Core Description

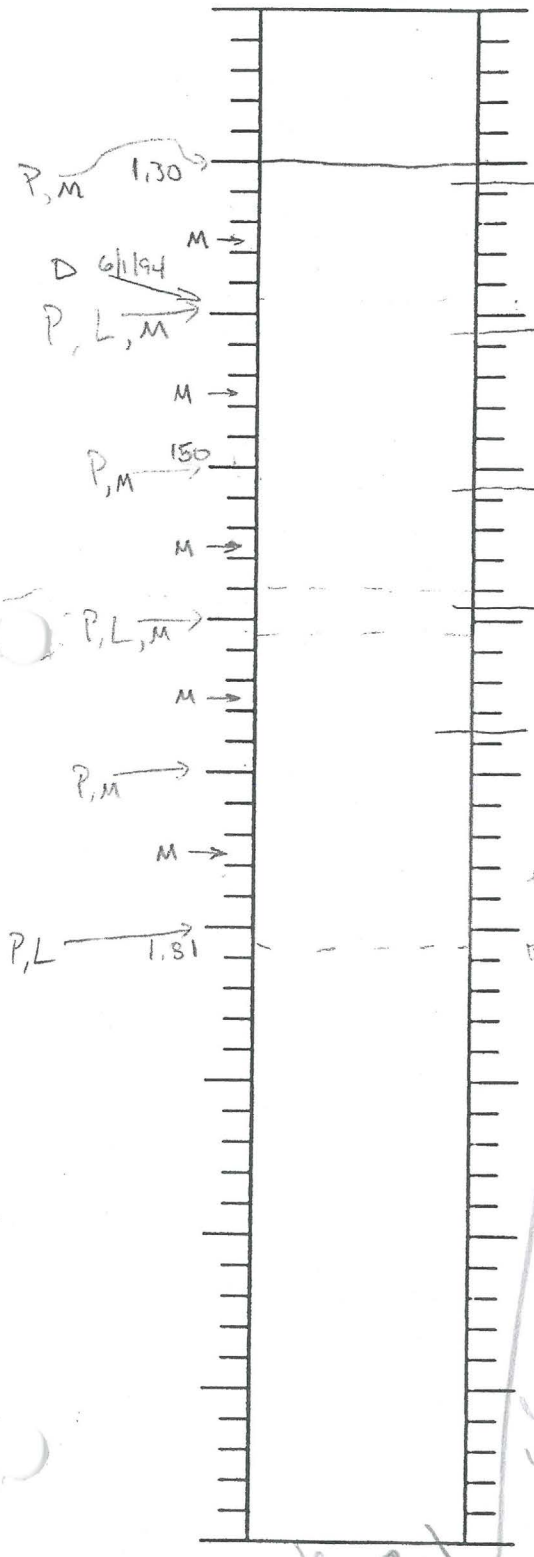
Site: Carp Lake, Washington Core: 90 A # 1

Depth: 1.30-1.85 Date: Aug 30, 1991 Analyst: M. Worona

Depth below [water / mud] surface

Total recovery: 51cm

Lithology:



Brownish Black 5YR 2/1 and Grayish Brown 5YR 3/2 mixed Brasenia Peat and silty clay

Grayish Brown 5YR 3/2 silty clay mixed with Decomposed peat.

Brownish Black 5YR 2/1 decomposed peat.

Grayish Brown 5YR 3/2 silty clay mixed with Peat.

Brownish Black 5YR 2/1 Peat mixed w/ clay.

Towards the bottom there is an increase in the amount of Grayish Brown 5YR 3/2 silty clay

Photographed 9/18/91

I have sampled the rest of this core segment for charcoal It no longer EXISTS

VR 1/03

Sample size:

1cc for pollen at 1.80, 1.70, 1.60, 1.50, 1.40, 1.30

1cc for LOI at 1.80, 1.60, 1.40

1 cc for diatom at 1.40

Field notes:

1 1.30-1.85 55

Brasenia Peat partly decomposed (5YR 2

9-18 Slightly Clayey 5Y 3/2

labeled:

90A-1 WH?

4.55-4.65m

wrapped only with foil!

photos 87-88

-contains chunk of silty tephra + some sandy tephra

Sample 90A-1B-1

~1cm thick

F=photo P=pollen R=radiocarbon

T=tephra L=loss-on-ignition

M= [illegible]

Core Description VR

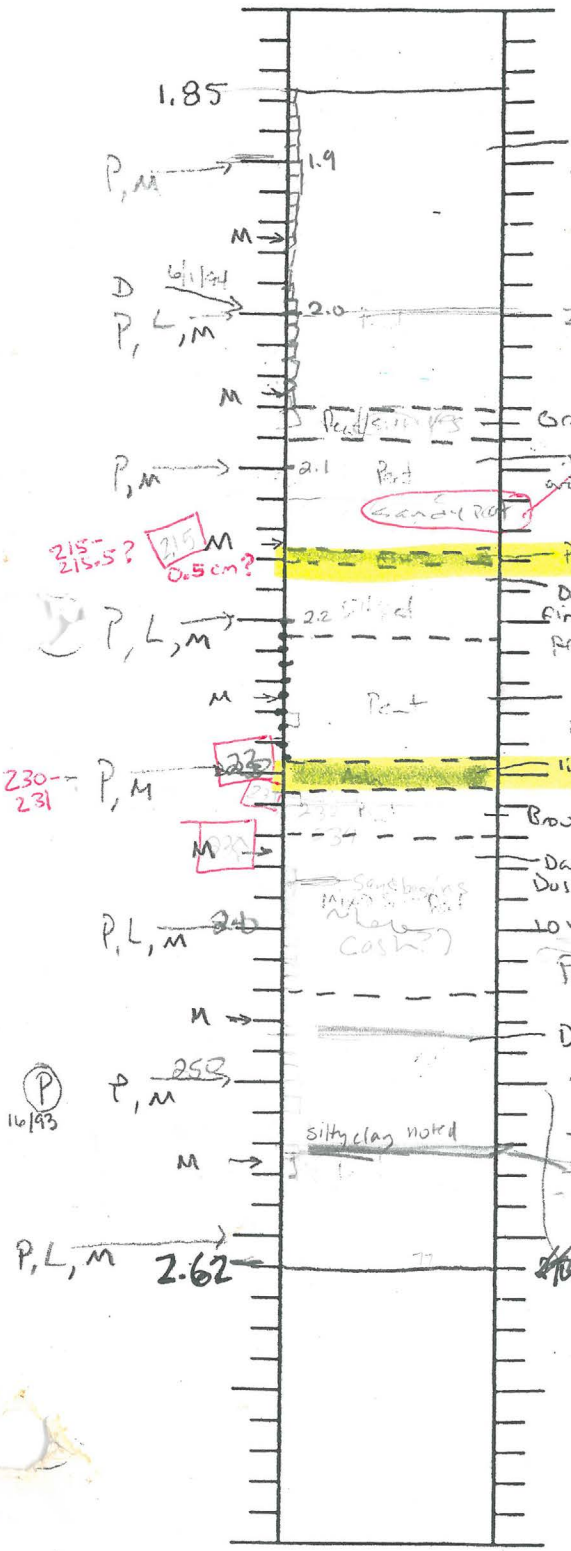
Site: Carp Lake, Washington Core: 90A #2

Depth: 1.85-2.70 Date: Aug 30, 1991 Analyst: M. Waroran

Depth below [water] / [mud] surface

Total recovery: 78 cm

Lithology:



Brownish Black 5YR 2/1 Decomposed Peat

2.00 2.8ka

another tephra?

Sample 90A-2-1

photos 136-139

Grayish Brown 5YR 3/2 Peat mixed w/ Silt

Mixed Brownish Black (5YR 2/1) and Grayish Brown (5YR 3/2) Peat

Sample 90A-2-2 only a trace remains not 2mm?

Pale Yellowish Brown 10YR 6/2 silt, fine sand, ash * Removed 90A #2 9.23.92 MW

Dark yellowish Brown (10YR 4/2) fine silty clay, mixed with abundant Peaty Organic material

photographed 10/25/91

Brownish Black to Grayish brown Peat with a silt, clay matrix

light colored (salt & pepper) coarse sandy ash * Removed 90A #2 9.23.92 MW 1cm ← 1cm?

Sample 90A-2-3

Brownish Black 5YR 2/1 decomposed peat.

Dark Yellowish Brown (10YR 4/2) to Dusky Yellowish Brown 10YR 4/2 mixed silt and Peat

Dusky brown 5YR 2/2 Peat mixed w/ fine silty clay.

sampled for phytoliths 11/12/96

Sample size: 1cc for pollen at 2.60, 2.50, 2.40, 2.30, 2.20, 2.10, 2.00, 1.90

1cc for LOI at 2.60, 2.40, 2.20, 2.00

1cc for diatom at 2.00

Field notes:

2 1.85-2.70 83 0-33 decomposed peat

33-41 clayey silt, ash at 35-36,

41-54 decomposed peat, pumiceous ash 49

54-64 clayey silt, 64-74 peat,

74-77 clayey peat

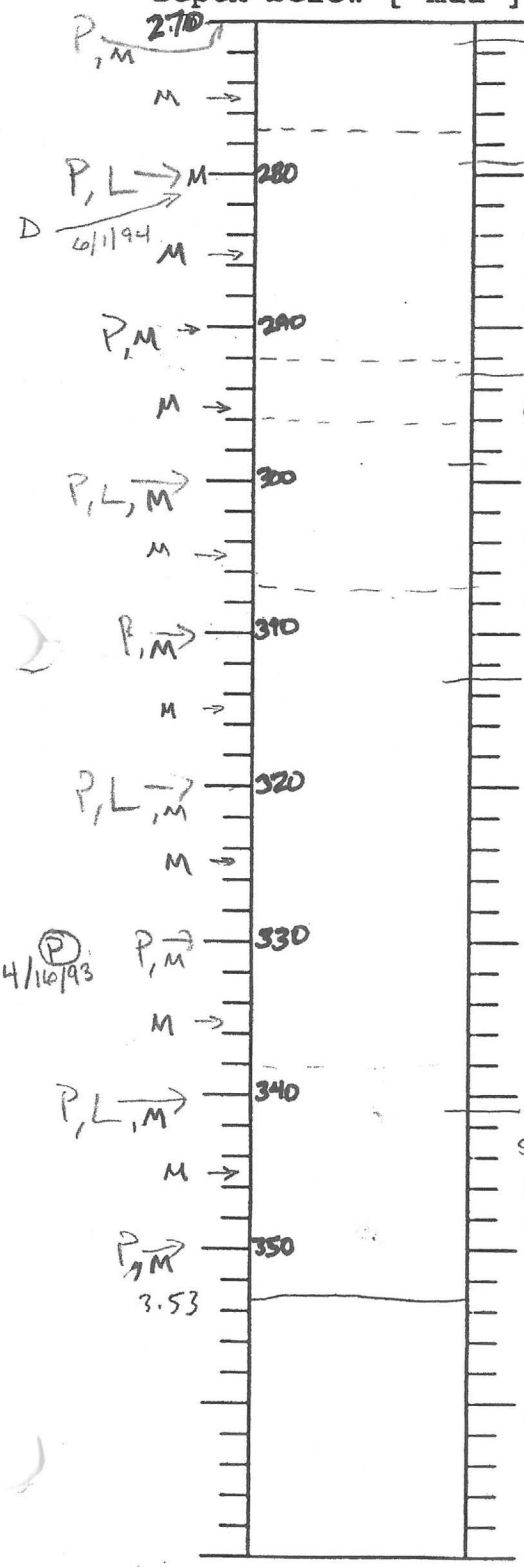
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= Magnetic Properties

Core Description

Site: Carp Lake, Washington Core: 90A #3

Depth: 2.70-3.55 Date: Aug 29, 1991 Analyst: M. Worona

Depth below [water] [mud] surface



CRUMBLED R 1/02

Dusky Brown 5YR 2/2 peat. Almost Entirely plant material.

Dusky Yellowish Brown 10YR 2/2 fine silty clay. This unit is almost all clay w/ only a small fraction of silt and an abundance of plant litter

Dusky Brown 5YR 2/2 peat. Almost entirely plant debris

Dusky Yellowish Brown 10YR 2/2 mixed peat and fine silty clay. Concentration of each is variable, as there are layers of total silt/clay or peat

Brownish Black 5YR 2/1 Peat - very wet and decomposed.

Brownish Black 5YR 2/1 clayey peat w/ abundant root and plant debris.

Total recovery: 83 cm

Lithology:

2002 / ~80 cm due to mild dessication & the top ~2cm are crumbled

14-July-2012 photo 173

photographed 10/25/91

Sample size:

1 cc for pollen at 2.70, 2.80, 2.90, 3.00, 3.10, 3.20, 3.30, 3.40,

1 cc for LOI at 2.80, 3.00, 3.20, 3.40

1 cc for diatom at 3.00

Field notes:

3 2.70-3.55 3 0-7 peat

7-21 clayey silt

21-25 peat, 25-37 clayey silt

37-68 peat, 68-83 clayey s

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

M = magnetic properties

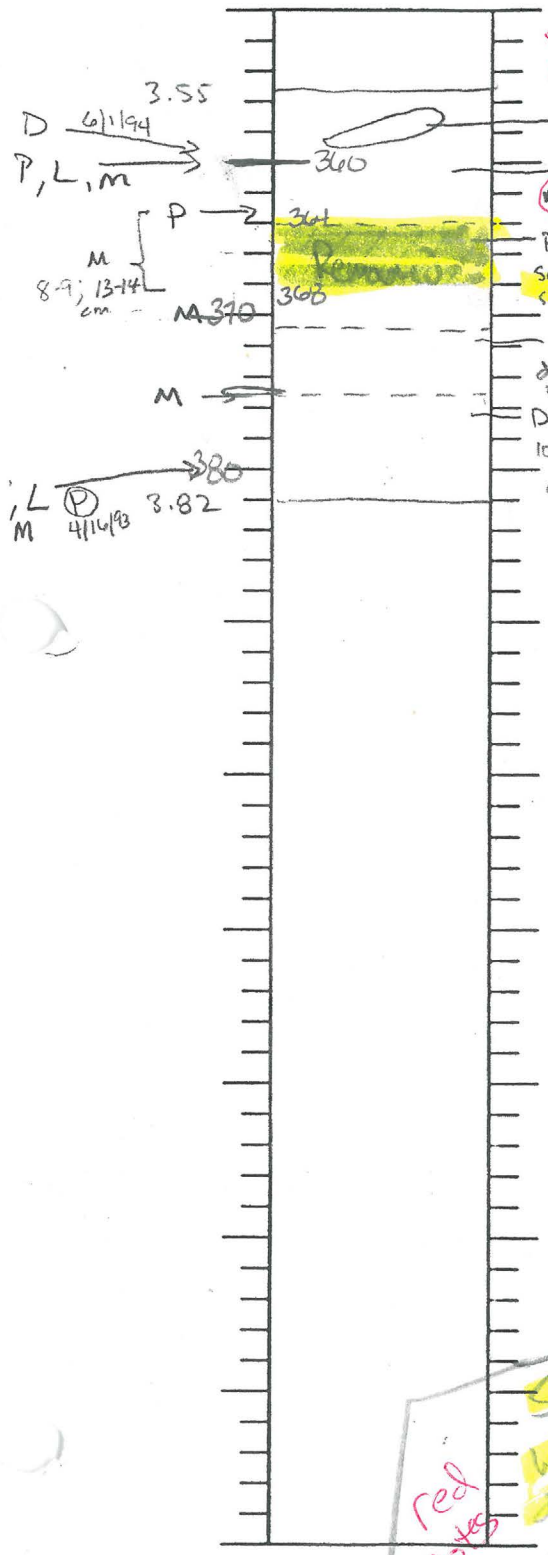
Opened piece labeled 90A-4, but depth labeled as 9.95-10.05m!

Core Description

Site: Carp Lake, Washington Core: 90A #4

Depth: 3.55-4.33 Date: Aug 29, 1991 Analyst: M. Waroma

Depth below [water] / [mud] surface



Sample 90A-4-1

top 2cm sandy tephra mixed in peat

Chunk of wood

mixed peat and Ash

3.5 to 4cm thick

Pinkish gray 5YR 8/1 fine sand/silty Ash. with numerous scattered root fibers.

Brownish Black 5YR 2/1 decomposed peat. very wet.

Dusky Yellowish Brown 10YR 2/2. Small amount of plant material.

Total recovery: 27cm

Lithology:

From the lowest section

Sample 90A-4-2

65% Silica

<10% Sand

65% Silt

25% biogenic (Diatoms, chrysophyte spicules)

2.5% Clay

35% organic Carbon

<5% Sand Size

30% silt Size (mostly charcoal)

65% Clay Size

Removed 9-23-92 RAD 90A#4

no tephra in remaining core photographed 10/8/91

wrong 90A-4

(except slight scuffs probably not in place)

10/94 - Sampled: 3.70, 3.72, 3.74, 3.76, 3.78, 3.82 -LG ICC

Sample size:

1cc for pollen at 3.80, 3.63, 3.60

1cc for LOI at 3.80, 3.60

1cc for diatom at 3.60

13-July-2012 photo 85

Field notes:

4 3.55-4.33 28 organic Peat

Mazama

Second 90A-4 with correct depth range 14-July-2012

red notes

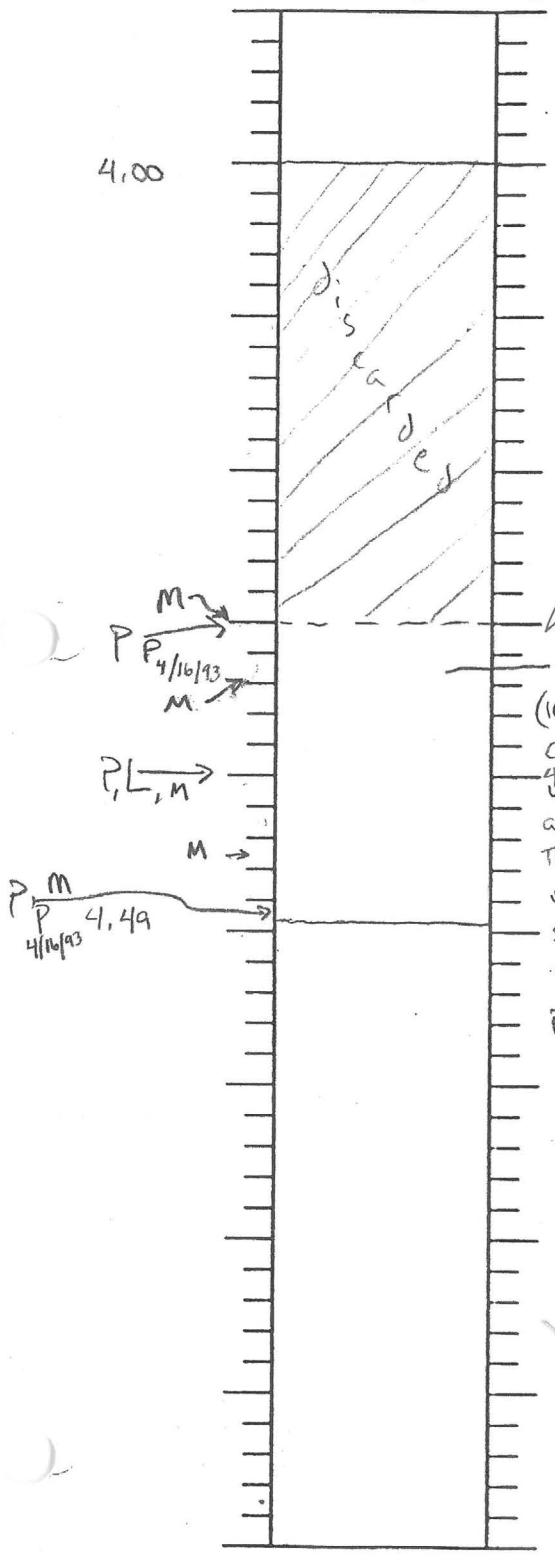
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M = magnetic properties

Core Description

Site: Carp Lake, Washington Core: 90A #5

Depth: 4.00-4.51 Date: Aug 29, 1991 Analyst: M. Worona

Depth below [water] / [mud] surface



Total recovery: 19.5 cm

Lithology:

65% Silica
<10% sand size
45% silt
15% biogenic (opicoles, diatoms
45% clay

35% Organic Carbon
<5% sand size
40% silt size (no pollen recognize
55% clay size

photographed 10/24/91

10/94 - Sampled: 4.31-4.38 (every 1 cm
4.41-4.48 (every 1 cm) - LG 1 cc

Sample size:

1 cc for pollen at 4.49, 4.40, 4.30

1 cc for LOI at 4.40

13-July-2012
photo 86

Field notes:

S 4.00-4.51 51 0-30 garbage (discarded at site)
30-51 silty clay soil 5 YR 2/1

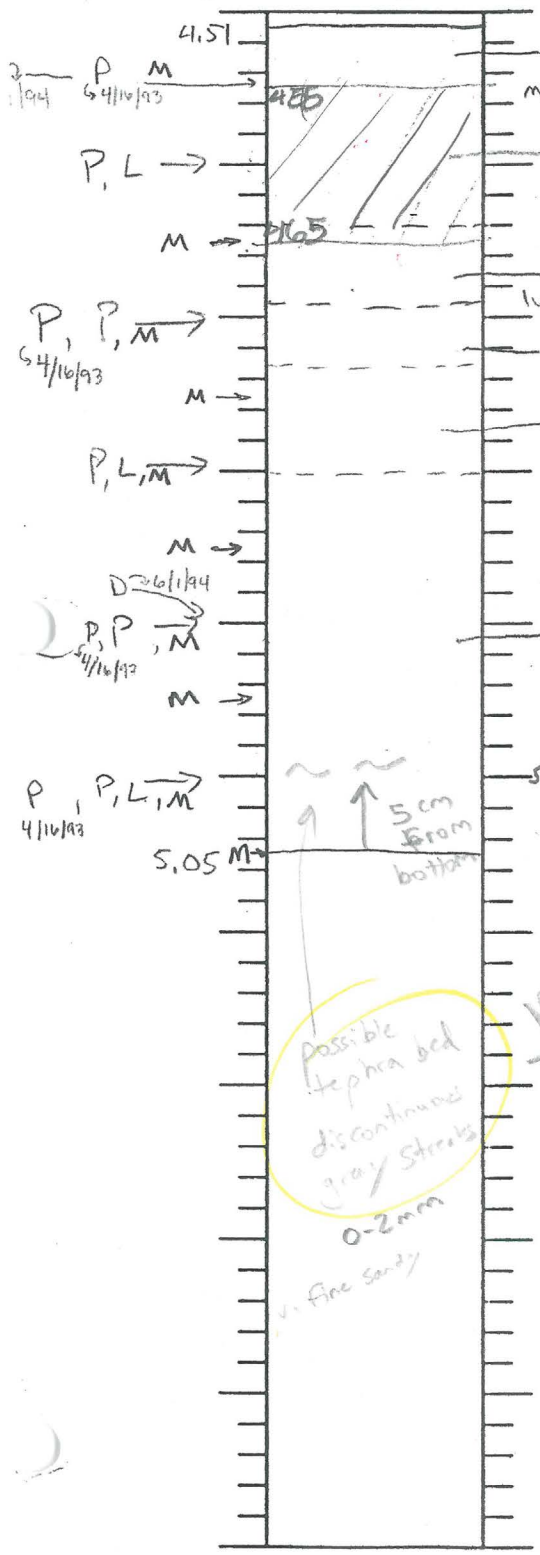
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

Site: Carp Lake, Washington Core: 90 A #6

Depth: 4.51 - 5.36 m Date: Aug 28, 1991 Analyst: M. Worona

Depth below [water] / [mud] surface



Dark Gray (N3) med silty clay

Removed for 14C 10.9.92 MW — 10cm

Grayish Brown (5YR 3/2) lumpy, silt nodules

Dark Gray (N3) med silty clay

Grayish Brown (5YR 3/2) lumpy, silt nodules. Difficult to cut through and causes the unit to crumble. The unit is also very wet.

Grayish Brown (5YR 3/2) silty clay this unit is similar to the one above it, but was easier to cut.

Total recovery: 54 cm — have 46 cm

Lithology:

80 % Silica
<10 % Sand
40 % Silt
<50% biogenic
50% clay

total 56

20% Organic carbon
<5% Sand size
10% Silt size (No identifiable pollen)
85% Clay size

*photographed 9/19/91

10/94 Sampled: 4.52, 4.54, 4.66, 4.68, 4.7
4.74, 4.76, 4.78, 4.80, 4.82, 4.84, 4.86, 4.8
4.92, 4.94, 4.96, 4.98, 5.02, 5.04 - 1.6 cc

Sample size:

1cc for pollen at 5.00, 4.90, 4.80, 4.70, 4.60

1cc for LOI at 5.00, 4.80, 4.60

1cc for Diatom at 4.55, 4.90

13-July-2012

really poor condition / was poorly wrapped

photos 132-135

Field notes:

6 4.51 - 5.36 56 silty clay soil

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

M= magnetic properties

CORE LOG

CORE ID 90A carp Lake

SECTION 7

Lat.

Long.

Water Depth ✓

	Color	contact: sharp	contact: grad.	contact: mottled	biogenous mat: foram	biogenous mat: calc. Nanno	biogenous mat: pter.	biogenous mat: rad.	biogenous mat: diatom	biogenous mat: spicules	biogenous mat: plant frag.	biogenous mat: mol. Shell	grain size: gravel	grain size: sand	grain size: silt	grain size: clay	structure: lamin	structure: grad. bed	structure: X bed	structure: mottles	structure: homogen	REMARKS
0																						
19cm																						
29 cm																						

Date Open & Desc. 12-July-2012

Interval Depth 5.32-5.82m

brown silt/clay

— — —

gray v. fine sand + silt

dry

photo #

Fossils: X-Present C-Common B-Barren A-Abundant R-Rare

graded bed (turbidite)

ss-smear slide

CORE LOG

CORE ID: Carplake 90A

SECTION: 8, 9

Lat.

Long.

Water Depth

	Color	contact			biogenous mat								grain size				structure					REMARKS
		sharp	grad.	mottled	foram	calc. Nanno	pter.	rad.	diatom	spicules	plant frag.	mol. Shell	gravel	sand	silt	clay	lamin	grad. bed	X bed	mottles	homogen	
0																						Date Open & Desc. 14-July-2012
																						Interval Depth 5.82-6.12m
																						#8
																						dark silt/clay
																						photo 150
0																						6.12-6.42m #9
																						dark silt/clay
																						photo 149

Fossils: X-Present C-Common B-Barren
A-Abundant R-Rare

graded bed (turbidite)

ss-smear slide

CORE LOG

CORE ID: Carp Lake 90A

SECTION: 10, 11

Lat.

Long.

Water Depth

	Color	contact: sharp	contact: grad.	contact: mottled	biogenous mat: foram	biogenous mat: calc. Nanno	biogenous mat: pter.	biogenous mat: rad.	biogenous mat: diatom	biogenous mat: spicules	biogenous mat: plant frag.	biogenous mat: mol. Shell	grain size: gravel	grain size: sand	grain size: silt	grain size: clay	structure: lamin	structure: grad. bed	structure: X bed	structure: mottles	structure: homogen	REMARKS
0	brown silt/clay																					
4.5 – 8.5 –	lighter color with spots of sandy tephra																					
	brown silt/clay																					
27																						

Date Open & Desc. 14-July-2012

Interval Depth

6.72-7.02m

dark brown silt/clay throughout

#11

photo 145

6.42-6.72m

#10

Sample 90A-10-1

photos 416-418

Fossils: X-Present C-Common B-Barren A-Abundant R-Rare

graded bed (turbidite)

ss-smear slide

CORE LOG

CORE ID: Carp Lake 90A

SECTION: #12 (7.02–7.52 m)

Lat.

Long.

