG NUMBER:		25044.10									
Dinitrobutylphenol, TCLP Leachable	mg/l	<0.03				KLG	04/16/91	11:15	250	119	14
Arsenic, TCLP Leachable	mg/l	<0.3				BSC	04/17/91	11:30	0.200	98	0
Atrazine, TCLP Leachable	mg/l	<1.5				SCP	04/13/91	11:00	0.25	146	0
Bladex, TCLP Leachable	mg/l	<0.01				SCP	04/13/91	11:00	0.25	146	0
Methyl Parathion, TCLP Leachable	mg/l	<0.01				SCP	04/13/91	11:00	0.25	146	0
Toxic Characteristic Leaching Procedure	NA	YES				WAS	04/11/91	17:00	NA	NA	NA
Toxaphene, TCLP Leachable	mg/l	<0.0001				SCP	04/13/91	11:00	0.25	146	0

SUPPLEMENTARY INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:
25044.10 SOUTH POND - B2

COLLECTION DATE/TIME:
04/08/91 04/08/91 16:00

CERTIFICATION:
Sandra A. Pittman
Quality Assurance and Quality Control
Ray Hudnall
Analytical Services

This report applies only to the sample(s) analyzed. The liability of the laboratory is limited to the amount paid for the report by the client. The client assumes all liability for the further distribution of this report or its content and by making such distribution agrees to hold the laboratory harmless against all claims of persons so informed of the contents t

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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEM DATE: 05/15/91
LOCATION: VICKSBURG, MS 39180 PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 04/10/91
REPORT NO.: 19627
PROJECT NO.:
PAGE NO.: 1

ANALYTE	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTROL		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE % DEVIATION
TEST RESULTS FOR SAMPLE LOG NUMBER:		25044.20									
Dinitrobutylphenol, TCLP Leachable	mg/l	0.24				KLG	04/16/91	11:15	250	119	14
Arsenic, TCLP Leachable	mg/l	<0.3				BSC	04/17/91	11:30	0.200	98	0
Atrazine, TCLP Leachable	mg/l	<1.5				SCP	04/13/91	11:00	0.25	146	0
Bladex, TCLP Leachable	mg/l	<0.01				SCP	04/13/91	11:00	0.25	146	0
Methyl Parathion, TCLP Leachable	mg/l	<0.01				SCP	04/13/91	11:00	0.25	146	0
Toxic Characteristic Leaching Procedure	NA	YES				WAS	04/11/91	17:00	NA	NA	NA
Toxaphene, TCLP Leachable	mg/l	<0.0001				SCP	04/13/91	11:00	0.25	146	0

SUPPLEMENTARY INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:
25044.20 SOUTH POND - B3

COLLECTION DATE/TIME:
04/08/91 04/08/91 16:00

CERTIFICATION:
Sandra C. Pittman
Quality Assurance and Quality Control
Ray Hudnall
Analytical Services

This report applies only to the sample(s) analyzed. The liability of the laboratory is limited to the amount paid for the report by the client. The client assumes all liability for the further distribution of this report or its content and by making such distribution agrees to hold the laboratory harmless against all claims of persons or [illegible] of the contents.

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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEM
LOCATION: VICKSBURG, MS 39180
DATE: 05/15/91
PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 04/10/91
REPORT NO.: 19628
PROJECT NO.:
PAGE NO.: 1

ANALYTE	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTROL		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE % DEVIATION
TEST RESULTS FOR SAMPLE LOG NUMBER:		25044.30									
Dinitrobutylphenol, TCLP Leachable	mg/l	0.12				KLB	04/16/91	11:15	250	119	14
Arsenic, TCLP Leachable	mg/l	<0.3				BSC	04/17/91	11:30	0.200	98	0
Atrazine, TCLP Leachable	mg/l	<1.5				SCP	04/13/91	11:00	0.25	146	0
Bladex, TCLP Leachable	mg/l	<0.01				SCP	04/13/91	11:00	0.25	146	0
Methyl Parathion, TCLP Leachable	mg/l	<0.01				SCP	04/13/91	11:00	0.25	146	0
Toxic Characteristic Leaching Procedure	NA	YES				WAS	04/11/91	17:00	NA	NA	NA
Toxaphene, TCLP Leachable	mg/l	<0.0001				SCP	04/13/91	11:00	0.25	146	0

SUPPLEMENTARY INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:
25044.30 SOUTH POND - B4

COLLECTION DATE/TIME:
04/08/91 04/08/91 16:00

CERTIFICATION:
Sandra C. Pittman
Quality Assurance and Quality Control
Ray Hudnall
Analytical Services

This report applies only to the sample(s) analyzed. The liability of the laboratory is limited to the amount paid for the report by the client. The client assumes all liability for the further distribution of this report or its content and by making such distribution agrees to hold the laboratory harmless against all claims of persons so informed of the contents hereof.

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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEM
LOCATION: VICKSBURG, MS 39180
DATE: 05/15/91
PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 04/10/91
REPORT NO.: 19630
PROJECT NO.:
PAGE NO.: 1

ANALYTE	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTROL		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE % DEVIATION
TEST RESULTS FOR SAMPLE LOG NUMBER:		25044.50									
Dinitrobutylphenol, TCLP Leachable	mg/l	0.25				KLG	04/16/91	11:15	250	119	14
Arsenic, TCLP Leachable	mg/l	0.3				BSC	04/17/91	11:30	0.200	98	0
Atrazine, TCLP Leachable	mg/l	<1.5				SCP	04/13/91	11:00	0.25	146	0
Bladex, TCLP Leachable	mg/l	<0.01				SCP	04/13/91	11:00	0.25	146	0
Methyl Parathion, TCLP Leachable	mg/l	<0.01				SCP	04/13/91	11:00	0.25	146	0
Toxic Characteristic Leaching Procedure	NA	YES				MAS	04/11/91	17:00	NA	NA	NA
Toxaphene, TCLP Leachable	mg/l	<0.0001				SCP	04/13/91	11:00	0.25	146	0

SUPPLEMENTARY INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:
25044.50 SOUTH POND - C2

COLLECTION DATE/TIME:
04/08/91 04/08/91 16:00

CERTIFICATION:

Sandra C. Pittman
Quality Assurance and Quality Control

Ray Hudnall
Analytical Services

This report applies only to the sample(s) analyzed. The liability of the laboratory is limited to the amount paid for the report by the client. The client assumes all liability for the further distribution of this report or its content and by making such distribution agrees to hold the laboratory harmless against all claims of persons so informed of the contents t

