



COOPERATIVE EXTENSION SERVICE

UNIVERSITY OF NEBRASKA EAST CAMPUS LINCOLN, NB 68503

August 2, 1972

Mr. Dale K. Henning
Associate Professor of Anthropology
103 Burnett Hall
City Campus

Dear Mr. Henning:

Your Organic Matter tests- 7 samples

<u>Sample Number</u>	<u>Laboratory Number</u>	<u>% Organic Matter</u>
I (1)	155	0.27
I (2)	156	0.30
I (3)	157	0.49
I (4)	158	0.50
I (5)	159	1.01
I (6)	160	0.30
I (7)	161	0.83

Yours truly,

Delno Knudsen
Extension Agronomist

DK:sl



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SOIL SAMPLE INFORMATION SHEET

UNIVERSITY OF NEBRASKA—LINCOLN, NEBRASKA 68503
PRESS HARD FOR LEGIBLE COPIES

JUL 31 1972

FOLLOW
SAMPLE
INSTRUC
ON BACK

NAME Val J. Henning EXTENSION COUNTY Val

SEND AN EXTRA COPY OF RESULTS TO:

R.F.D. 1 QUARTER NE SE NW SW

TOWN 2410 ZIP 68503

DATE SAMPLED 7/10/72 SECTION 1 TOWNSHIP 2410 RANGE 2411

PHONE 2410 - 2411

SAMPLE and SOIL INFORMATION

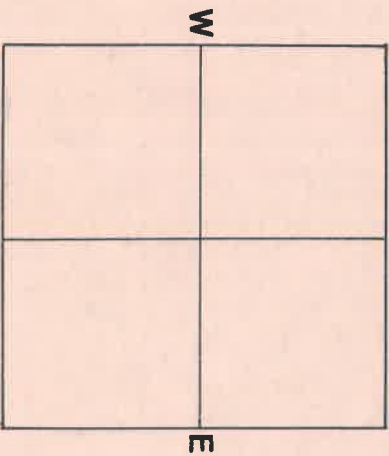
LAB USE ONLY LABORATORY NUMBER	Sample Number	Sample Depth, Inches	Test Desired	Acres in Field	Check if Irrigated	TOPOGRAPHY			SOIL TYPE (See Map on Back)	LAST CROP GROWN	Yield Bu. or Ton	Fertilizer Applied Last Year					Last Limed	Next Crop to Be Grown
						Sloping Upland	Level Upland	Bottom Land				N	P ₂ O ₅	K ₂ O	Zn	Year	T/A	
EXAMPLE	1	0-8"	B	10	✓		✓		Hastings	CORN	120 bu	150 #	30 #	0	0	1969	2T	CORN
EXAMPLE	1-A	8-24"	F	"	"		"		"	"	"	"	"	"	"	"	"	"
	155-G	I ①																
	156-G	I ②																
	157-G	I ③																
	158-G	I ④																
	159-G	I ⑤																
	160-G	I ⑥																
	161-G	I ⑦																

CROP and FERTILIZER INFORMATION

TESTS and FEES PER SAMPLE

A	\$2.00	Phosphorus, Potassium, pH, Lime Requirement
B	\$3.00	A + Residual Nitrate (samples taken at 0-8 & 8-24" depth (see back))
C	\$6.00	A + Residual Nitrate & Zinc
D	\$5.00	A + Zinc
E	\$3.00	Zinc only
F	\$1.00	Residual Nitrate only (ea. sample)
G	\$1.00	Organic matter

SKETCH FIELDS SAMPLED



DESCRIBE SPECIAL PROBLEMS:

Typical drainage problems, etc.

MAKE CHECK PAYABLE TO:

SOIL TESTING LABORATORY

124 Keim Hall
University of Nebraska
Lincoln, Nebraska 68503

MAIL TO:

FILL IN AS COMPLETELY AS YOU CAN

DO NOT DETACH. RETURN ALL 4 PARTS. THE ORIGINAL WILL BE RETURNED TO YOU.