Water Depth

	Color	contact			biogenous mat								grain size				structure					REMARKS
		sharp	grad.	mottled	foram	calc. Nanno	pter.	rad.	diatom	spicules	plant frag.	mol. Shell	gravel	sand	silt	clay	lamin	grad. bed	X bed	mottles	homogen	

Date Open & Desc. 13-July-2012

Interval Depth

7.02–7.52 m

all silty clay to clayey silt (more clay toward top)

photo # 131

long

Fossils: X-Present C-Common B-Barren A-Abundant R-Rare

graded bed (turbidite)

ss-smear slide

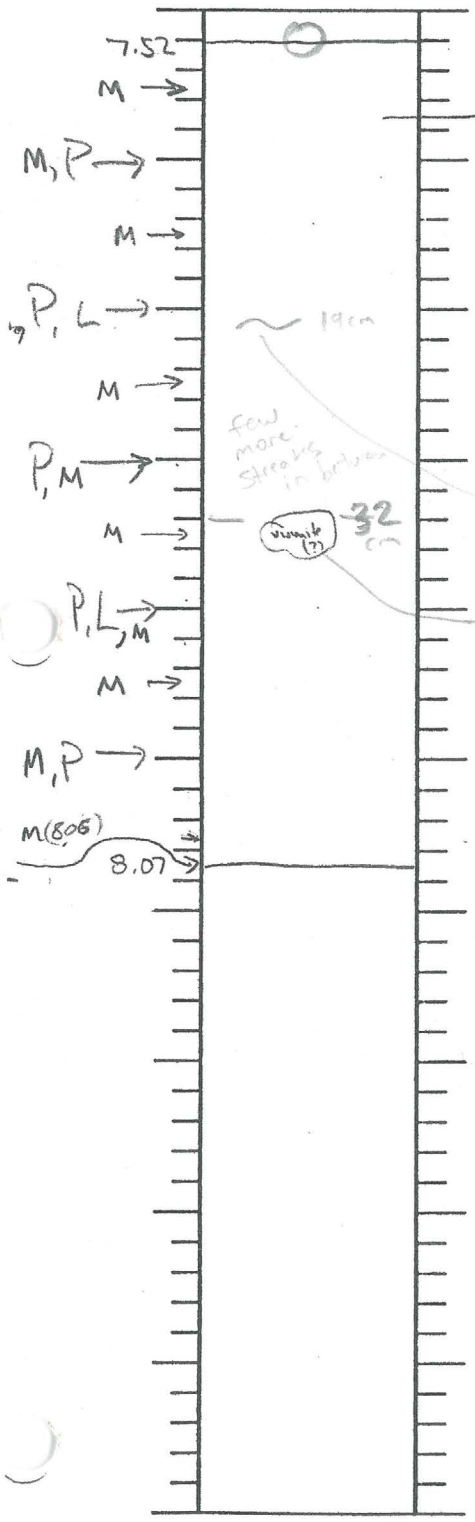
#7-12 omitted

Core Description

Site: Carp Lake, Washington Core: 90A #13

Depth: 7.52 - 8.14 m Date: Aug 26, 1991 Analyst: M. Worona

Depth below [water] / [mud] surface



Total recovery: 55 cm

Lithology:

Dark yellowish brown (10 YR 4/2) wet silty clay, with traces of vivianite scattered through out. A large chunk (>1cm) of vivianite (?) is located at ≈7.85m. otherwise, the core appears to be homogeneous.

45% Silica
<45% Sand
30% Silt
20% biogenic (chrysophytes & Diato
65% Clay

55% Organic Carbon
<45% Sand
20% Silt size (pine & artemisia pollen ide
75% Clay size

Streak of ~~white tephra~~ — discontinuous bed? — Sample 90A-13-1

Chunk of ~~white tephra near~~ center of core — Sample 90A-13-2

photographed 10/25/91

Sample size:

1cc for pollen at 8.07, 8.00, 7.90, 7.80, 7.70, 7.60

1cc for LOI at 8.07, 7.90, 7.70

Field notes:

13 7.52 - 8.14 56 silty clay

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

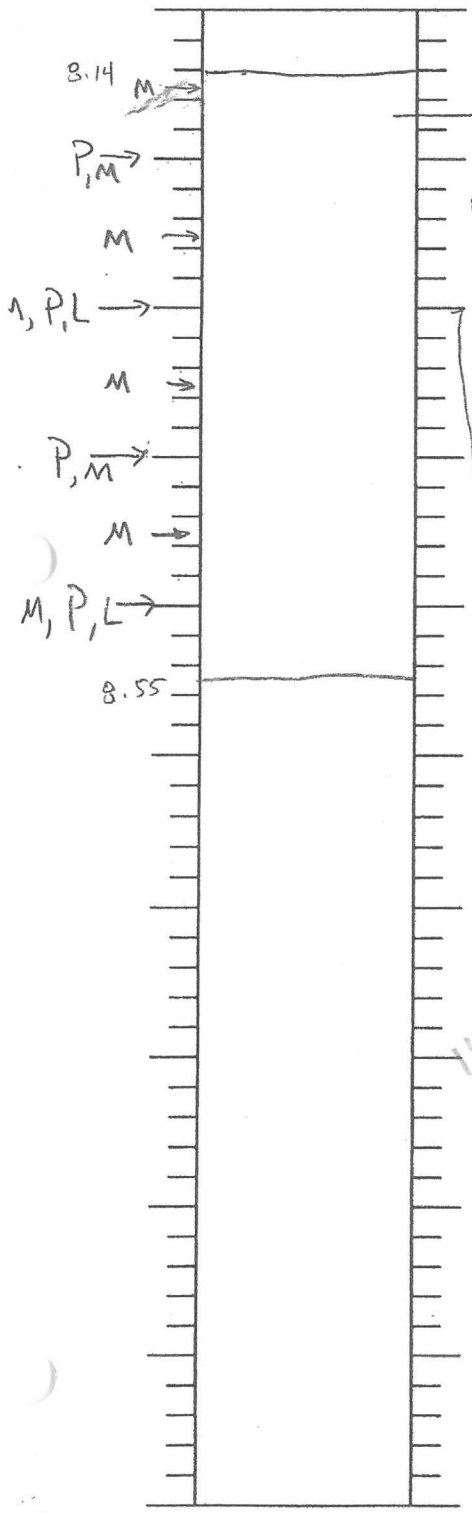
M= Magnetic properties

Core Description

Site: Carp Lake, Washington Core: 90A # 14

Depth: 8.14-8.65 Date: Aug 26, 1991 Analyst: M. Worona

Depth below [water] [mud] surface



Total recovery: 41 cm

Lithology:

This unit is darker than dark yellowish brown (10 YR 4/2). It is mostly fine silty clay and appears to be quite homogeneous. However, the upper 12cm seems unusually soft, and may not be original (in place) material.

55% Silica
<5% Sand
35% Silt
20% Biogenic Diatoms & chrysophytes
60% Clay

45% organic Carbon
<5% Sand
15% Silt
(Pine & unidentified pollen)
80% Clay

photographed 10/8/91 A+B

8.30- sampled for phytoliths 10/12/96

14-July-2012
poor condition
- middle jumbled
photo 144

Sample size:

No LOI or pollen at 8.60m

1cc for Pollen at 8.50, 8.40, 8.30, 8.20
1cc for LOI at 8.50, 8.30

Field notes:

14 8.14-8.65 42 silty clay

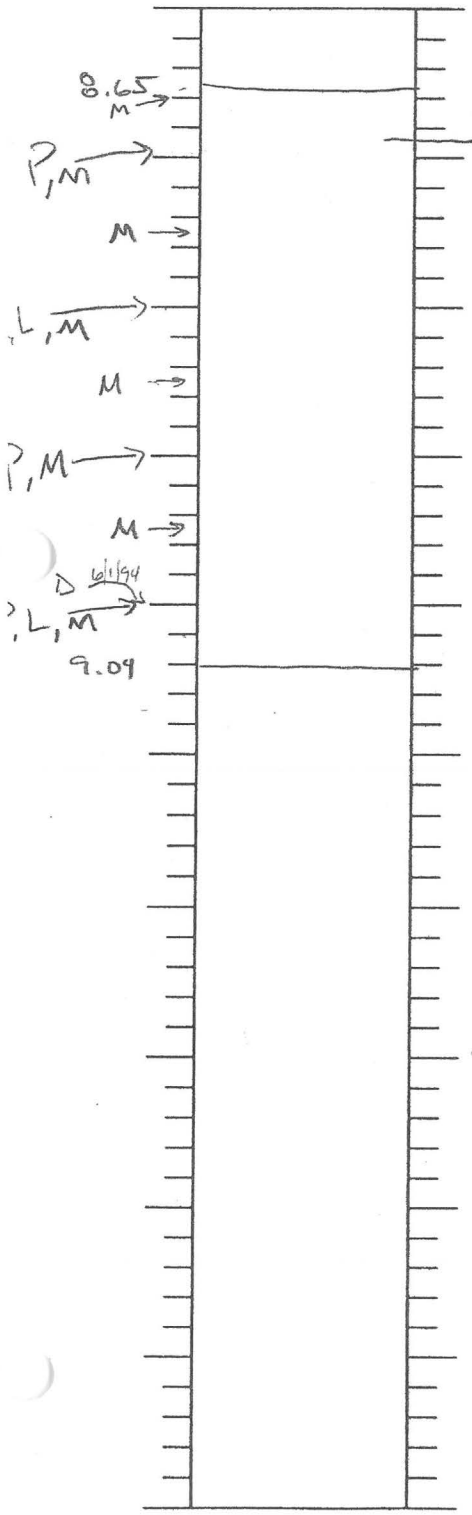
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake Washington Core: 90A #15

Depth: 8.65 - 9.05 m Date: Aug 26, 1991 Analyst: M. Worora

Depth below [water] / [mud] surface



Total recovery: 39 cm

Lithology:

Dark Yellowish Brown 10 YR 4/2 fine silty clay. This unit is very dense and quite homogenous. The only readily apparent change in the consistency of the core is a slight increase in med. grained sand towards the bottom

50% silica
<5% sand
20% silt
20% Biogenic Chrysophytes, Diatom
75% clay

50% organic Carbon
<5% sand
15% silt (some unidentified pollen)
80% clay

photographed 10/8/91 A+B

14-July-2012
photo 172

Sample size:

1cc for pollen at 9.00, 8.90, 8.80, 8.70

1cc for LOI at 9.00, 8.80

1cc for diatoms at 9.00

Field notes:

15 8.65-9.05 40 silty clay, v. dense

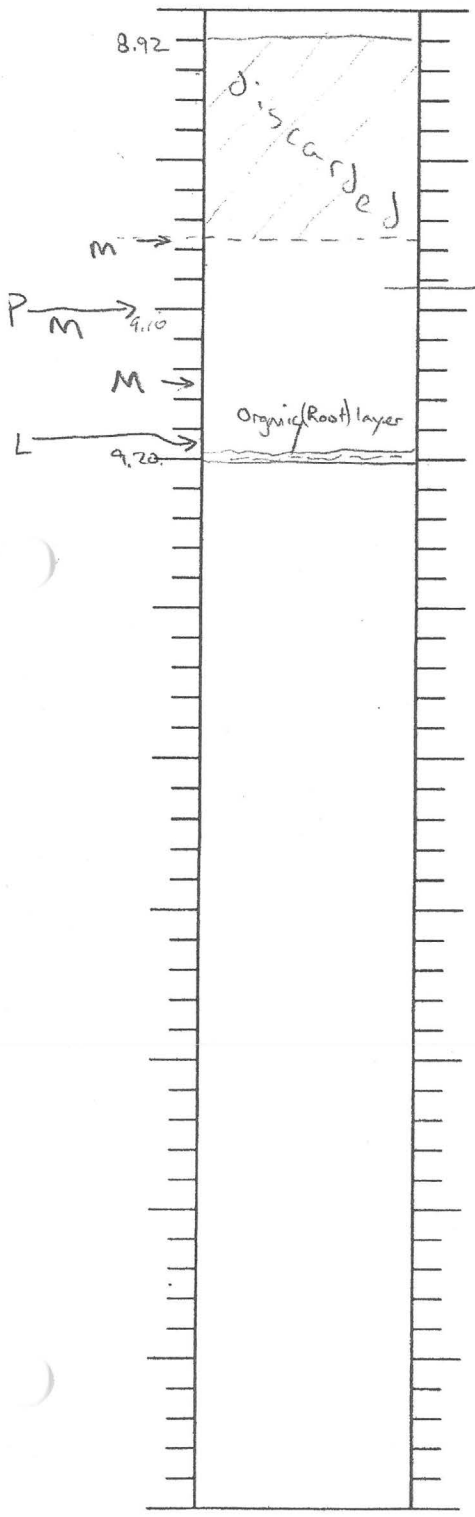
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90A #16

Depth: 8.92-9.22 Date: Aug 23, 1991 Analyst: M. Waronka

Depth below [water] [mud] surface



olive gray (5Y 4/1) fine silty clay. This unit is very homogeneous except for the bottom 1cm which is Grayish Brown (5YR 3/2) and contains abundant organic (root) matter. This bottom 1cm was avoided when sampling.

Total recovery: 15 cm

Lithology:

60% silica
<5% Sand
30% silt
20% biogenic (Chrysophytes, Diatoms Spicules)
65% Clay

40% Organic Carbon
<5% Sand Size
40% silt Size (Abundant fine and unidentifiable pollen)
55% Clay Size

photographed 10/8/91

Sample size:

1cc for pollen at 9.19 and 9.10

1cc for LOI at 9.19

Field notes:

16 8.92-9.22 15 silty clay, v. dense

0-13 discarded

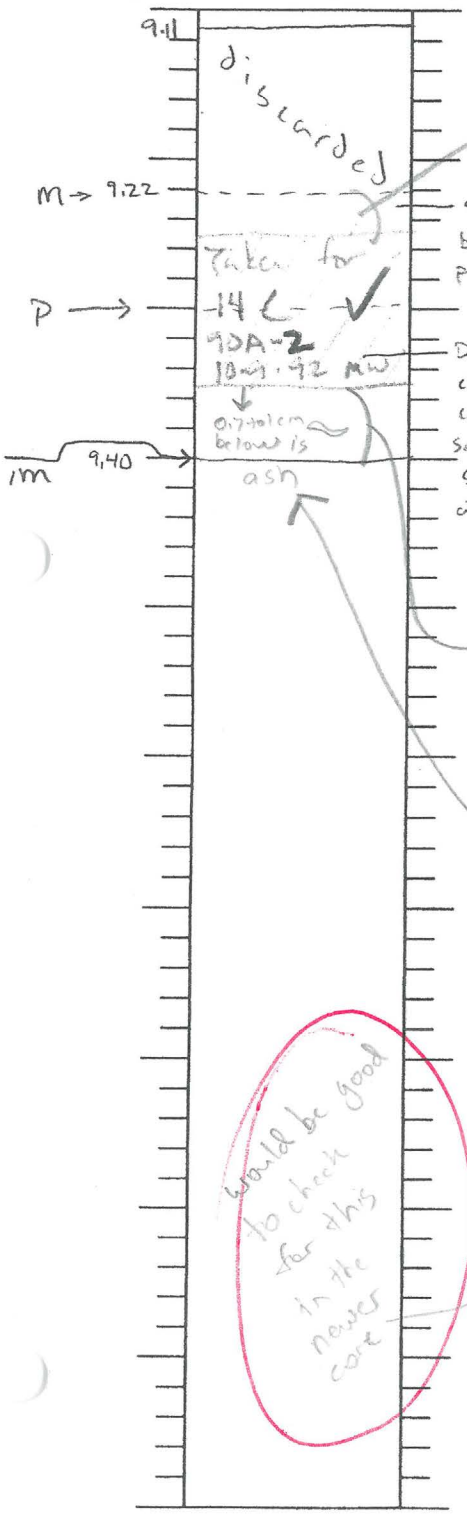
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90A #17

Depth: 9.11 - 9.41 m Date: Aug 23, 1991 Analyst: M. Wordova

Depth below [water / mud] surface



upper piece

Slightly darker than dark Yellowish brown (10 YR 4/2) silty clay. This portion of the unit contains little or no visible light colored sandy pumice.

Darker than dark Yellowish Brown 10 YR 4/2 clayey silt. This portion of the unit contains abundant visible light sand size pumice that is evenly scattered and apparently not concentrated at any level.

lower piece

possible discontinuous white ash ~~3.5 cm below~~ top of preserved portion

would be good to check for this in the newer core

Sample 90A-17-1

Total recovery: 18 cm

Lithology:

40% Silica
<10% Sand size
30% Silt size
25% biogenic (Chrysophytes, diatoms, spicules)
60% Clay size

60% organic carbon
<5% Sand size
15% Silt size
(Pollen includes pine, artemisia)
80% Clay size

photographed 10/8/91

13-July-2012
photos 79-83

Sample size:

1 cc for pollen at 9.40 and 9.30

1 cc for LOI at 9.40

Field notes:

17 9.11 - 9.41 18 0-4 Silty clay

4-18 clayey silt

** top 0-11 discarded

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

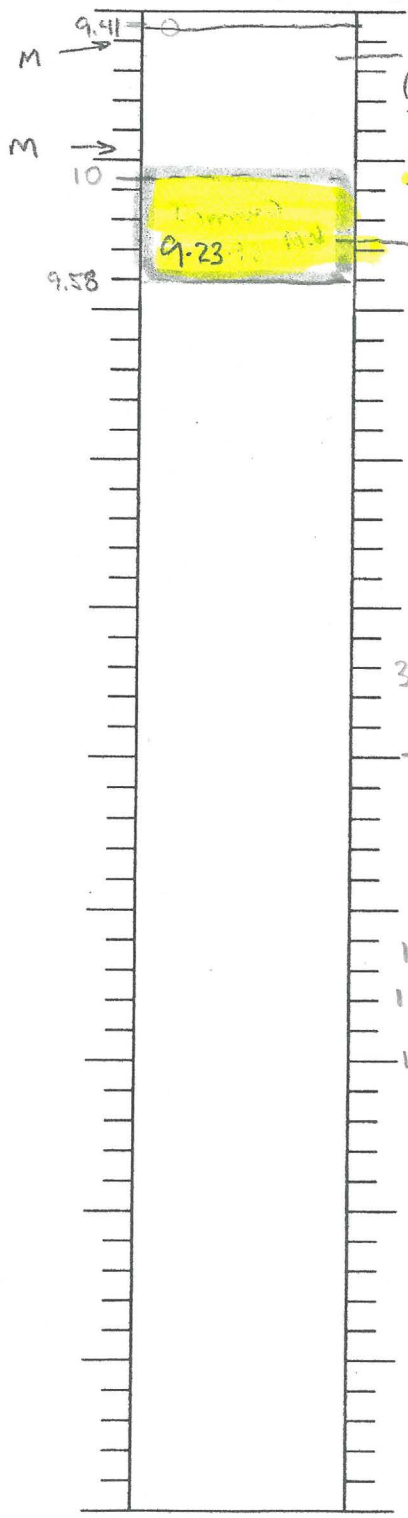
Site: Carplake, Washington Core: 90A # 18

Depth: 9.41 - 9.71 Date: Aug 23, 1991 Analyst: M. Waraa

Depth below [water] / [mud] surface

Total recovery: 17 cm

Lithology:



Dark Yellowish Brown (10YR 4/2) clayey silt. The amount of silt/sand sized ash increases towards the bottom.

light olive gray (5Y 6/1) silt/sandy pumiceous ash. The center of this portion is finer grained than the edges.

* 90A#18

13-July-2012 photos 122-125

Not Sampled

dark brown

3.5 cm

lighter

7 cm

sandy tephra] sample 90A-18-1 — redeposited?

sandy tephra + silt

10

5 fine tephra

17

previously removed?

Sample 90A-18-2

coarser part?

photographed 10/8/91

Sample size:

No Sample Taken

Field notes:

18 9.41-9.71 17 0-10 clayey silt

10-17 Ash

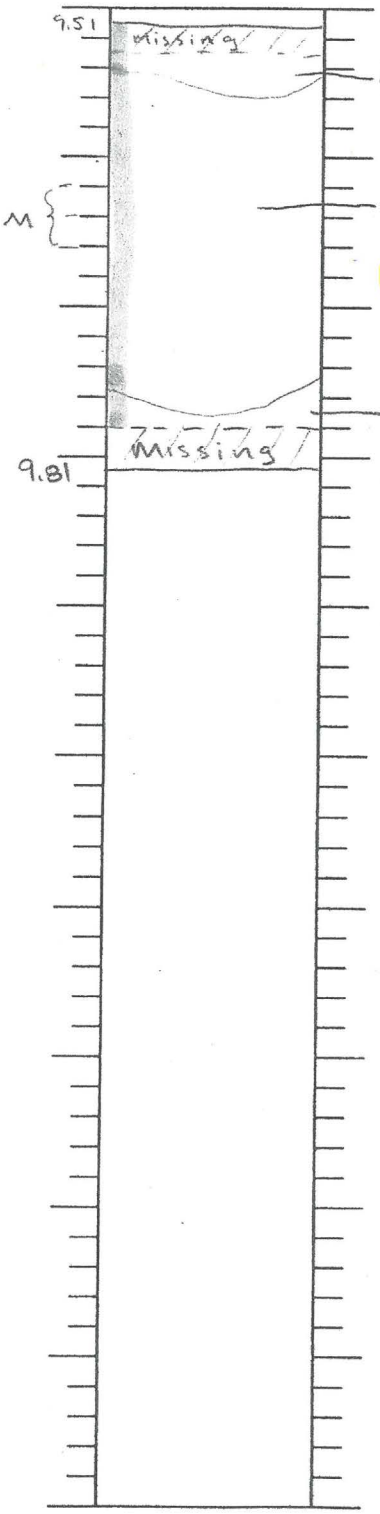
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90A # 19

Depth: 9.51 - 9.81 m Date: Aug 23, 1991 Analyst: M. Waldorf

Depth below [water] / [mud] surface



dark yellowish brown 10yr 4/2 Fine silty clay. This small amount of material may not be in place.

Light colored (white, light gray, clear, and some black grains) pumiceous ash

Dusky Brown 5YR 2/2 Peat, Highly organic w/ visible plant remains.

Total recovery: 24 cm

Lithology:

Sample 90A-19-1

Not Sampled

photographed 10/8/91

12-July-2012
photo

Sample size:

No Sample taken

Field notes:

19 9.51-9.81 26 0-2 missing
2-27 ash, pumiceous
27-30 missing

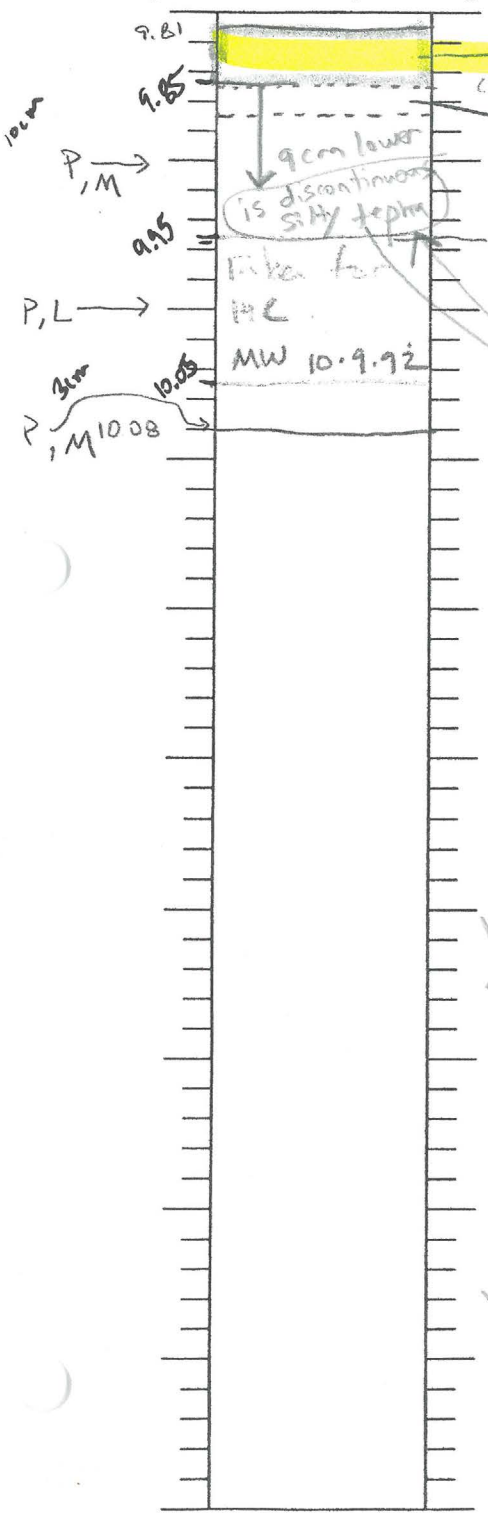
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description Sampled 4/02 VL

Site: Carp Lake, Washington Core: 90A #20

Depth: 9.81-10.11 m Date: Aug 22, 1991 Analyst: M. Worona

Depth below [water] / [mud] surface



Sample 90A-20-1

Ash (pumiceous)

Coarse Sand

Dusky Brown (5YR 2/2) highly organic/peaty layer

Sample 90A-20-2

pod-like body in center of core

Total recovery: 27 cm

Lithology:

65% silica
<5% sand size
35% silt size
35% biogenic (chrysophyte, Diatoms)
60% clay size

35% organic
<5% sand size
40% silt size
(Pollen including Pinus pollen and diatoms)
55% clay

*photographed 10/4/91

13 July-2012

photos 76-78

note on segment says most of tephra is in a small bag, probably packaged separately

Sample size:

1cc for pollen at 10.08, 10.00 and 9.90

1cc for LOI at 10.00

Field notes:

20 9.81-10.11 0-9 Ash, pumiceous contamination

9-28 silty clay

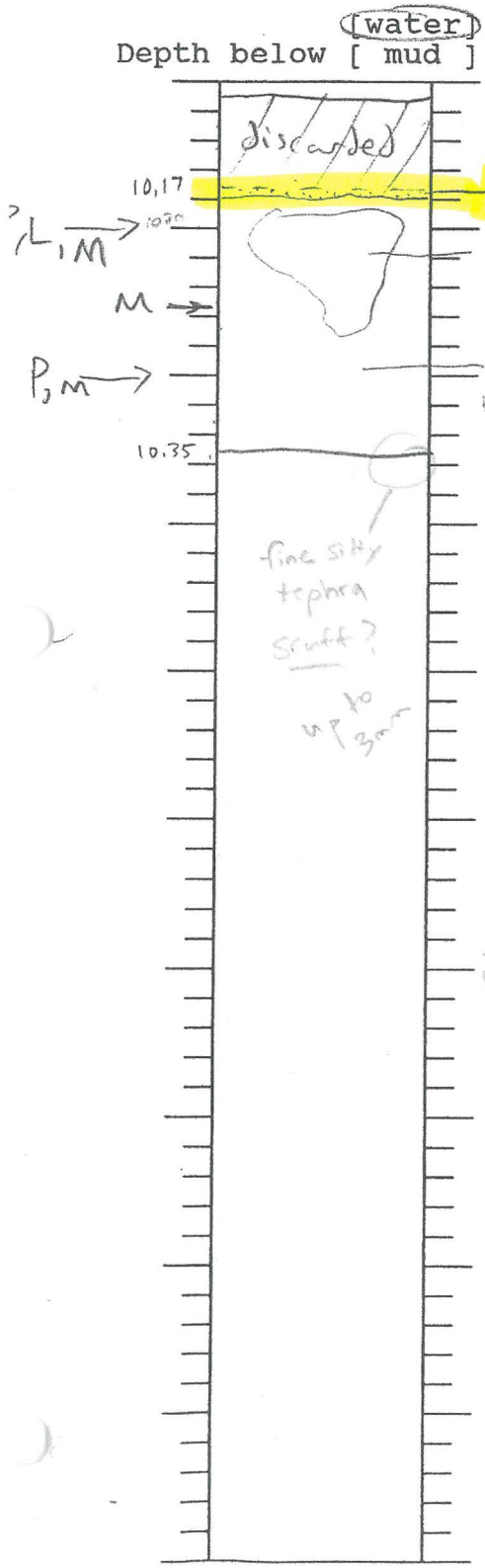
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90A # 21

Depth: 10.11 - 10.41 Date: Aug 22, 1991 Analyst: M. Whorra

Depth below [water] / [mud] surface



not in place? scuff?

Sample 90A-21-1

thin layer of light & dark (salt & pepper) med sandy Ash(?)

few mm

olive gray (5Y 4/1) fine sandy clay.

This part of the core appears to be oxidized to dark yellowish brown (10YR 4/2) but is of similar consistency as the rest of the unit.

fine silty tephra scuff? up to 3mm

Sample 90A-21-2

13-July-2012

photos 72-74

Total recovery: 18cm

Lithology:

65% Silica
- <10% sand size
- 25% silt size
- <10% Biogenic (chrysophytes)
- 65% clay size

35% Organic Carbon
- <5% sand size
- 15% silt size
- 80% clay size

photographed 10/4/91

Sample size:

1cc for pollen at 10.30, 10.20

1cc for LOI at 10.20

no sample at 10.40

Field notes:

21 10.11-10.41 18 0-6 discarded

6-24 silty clay, v. stiff & dry ?