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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEM
LOCATION: VICKSBURG, MS 39180
DATE: 05/15/91
PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 04/10/91
REPORT NO.: 19629
PROJECT NO.:
PAGE NO.: 1

ANALYTE	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTROL		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE % DEVIATION
TEST RESULTS FOR SAMPLE LOG NUMBER:		25044.40									
Dinitrobutylphenol, TCLP Leachable	mg/l	0.16				KLG	04/16/91	11:15	250	119	14
Arsenic, TCLP Leachable	mg/l	<0.3				BSC	04/17/91	11:30	0.200	98	0
Atrazine, TCLP Leachable	mg/l	<1.5				SCP	04/13/91	11:00	0.25	146	0
Bladex, TCLP Leachable	mg/l	<0.01				SCP	04/13/91	11:00	0.25	146	0
Methyl Parathion, TCLP Leachable	mg/l	<0.01				SCP	04/13/91	11:00	0.25	146	0
Toxic Characteristic Leaching Procedure	NA	YES				WAS	04/11/91	17:00	NA	NA	NA
Toxaphene, TCLP Leachable	mg/l	<0.0001				SCP	04/13/91	11:00	0.25	146	0

SUPPLEMENTARY INFORMATION:

Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:

25044.40 SOUTH POND - C1

COLLECTION DATE/TIME:

04/08/91 04/08/91 16:00

CERTIFICATION:

Sandra C. Pittman
Quality Assurance and Quality Control

Ray Hudnall
Analytical Services

This report applies only to the sample(s) analyzed. The liability of the laboratory is limited to the amount paid for the report by the client. The client assumes all liability for the further distribution of this report or its content and by making such distribution agrees to hold the laboratory harmless against

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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEM DATE: 05/15/91
LOCATION: VICKSBURG, MS 39180 PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 04/10/91
REPORT NO.: 19619 PAGE NO.: 1
PROJECT NO.:

ANALYTE	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTROL		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE % DEVIATION
TEST RESULTS FOR SAMPLE LOG NUMBER:		25043.00									
Dinitrobutylphenol	mg/kg	<1				KLG	04/16/91	11:20	250	107	40
Arsenic, Total	mg/kg	5.8				BSC	04/17/91	11:30	0.200	98	0
Atrazine	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Bladex	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Methyl Parathion	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Toxaphene	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0

SUPPLEMENTARY INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:	COLLECTION DATE/TIME:	CERTIFICATION:
25043.00 SOUTH POND - B1	04/08/91-04/08/91 16:00	Sandra C. Pettyan, Quality Assurance and Quality Control
	-	Ray Hednall, Analytical Services
	-	
	-	

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EPS Analytical Services
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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEM
LOCATION: VICKSBURG, MS 39180
DATE: 05/15/91
PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 04/10/91
REPORT NO.: 19620
PROJECT NO.:
PAGE NO.: 1

ANALYTE	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTROL		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE % DEVIATION
TEST RESULTS FOR SAMPLE LOG NUMBER:		25043.10									
Dinitrobutylphenol	mg/kg	<1				KLG	04/16/91	11:20	250	107	40
Arsenic, Total	mg/kg	10.0				BSC	04/17/91	11:30	0.200	98	0
Atrazine	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Bladex	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Methyl Parathion	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Toxaphene	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0

SUPPLEMENTARY INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:
25043.10 SOUTH POND - B2

COLLECTION DATE/TIME:
04/08/91-04/08/91 16:00

CERTIFICATION:

Sandra C. Pittman
Quality Assurance and Quality Control

Ray Hudnall
Analytical Services

This report applies only to the sample(s) analyzed. The liability of the laboratory is limited to the amount paid for the report by the client. The client assumes all liability for the further distribution of this report or its content and by making such distribution agrees to hold the laboratory harmless against all claims of persons so informed of the contents hereof.

EPS Analytical Services
5360 I-55 North • Jackson, MS 39211 • Telephone (601) 956-1400 • FAX (601) 956-2365

LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEM DATE: 05/15/91
LOCATION: VICKSBURG, MS 39180 PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 04/10/91
REPORT NO.: 19621 PAGE NO.: 1
PROJECT NO.:

ANALYTE	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTROL		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE % DEVIATION
TEST RESULTS FOR SAMPLE LOG NUMBER:		25043.20									
Dinitrobutylphenol	mg/kg	<1				KLG	04/16/91	11:20	250	107	40
Arsenic, Total	mg/kg	8.1				BSC	04/17/91	11:30	0.200	98	0
Atrazine	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Bladex	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Methyl Parathion	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Toxaphene	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0

SUPPLEMENTARY INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:
25043.20 SOUTH POND - B3

COLLECTION DATE/TIME:
04/08/91-04/08/91 16:00

CERTIFICATION:
Sandra C. Pittman
Quality Assurance and Quality Control
Ray Hudnall
Analytical Services

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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEM
LOCATION: VICKSBURG, MS 39180
DATE: 05/15/91
PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 04/10/91
REPORT NO.: 19622
PROJECT NO.:
PAGE NO.: 1

ANALYTE	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTROL		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE % DEVIATION
TEST RESULTS FOR SAMPLE LOG NUMBER:		25043.30									
Dinitrobutylphenol	mg/kg	<1				KLG	04/16/91	11:20	250	107	40
Arsenic, Total	mg/kg	6.6				BSC	04/17/91	11:30	0.200	98	0
Atrazine	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Bladex	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Methyl Parathion	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Toxaphene	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0

SUPPLEMENTARY INFORMATION:

Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:

25043.30 SOUTH POND - B4

COLLECTION DATE/TIME:

04/08/91-04/08/91 16:00

CERTIFICATION:

Sandra C. Pittman
Quality Assurance and Quality Control

Ray Hudnall
Analytical Services

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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEM
LOCATION: VICKSBURG, MS 39180
DATE: 05/15/91
PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 04/10/91
REPORT NO.: 19623
PROJECT NO.:
PAGE NO.: 1

ANALYTE	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTROL		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE % DEVIATION
TEST RESULTS FOR SAMPLE LOG NUMBER:		25043.40									
Dinitrobutylphenol	mg/kg	<1				KLG	04/16/91	11:20	250	107	40
Arsenic, Total	mg/kg	16				BSC	04/17/91	11:30	0.200	98	0
Atrazine	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Bladex	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Methyl Parathion	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Toxaphene	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0

SUPPLEMENTARY INFORMATION:

Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:

25043.40 SOUTH POND - C1

COLLECTION DATE/TIME:

04/08/91-04/08/91 16:00

CERTIFICATION:

Sandra C. Tillyson
Quality Assurance and Quality Control

Ray Hudnall
Analytical Services

This report applies only to the sample(s) analyzed. The liability of the laboratory is limited to the amount paid for the report by the client. The client assumes all liability for the further distribution of this report or its content and by making such distribution agrees to hold the laboratory harmless against

EPS Analytical Services
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LABORATORY REPORT

CLIENT: VICKSBURG CHEMICAL DIV OF CEDAR CHEM
LOCATION: VICKSBURG, MS 39180
DATE: 05/15/91
PROJECT LOCATION: VICKSBURG, MS
COLLECTED BY: CLIENT
RECEIPT DATE: 04/10/91
REPORT NO.:
PROJECT NO.: 19624
PAGE NO.: 1

ANALYTE	UNITS	LABORATORY RESULTS / REGULATORY LIMIT				ANALYSIS INFORMATION			BATCH QUALITY CONTROL		
						ANALYST	DATE	TIME	SPIKE VALUE	% RECOVERY	RELATIVE % DEVIATION
~~TEST RESULTS FOR SAMPLE LOG NUMBER:~~		~~25043.50~~									
Dinitrobutylphenol	mg/kg	<1				KLG	04/16/91	11:20	250	107	40
Arsenic, Total	mg/kg	17				BSC	04/17/91	11:30	0.200	98	0
Atrazine	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Bladex	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Methyl Parathion	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0
Toxaphene	mg/kg	<0.5				SCP	04/13/91	13:00	0.25	124	0

SUPPLEMENTARY INFORMATION:
Analyses conducted in accordance with 40 CFR, Part 261, November 1986, "Test Methods for Evaluating Solid Waste" (SW-846).

SAMPLE DESCRIPTION:
25043.50 SOUTH POND - C2

COLLECTION DATE/TIME:
04/08/91-04/08/91 16:00

CERTIFICATION:
Sandra C. Pittman
Quality Assurance and Quality Control
Ray Hudnall
Analytical Services

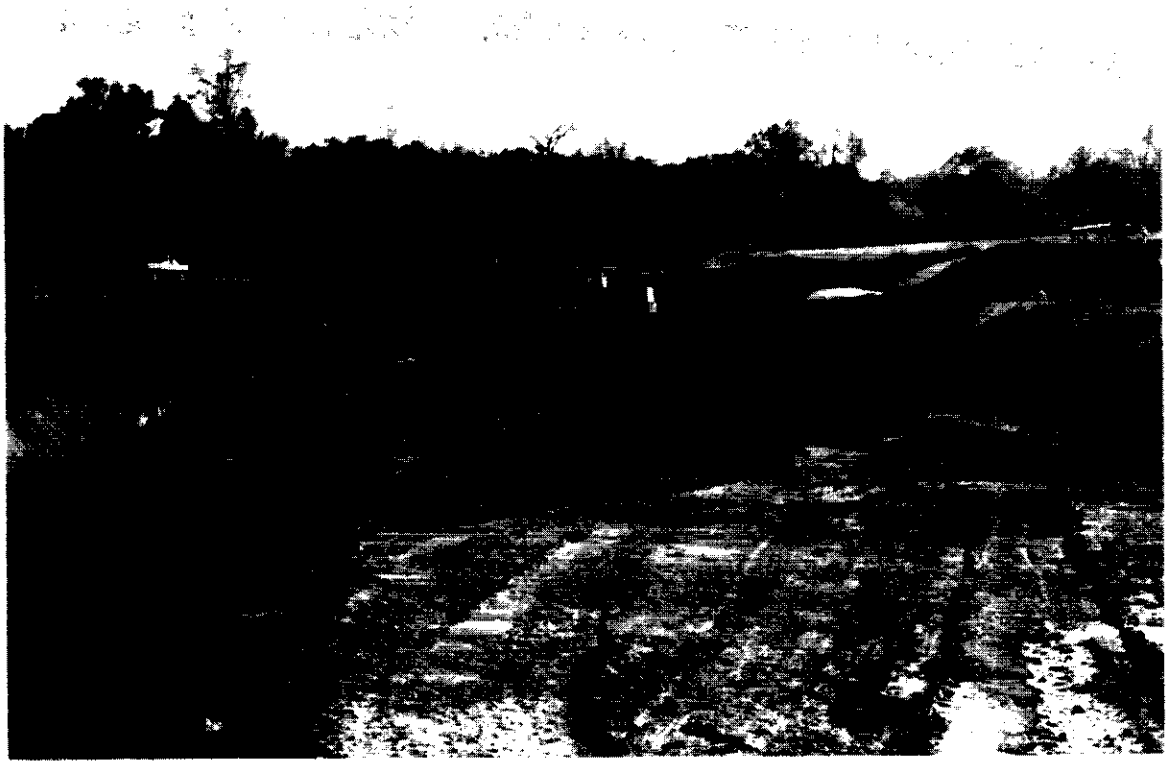
This report applies only to the sample(s) analyzed. The liability of the laboratory is limited to the amount paid for the report by the client. The client assumes all liability for the further distribution of this report or its content and by making such distribution agrees to hold the laboratory harmless against all claims of persons so informed of the contents hereof.