Sec. 1 NORTH WALL PROFILE

(Top)

NW CORNER

NE CORNER

Grid Line

Soil Samples

- [illegible]

* CHARCOAL PRESENT
TAKEN IN SHADE
Soil moist
Munsell Color
CHART

University of Nebraska - EXCAVATION FORM
Department of Anthropology

Page _____

Site No. _____ Reservoir _____

Provenience: Horizontal _____

Vertical: S.D. _____ D.D. _____

Definition: _____

Description: _____

Soil: _____

Samples _____

Dimensions (features):

Diameter _____ Vertical depth/thickness _____

Max. Length _____ Direction _____

Max. Width _____ Direction _____

Screened: Yes _____ No _____ Mesh size: _____

Special Screening and sampling (describe): _____

Associations:

Features _____

Artifacts _____

Non-artifactual debris _____

Remarks: _____

Field Photo Nos: B&W _____ Color _____ Neg. Nos. _____

Recorded by: _____ Date _____

Site No. _____

Provenience: _____

Feature: _____

Date: _____

Soil Samples From NORTH WALL JQ.1 (I.)
See SQ1 North Wall Profile Sheet

PH Readings

10 grams of soil
And 10 ml of H₂O

amples were
stirred

SAMPLE #	REFERENCE	Reading	REFERENCE
1	7.8	7.8	7.9
2	7.9	8.0	
3		8.0	
4		8.1	
5		8.0	
6		7.8	
7		7.9	

PHOSPHORUS

SAMPLE #	ABS 70 dilution	ABS 700 dilution	PPM 70	PPM 700
1	.314		66.6	
1	.328		68.9	
2	.388	.114		127.7
3	.390	.121		135.5
4	.392	.169		189.3 (?)
5	.391	.115		128.8
5	.390		81.9	
6	.300		63.0	
7	.318		66.8	

STANDARD

CURVE FACTOR

.1	.072	1.4
.2	.130	1.5
.3	.174	1.7
.4	.206	1.9
.5	.238	2.1
.6	.261	2.3
.7	.282	2.5
.8	.296	2.7
.9	.310	2.9
1.0	.324	3.1

**Determination of Acid-Soluble
Phosphorus in Soil**

(Bray No. 1)

Reagents

A. Bray No. 1 extractant

1. Dissolve 19.92 grams NH_4F in 200ml distilled water. Filter.
2. Add 36.4ml concentrated HCl to 16 liters distilled water.
3. Combine solutions and make up to 18 liters.

B. Ammonium Molybdate stock solution

1. Dissolve 28.6 grams $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24} \cdot 4\text{H}_2\text{O}$ in 200ml distilled water. Heat to 60°C .
2. Dilute 300ml of H_2SO_4 to 600ml with distilled water.
3. Combine the solutions slowly with stirring. Bring to 1000ml total volume.
4. Dilute 50ml to 1000ml each day. Use 7ml/sample.

C. Stannous chloride solution

1. Dissolve 15.0 grams of $\text{SnCl}_2 \cdot 2\text{H}_2\text{O}$ in 25ml concentrated HCl .
2. Store in a glass stoppered bottle or a 50ml Erlenmeyer flask suitably stoppered, away from light. Prepare fresh every 4 weeks.

D. Dilute stannous chloride solution

1. Add 1ml concentrated SnCl_2 solution to 500ml distilled water.
2. Make fresh every 3-4 hours. Use 2ml/sample.

E. Standard phosphorus solutions

1. Dissolve 4.3936 grams KH_2PO_4 in 1000ml of Bray No. 1 extraction solution. Makes 1000ppm solution.
2. Standards should contain toluene (3 drops) and be kept in the refrigerator.

Procedure:

A. Preparation of Standard curve.

1. Place 1ml of 1000ppm stock solution in a 100ml volumetric flask and bring to volume with distilled H_2O . This makes a 10ppm solution.
2. Place 10ppm solution in a 50ml buret (graduated in tenths of a ml). Add to each test tube as follows: 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, and 1.0ml from the buret. (A 150mm x 19mm test tube provides sufficient volume.)
3. Using the same or a similar buret filled with distilled H_2O , add respectively 0.9, 0.8, 0.7, 0.6, 0.5, 0.4, 0.3, 0.2, 0.1 and 0.0ml to each test tube. This will result in standards of 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10ppm.
4. Add 7ml of $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24}$, shake, add 2ml of SnCl_2 and shake.