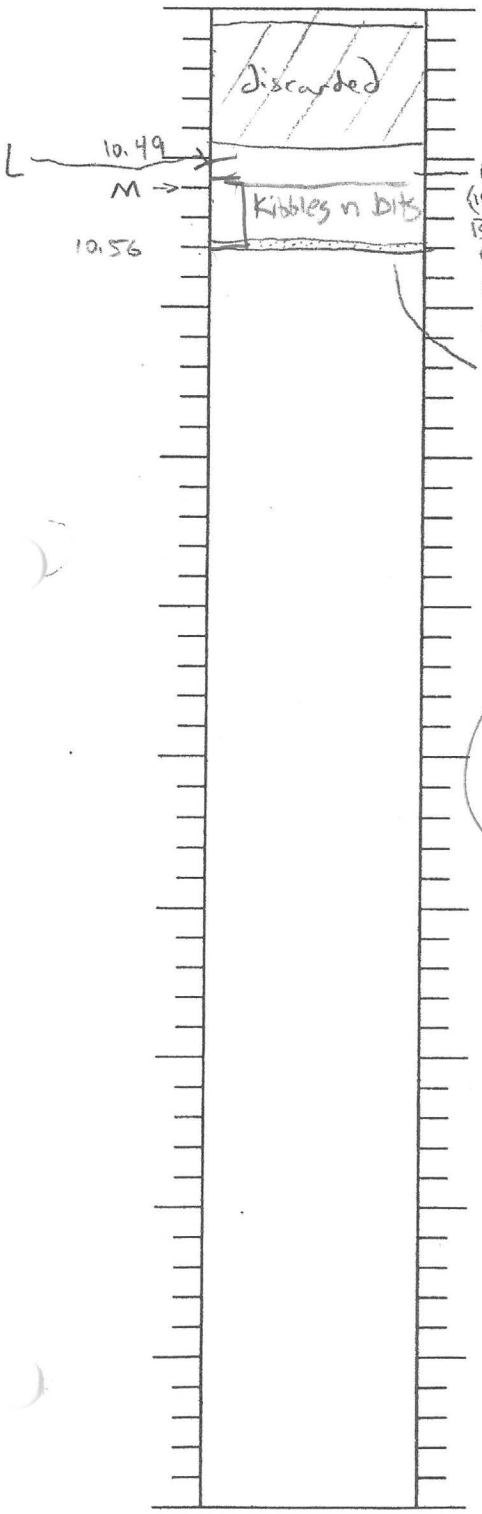
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90A #22

Depth: 10.41-10.58 Date: Aug 22, 1991 Analyst: M. Wrona

Depth below [water] / [mud] surface



Moderate Yellowish Brown (10 YR 5/4) to Dark Yellowish Brown (10YR 4/2) Fine Silty Clay. This unit has a thin 1cm layer of Dusky yellowish Brown 10 YR 2/2 Fine Sand at the bottom

discarded

Total recovery: 7cm

Lithology:

50% silica
<10% sand size
30% silt size
<5% Biogenic Silica
60% clay size

50% Organic Carbon
< 5% sand size
15% silt size
80% clay size

photographed 10/4/91

Sample size:
1cc for pollen and LOI at 10.50

Field notes:
22 10.41-10.58 7 0-8 discarded
8-15 silty clay*
15-17 missing
* silty layer at bottom

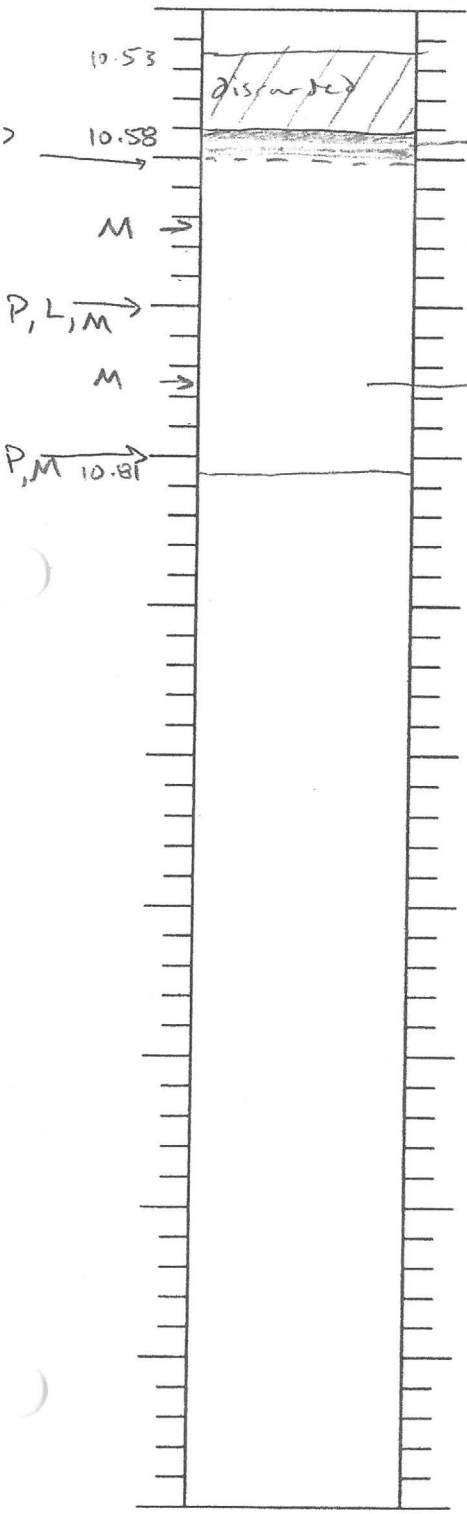
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: #23 90A

Depth: 10.53-10.83 Date: Aug 22, 1991 Analyst: M. Waroma

Depth below [water] / [mud] surface



alternating layers of med. sand. The dark layer is Brownish Black 5YR 2/1 while the lighter layer is Moderate Yellowish Brown 10YR 5/4.

Grayish Brown (5YR 3/2) Fine silty clay. The upper ≈2 cm (Below the sandy 2 cm) is somewhat lighter and has an increased amt. of silt.

Total recovery: 23 cm

Lithology:

Sample 90A-23-1

55% Silica
<5% sand size
20% Silt size
10% Biogenic (chrysophytes)
75% Clay size

45% organic carbon
<5% sand size
20% Silt size (No identifiable pollen)
75% Clay size

xphotographed 10/4/91

12-July-2012
photo #51

Sample size:

1 cc for pollen at 10.80, 10.70, 10.60

1 cc for LOI at 10.70

Field notes:

23 10.55-10.83 0-5 discard

5-28 Brown clay w/ silt

5YR 3/2

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

11.30
10.83
47 cm

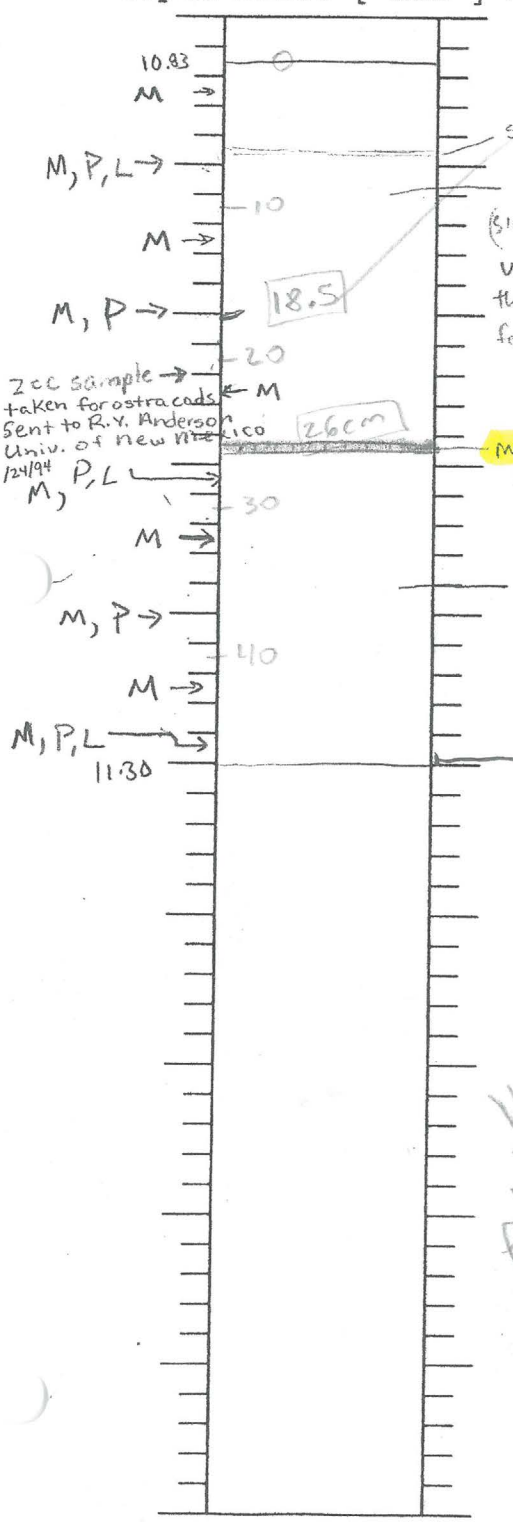
2cm/month

Core Description

Site: Carp Lake, Washington Core: 90A #24

Depth: 10.83-11.33 Date: Aug 17, 1991 Analyst: M. Waroran

Depth below [water] [mud] surface



slightly darker band

grayish brown (5 YR 3/2) (slightly) fine silty clay. The unit is quite homogeneous through out except for a few small occurrences of tephra

med sandy ash, light in color, (very thin sandy lens. core breaks at this point) 1-2mm?

Removed 10.13.92 MW

Sample 90A-24-1

Photographed 10/4/91 A+B

remaining material removed 4/25/92

~~possible strike of tephra~~

Across surface only

Total recovery: 47 cm

Lithology:

50% silica
<5% sand
20% silt size
<5% biogenic (diatoms, sponge, etc)
75% clay size

50% organic carbon
<5% sand size
15% silt size (some pine pollen)
80% clay size

Sample size:

1cc for pollen at 11.29, 11.20, 11.11, 11.00, 10.90

1cc for LOI at 11.29, 11.11, 10.90

Field notes:

24 10.83-11.33 47 brown silty clay

14-July-2012
photos 67-71

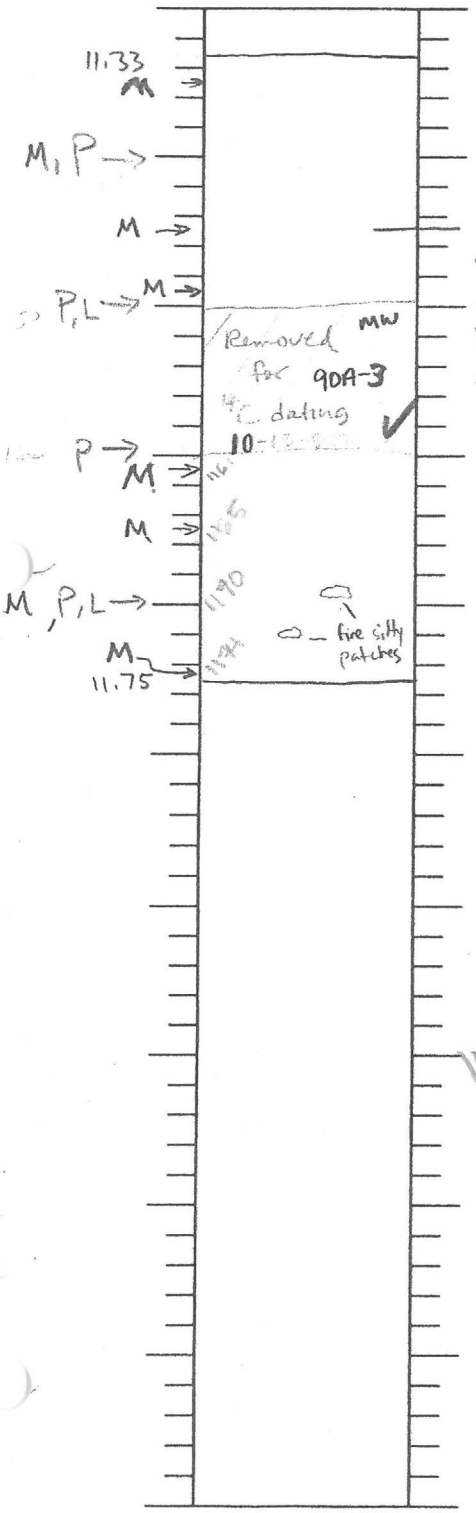
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90A # 25

Depth: 11.33 - 11.83 Date: Aug 14, 1991 Analyst: M. Worona

Depth below [water] / [mud] surface



Grayish Brown 5 YR 3/2 fine silty clay that is very homogeneous through out the unit. There are a couple of dry, lighter patches towards the bottom (≈ 11.69 - 11.72) that seem to be composed of fine silt.

Total recovery: 42 cm

Lithology:

The lithology of this unit appears to be quite similar to that of 90A # 26, but this unit may have slightly more organic matter than 90A # 26

60 % silica
<5% sand size
25 % silt size
70 % clay size

40 % organic carbon
<5% sand size
15% silt size
80 % clay size

Photographed 10/4/91 A + B

Sample size:

1cc for pollen at 11.70, 11.60, 11.50, 11.40

1cc for LOI at 11.70, 11.50

Field notes:

25 11.33 - 11.83 43 brown silty clay

11-July-2012
photo 166

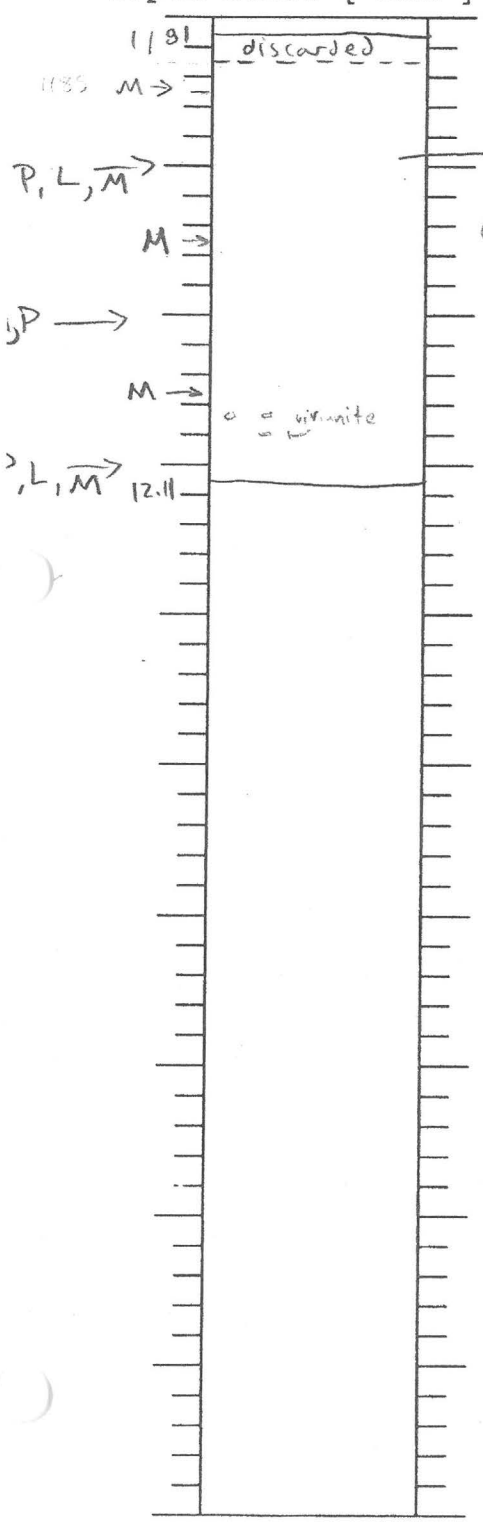
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90 A #26

Depth: 11.81 - 12.11 Date: Aug 14, 1991 Analyst: M. Worona

Depth below [water] surface
[mud]



Grayish brown (5YR 3/2) fine silty clay. This unit appears to be quite homogeneous except for a few small lenses of vivianite towards the bottom.

Total recovery: 28cm

Lithology:

65% silica
<5% sand
20% silt
<5% biogenic
75% clay size

35% organic carbon
<5% sand size
15% silt size (some unidentifiable Pol
80% clay size

photographed 10/24/91

12-July-2012
photo #49

Sample size:

1cc for Pollen at 12.10, 12.00, 11.90

1cc for LOI at 12.10 and 11.90

Field notes:

26 11.81 - 12.11 30 0-2 discard

2-30 brown silty clay

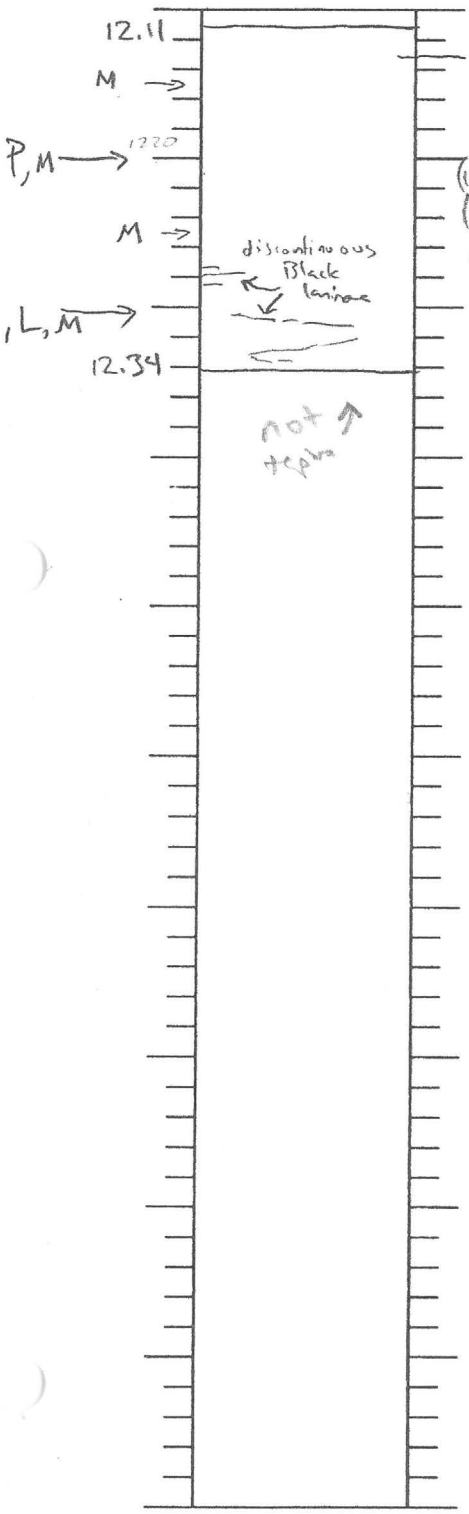
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90A #27

Depth: 12.11 - 12.41 Date: Aug 14, 1991 Analyst: M. Worona

Depth below [water / mud] surface



The color of this unit somewhere between Dark yellowish brown (10YR 4/2) and Ducky Brown (5YR 2/2). The consistency is that of fine silty clay that is fairly homogeneous except for a few dark/black faint laminae towards the bottom of the section.

Total recovery: 23 cm

Lithology:

55% silica
<5% sand
40% silt
10% biogenic (mostly diatoms)
55% clay

45% Organic carbon
<5% sand size
20% silt (some unidentifiable pollen)
75% clay size

photographed - 10/8/91

12-July-2012
photo # 48

Sample size:
1 cc for pollen at 12.30 and 12.20
1 cc for LOI at 12.30

Field notes:
27 12.11-12.41 24 0-7 brown silty c
7-24 organic silty clay
dark band at 20 cm

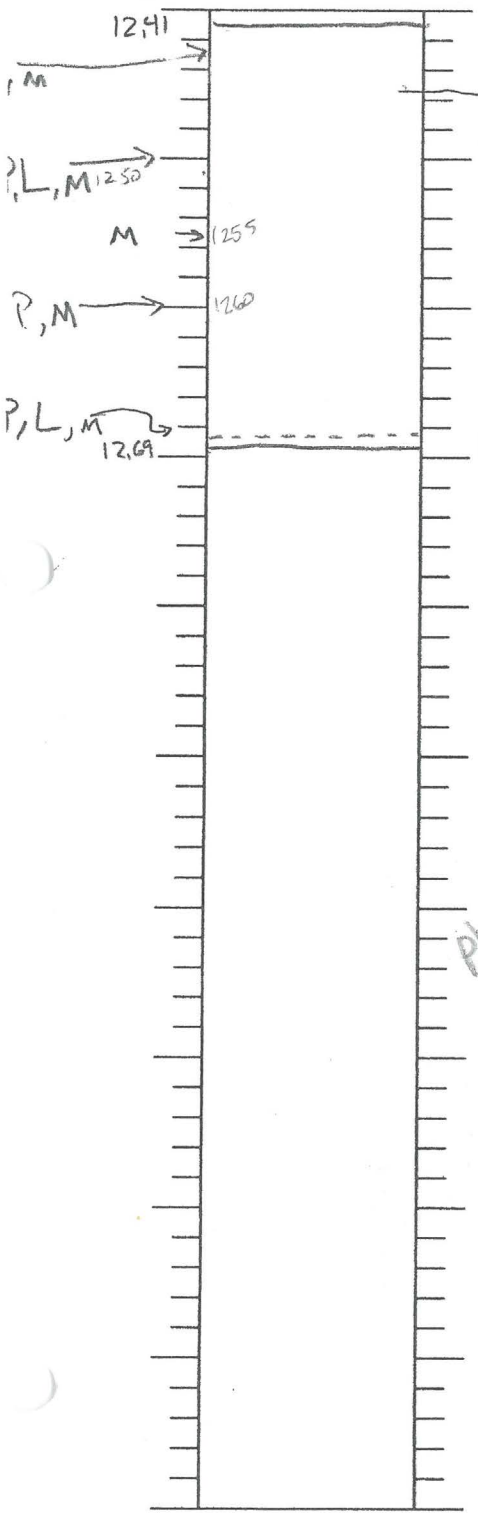
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90A #28

Depth: 12.41-12.71m Date: Aug 13, 1991 Analyst: M. Worona

Depth below [water] / [mud] surface



This unit is closest to dusky Brown 5YR 2/2 and it consists of fine silty clay. The unit is of uniform consistency and it contains some small 1-2 mm lenses of vivianite towards the bottom.

medium sandy ash like that on top of 90A #29

Total recovery: 28 cm

Lithology:

55% silica
<5% sand size
30% silt size
<5% biogenic
65% clay size

45% organic carbon
<5% sand size
30% silt size
65% clay size

Sample 90A-28-1

photographed 10/8/91

12-July-2012

photos 46-47

Sample size:

1 cc for pollen at 12.68, 12.60 and 12.5

1cc for LOI at 12.68, 12.50

Field notes:

28 12.41 - 12.71 29 brown silty clay

0.5 cm ash at bottom

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core frozen → Big mess.
Good luck sampling again.
-VR 6/15/02

Core Description

Site: Carp Lake, Washington Core: 90A # 29

Depth: 12.71 - 13.01 Date: Aug 13, 1991 Analyst: M. Woronca

Depth below [water / mud] surface

12.71

M 12.80 →

M →

L, M →

M →

P, M →

13.02

Total recovery: 31 cm

Lithology:

10.18.92
90A # 29

~~light olive gray~~ (5Y 6/1) med sandy ash that is most concentrated within the center 4 cm. otherwise it's mixed w/ Grayish Brown 5YR 3/2 silty clay.

spots of ash in jumbled sediment

This unit consists of mostly fine silty clay that is Grayish Brown 5YR 3/2 towards the top and gradually changes to a color which looks like a cross between Dusky Brown (5YR 2/2) and Dark Yellowish Brown (10YR 2/2) towards the bottom. Also towards the bottom 10-12 cm macroscopic plant remains increase in concentration.

~~use sample from #28~~

sample 90A-29-1

40% silica
<5% sand size
40% silt size
30% Biogenic (Diatoms and spicules)
55% clay size

60% Organic Carbon
10% sand size
Includes plant cuticle and other debris
25% silt size
Includes plant debris and some unidentifiable pollen
65% clay.

* From 12.77 to 12.88 the sediment is very soft and seems as though it could be re-deposited junk that should not be considered as in place

photographed 10/8/91

14-July-2012
photo 143

Sample size:

1cc for pollen at 13.00, 12.90 and 12.80

1cc for LOI at 12.90

Field notes:

29 12.71 - 13.01 30 0-4 ash, sand size mixed w/ brown silty clay

4-15 brown silty clay

15-30 dry silty clay w/ plant remains

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Camp Lake, Washington Core: 90 A #30

Depth: 13.01-13.31 Date: Aug 13, 1991 Analyst: M. Waronne

Depth below [water / mud] surface

13.01

M →

P L, M →

M →

, M →

M →

13.30

Total recovery: 29cm

Lithology:

This unit is slightly lighter (yellower) than Dusky Brown (5 YR 2/2) and it consists of mostly clay with med silt and very little sand. Less sand than 90A#31. At ≈ 13.03 a seed was found, and at other levels traces of macro fossils are evident. These include mostly root fibers

65% silica
<5% sand
60% silt
40% biogenic Lots of Diatoms some spicules & clay
35% clay

35% organic carbon
<5% sand size
35% silt Pollen is present inc grass & pine
60% clay

1329-1339 - remaining material removed 6/02

photographed 10/8/91

14-July-2012
photo 142

Sample size:

1cc for pollen at 13.29, 13.20, 13.10
1cc for LOI at 13.29, and 13.10

Field notes:

30 13.01-13.31 29 silty organic clay w/ macrofossils

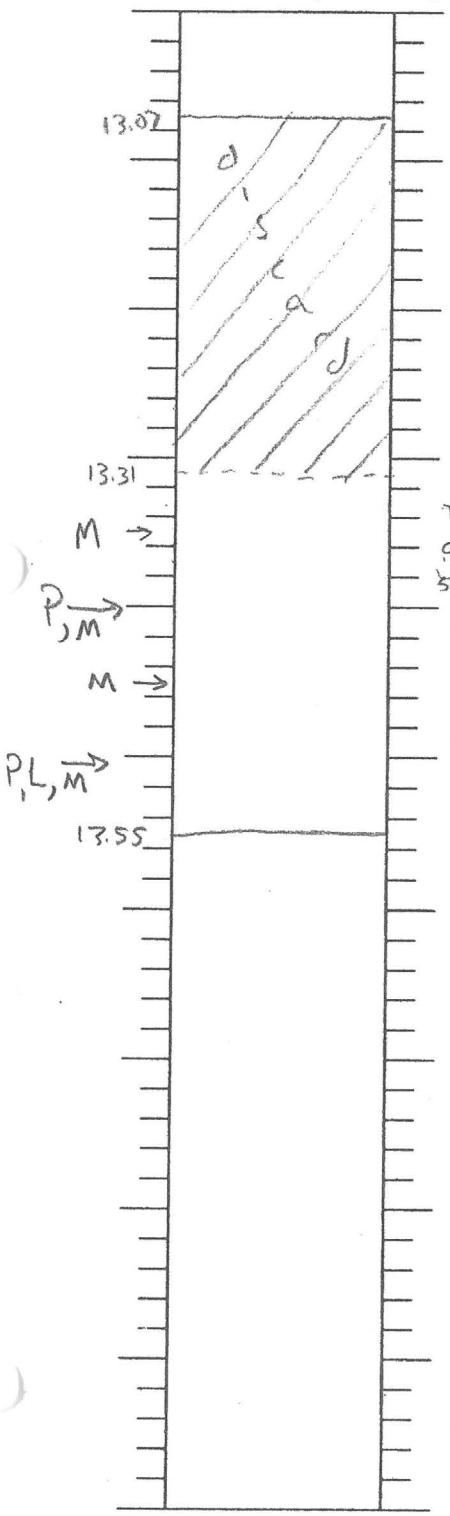
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90A #31

Depth: 13.07-13.55 Date: Aug 11, 1991 Analyst: M. Waraven

Depth below [water] / [mud] surface



12-July-2012
photo 45

Total recovery: 24

Lithology:

The sandiness of this unit makes the description of its lithology through sediment smear difficult. However it appears to be somewhat similar to sample # 31 90A. There is an increase in sand content but biogenic silica appears roughly equal (spicules, diatoms and chrysophytes are all present).

The color of this unit is close to olive gray 5Y 4/1 or Brownish gray 5YR 4/1. It consists of fine silty clay with a moderate amount of med sand. It seems uniform through out and cuts well. (without crumbling)

photographed 10/8/91

Sample size:

1 cc for pollen at 13.50 and 13.40

1 cc for LOI at 13.50

Field notes:

31 13.07-13.55 48 0-24 discard

24-48 silty inorganic clay

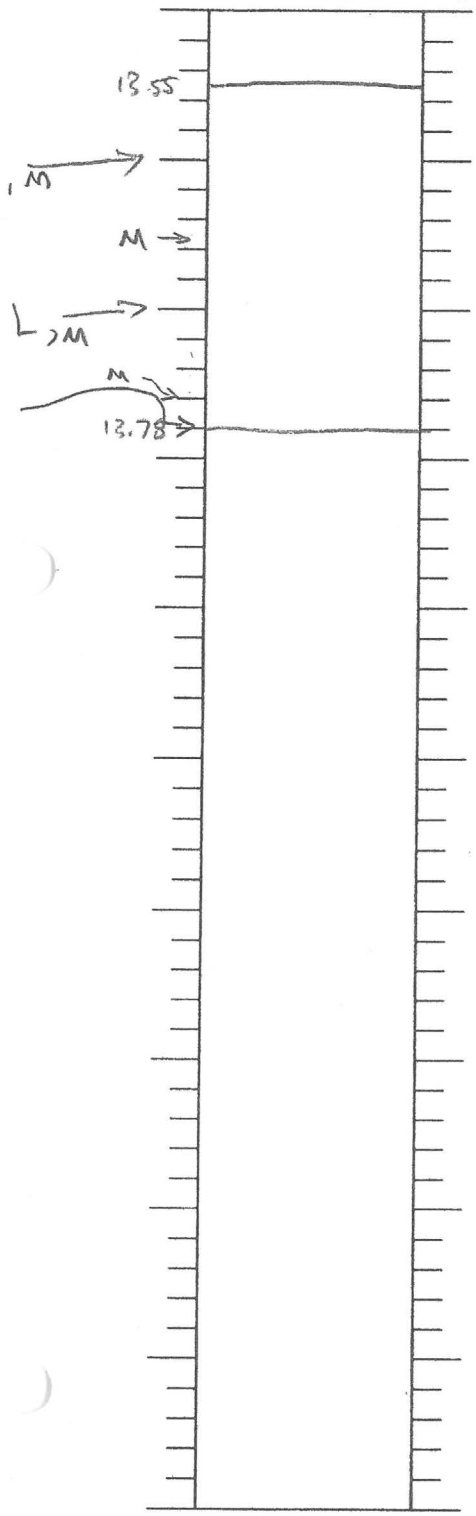
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90A #32

Depth: 13.55-13.85 Date: Aug 11, 1991 Analyst: M. Worona

Depth below [water] [mud] surface



phytolith sample 1A/12/96

Dark yellowish Brown 10YR 4/2 silty clay that contains a small amount of fine/medium sand. Color and consistency seem uniform through out unit.