APPENDIX J

PHOTOGRAPH LOG

Construction Photographs
Cedar Chemical Co.
Vicksburg, Mississippi

1. Solidification of impoundment sediments.



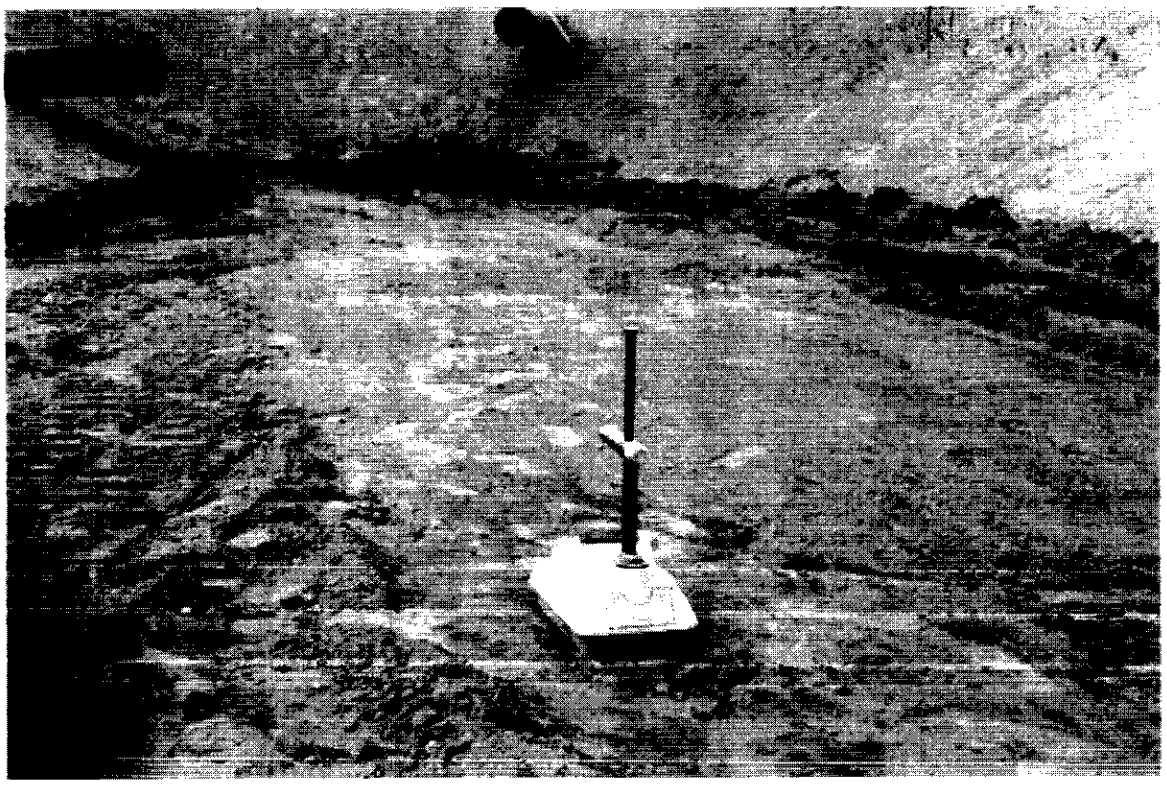
2. Removal of Solidified Sediments from impoundments.

Construction Photographs
Cedar Chemical Co.
Vicksburg, Mississippi

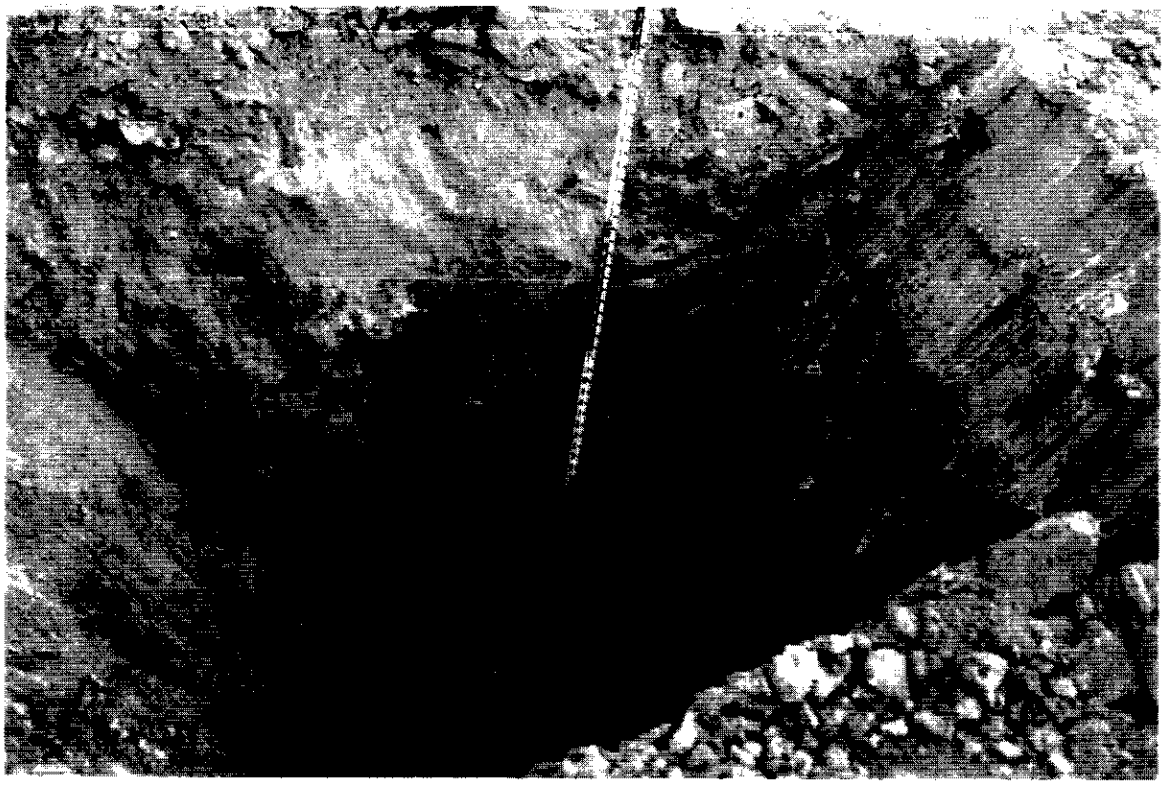
3. Stockpiled sediments in the SWCA and construction of impoundment dikes.