5. Read on the colorimeter at 660 millimicrons within 5 to 15 minutes after preparation.

B. Determinations

1. 3.0 grams of soil (which has been passed through a 2mm screen) are weighted into a 125ml Erlenmeyer flask.*
2. 21ml of Bray No. 1 extracting solution is added.
3. Shake on mechanical shaker for 5 minutes.
4. Soil solutions is filtered through No. 42 filter paper into storage bottles.
5. 1.0ml of filtrate is added to 150 x 19mm test tube.
6. Add 7ml ammonium molybdate solution. Shake.
7. Add 2ml stannous chloride solution. Shake.
8. Read Absorbance at 660 millimicrons after 10 minutes against a distilled water blank.

C. Calculations

1. Dilution: 21ml Bray Solution/3 grams soil = 7

$$10\text{ml}/1\text{ml filtrate} = 10$$

$$\text{TOTAL Dilution} = 7 \times 10 = 70$$

2. Absorbance x curve factor x dilution = ppm "P"

$$0/0 P = \text{ppm "P"} \times 10^{-4}$$

3. Curve factor = $\frac{\text{ppm}}{A}$

D. Precautions and Suggestions

1. All soils should be passed through a 2mm screen.
2. A control soil having a known concentration of "P" may be used if desired.
3. Use clean glassware.
4. Concentrated stannous chloride should be made up every 4 weeks.
5. Dilute stannous chloride must be mixed immediately with the solution after being added to it.
6. Determination should be carried out in a room at an air temperature of less than 80°F.

*Duplicates should be run at least every tenth sample. Duplication should be within $\pm 5\%$.

1. PH
2. PHOSPHOROUS
3. Organic matter in relation to others.

4. → CHANGE #3 X
5. R-SHEETS X

<u>PH Readings</u>		10 grams soil with 10 ml distilled water	
		<u>STIRRED</u>	<u>200</u>
1	7.7 7.8	7.8	7.9
2	7.7	8.0	
3		8.0	
4		8.1	
5		8.0	
6		7.8	
7		7.9	

- TELL Mike Per diems must be in - by Friday
- ALSO - Vehicles mileage as of 31st for both vehicles must be turned in by Friday.

Read Organic carbon - Can then organic matter
 \$1.00 per sample.
 Start tomorrow (Aug 1st)

soil testing
 MARK HOOKER - Soil Lab.

CALL PR.

SAMPLE	70 Dilution		700 Dilution		7000 Dilution	
	Abs		TPA	70	700	Dilution
1	.317			66.2		
1	.328			68.9		
2	.388	.114			127.7	
3	.390	.121	OK		135.5	
✓	.392	.169	to read		189.3	
5	.391	.115			128.8	
5	.390		81.9x			
6	.300		63			
7	.318		66.8			

Too high
to read

$$PPM = \text{Dilution} \times \text{Curve Factor} \times \text{Abs}$$

100

STANDARD

C.F

.1	.072	1.4
.2	.130	1.5
.3	.174	1.7
.4	.206	1.9
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.6	.261	2.3
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1.0	.324	3.1

Soil Samples From North Wall SQ. 1

See SQ. 1 North Wall Profile Sheet

PH READING

	<u>SAMPLE #</u>	<u>REFERENCE</u>	<u>Reading</u>	<u>REFERENCE</u>
	1	7.8	7.8	7.9
10 grams of soil	2	7.9	8.0	
& 10 mL of H ₂ O	3		8.0	
	4		8.1	
Samples were stirred	5		8.0	
	6		7.8	
	7		7.9	

PHOSPHOROUS

	<u>SAMPLE #</u>	<u>ABS</u> <u>TO dilution</u>	<u>ABS</u> <u>TO dilution</u>	<u>PPM</u> <u>TO</u>	<u>PPM</u> <u>TO</u>
	1	.314		66.6	
	1	.308		68.9	
	2	.388	.114		127.7
	3	.390	.121		135.5
	4	.392	.169		189.3 (?)
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