12-July-2012
photo #44

Total recovery: 23 cm

Lithology:

65% silica
5% sand size
40% silt size
20% Biogenic (chrysophytes, Diatoms & spicules)
55% clay

35% organic Carbon
<5% sand
35% silt size
10% pollen (gasil?), Pine)
60% clay size

photographed 10/8/91

Sample size:

1 cc for pollen at 13.77, 13.70, 13.60
1 cc for LOI at 13.70

Field notes:

32 13.55-13.85 23 silty inorganic clay

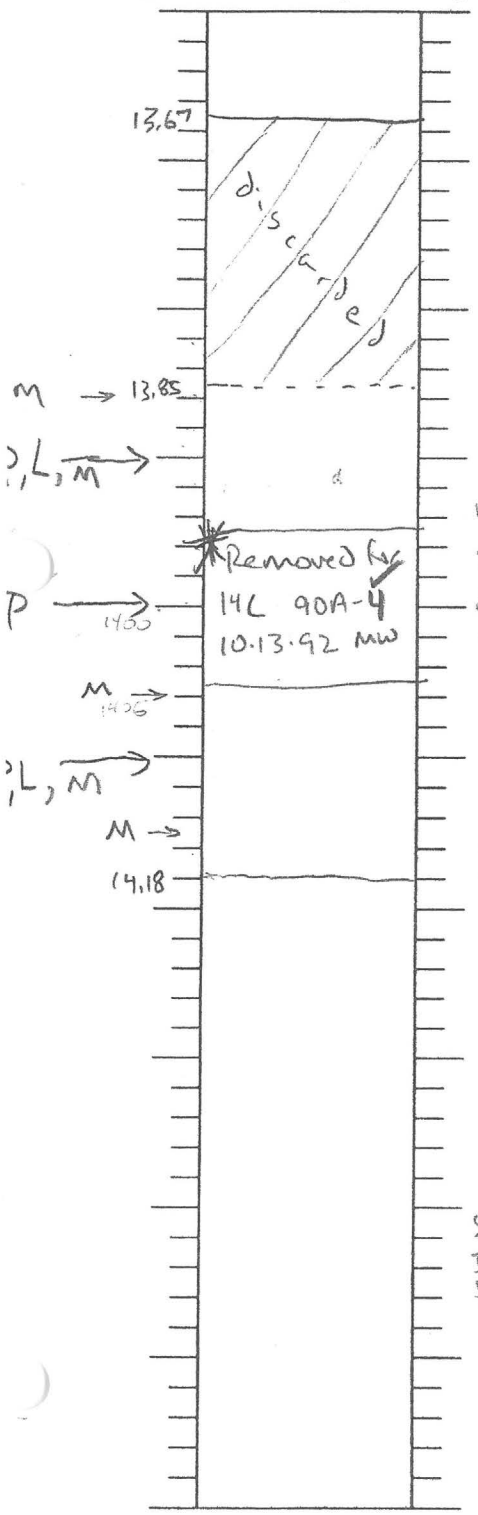
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90A #33

Depth: 13.67 - 14.17 Date: Aug 11, 1991 Analyst: M. Waroza

Depth below [water / mud] surface



12-July-2012 photo 43

Total recovery: 33

Lithology:

60% Silica
<5% Sand size
40% Silt size
30% biogenic (Diatoms, spicules)
55% Clay Size

40% organic Carbon
<5% Sand size
40% Silt size (Pollen includes Pine, Artemisia)
55% Clay Size

This unit is extensively mottled and contains patches of at least three different colors; Including Dusky Brown (5YR 2/2), Olive Gray (5 Y 4/1), and Dark Yellowish Brown (10YR 4/2). The sediment is mostly silty clay with a small amount of med. sand. Also present are a few 1-2 mm dull black pebbles, which resemble charcoal.

photographed 10/8/91

Sample size:

1cc for pollen at 14.10, 14.00, and 13.90

1cc for LOI at 14.10 and 13.90

Field notes:

33. 13.67 - 14.17 0-18 discarded

18-50 mottled brown/green silty clay

green - 5y 3/2

brown 5 YR 3/2

* The 14C sample was somewhat crumbly. ∴ I had to handle it more than I would have liked to. MW

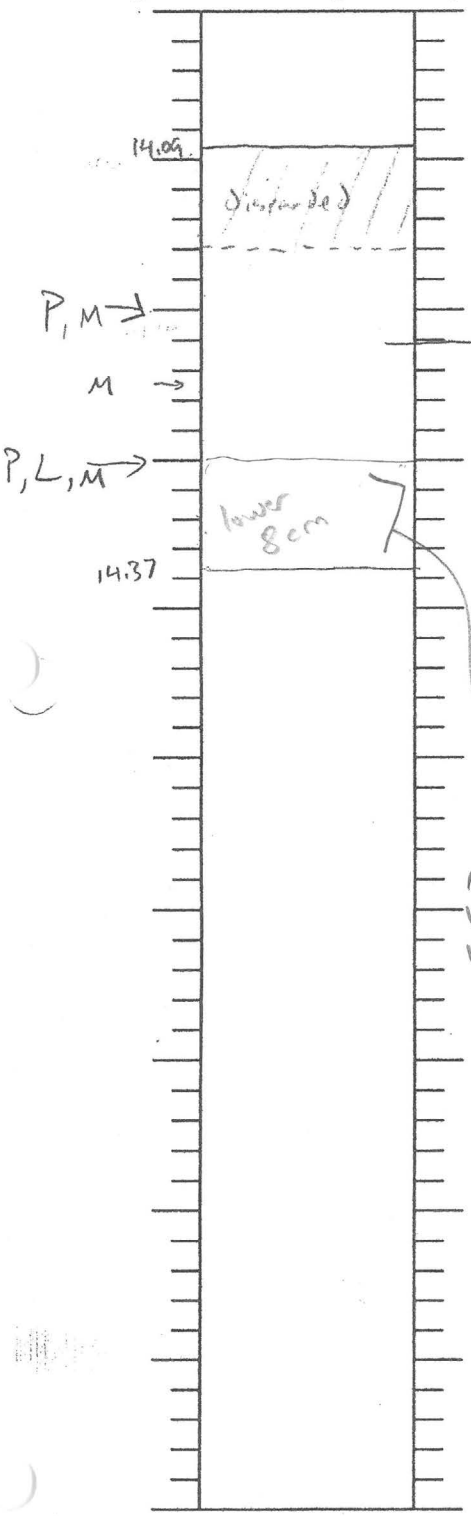
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90 A #34

Depth: 14.09 - 14.38 Date: Aug 9, 1991 Analyst: M. Wonom

Depth below [water / mud] surface



Total recovery: 21 cm

Lithology:

Dark yellowish Brown 10YR 4/2 silty clay that contains a small amount of med. sand. The color and consistency appear homogeneous through out the core.

70% Silica
5% sand size
45% silt size
10% Biogenic (Diatoms, Spicules) clay
50% clay size

30% Organic Carbon
<5% sand size
60% silt size
20% Pollen (Conifer + others)
35% clay size.

This part of the core was extremely crumbled. All salvageable material was sampled & the rest was discarded. R 6/02

photographed 10/24/91

Sample size:
1cc for pollen at 14.30 and 14.20
1cc for LOI at 14.30

Field notes:
34 14.09 - 14.38 28 0-7 discarded
7-28 mottled brown/green
silty clay v. stiff and dry

13-July-2012
photo 75

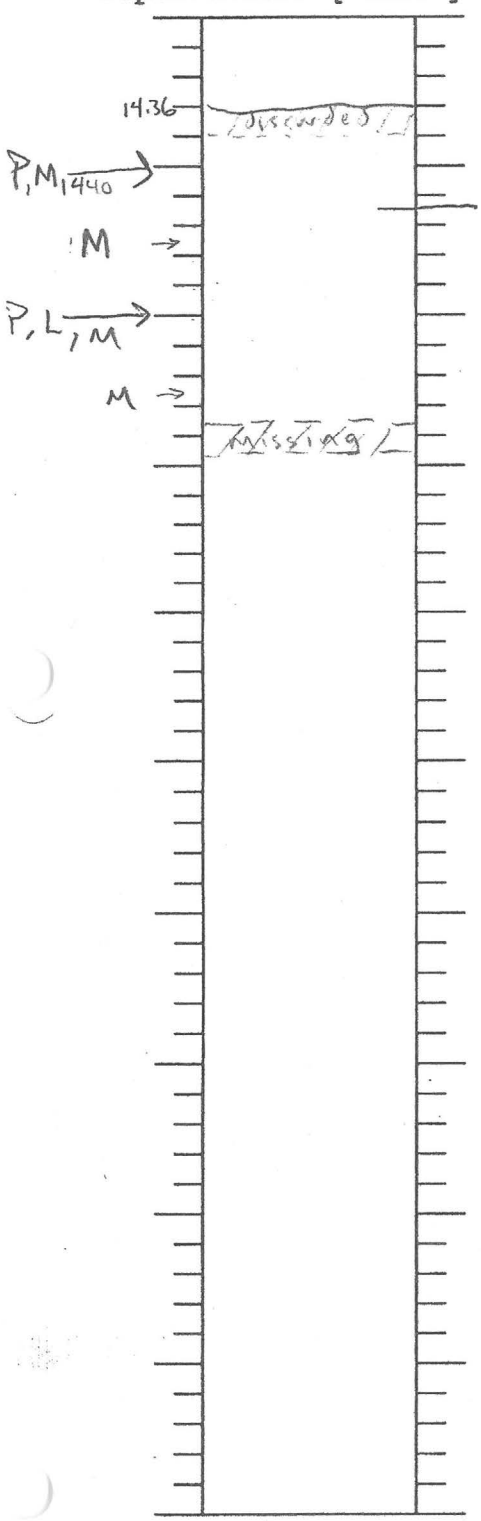
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M: magnetic properties

Core Description

Site: Carp Lake, Washington Core: 90A #35

Depth: 14.36 - 14.59 Date: 8/9/91 Analyst: M. Worona

Depth below [water] [mud] surface



Dusky yellowish brown 10 YR 2/2 silty clay with a small amount of med/fine sand. This unit splits well and is not as crumbly as lower units.

Total recovery: 19 cm

Lithology:

75% silica
- <10% sand size
- 40% silt size
- ≈10% biogenic (spicules & Diatoms)
- 50% clay size

25% organic carbon
- <5% sand size
- 40% silt size
- 55% clay size

12-July-2012
photo 42

Photographed 10/4/91

Sample size:

1cc for pollen at 14.50 and 14.40

1cc for LOI at 14.50

Field notes:

35 14.36 - 14.52 ~~TR~~ 0-2 discarded

2-21 green silty clay w/ fine grained sand

21-23 missing

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

sampled 7/17/02 VR

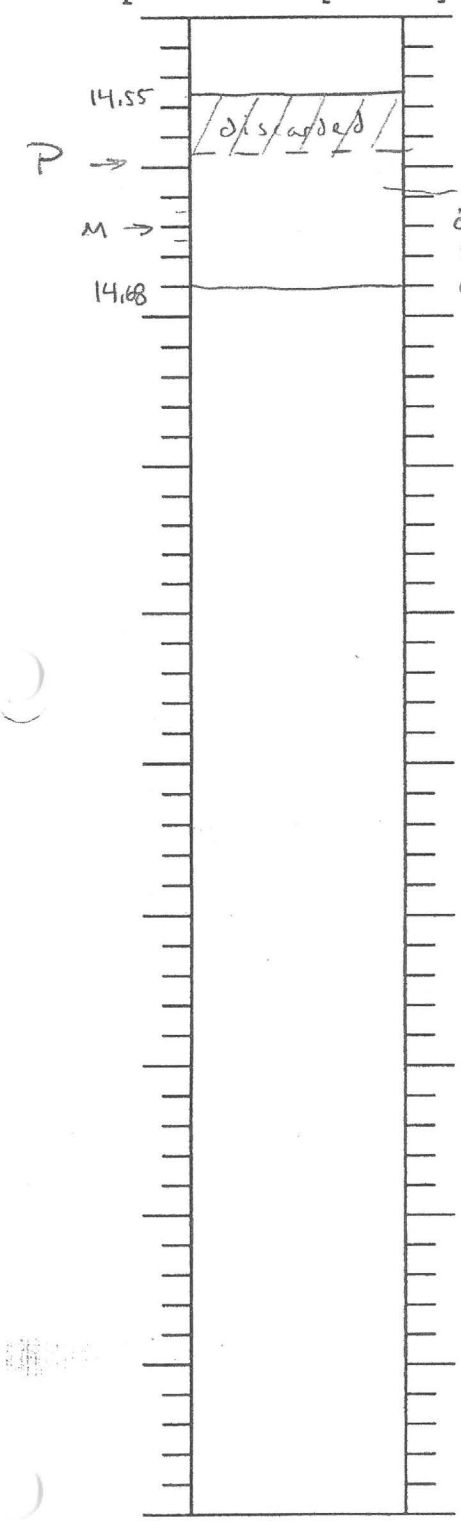
Site: Carp Lake Washington Core: 90 A #36

Depth: 14.55 - 14.67 Date: Aug 8, 1991 Analyst: M. Worona

Depth below [water] [mud] surface

Total recovery: 9 cm

Lithology:



This unit is close to dark yellowish Brown 10YR 4/2. It consists of fine silty clay with some fine/med sand.

The lithology of this unit is difficult to determine due to the interference of the sand grains in viewing the sediment. The lithology appears quite similar to 90A #37

Very crumble/. All salvageable material sampled - interest discarded. VR 7/02

photographed 10/24/91

Sample size:

1 cc for pollen at 14.60

Field notes:

36 14.55-14.67 12 0-4 discarded

4-12 green silty clay w/ fine g. sand

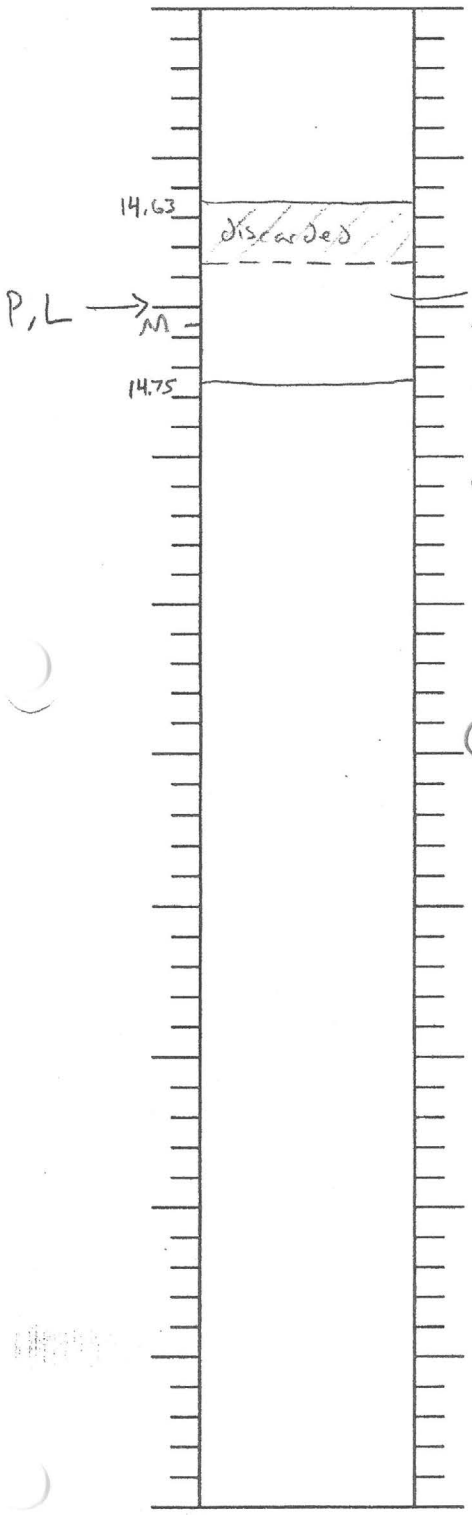
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M: magnetic properties

Core Description

Site: Carp Lake Washington Core: 90A #37

Depth: 14.63 - 14.75 Date: Aug 8, 1991 Analyst: M. Woronca

Depth below [water] [mud] surface



Olive Black (5 Y 2/1) silty clay that contains a moderate amount of med grained sand. This unit is crumbly when cut and exhibits a "pod like" nodular structure

This segment was almost entirely crumbled. All salvageable material was sampled & the rest was discarded. 6/02

Total recovery: 8 cm

Lithology:

* Because of the presence of the med. sand grains the sediment smear was difficult to focus and view under the microscope. ∴ The results may be quite generalized.

65% Silica
<10% sand size
40% silt size
<10% biogenic
50% clay size

40% Organic carbon
<5% sand size
30% silt size
pollen is present in relatively large # ≈ 20% of silt size debris is pollen.
65% clay size

photographed 10/24/91

Sample size:

1cc for pollen and LOI at 14.70

Field notes:

14.63-14.75 12 0-4 discarded
4-12 green silty clay w/ fine grained sand

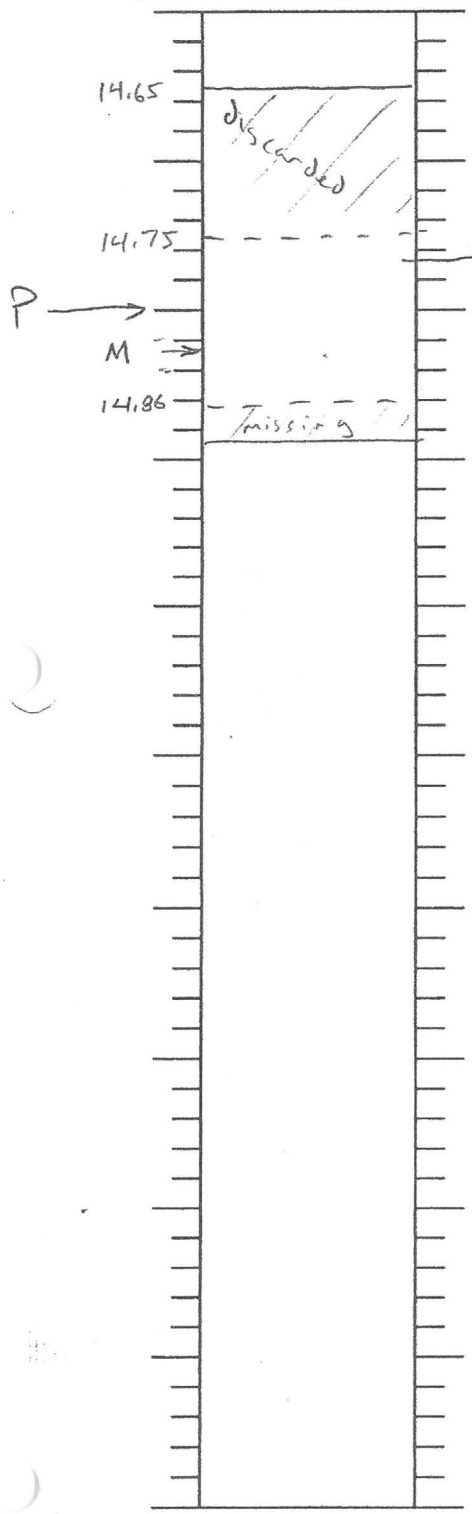
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

Site: Carp Lake, Washington Core: 38 90A

Depth: 14.65 - 14.89 Date: Aug 8, 1991 Analyst: M. Worona

Depth below [water] / [mud] surface



Total recovery: 11 cm

Lithology:

60% silica
<10% Sand Size
40% Silt Size
10% Biogenic (mostly chrysophytes)
50% Clay Size

40% organic Carbon
<5% Sand Size
30% Silt size (pollen is present)
65% Clay Size

Dark yellowish brown 10 YR 4/2 silty clay with a moderate amount of med. Sand. This unit seemed very brittle and crumbled as it was cut for description.

This segment was mostly crumbled. I sampled all savageable material and discarded the rest. V2 6/02

photographed 10/24/91

Sample size:

1 cc for pollen at 14.80

Field notes:

38 14.65-14.89 0-10 discarded

10-21 green silty clay w/ fine gr. sand

21-24 missing

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

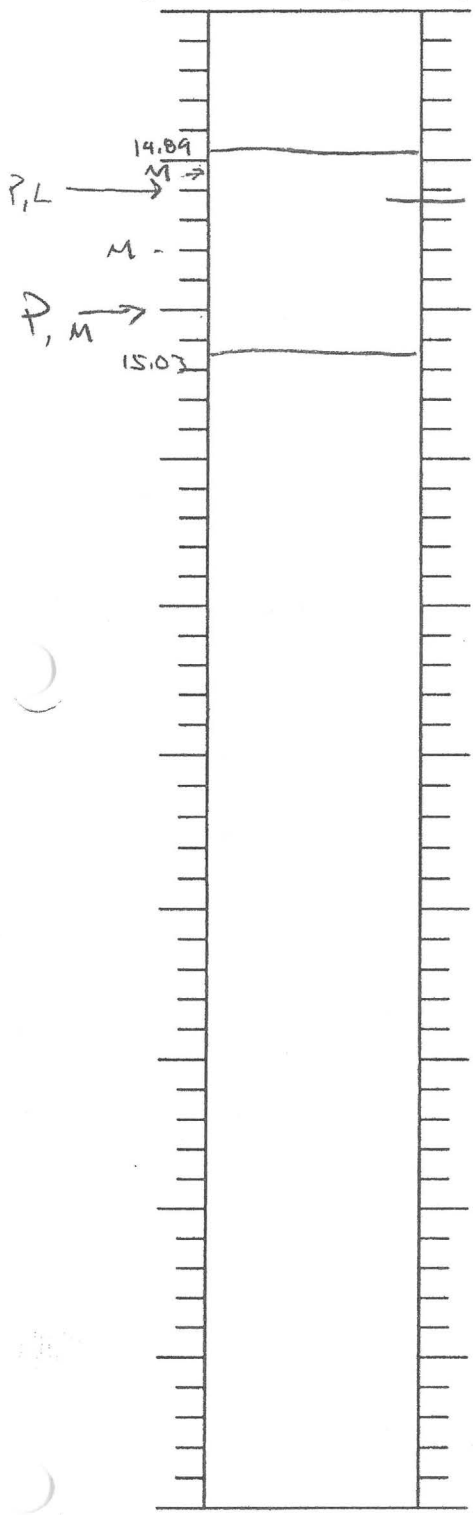
M = magnetic properties

Core Description

Site: Carp Lake, Washington Core: 90A #39

Depth: 14.89-15.03 Date: Aug 8, 1991 Analyst: M. Waters

Depth below [water / mud] surface



There is no exact match for color but this unit is close to Dark Yellowish Brown 10YR 4/2. It is composed of mostly fine silty clay and a small amount of fine grained sand

Probably too crumbly to work with again. R 6/02

Total recovery: 14 cm

Lithology:

75% Silica
<5% Sand size
45% Silt size
<10% Biogenic (diatoms)
50% clay size

25% Organic Carbon
<5% sand sized
60% Silt sized Pollen is present but not readily identifiable
35% clay sized.

photographed 10/24/91

13-July-2012
photo # 71

Sample size:

1 cc for pollen at 15.00 and 14.90
1 cc for LOI at 14.90

Field notes:

39 14.89-15.03 14 green silty clay w/ fine grained sand

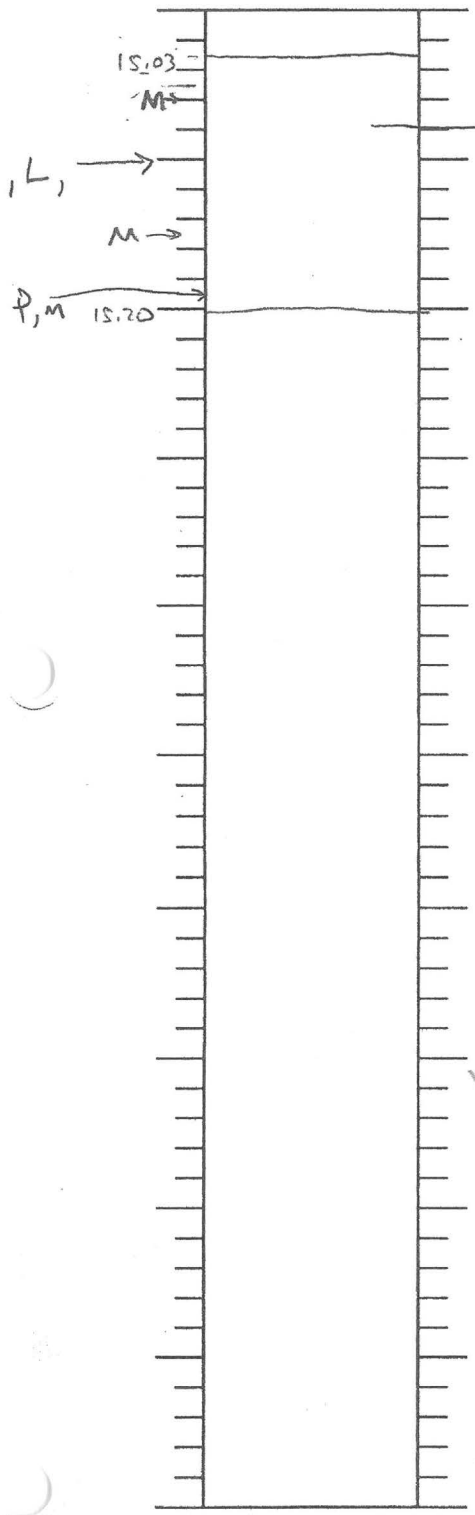
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M=magnetic properties

Core Description

Site: Carp Lake Washington Core: 90A # 40

Depth: 15.03-15.25 Date: Aug 8, 1991 Analyst: M. Woronko

Depth below [water] [mud] surface



moderate yellowish brown 10 YR 5/4 Fine silty clay with a small amount of sand size grains.