4. Construction of impoundment dikes.

Construction Photographs
Cedar Chemical Co.
Vicksburg, Mississippi



5. Density and moisture testing of impoundment foundations.



6. Test pits of solidified sediments.

Construction Photographs
Cedar Chemical Co.
Vicksburg, Mississippi

7. Excavating LD/RS trench in impoundments.

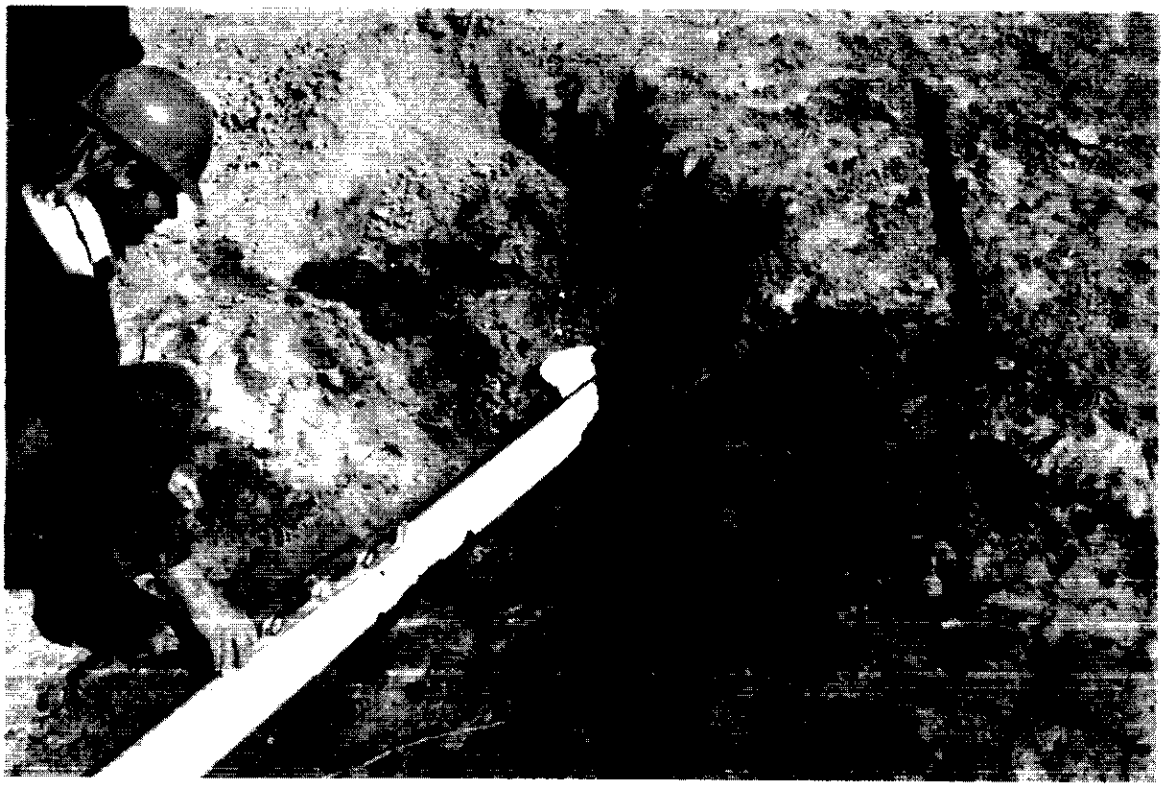
8. Placing SWCA cap lateral drainage layer gravel and piping.

Construction Photographs
Cedar Chemical Co.
Vicksburg, Mississippi

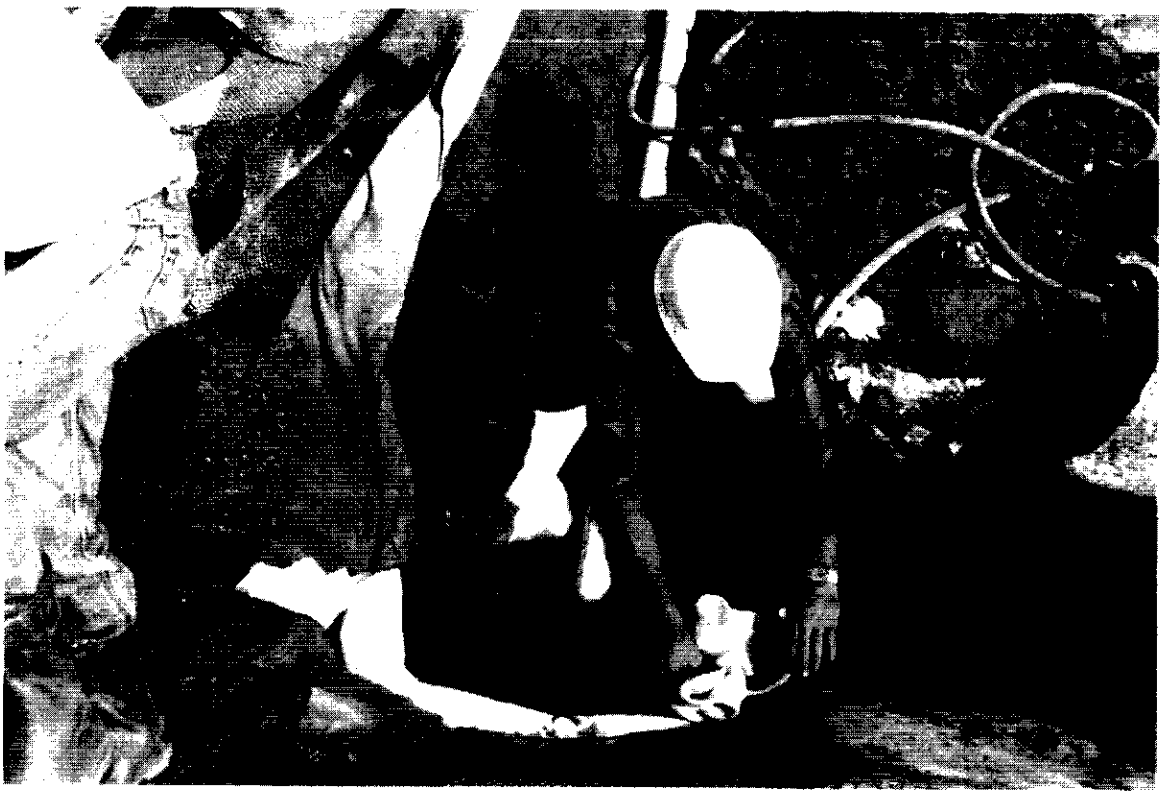
9. Placing equalization piping.

10. Cleaning SWCA cap tie-in area in preparation for welding.

Construction Photographs
Cedar Chemical Co.
Vicksburg, Mississippi

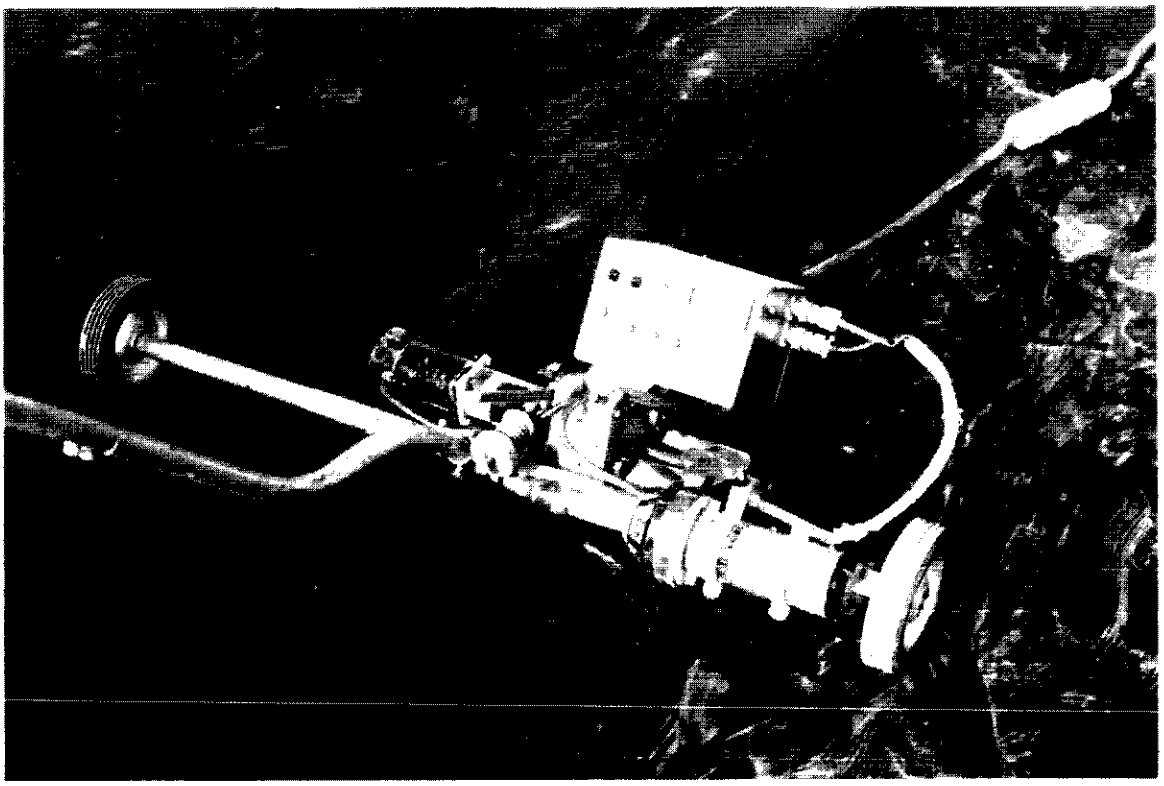


11. Installing the SWCA lateral drainage layer downchutes through the topsoil layer.

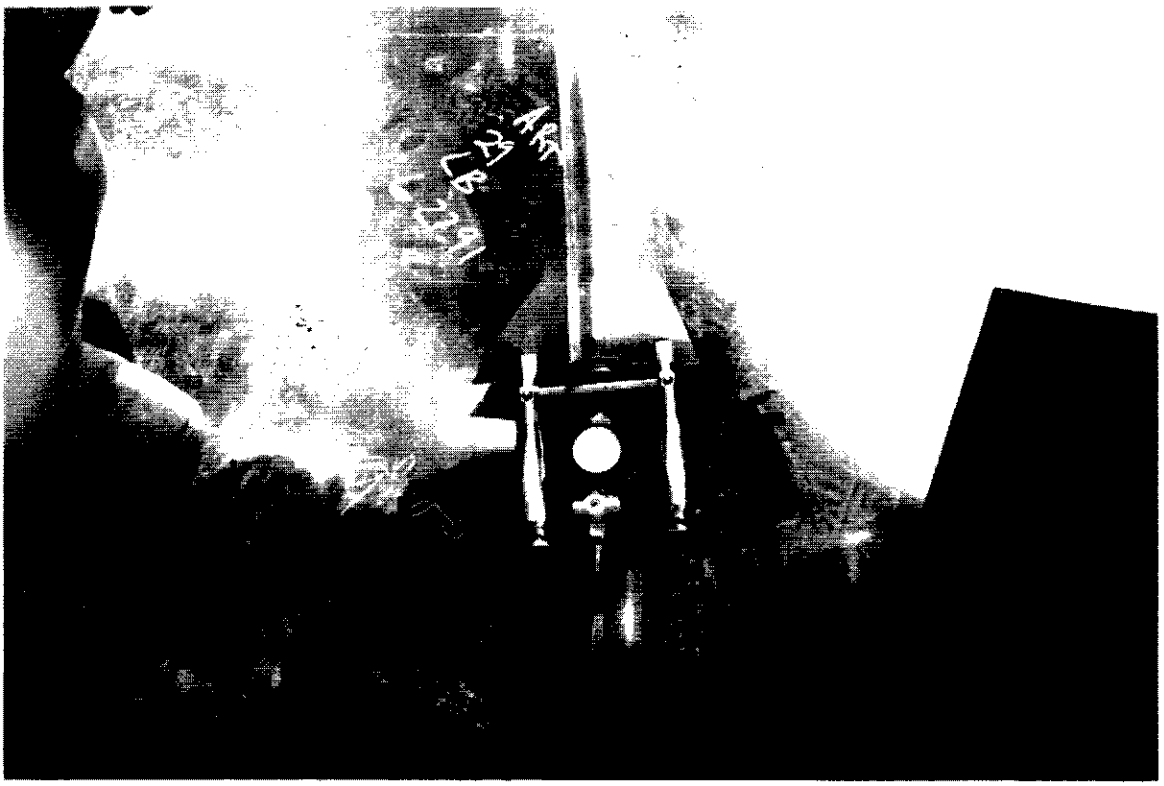


12. Constructing the groundwater removal piping in Impoundment A.

Construction Photographs
Cedar Chemical Co.
Vicksburg, Mississippi

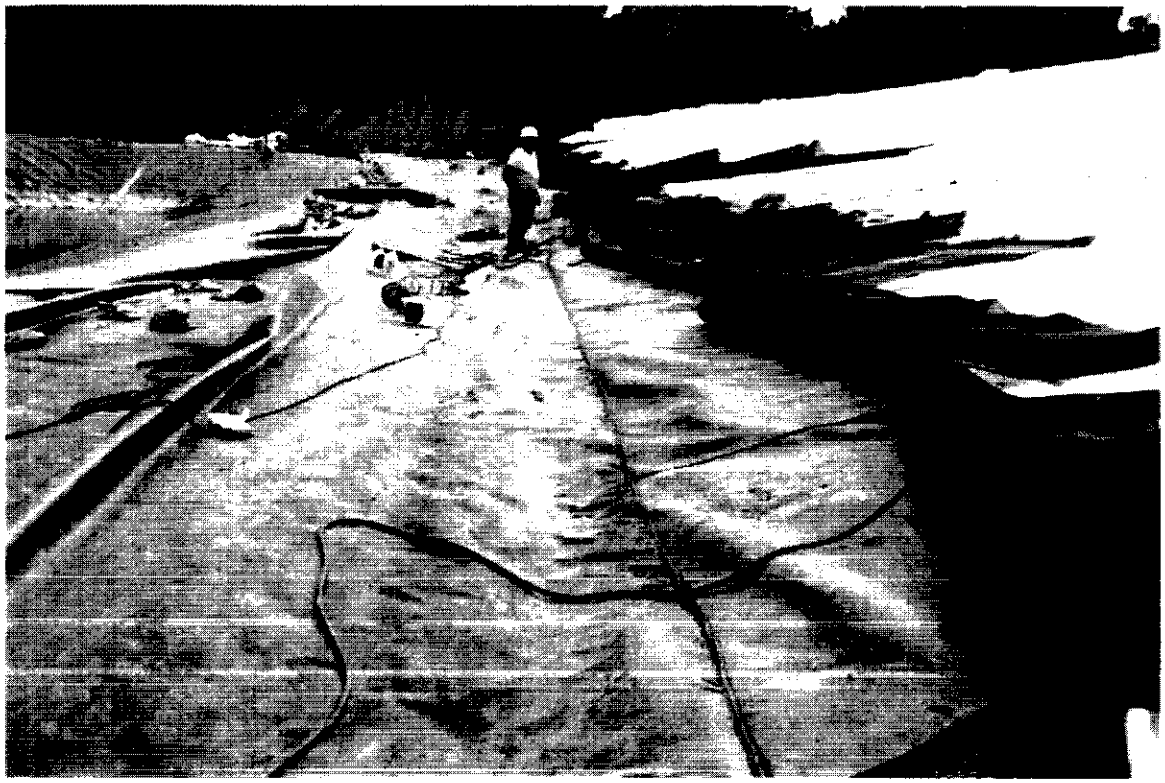


13. Welding liners with fusion welder.

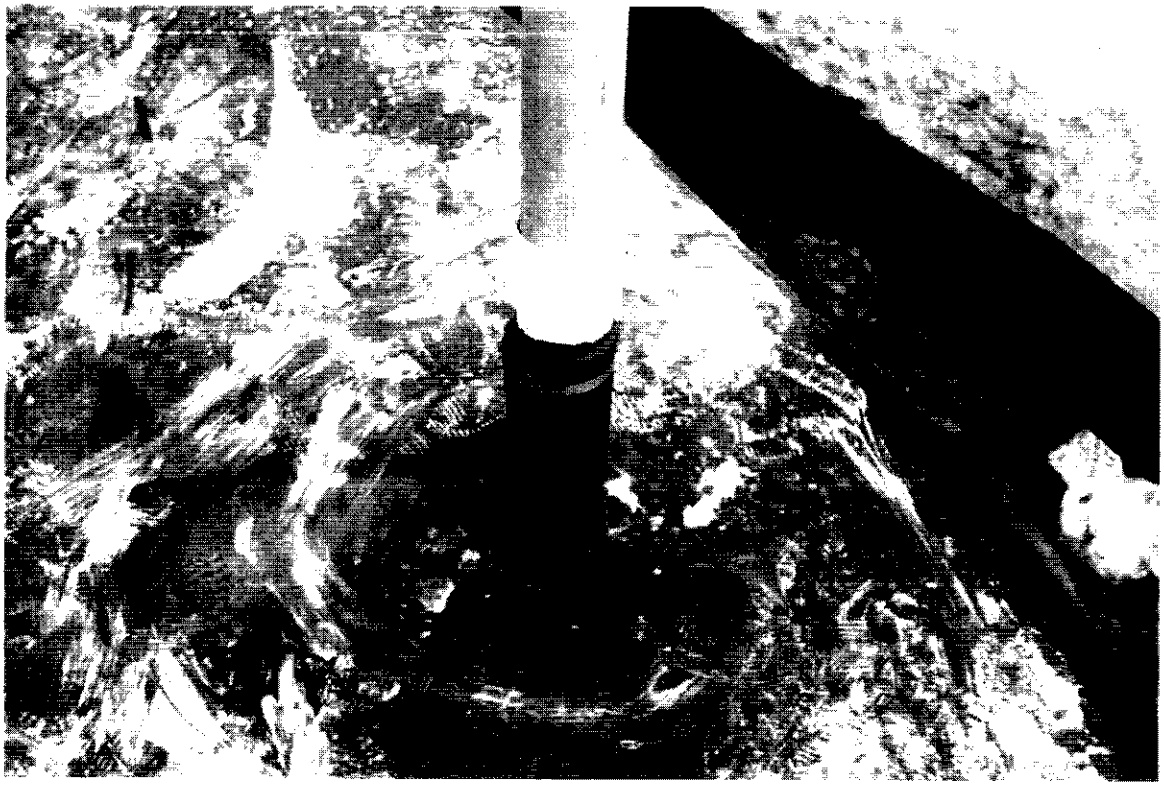