Total recovery: 17 cm

Lithology:

70% silica
5% Sand size
20% silt sized
75% clay sized
no distinguishable biogenic sediment

30% organic carbon
<5% sand sized
40% silt size pollen is present but not identifiable.
55% clay sized

photographed 10/24/91

13-July-2012
photo #70

Sample size:

1cc at 15.19 for pollen
1cc at 15.10 for pollen and LOI

Field notes:

40 15.03-15.25 17 green silty clay

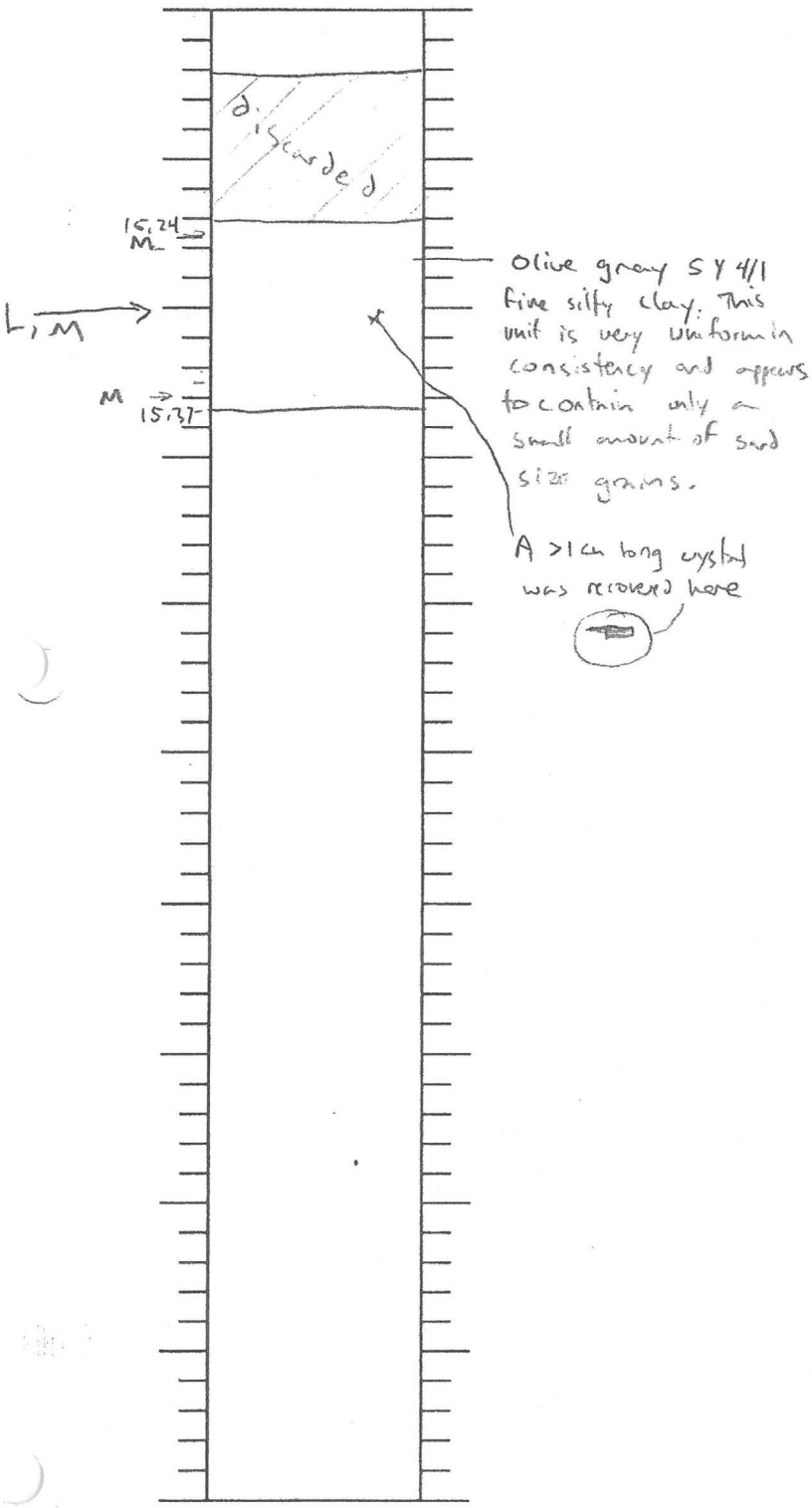
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

Site: Carp Lake, Washington Core: 90A #41

Depth: 15.14 - 15.37 Date: August 8, 1991 Analyst: M. Worona

Depth below [water] / [mud] surface



Total recovery: 13 cm

Lithology:

60% silica
5% sand
35% silt very little biogenic
60% clay size

40% Organic Carbon
<5% sand size
25% silt size (No identifiable pollen)
70% clay size

12-July-2012
photo 41

Sample size:

1 cc at 15.30 for pollen and LOI

Field notes:

41 15.14 - 15.37 22 0-10 discarded
10-23 green silty clay

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M: Magnetic properties

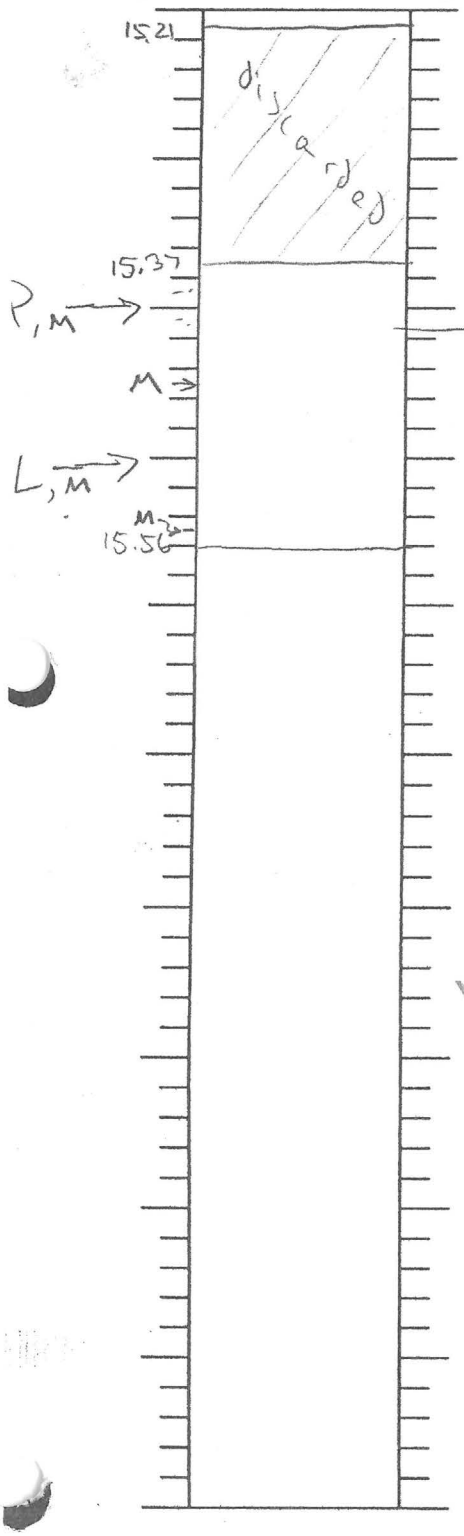
Core Description

sampled 7/17/02 VR

Site: Carp Lake, Washington Core: 42 90A

Depth: 15.21-15.55 Date: July 31, 1991 Analyst: M. Waldron

Depth below [water] [mud] surface



Total recovery: 19 cm

Lithology: 80% Silica
<10% sand
35% silt
<5% biogenic
55% clay

Olive gray 5Y 4/1 silty clay. This unit contains a small amount of fine sand and was noticeably less crumbly than 90A #43

20% Organic Carbon
<5% sand
15% silt
80% clay

photographed 10/25/91

14-July-2012

Sample size:

1cc for pollen at 15.50 and 15.40

1cc for LOI at 15.50

Field notes:

42 15.21 - 15.55 34 0-16 discarded

16-34 green silty clay

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

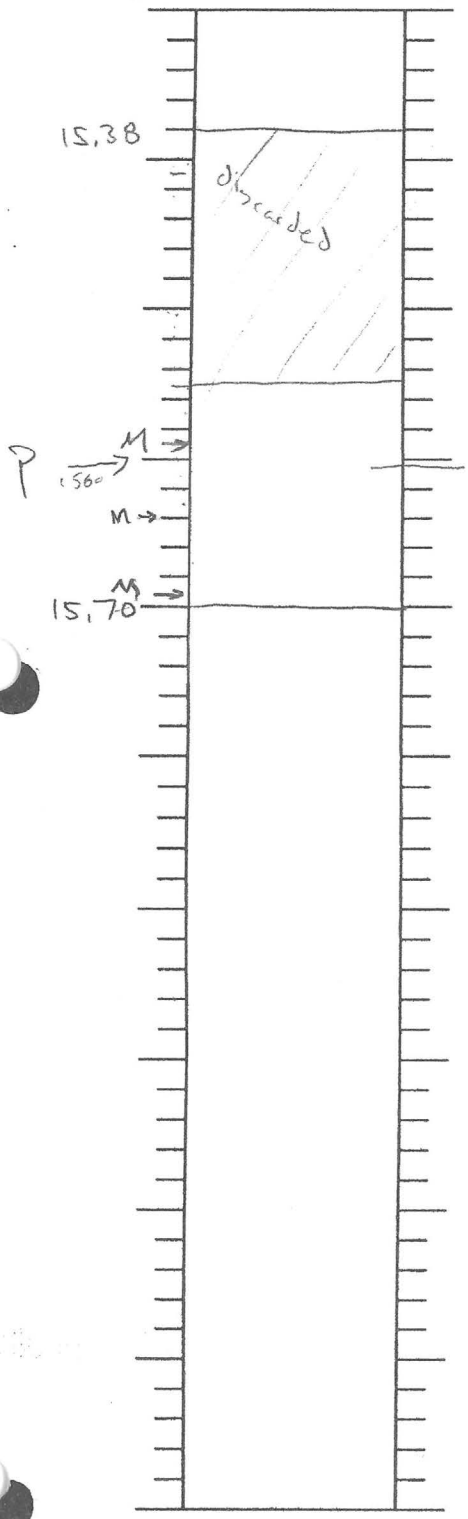
Sampled 7/17/02 K

Core Description

Site: Carp Lake, Washington Core: #43 90A

Depth: 15.38-15.69 Date: July 31, 1991 Analyst: M. Waroza

Depth below [water] / [mud] surface



Total recovery: 15cm

Lithology:

75% Silica
5% sand
35% silt
< 5% Biogenic
60% Clay

25% Carbon
< 5% Sand size
20% silt size
75% Clay size

Olive Black 5Y2/1 silty clay with a small component of fine sand. Core was very crumbly and difficult to cut and keep in tact.

photographed 10/25/91

Sample size:

1cc for pollen at 15.60

14-July-2012
photo 140

Field notes:

43 15.38-15.69 31

0-17 discarded

17-31 green silty clay

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

M: magnetic properties

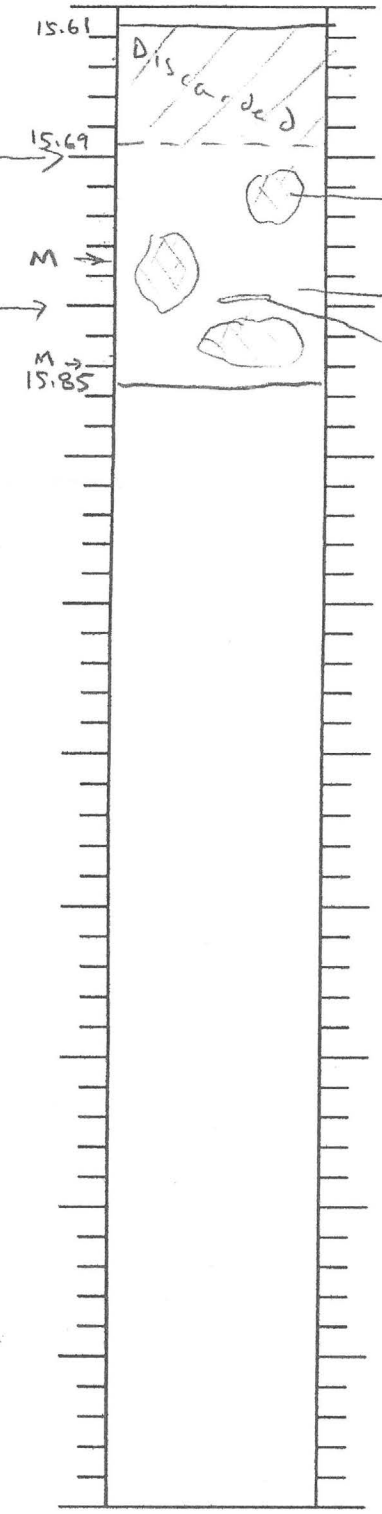
Core Description

Sampled 7/17/02 VR

Site: Carp Lake, Washington Core: #44 90A

Depth: 15.61- 15.89 Date: July 29, 1991 Analyst: M. Waroma

Depth below [water] / [mud] surface



Patches of Dusky Yellowish brown (10 YR 2/2) fine silty clay in a mostly Dark Yellowish Brown (10 YR 4/2) fine silty clay core.

A few area (small) seem to be enriched with fine sand.

Very crumbly. Sampled for charcoal & discarded VR 7/02

Total recovery: 15.5 cm

Lithology:

75% Silica
5% Sand
35% Silt
Very little biogenic <5%
60% clay size

25% organic carbon
<5% sand size
<35% silt size
>60% clay size

photographed 10/4/91

Sample size:

1 cc for pollen at 15.80 : 15.70
1 cc for LOI at 15.70

Field notes:

44 15.61- 15.89 20 0-8 discarded
8-15 green silty clay
15- 20 messy

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M: magnetic properties

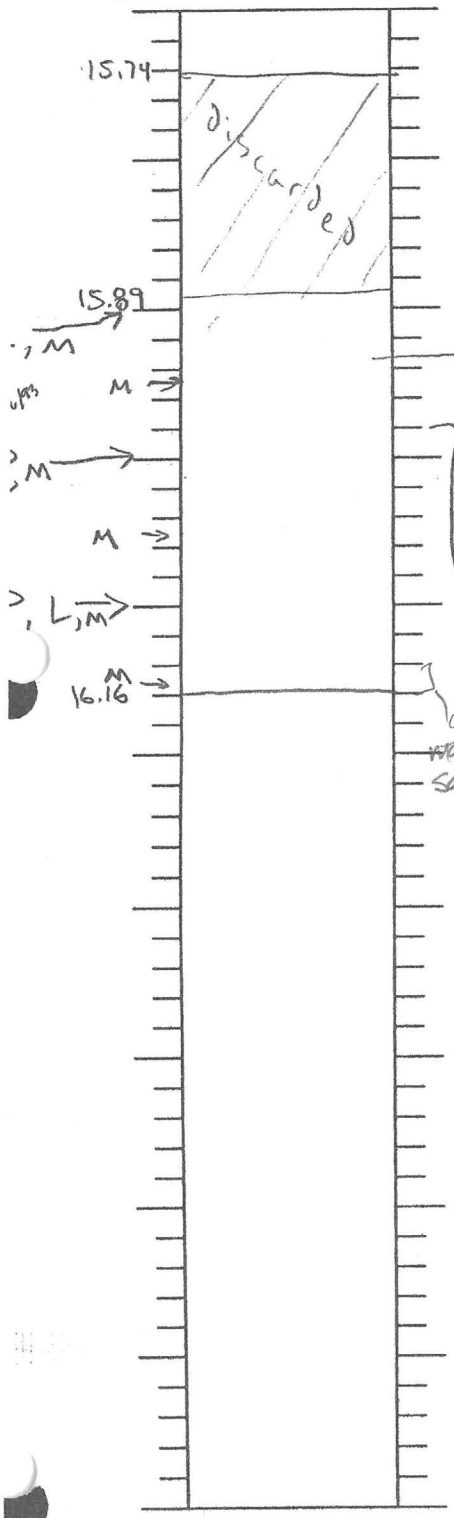
Core Description

Sampled 7/17/02 VR

Site: Carp Lake, Washington Core: #45 90A

Depth: 15.74-16.19 Date: July 29, 1991 Analyst: M. Waldron

Depth below [water] [mud] surface



Total recovery: 27 cm

Lithology:

70% Silica
<5% Sand sized
35% Silt Sized
<10% Biogenic
>90% Non Bio
60% Clay sized

30% Organic Carbon
<5% Sand sized
40% silt sized
55% Clay Sized

Olive Gray (5 Y 4/1) fine silty clay, with no visible coarser components (macro's or mineral) Very homogenous in appearance.

15.98m A 2cc sample was taken for ostracods and sent to R.Y. Anderson Univ. of New Mexico 2/24/94 #photographed 10/4/91

all remaining material sampled. VR 7/02

Sample size:

1cc for pollen at 16.10, 16.00 & 15.90

1cc for LOI at 16.10, 15.90

14-July-2012 photo 165

Field notes:

45 15.74-16.19 42 0-15 discarded

15-42 green silty clay

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

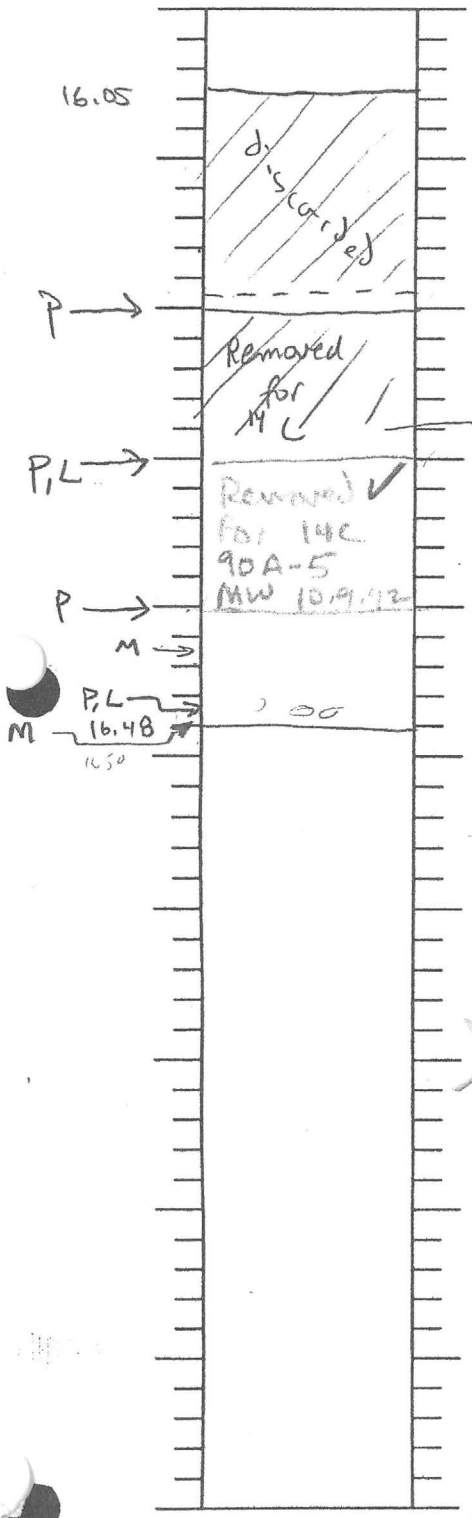
Sampled 7/17/02
VR

Core Description

Site: Carp Lake, Washington Core: #46 90A

Depth: 16.05-16.51 Date: July 27, 1991 Analyst: M. Worona

Depth below [water] [mud] surface



Olive gray (5Y 4/2) med silty clay. This core was noticeably less crumbly than the recent sections deeper than it, and it appears to be much more homogenous in consistency.

Total recovery: 29 cm

Lithology:

65% Silica
<5% Sand size
35% silt size
<10% biogenic
60% Clay size

1630-1640 ?

35% Carbon (Org)
<5% sand size
< 40% silt size
> 55% clay size

*photographed 10/4/91

13-July-2012
Photo 121

Sample size:

1cc for pollen at 16.47, 16.40, 16.30, 16.20
1cc to LOI at 16.47, 16.30

Field notes:

~~46 16.05-16.51 43 0-14 discarded~~
~~14-43 gray green silty clay 5Y 3/2~~

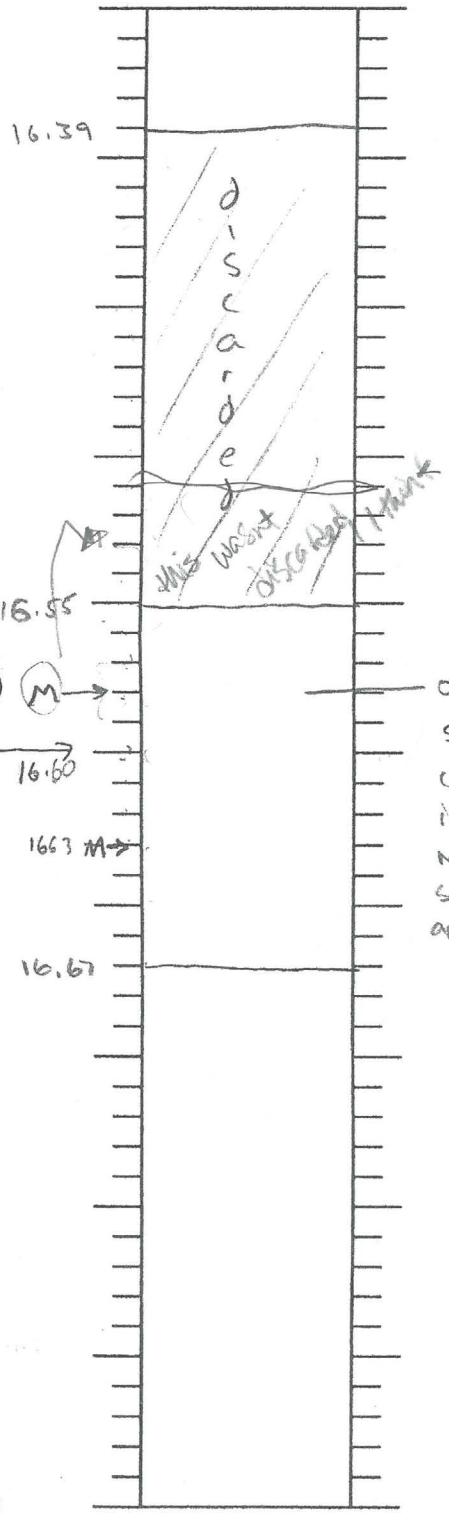
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

Site: Carp Lake, Washington Core: 47 90A

Depth: 16.39-16.67 Date: July 26, 1991 Analyst: M. Worona

Depth below [water] [mud] surface



Sample 90A-47-1 spots of possible tephra ~16cm down (13?cm)

olive gray 5Y 4/1 silty clay. This unit contains a noticeable increase in coarse material. Several fine sand size grains are present

Total recovery: 16 cm

Lithology:

60% silica
10% Sand sized
70% silt sized
5% biogenic
95% Non Bio
20% Clay Sized

40% carbon
<5% Sand size
20% Silt size
75% Clay Size

photographed 10/25/91

14-July-2012 photos 163-164

Sample size:

1 cm³ for pollen at 16.60

55 67
39 39
28 28

Field notes:

10/12/98

47 16.39-16.67 28 0 ~~16~~ discarded

12-28 grey green silty clay

20-12 = 16 ok

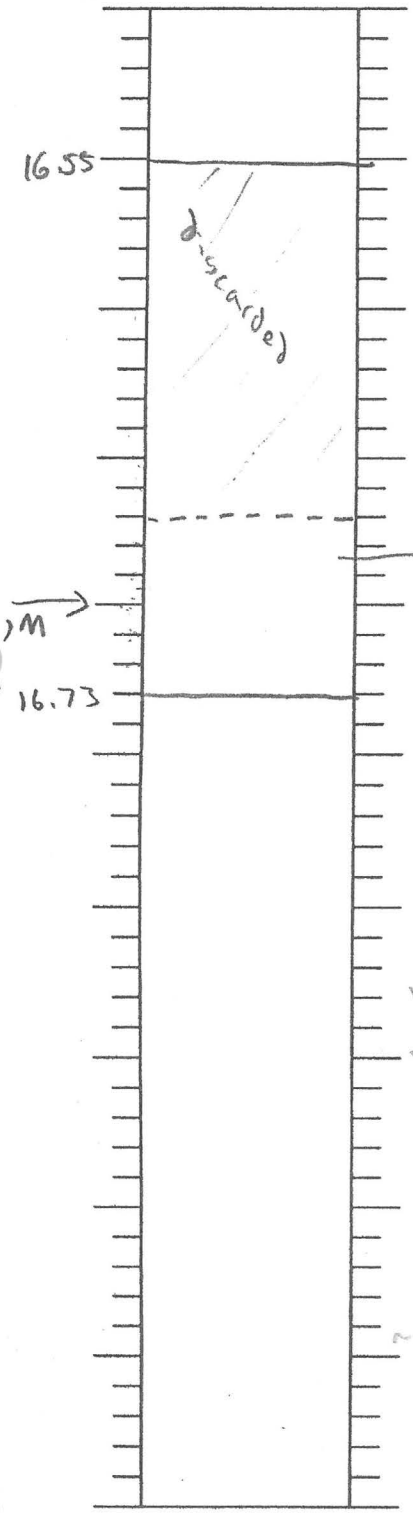
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M = Magnetic properties

Core Description

Site: Carp Lake Washington Core: 4B 90A

Depth: 16.55 – 16.73 Date: July 26, 1991 Analyst: M. Wonora

Depth below [water] [mud] surface



Total recovery: 6 cm

Lithology:

70% Silica
5% Sand Sized
30% Silt Sized
15% Biogenic Chrysophytes & Diatoms
85% Non Biogenic
65% Clay Sized

30% Carbon
20% Silt Sized
80% Clay Sized

Olive black 5Y 2/1 Fine Silty Clay. This unit contains numerous small (½ cm) ped like structures that seem to contribute to its crumbly nature

photographed 10/24/91

13-July-2012
photos 68-69

0–
~2.5 – gray to tan zone – pedogenic or trace of tephra?
7–
12mm
Sample
90A-48-1

Sample size: 1 cm³ for pollen and 1 cm³ for LOI at 16.70

Field notes: 4B 16.55-16.73 1B 0-12 discarded
12-18 gray green silty clay

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

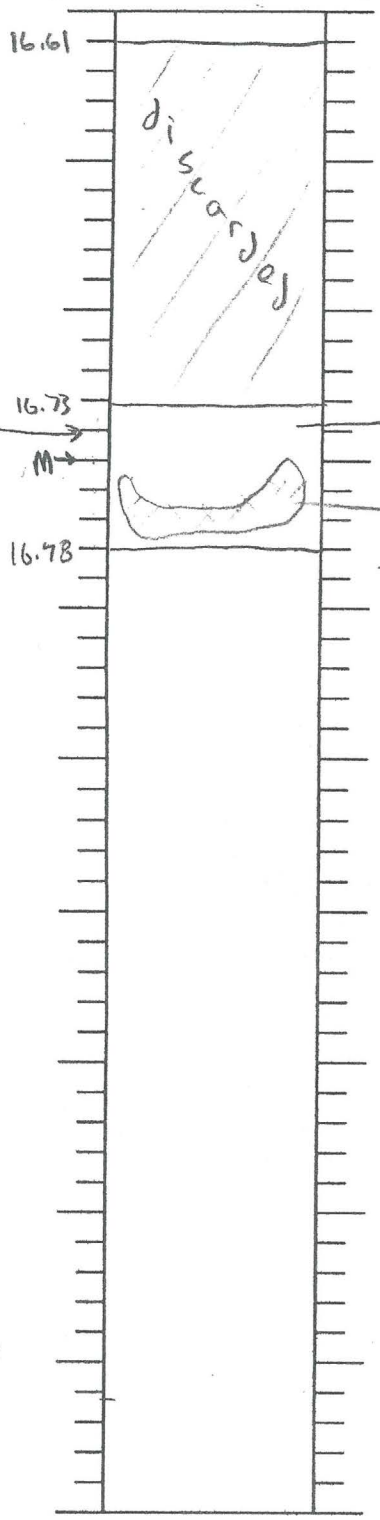
Core Description

no remaining material - discarded in 2002

Site: Carp Lake, Washington Core: 90A # 49

Depth: 16.61- 16.78 m Date: July 24, 1991 Analyst: M. Wonora

Depth below [water] [mud] surface



All salvageable material sampled the rest was discarded. 7/02

Total recovery: 5 cm + 12 discarded

Lithology:

50% silica
<5% sand sized
30% silt sized
15% biogenic spicules, diatom chrysophytes
65% clay sized

50% Organic Carbon
<5% sand sized
10% silt sized
85% clay sized

Grayish brown 5YR 3/2 fine silty clay

Olive black 5Y 2/1 fine silty clay.

This unit contains the lumpy structures similar to soil peds. This accounts for much of the crumbly nature

Photographed 10/25/91

Sample size:

1 cm³ for pollen at 16.74

Field notes:

49 16.61-16.78 17 0-12 discarded

12-17 silty clay w/ dry clay pebbles

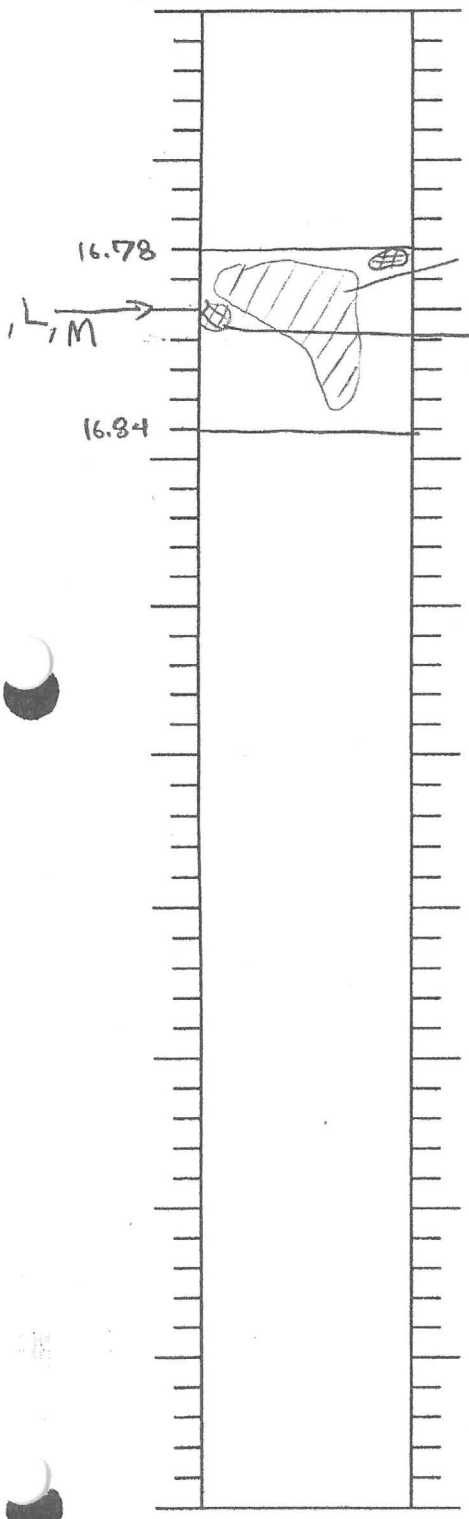
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M: magnetic properties

Core Description

Site: Carp Lake, Washington Core: #50 90A

Depth: 16.78-16.84 Date: July 24, 1991 Analyst: M. Waroma

Depth below [mud] surface



Dusky Brown 5 YR 2/2 silty clay with a few small areas of Dark Yellowish Brown 10 YR 4/2 clay

This unit also contains numerous small < 1cm. peds(?) associated w/ soil formation.