14. Air testing of the fusion welded seams.

Construction Photographs
Cedar Chemical Co.
Vicksburg, Mississippi



15. Welding the 30 mil liner to the SWCA cap liner.



16. Impoundment gas vent riser, installed.

Construction Photographs
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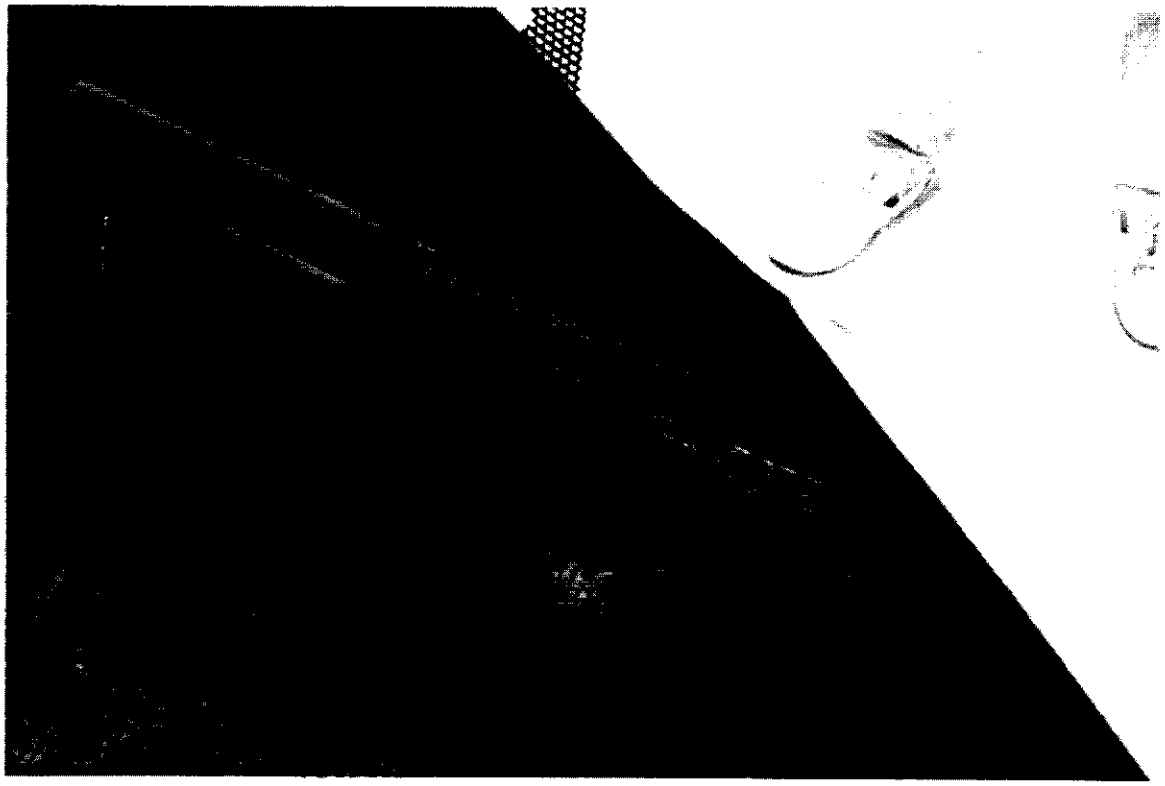
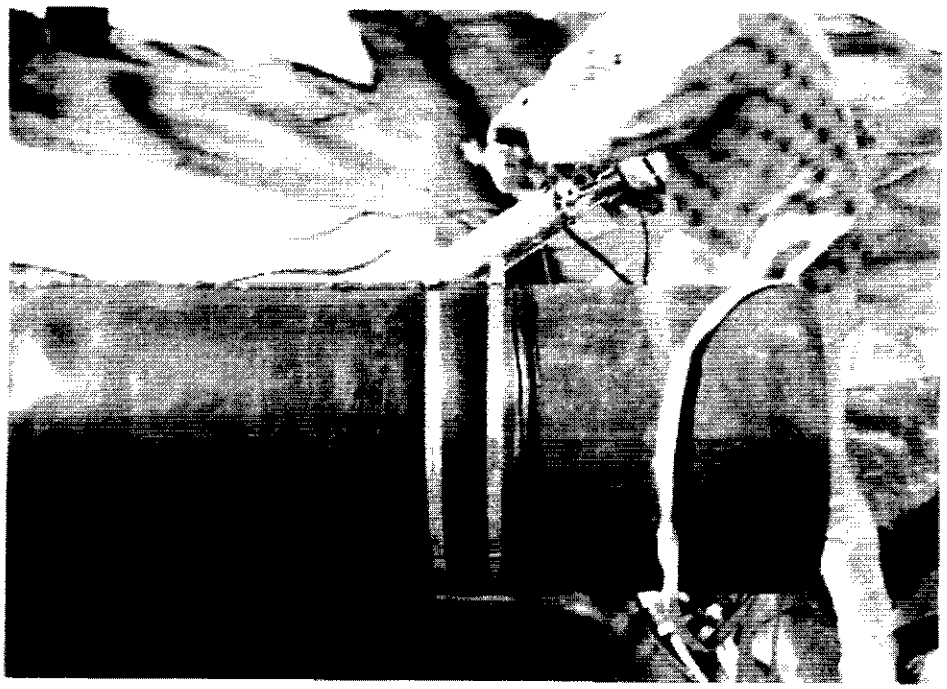
Vicksburg, Mississippi



17. The SWCA clean out pipes protruding through the cap liner.



18. Installing factory fabricated boots on the impoundment 18-inch piping.