Total recovery: 6cm

Lithology:

70 % silica
<5 % sand
50 % silt sized
10% Biogenic (spicules & chrysophyte)
90% Non Biogenic
45% clay sized
30 % organic carbon
<5% sand sized
85% clay sized
10% silt sized

photographed 10/24/91

Sample size:

1 cm^3 for Pollen and LOI at 16.8

Field notes:

50 16.78-16.84 6 0-6 dry silty clay

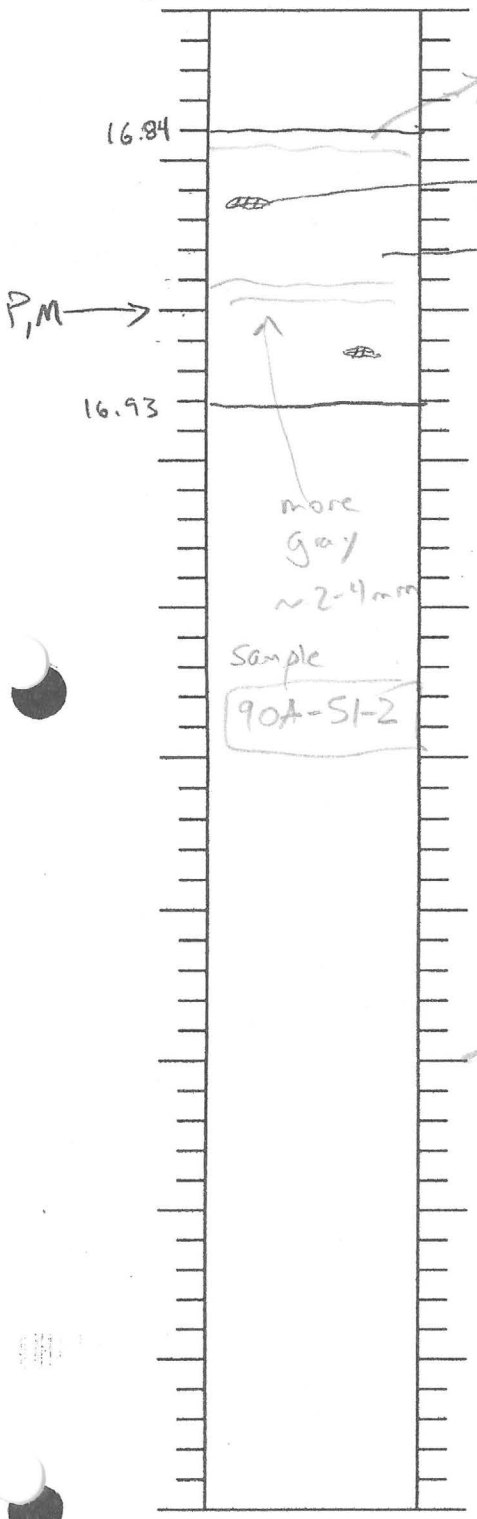
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

Site: Carp Lake Washington Core: 90A #51

Depth: 16.84 - 16.93 Date: July 29, 1991 Analyst: M. Worora

Depth below [water] [mud] surface



more gray ~1-3mm

Sample 90A-51-1

small patches of Dark yellowish Brown (10 YR 4/2) clay in a predominately Moderate brown (5 YR 3/4) Silty clay matrix. This unit is characterized by numerous pods (≈ 1/2 cm diameter) that are typical of soil formations.

more gray ~2-4mm

Sample 90A-51-2

at top and at 6cm down is paler sediment w/ color shifted toward gray — ash ?? (or pedogenic?)

probably need density separation for these

photographed 10/24/91

13-July-2012

photo 67

Total recovery: 9 cm

Lithology:

75% Silica
<5% silt sized
60% silt sized
- 10% Biogenic
90% Non Biogenic
35% clay sized

25% Carbon
20% silt sized
80% clay sized

Sample size:

1 cm³ at 16.90 for pollen

Field notes:

51 16.84 - 16.93 9 0-9 crumbly silty clay grey green 3Y 3/2 red brown 5 YR 3/2 This unit seems to be a soil

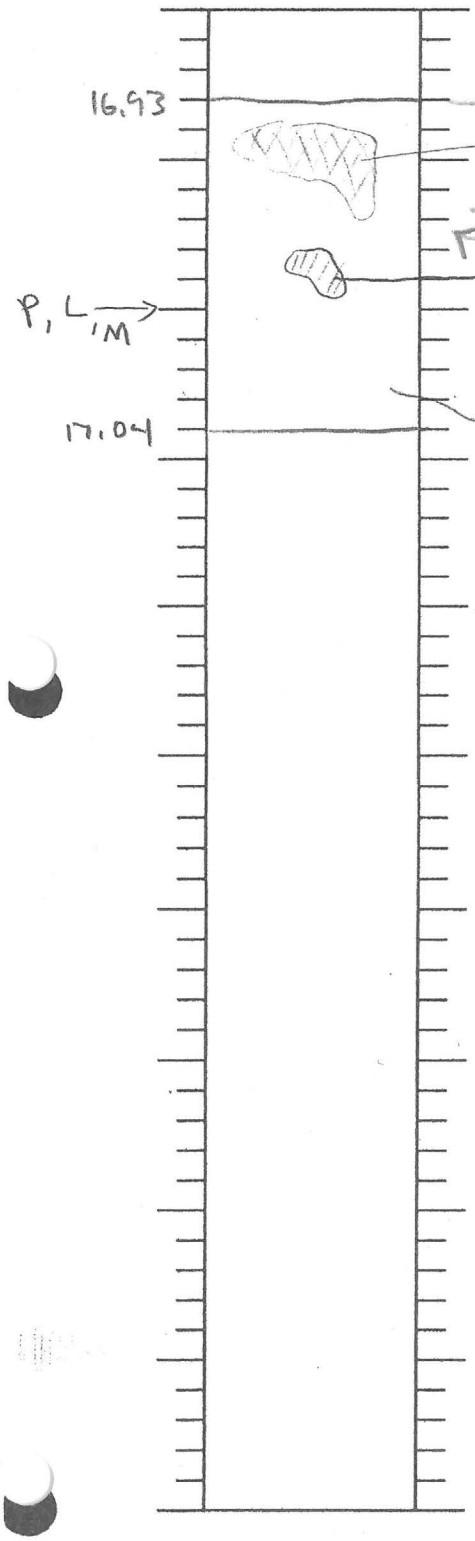
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic property

Core Description

Site: Carp Lake, Washington Core: #52 90A

Depth: 16.93 - 17.04 Date: July 23, 1991 Analyst: M. Waronen

Depth below [water] [mud] surface



upper piece, a bit jumbled

patch of Dark gray (N3) silty clay.

light gray band, chunks probably not tephra, but sampled just in case

Light olive gray (5Y5/2) clay. This is the only occurrance of such clay seen in the cross section.

90A-52-1

Dark yellowish brown 10YR 4/2 Silty Clay

Only the ends of this core are intact. VL 7/92

photographed 10/24/91

14-July-2012

photo 185

Total recovery: 11 cm

Lithology:

80% Silica

<5% Sand size

70% Silt size

5% biogenic

95% Non-Bio

25% Clay size

20% Carbon

20% Sand sized

40% silt sized

40% clay sized

Sample size:

1 cm³ at 17.00 for pollen and

1 cm³ at 17.00 for LOI

Field notes:

52 16.93-17.04 11

0-11 crumbly silty clay

grey green 5Y 3/2

red brown 5YR 3/2

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

Site: Carp Lake, Washington Core: 90A #53

Depth: 17.04 - 17.17 Date: July 23, 1991 Analyst: M. Worona

Depth below [water / mud] surface

Total recovery: 13 cm

Lithology:

upper half of core contains a large patch of Dark Grey (N3) silty clay. Bottom half contains mottled patches of brownish gray (5YR 4/1) Dark Yellowish brown 10YR 4/2 and Dark gray (N3) silty clay.

The bottom ≈1 cm is med grained ash.

tephra? 90A-53-1

80% silica
10% sand size
50% silt size
10% biogenic chrysophytes,
90% non biogenic
40% clay size

20% organic carbon
45% sand sized
15% silt sized
80% clay sized

sample 90A-53-2

14-July-2012

photos 82-84

photographed 10/24/91

Sample size:

1 cc for pollen at 17.10

Field notes:

53 17.04-17.17 13

0-13 crumbly silty clay same as above (#52)

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

M= magnetic properties

Core Description

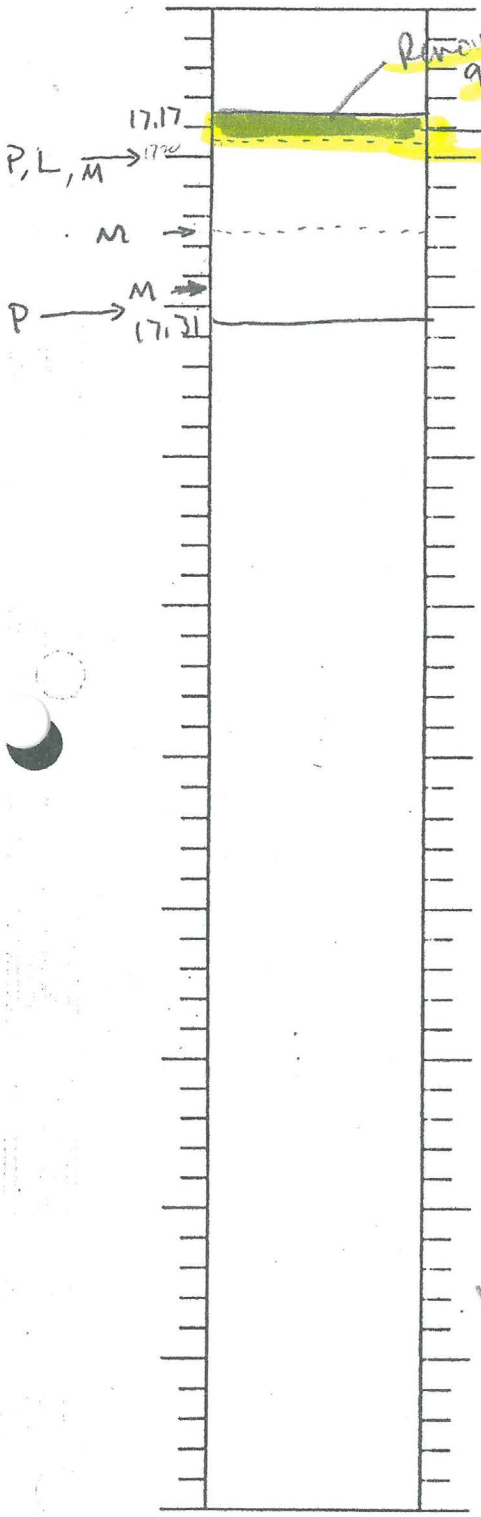
Site: Carp Lake, Washington Core: 90A #54

Depth: 17.17 - 17.33 Date: July 23, 1991 Analyst: M. Worona

Depth below [water / mud] surface

Sample 90A-54-1

Total recovery: 14 cm



Volcanic Ash = top 2 cm (red/fine sandy)

A large patch of Greenish black 5G 2/1 fine silty clay extends to 17.25 where the core is broken. All of the material below 17.25 is moderate brown 5YR 3/4 fine silty clay

All material below 17.25 too crumbly to save - discarded

Lithology: * 90A #54

80% silica
- <5% sand sized
- 25% silt sized
  - 80% Non Biogenic
  - 20% Biogenic (chrysophytes, Diatoms & spicules)
- 70% clay sized

20% Organic Carbon
- 90% clay sized
- 10% silt sized
  - No identifiable pollen

photographed 10/24/91

Sample size:

1cc at 17.20 for LOI

1cc at 17.20 & 17.30 for Pollen

Field notes:

54 17.17 - 17.33 15

0-1 volcanic

1-15 brown & green silty clay as above (90A #53)

14-July-2012 photo 162

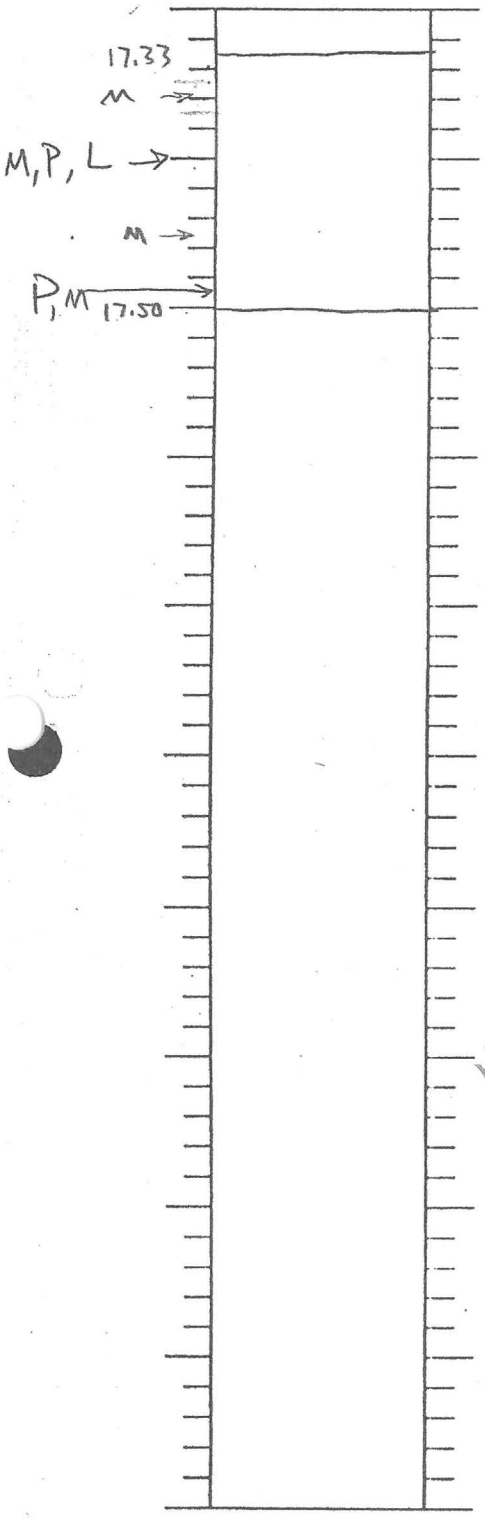
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

Site: Carp Lake, Washington Core: 90A #55

Depth: 17.33 – 17.51 Date: July 23, 1991 Analyst: M. Woronca

Depth below [water] [mud] surface



Total recovery: 17 cm

Lithology:

The seemingly un oxidized patches are a dark gray (N3) silty clay, The majority of the core is dark yellowish brown (10 YR 4/2)

There are bands of clay enrichment at ≈ 17.39 & 17.41-17.42. Some vivianite is also present

20% organic carbon
<5% sandsized
50% silt sized
45% clay sized

80% silica
15% sand sized
70% silt sized
15% clay sized

10% = biogenic silica
ie chrysophytes & spicules

photographed 10/25/91

13-July-2012
Photo 120

Sample size:

1 cc for Pollen at 17.49 & 17.40
1 cc for LOI at 17.40

Field notes:

55 17.33-17.51 17 cm
0-17 brown & green grey silty clay
same as #54
11 cm - gypsum(?) crystal

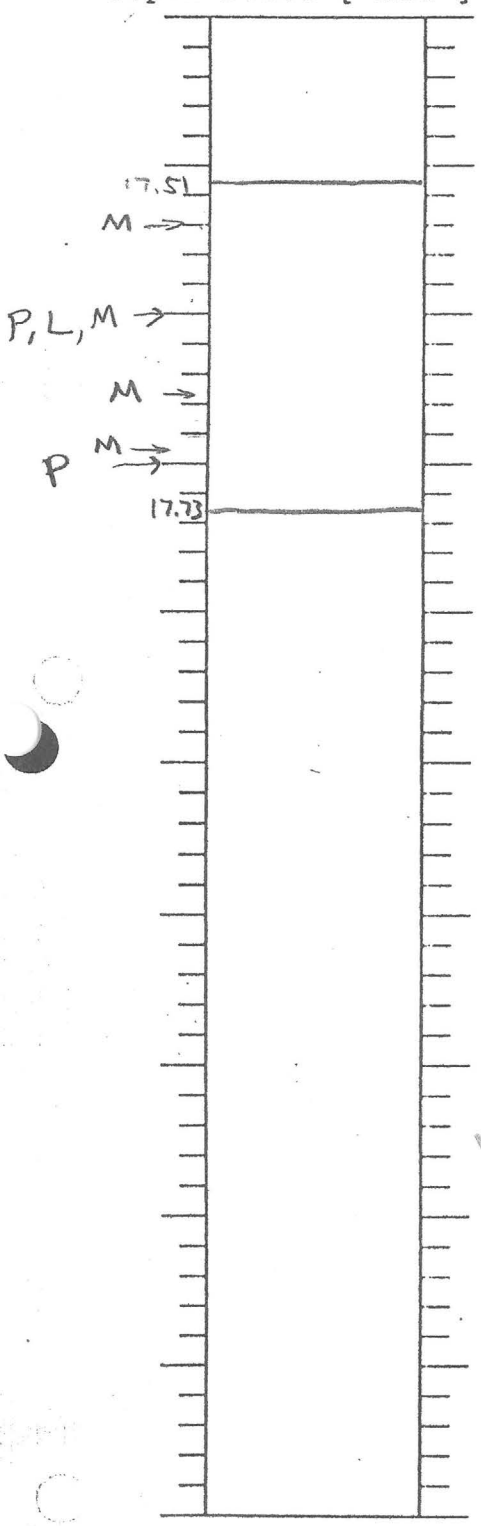
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

Site: Carp Lake, Washington Core: 90A #56

Depth: 17.51 - 17.76 Date: 5.30.91 Analyst: M. Wonorow

Depth below [water] [mud] surface



Total recovery: 22cm

Lithology:

Olive Black 5Y 2/1
fine silty clay with a small component of larger grains (fine sand)

55% organic carbon
90% clay sized
5% silt sized
<5% sand sized

45% silica
60% clay size
35% silt sized
Some chrysophyte & spicule
<5% sand sized

1772-1773 - remaining material removed. VL 7/02

photographed 10/24/91

13-July-2012
photo 66

Sample size:

1cc at 17.70 & 17.60 for Pollen

1cc at 17.60 for LOI

Field notes:

56 1751 - 17.76 24

0-24 brown & green grey silty clay

Same as above

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: # 57 90A

Depth: 17.76-17.98 Date: 5.30.91 Analyst: M. Worona

Depth below [water / mud] surface

Total recovery: 22 cm

Lithology:

Sample 90A-57-0

at 12.3 cm tephra probable bedmore bed discontinuous (gray fine sand)

at 15.5 cm lighter color possible silty tphra ~3mm ash

30% Organic Carbon
- 75% Clay size
- 20% Silt/Pollen size some tricolpate (oak?)
- 5% Sand size

Sample 90A-57-1

17.76

P, L, M →

M →

M, P →

M →

17.98

Dark grey (N3) fine silty clay w/ scattered vivianite. The bottom 1cm is only distinguishable by a slight coarsening of grain size due to color change from oxidation.

70% Silicon
- 60% Clay size
- 30% Silt size
  - 85% non-biogenic
  - 15% biogenic - Diatoms, chrysophyte spicules
- 10% Sand sized

chunks of gray ash at base - chunks up to 1.2cm suggest significant layer

Sample 90A-57-2

photographed 10/24/91

Sample size:

1cc for pollen at 17.90 & 17.80

1cc for LOI at 17.80

Field notes:

57 17.76-17.98 22 cm

0-21 brown green & grey silty clay

21-22 ash? (fine sand)

5YR 5/2

11-July-2012

Crumbly esp lower part

photos 155-157 161

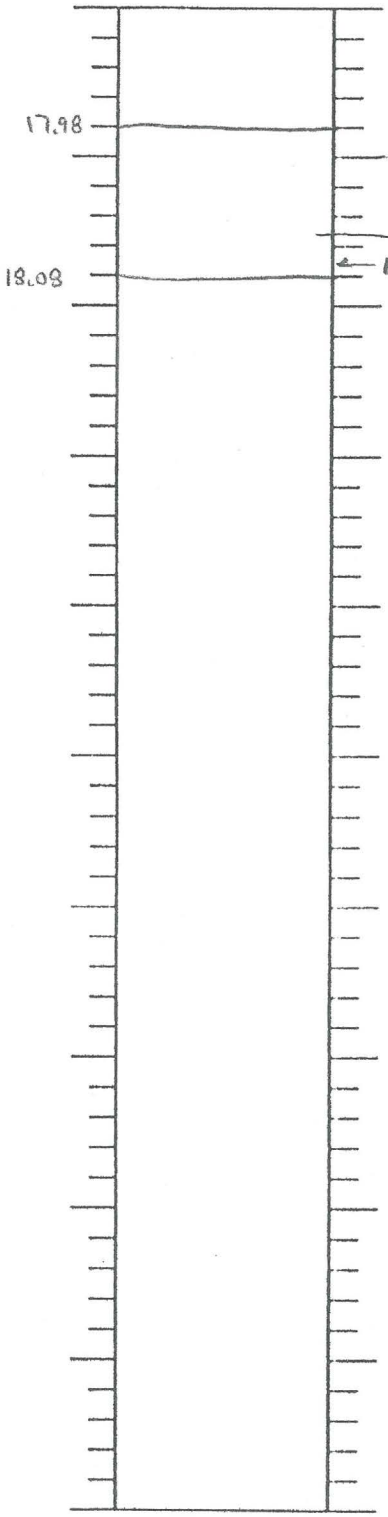
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M=magnetic properties

Core Description

Site: Carplake, Washington Core: 90A#58

Depth: 17.98 - 18.08 Date: 5.16.91 Analyst: Marc Worona

Depth below [water / mud] surface



silty gray tephra at top

Total recovery: 10 cm

Lithology:

Sample 90A-58-1

18.00 → P, L, M

olive Black 5Y 2/1
silty clay w/ some coarser grains
← M

Really crumbly.
Good luck.
K 7/02

40% Organic Carbon
<5% Sand sized
80% Clay sized
15% Pollen/silt sized

60% Silica
10% Biogenic (Chrysophytes, Diatoms)
90% Non Biogenic
15% Sand sized
40% silt sized
45% Clay sized

14-July-2012
photos 179-180

photographed 10/24/91

Sample size:

Field notes:

58 17.98-18.08 10cm
0-10 silt clay grey green and brown clay v. dry

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

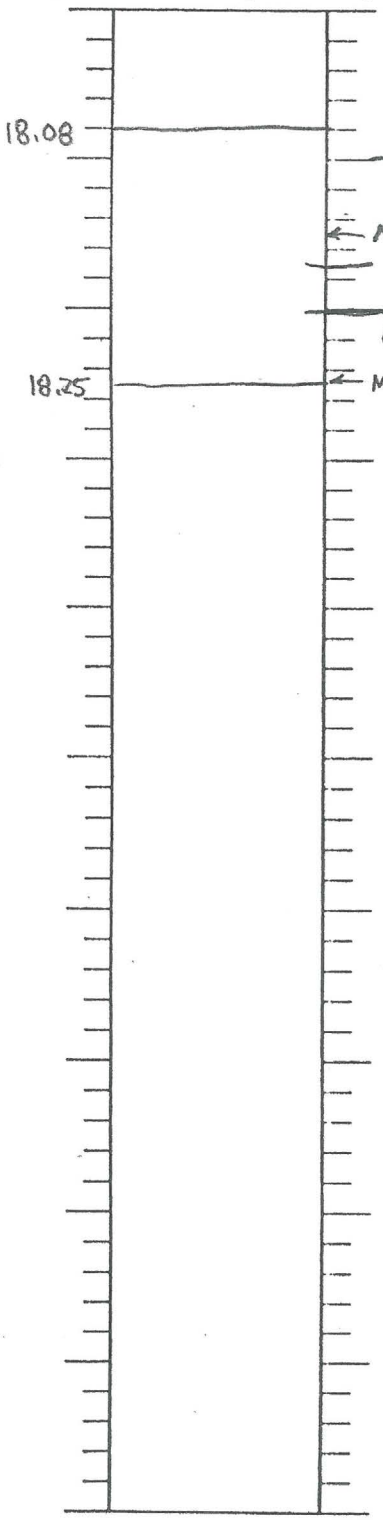
Core Description

no segment discarded in 2002

Site: Carp Lake, Washington Core: 90A #59

Depth: 18.08-18.30 Date: 5.16.91 Analyst: Marc Worona

Depth below [water] / [mud] surface



→ P, M

← M

Olive black 5Y 2/1 fine silty clay

→ P, L, M

← M

sampled for analysis remaining material too crumbly → discarded VL 4/02

photographed 10/24/91

Total recovery: 17 cm

Lithology:

18.10 30% Carbon
5% Sand sized
80% Clay sized
15% Silt/Pollen sized

70% Silica
<5% Biogenic (Spicules)
25% Sand sized
30% Silt sized
40% Clay sized

18.20 – 40% carbon
5% Sand sized
20% silt sized
75% clay sized
60% silica
<5% Biogenic (spicules)
50% Silt sized
40% clay sized
5% Sand sized

Sample size:

1cc taken for Pollen at 18.10 & 18.20

1cc taken for LOI at 18.20

Field notes:

#59 18.08-18.30 17cm

0-17 silty clay grey green and brown clay

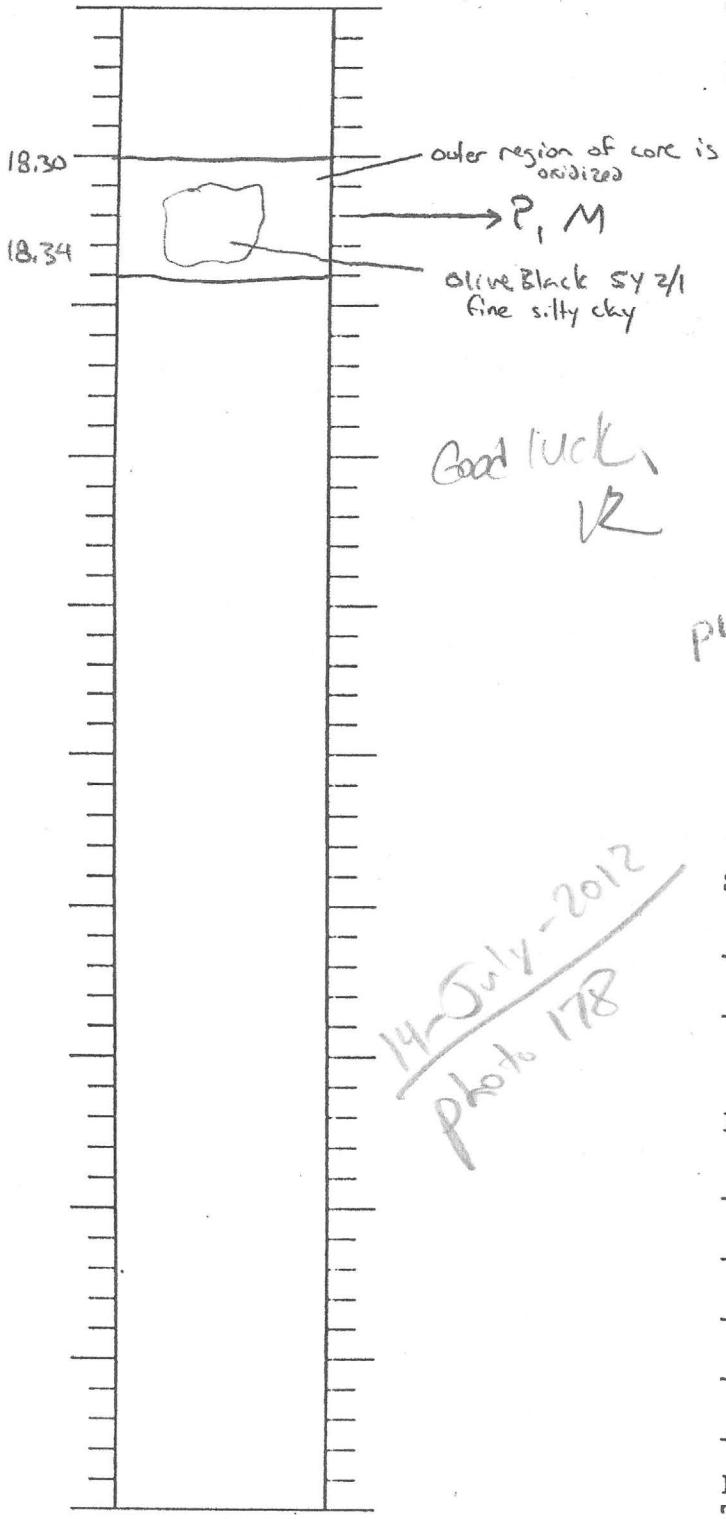
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M: magnetic properties

Core Description

Site: Carp Lake, Washington Core: 90 A #60

Depth: 18.30 - 18.34 Date: 5.9.91 Analyst: M. Worona

Depth below [water] [mud] surface



Total recovery: 4cm

Lithology:

30% Organic Carbon

50% Clay sized
40% silt sized - Chenopod & Pine Pollen
10% Sand sized

70% Silica

70% clay sized
25% silt sized < 90% No Biogenic / 10% Biogenic Diatoms & Pi
5% sand sized

Good luck,
VR

photographed
10/24/91

14-July-2012
photo 178

Sample size:

1 cc for pollen at 18.32 cm

Field notes:

60 18.30-18.34 3cm ~~(lost overbend)~~

Recovered by Dennis

0-3 silty clay; grey green & brown silty clay.