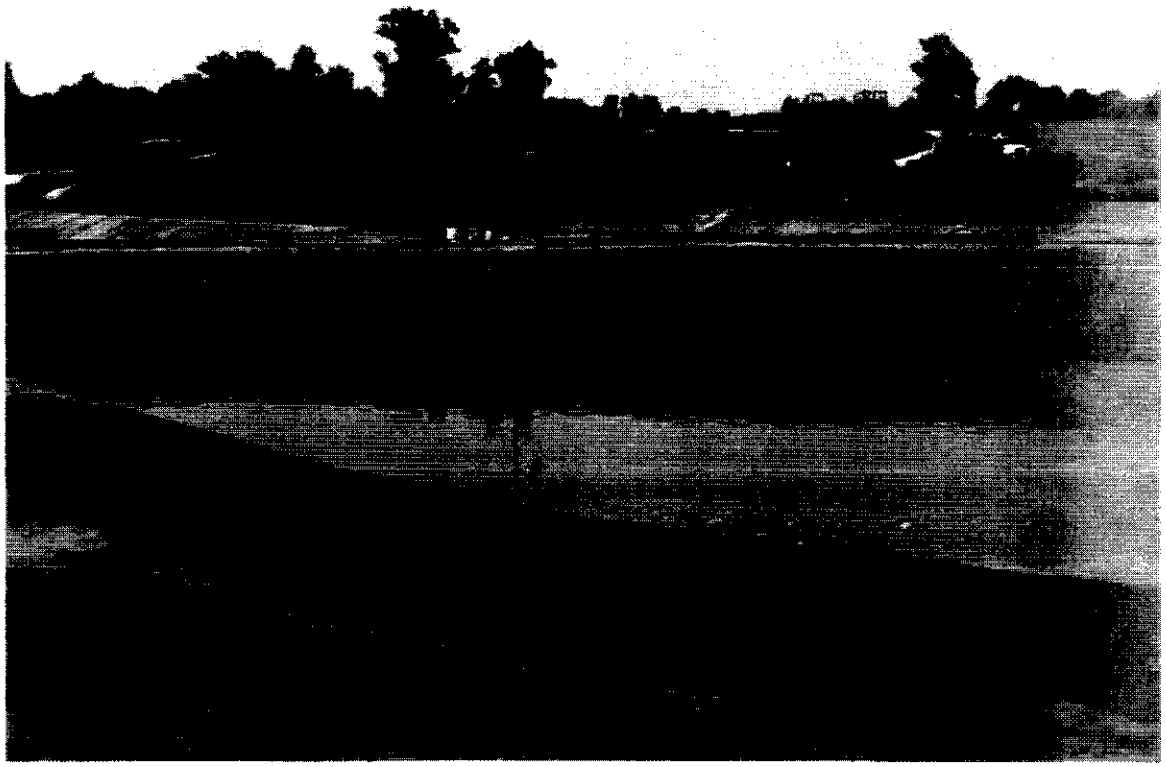
Construction Photographs
Cedar Chemical Co.
Vicksburg, Mississippi

19. Impoundment C liner installed.

20. Impoundment A liner installed.

Construction Photographs
Cedar Chemical Co.
Vicksburg, Mississippi

21. Installing the SWCA cap liner over the clay liner.



22. View of the closure site with the SWCA expansion constructed.

Construction Photographs
Cedar Chemical Co.
Vicksburg, Mississippi

23. Placing erosion protection material over the SWCA cap topsoil.

24. View of the SWCA cap constructed and vegetated.