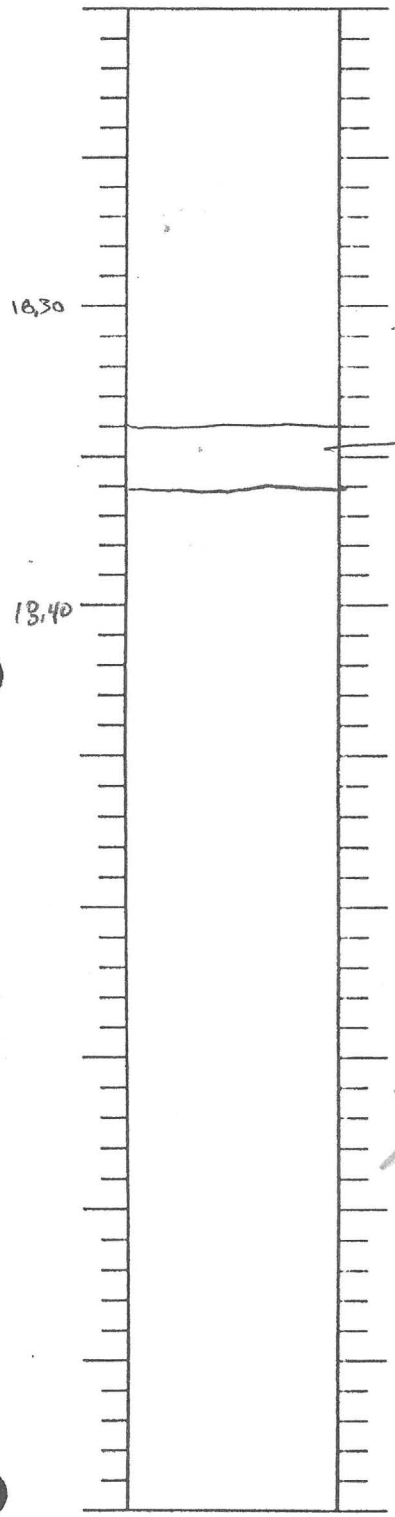
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

Site: Carp Lake Washington Core: 90A #61

Depth: 18.34 - 18.35 Date: 5.9.91 Analyst: M. Woronz

Depth below [water] [mud] surface



Total recovery: 2cm

Lithology:

photographed 10/25/91

Sample size:

No Sample taken

14-July-2012
photo 177

Field notes:

6) 18.34-18.35 1cm

grey green silty clay

looks like rock

green 5 GY 3/2

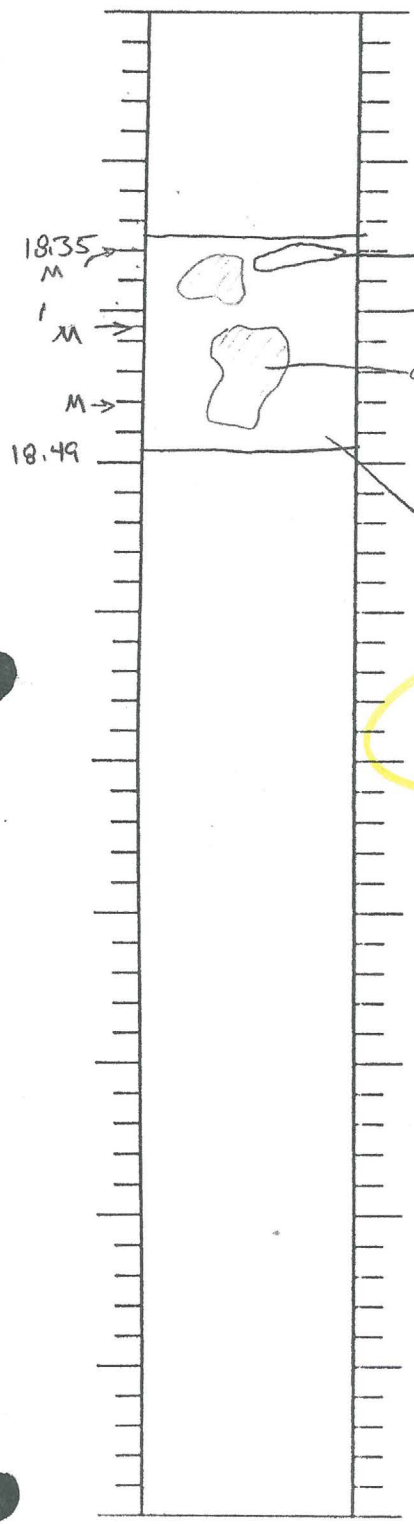
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90A #62

Depth: 18.35 - 18.49 Date: 5.8.91 Analyst: M. Waroza

Depth below [water] / [mud] surface



3 cm x .3cm pebble of siltstone

P, L

Olive Black 5Y 2/1 wet silt and clay with a small component of sand (5Y 2/1 patches appear to be un-oxidized portion of core)

Outer region of core is Moderate brown (5YR 3/4) silty/clay (Oxidized)

Total recovery: 14 cm

Lithology:

20% organic Carbon
5% Silt size
95% Clay size

80% Silica

40% Clay
50% Silt
10% Sand

very little biogenic silica

Remaining material degraded. Too crumbly. 7/02
photographed 10/24/91

Sample size:

1 cc for pollen & LOI

Field notes:

62 18.35 - 18.49 14 cm

grey green silty clay 5GY 3/2

3-4 Ash?

sediment is very dark & crumbly looks like soil

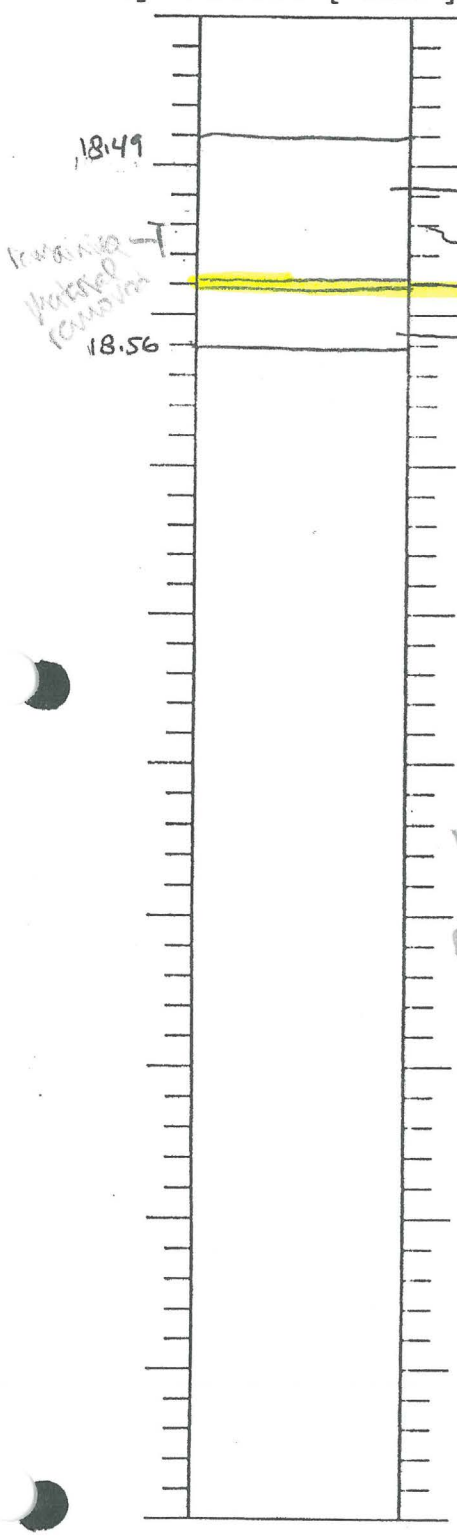
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M = magnetic properties

Core Description

Site: Carp Lake, Washington Core: 90A #63

Depth: 18.49 - 18.55 Date: 5.8.91 Analyst: M. Wrova

Depth below [water / mud] surface



Total recovery: 7cm

Lithology:

15% organic carbon

100% silt/clay sized

85% silica

35% clay sized
60% silt sized
15% sand sized

little if any biogenic silica (spicules & diatoms)

photographed 10/24/91

Sample size:

1cc for pollen

Field notes:

63 18.49 - 18.55 6cm

grey green & brown silty clay

5cm ash ?

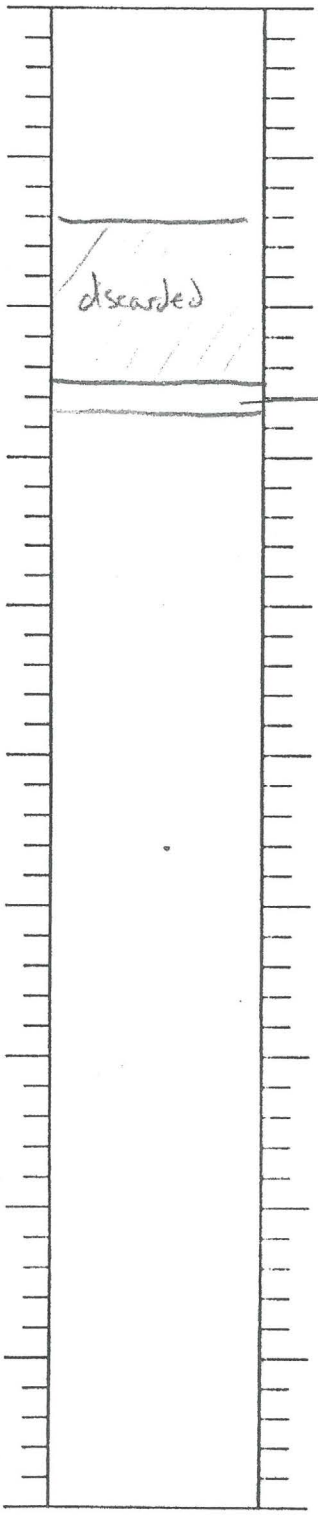
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

Site: Carp Lake, Washington Core: 90A #64

Depth: 18.44 - 18.57 Date: 5-8-91 Analyst: M. Worona

Depth below [water] [mud] surface



Total recovery: Very small sample

Lithology:

Not suitable for pollen analysis

photographed 10/25/91

Sample size:

None Taken

Field notes:

#64 18.44-18.57 13cm 2+11 cm

0-11 cm discarded

11-13 grey green silt and fine grained sand - some bedding 5GY 3/2

Small sample was saved, not suitable for pollen analysis

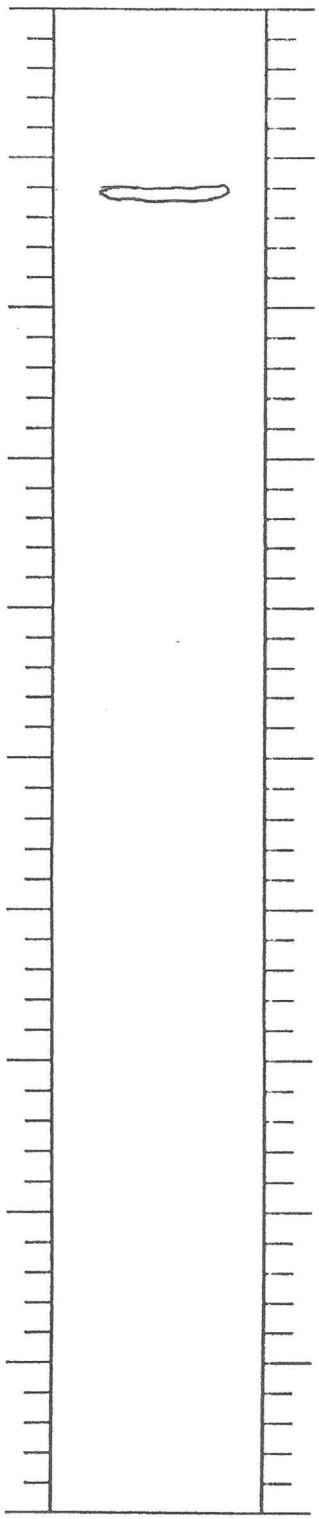
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90A #65

Depth: 18.62 Date: May 8, 1991 Analyst: M. Worona

Depth below [water] [mud] surface



Total recovery:

Lithology:

Ash/mud mix not sampled or described

photographed 10/25/91

Sample size:

Field notes:

Augered sample

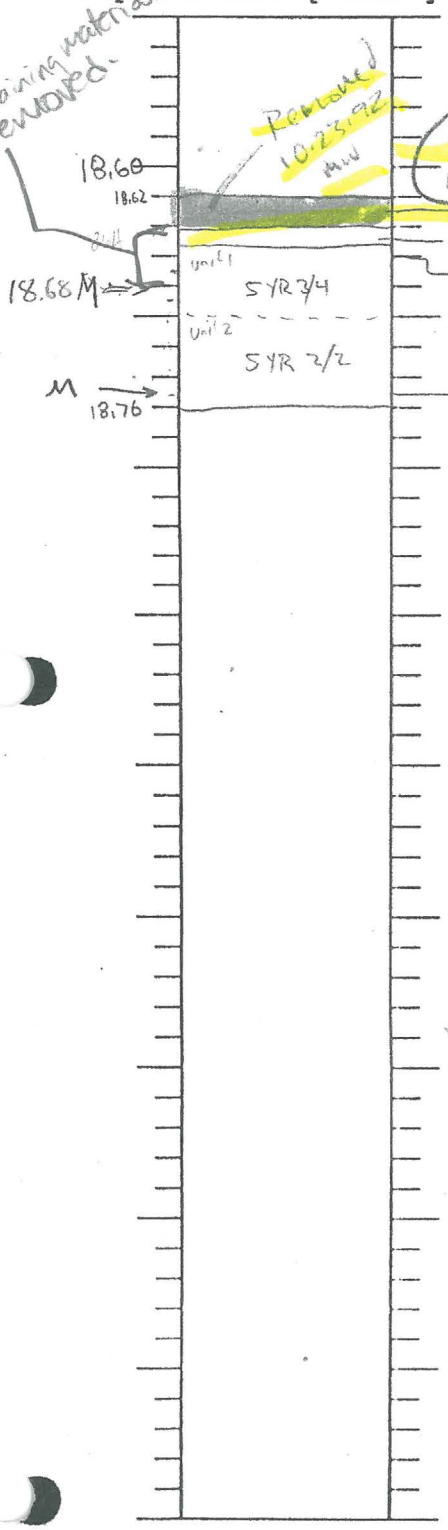
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake: Washington Core: 90A #66

Depth: #66 18.62-18.95 Date: 5.5.91 Analyst: M. Worona

Depth below [water / mud] surface



Total recovery: 14 cm

Lithology:

Sample 90A-66-1

90A#6

Unit 1 20% organic carbon
100% silt & clay sized

med/coarse pumiceous ash

dark fissile fine silty material (N2)

18.66 P, L

80% silica

Transition (not well defined) from from moderate brown to Dusky brown fine silty clay

25% sand
40% silt - very small fraction biogenic/Diatom spicule.
45% clay

18.75 P

Unit 2 5% organic carbon

95% silica
20% sand
50% silt very little appear to be biogenic Some spicules
30% clay

#photographed 9/19/91

14-July-2012

photos 175-176

Sample size:

1cc for pollen & 1cc P & LOI

Field notes: #66 18.62-18.95 14 cm

0-3 pumiceous tephra

3-7 H brown silty clay 5Y 3/2

5YR 3/2 7-14 brown clay w/ silt

looks like lake sediments 5YR 3/2

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

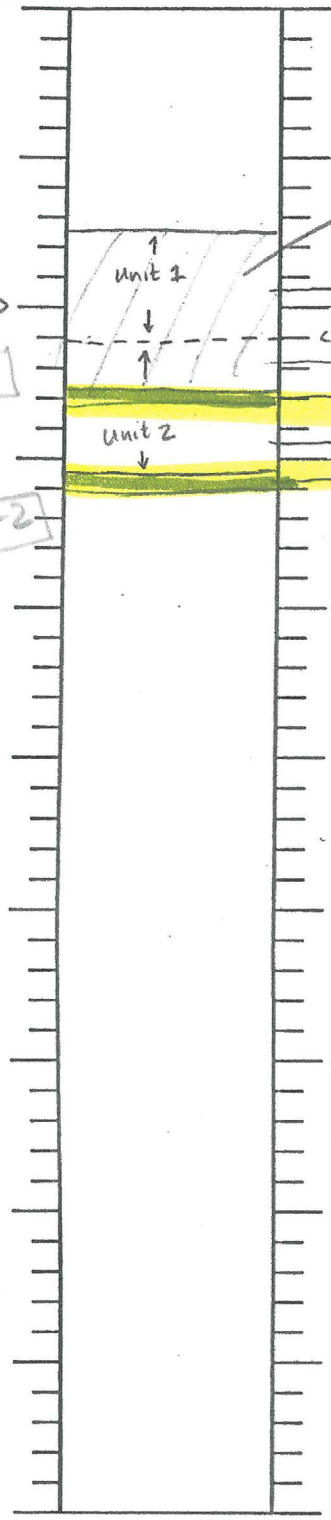
M: magnetic properties

Core Description

Site: Carp Lake Core: 90A # 67

Depth: 18.95 - 19.12 Date: 4.30.91 Analyst: Whitlock/Worona

Depth below [water] / [mud] surface



Removed for 14C 10.9.92 MW

Silty Clay (5 R 2/2)

P, L

contact not sharp

Clayey Silt

fine sandy Ash

Removed (1cm) 9.23.92 MW 90A #67 ← 2.5-7mm

Clayey Silt (10R 2/2)

very fine Silt (Ash) ✓

P

Removed 9.23.92 (2cm) MW

photographed 10/24/91

largely consumed by prior sampling; - still enough for a probe sample

13-July-2012 photo #60

Total recovery:

Lithology:

Unit 1: 15% organic carbon
100% ≥ silt + clay sized? Artemisia? Picea

85% silica
25% sand
35% silt
40% clay
no biogenic silica

Unit 2:
20% organic carbon
50% clay + sized
50% silt sized (pine)
80% silica
50% sand
25% clay
25% silt - chrysophyte, diatoms 10%

Sample size: 1cc for each Pollen and LOI

Field notes:

67 18.95-19.12 17cm 0-11 silty clay brown

11-12 ash, 12-16 brown silty clay (10 YR 2/2)

16-17 ash, fine grained

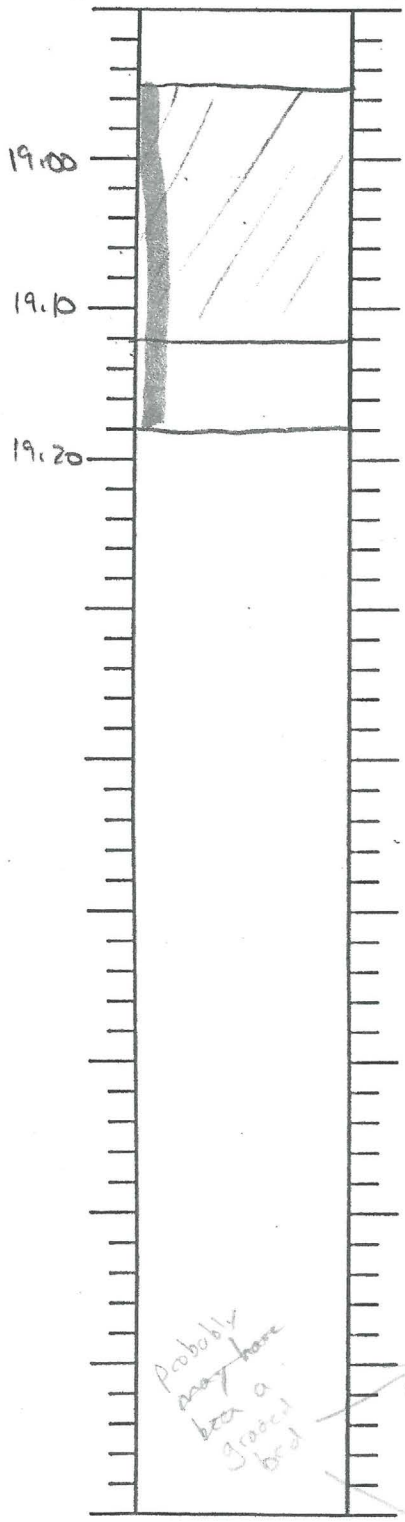
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp lake Core: 90A # 68

Depth: 18.95-19.18 m Date: 4.30.91 Analyst: whitlock/worona

Depth below [water] [mud] surface



discarded in field

(?) ash

9.23.92 mud
Probably same as ash at bottom of 90A #67
∴ Not sampled

Total recovery:

Lithology:

Volcanic Ash

Not described or Sampled

photographed 10/25/91

13-July-2012
photo 59

disturbed during coring

— one ash or two ??

— lower one could be the same as top of segment 69

— upper one may be same as bottom of segment 67

Sample size:

Field notes:

68 18.95-19.18 23 cm

0-17 discarded

17-23 coarse ash pumiceous

probably may have been a graded bed

silty sand-sized

ash

Sample 90A-68-1

"

ash

Sample 90A-68-2

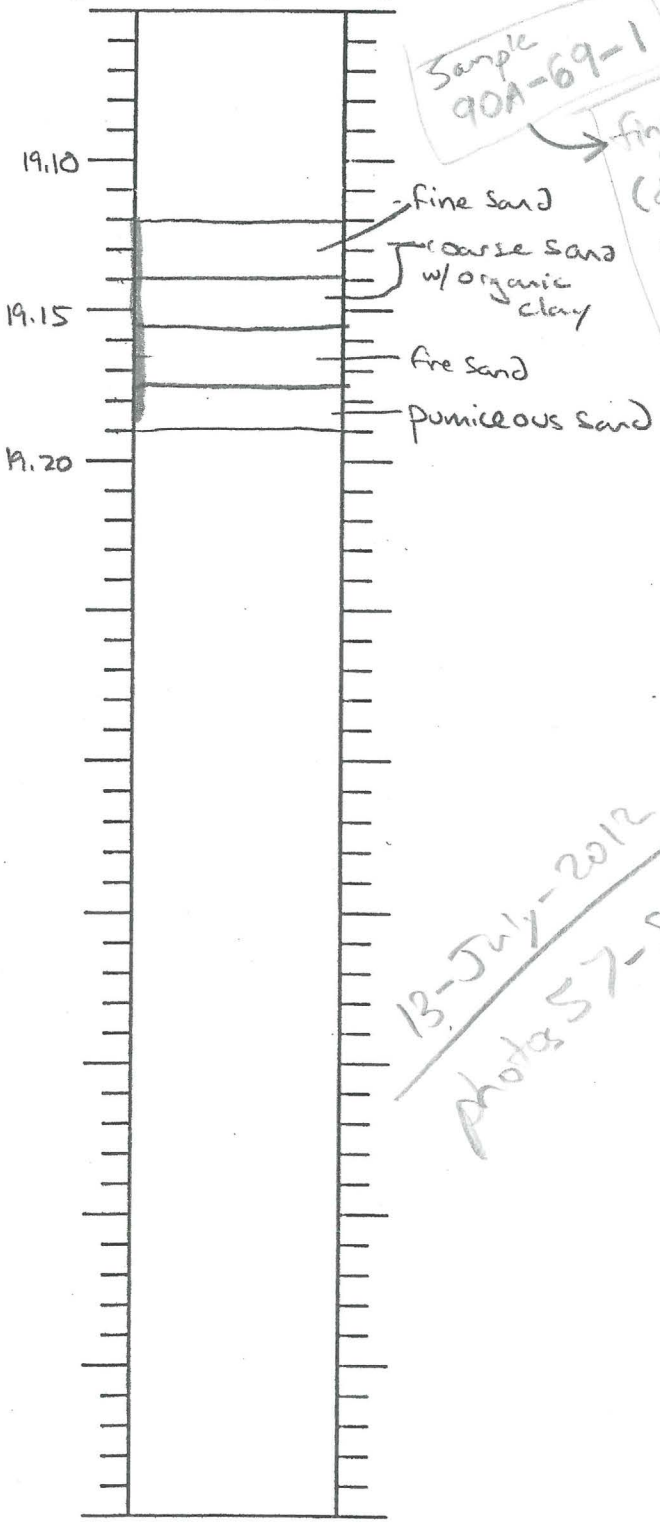
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake Core: 90A #69

Depth: 19.12 - 19.23 Date: 4/30/91 Analyst: C. Whitlock / M. Worona

Depth below [water] / [mud] surface



Sample 90A-69-1

fine ash (disturbed) over coarser tephra - suggests graded bed

19.13-19.18 Removed 9.23.92 MW

Total recovery: 7

Lithology:

Volcanic ash (not sampled)

photographed 10/25/91

13-July-2012 photos 57-58

Sample size:

Not Sampled

Field notes:

19.12-19.23, 11 0-6 ash + mud recovered

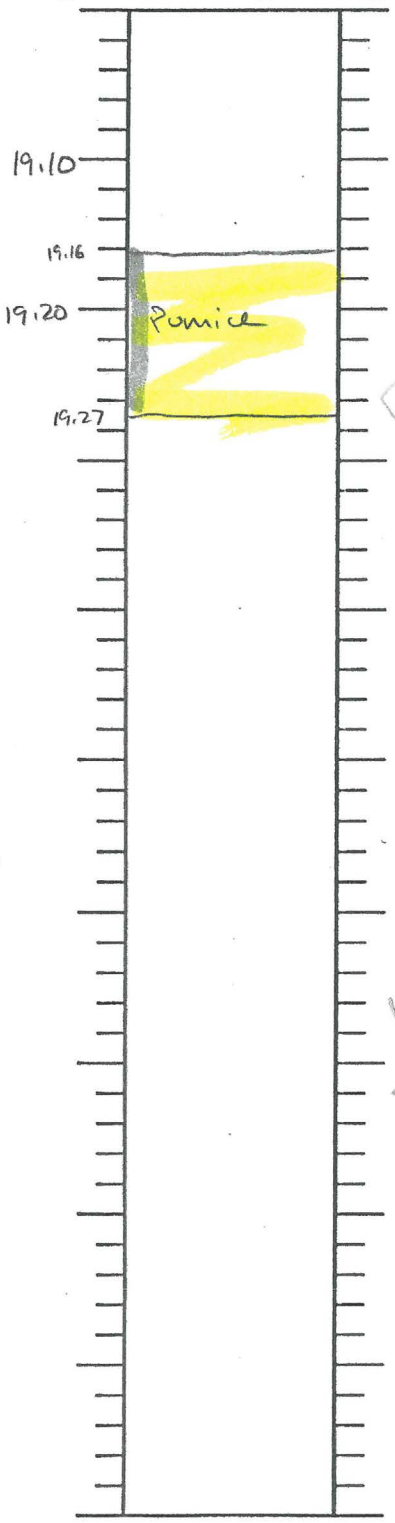
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake Core: 90A #70

Depth: 19.16 - 19.27 Date: 4.30.91 Analyst: C. Whitlock/M. Worona

Depth below [water / mud] surface



Sample 90A-70-1

Total recovery: 11 cm

Lithology:

Medium Upper/Coarse pumiceous ash

Not sampled or described

photographed 10/25/91

13-July-2012
photo 56

Sample size:

No Sample Taken

Field notes:

#70 19.16 - 19.27 11cm 0-11 pumiceous ash

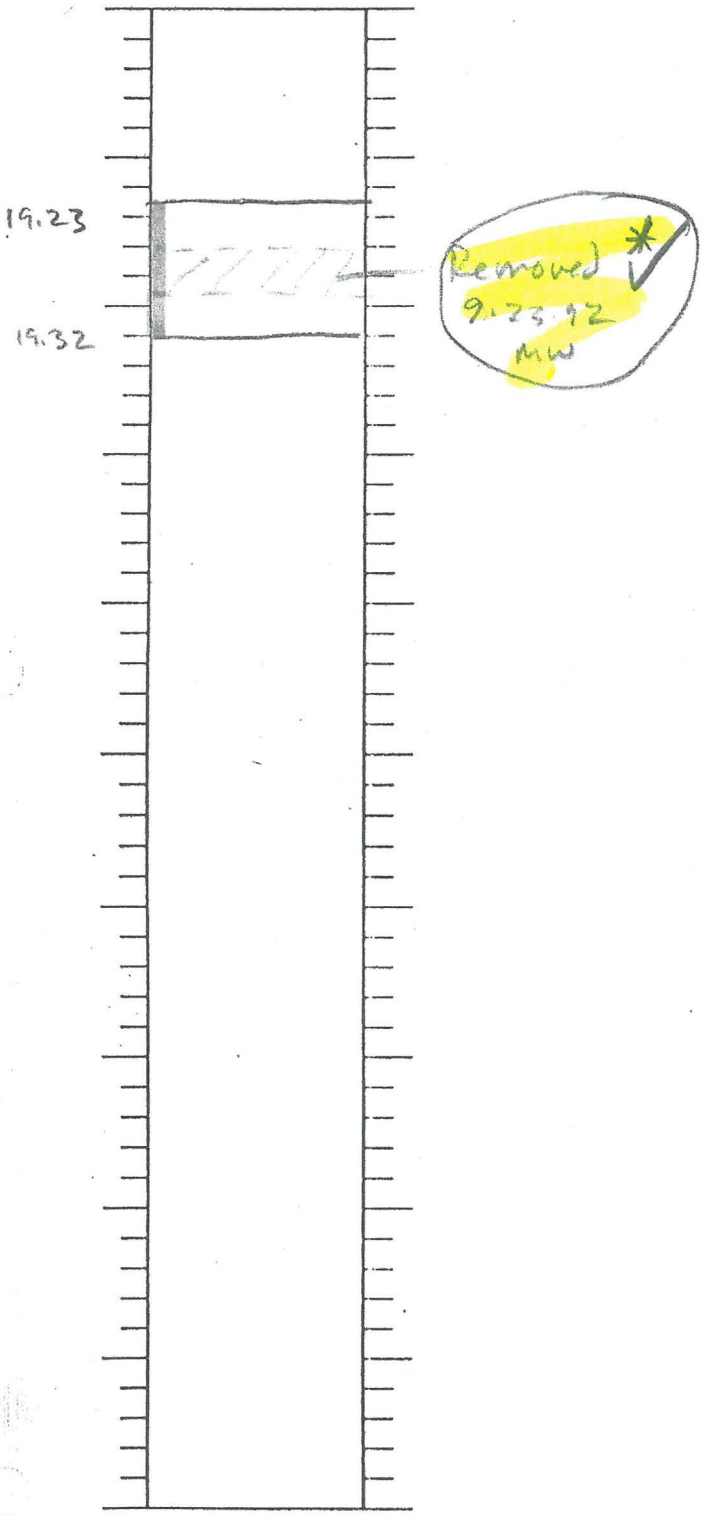
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake, Washington Core: 90A #71

Depth: 19.23 - 19.32 Date: 4.30.91 Analyst: C. Whitlock/M. Wa[illegible]

Depth below [water / mud] surface



Total recovery:

Lithology:

Tephra, not sampled or described

12-July-2012
photo #40
Sandy tephra
sample
90A-71-1

photographed 10/25/91

Sample size:

Field notes:

0-9 pumiceous Ash

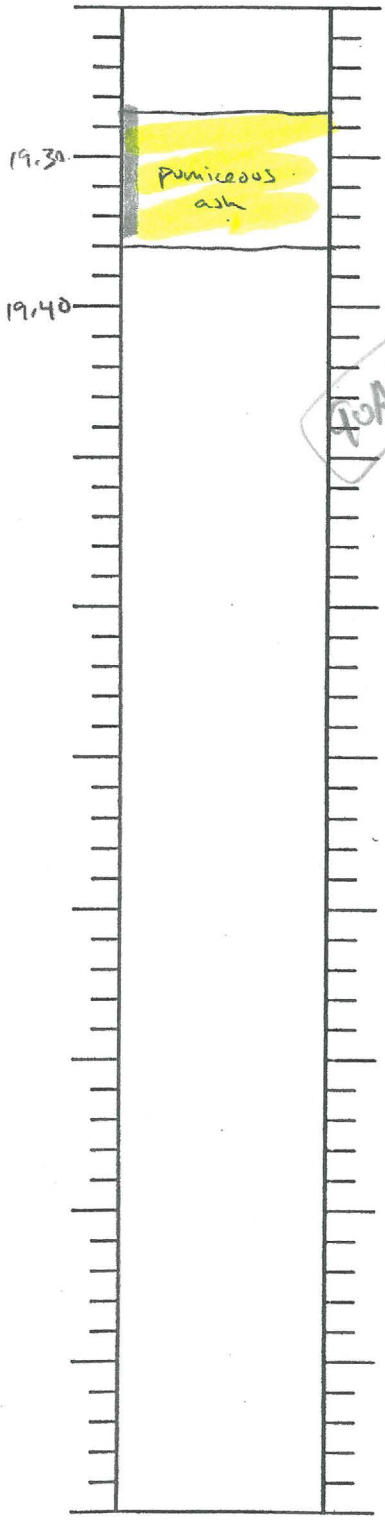
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake Core: 90A #72 19.27-19.36

Depth: 19.27-19.36 Date: 4.30.91 Analyst: Whitlock/M. Worona

Depth below [water] [mud] surface



Sample 90A-72-1

photographed 10/24/91

13-July-2012
photo #55

Total recovery: 9cm

Lithology:

Upper med/coarse pumiceous ash

Sample size: No Sample taken

Field notes:

#72 19.27-19.36 9cm 0-5 junk (mostly ash)
5-9 pumiciousash

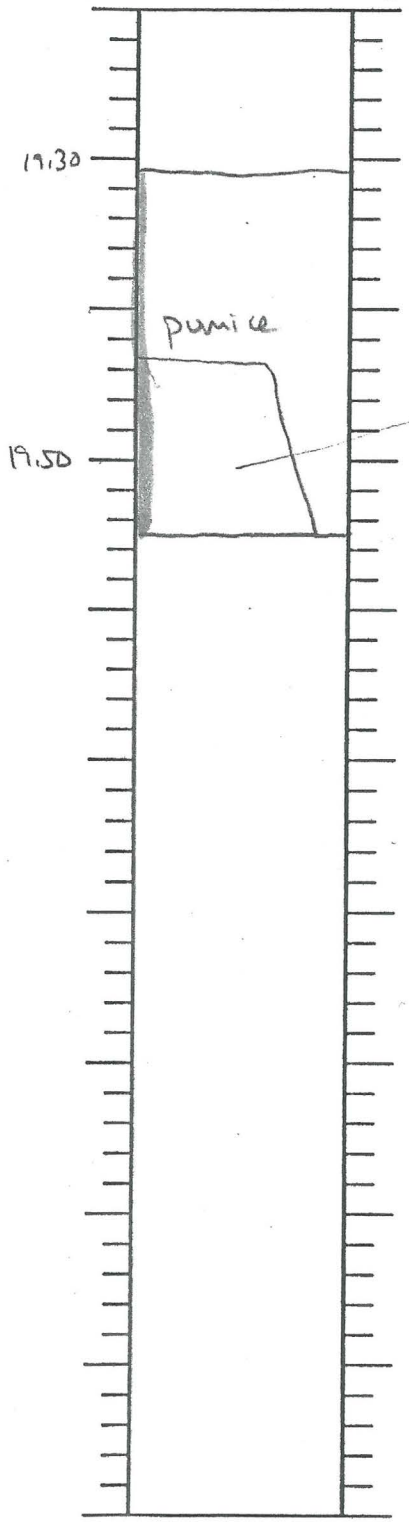
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake Core: 90A 73 19.31-19.55

Depth: 19.31-19.55 #73 Date: April 30, 1991 Analyst: C. Whitlock/M. Worona

Depth below [water] surface



Total recovery: 14 cm

Lithology:

Upper Med/Coarse grained pumice

sent to Sarna-Wojcicki on 2/25/96 for Ar/Ar date

photographed 10/25/91

all tephra sample 90A-73-1

13-July-2012 photo

Sample size: No Samples taken

Field notes: 0-5 junk

5-14 pumiceous ash

24 cm recovery

#73 19.31-19.55 24cm

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

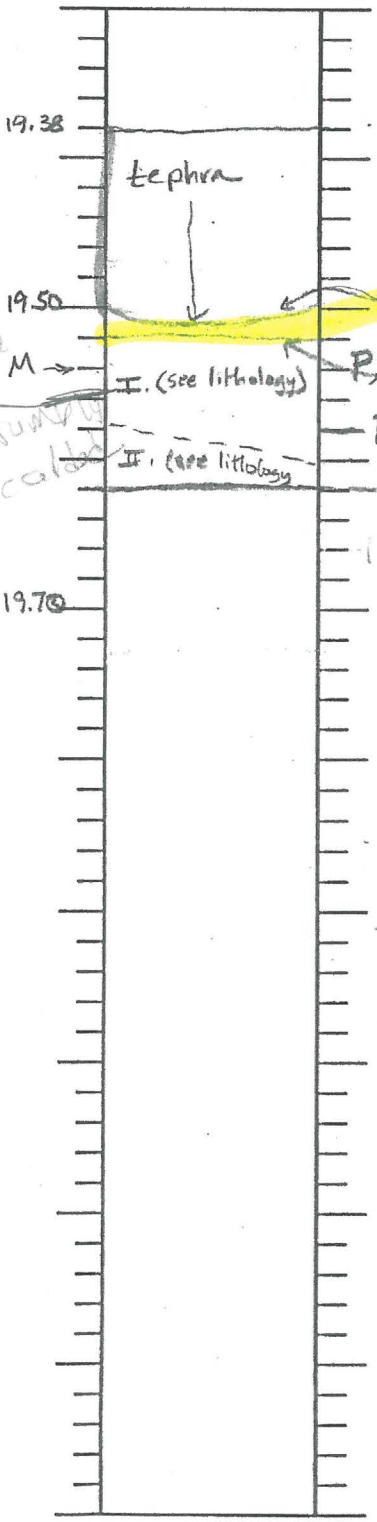
Core Description

#74

Site: Carp Lake Core: 90A

Depth: 19.38 - 19.73 #74 Date: 4/25/91 Analyst: C. Whitlock / S. Shafer

Depth below [water] / [mud] surface



Total recovery: 24

Lithology:

I. silty clay
60% organic carbon
85% clay sized < 7 μ
15% pollen sized
10% silt sized >100μ
40% silica
50% biogenic silica
60% spicules, chrysophytes

same as above (#73)

II Clay, organic, w/ plant remains
70% organic carbon
60% clay sized
15% >100μ, silt sized
25% pollen size Artemisia, Pine

30% silica
70% biogenic
50% diatoms (diverse)
50% chrysophytes + sponge spicules
30% inorganic (15% >100μ)

Sample size:

1 cc for pollen every 10 cm

1 cc for LOI every 20 cm

Field notes: #74 19.38-19.73, 24cm,

0-13 pumiceous ash 10YR 4/2

13-24 organic silty clay

10YR 4/2

plant debris

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

M= magnetic properties

Core Description

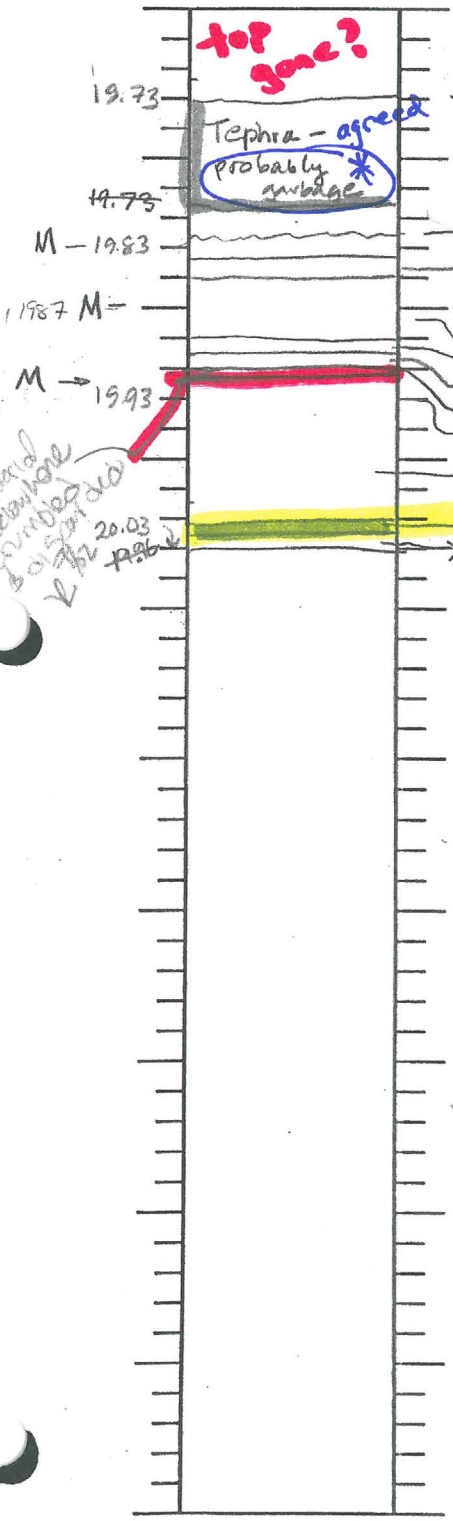
Site: Carp Lake Core: 90A #75

Depth: #75 19.73-20.03 Date: 4/25/91 Analyst: Marc Worona

Depth below [water] / [mud] surface

Total recovery: ~~23~~ 30 cm have 15cm

Sample 90A-75-1 previously done WA5-19



Lithology:

silty clay unit

70% organic carbon
10% - >100 μ (charcoal?)
20% - pollen sized - Pinus, Picea, C
70% - clay sized

30% silica
15% Pennales diatoms
85% inorganic
20% silt sized >100 μ
20% pollen sized
60% clay sized < 7μ

photographed 10/24/91

13-July-2012
photo #54

Sample size:

1cc for pollen every 10 cm

1cc for LOI every 20 cm

Field notes:

#75 19.73-20.03; 30 cm

0-9 pumiceous ash probably garbage

9-30 brown organic silty clay
10YR 4/2 w/plant debris

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

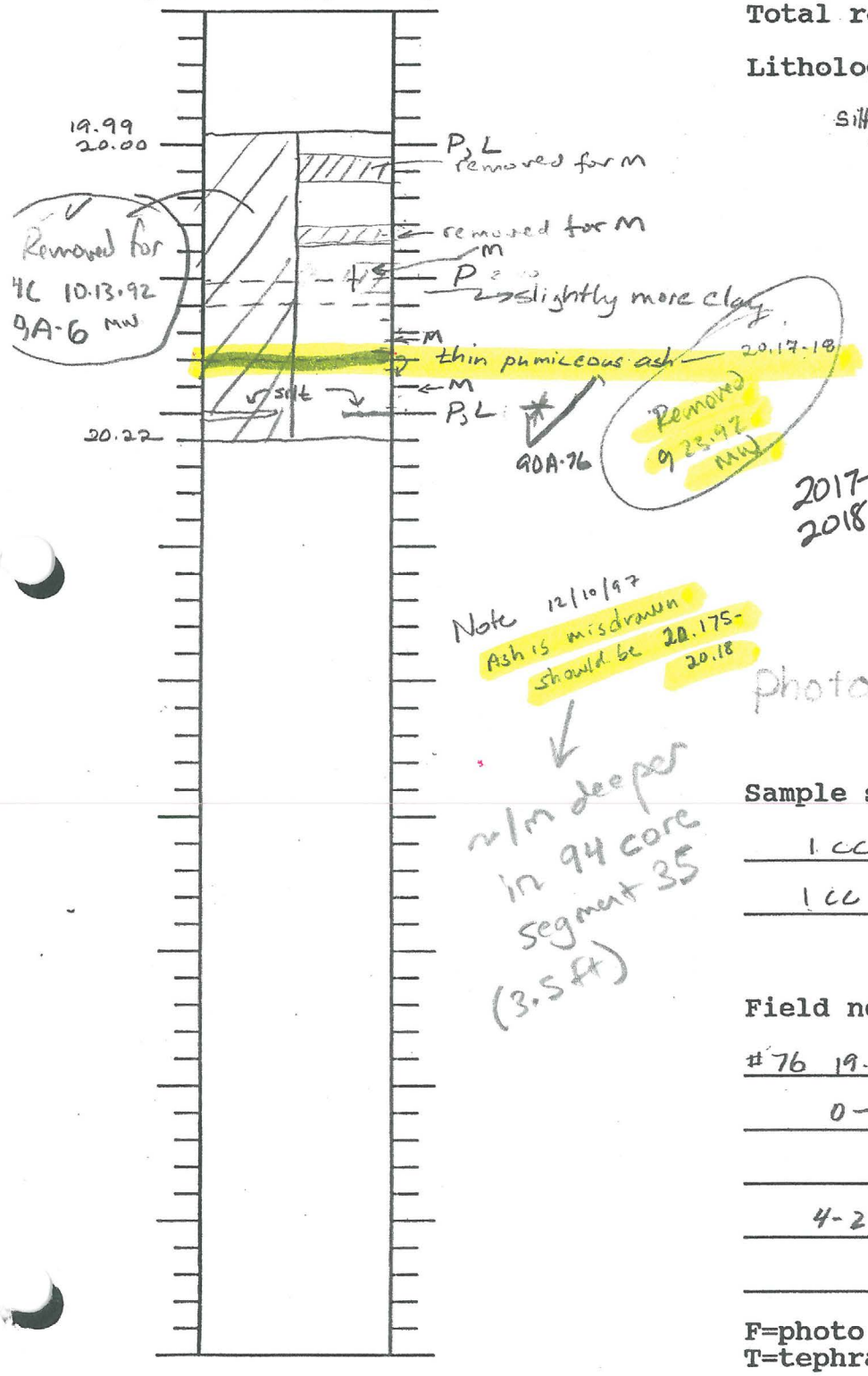
Core Description

#76

Site: Carp Lake Core: 90A 1

Depth: #76 19.99-20.32 Date: 4/25/91 Analyst: C. Whitlock / M. Worona

Depth below [water] / [mud] surface



Total recovery: 23 cm

Lithology:

silty clay w/ vivianite

10YR 4/2

60% organic carbon
25% clay sized
15% – pollen, pollen size – Pine / Picea

40% inorganic silica
75% <7 μ
20-25% – 7-100 μ
5% sand size

0% biogenic silica

2017
2018

Note 12/10/97 Ash is misdrawn should be 20.175-20.18

~1m deeper in 94 core segment 35 (3.5 ft)

photographed 10/24/91

Sample size:

1 cc for Pollen every 10 cm

1 cc for LOI every 20 cm

Field notes:

#76 19.99-20.32, 27 cm,

0-4 pumiceous ash, probably garbage; discarded

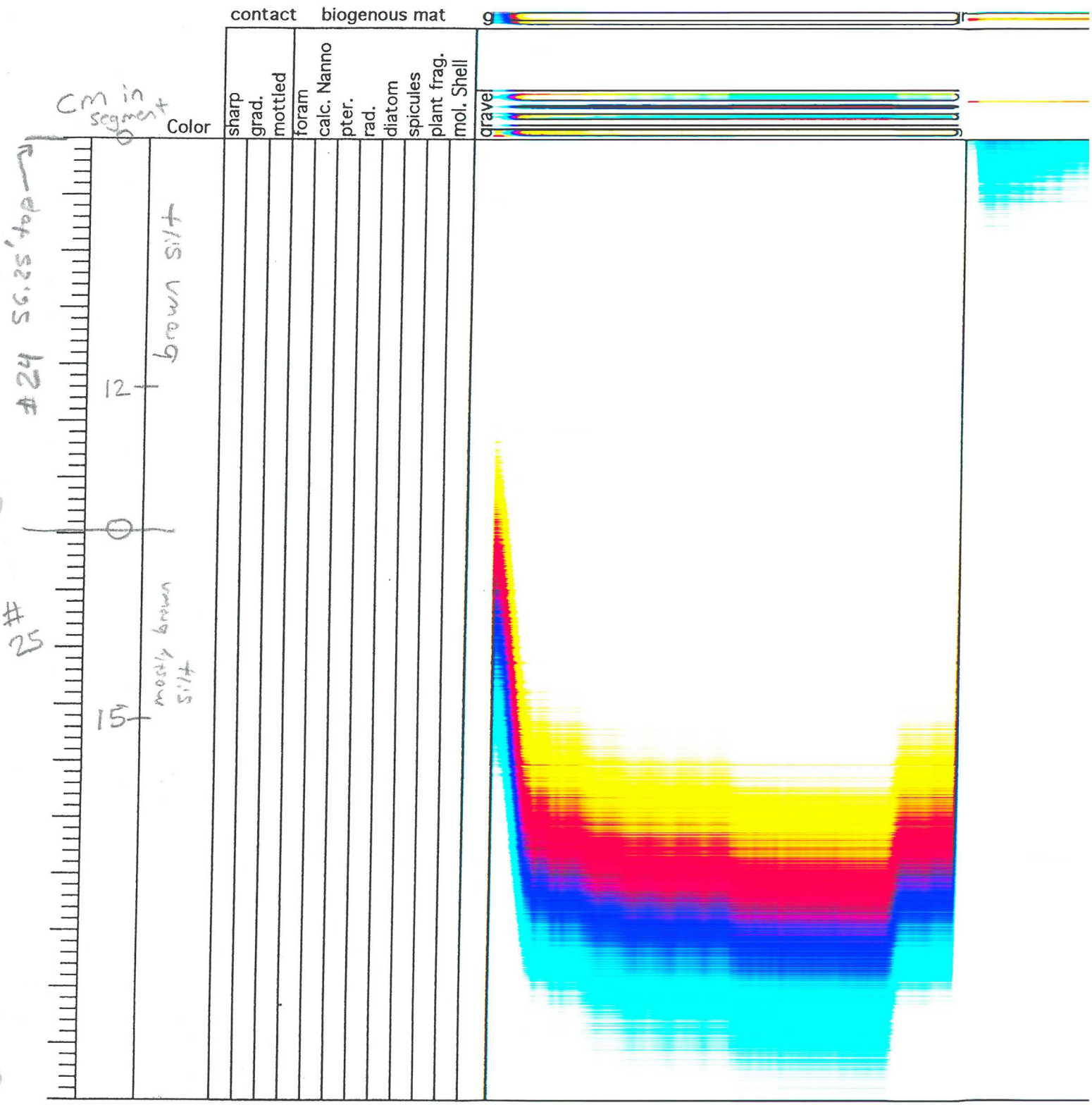
4-27 brown organic silty clay

10YR 4/2

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

m

CORE LO



Fossils: X-Present C-Common B-Barren
A-Abundant R-Rare

CORE LOG

CORE ID WH-3 Carp Lake

SECTION 26 (57.25-57.75)

Lat.

Long.

Water Depth

	Color	contact			biogenous mat								grain size				structure					REMARKS
		sharp	grad.	mottled	foram	calc. Nanno	pter.	rad.	diatom	spicules	plant frag.	mol. Shell	gravel	sand	silt	clay	lamin	grad. bed	X bed	mottles	homogen	
0																						Date Open & Desc. 12-July-2012
																						Interval Depth
	brown silt/clay																					photo #39
	pebble																					
12 cm																						

Fossils: X-Present C-Common B-Barren
A-Abundant R-Rare

graded bed (turbidite)

ss-smear slide

CORE LOG

CORE ID WH-3 Carp Lake

SECTION 26 (57.25-57.75)

Lat.

Long.

Water Depth

	Color	contact			biogenous mat								grain size					structure					REMARKS
		sharp	grad.	mottled	foram	calc. Nanno	pter.	rad.	diatom	spicules	plant frag.	mol. Shell	gravel	sand	silt	clay		lamin	grad. bed	X bed	mottles	homogen	
0																							Date Open & Desc. 12-July-2012
																							Interval Depth
	brown silt/clay																						photo #39
	pebble																						
12 cm																							

Fossils: X-Present C-Common B-Barren
A-Abundant R-Rare

graded bed (turbidite)

ss-smear slide

CORE LOG

CORE ID WH3 Carp Lake, WA

SECTION 27 (57.9-58.4') / 29 (58.9-59.4')

Lat.

Long.

Water Depth

	Color	contact: sharp	contact: grad.	contact: mottled	biogenous mat: foram	biogenous mat: calc. Nanno	biogenous mat: pter.	biogenous mat: rad.	biogenous mat: diatom	biogenous mat: spicules	biogenous mat: plant frag.	biogenous mat: mol. Shell	grain size: gravel	grain size: sand	grain size: silt	grain size: clay	structure: lamin	structure: grad. bed	structure: X bed	structure: mottles	structure: homogen	REMARKS
0 #27 brown silt/clay 15cm																						Date Open & Desc. 12-July-2012
																						Interval Depth
																						crumbly - round clay balls? photo# 5
0 #29 brown silt clay 15 cm																						photo #6

Fossils: X-Present C-Common B-Barren A-Abundant R-Rare

graded bed (turbidite)

ss-smear slide

CORE LOG

CORE ID: WH-3 Carp Lake

SECTION: 30 (59.6-60.1') / 28 (58.4-58.9')

Lat.

Long.

Water Depth

Depth	Color	contact: sharp	contact: grad.	contact: mottled	biogenous mat: foram	biogenous mat: calc. Nanno	biogenous mat: pter.	biogenous mat: rad.	biogenous mat: diatom	biogenous mat: spicules	biogenous mat: plant frag.	biogenous mat: mol. Shell	grain size: gravel	grain size: sand	grain size: silt	grain size: clay	structure: lamin	structure: grad. bed	structure: X bed	structure: mottles	structure: homogen	REMARKS
0																						Date Open & Desc. 12-July-2012
																						Interval Depth
#30 13.5	-crumbly silt/clay -looks like granules																					photo #36
0																						
6	fine gray ash																					sample WH-3-28-1
#28 10																						photos #37-38
15cm																						

Fossils: X-Present C-Common B-Barren A-Abundant R-Rare

graded bed (turbidite)

ss-smear slide

CORE LOG

CORE ID: WH-3 Carp Lake

SECTION: 31 (60.1-60.6) / 32 (60.6-61.1)

Lat.

Long.

Water Depth

	Color	contact: sharp	grad.	mottled	biogenous mat: foram	calc. Nanno	pter.	rad.	diatom	spicules	plant frag.	mol. Shell	grain size: gravel	sand	silt	clay	structure: lamin	grad. bed	X bed	mottles	homogen	REMARKS
0	crumbly brown silt + clay																					Date Open & Desc. 12-July-2012
6	brown silt/clay (#32)																					Interval Depth
																						photo #34
15																						
0	crumbly brown silt/clay (#31)																					photo #35
	probably deformed (stretched)																					
17cm																						

Fossils: X-Present C-Common B-Barren A-Abundant R-Rare

graded bed (turbidite)

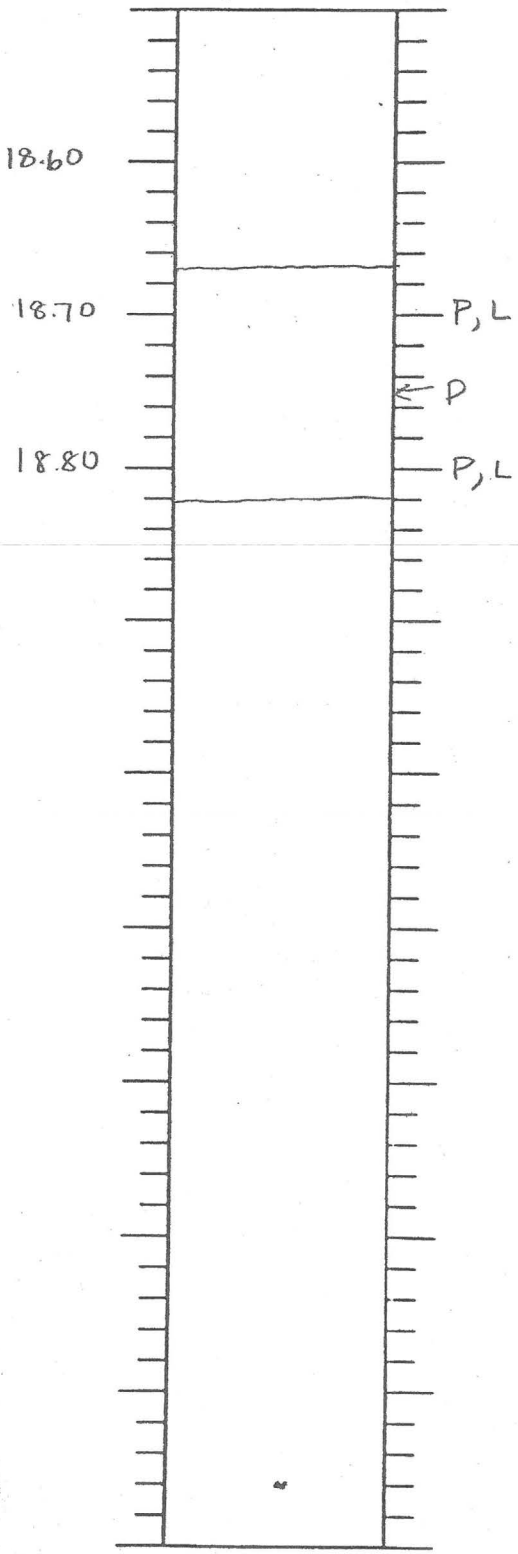
ss-smear slide

Core Description ✓

Site: Carp Lake Core: WH-3 Sa #33 94

Depth: 61.25 - 61.75' (18.67 - 18.82 m) Date: 11-18-94 Analyst: Whitlock/Hues

Depth below [water / mud] surface



Total recovery: 15cm

Lithology:

crumbly silty clay

- 12-July-2012 photo #7
- fell apart when opened

Sample size:

1cc for pollen @ 18.70, 18.75, 18.80

1cc for LOI @ 18.70, 18.80

Field notes:

silt and rocky debris on top + bottom.

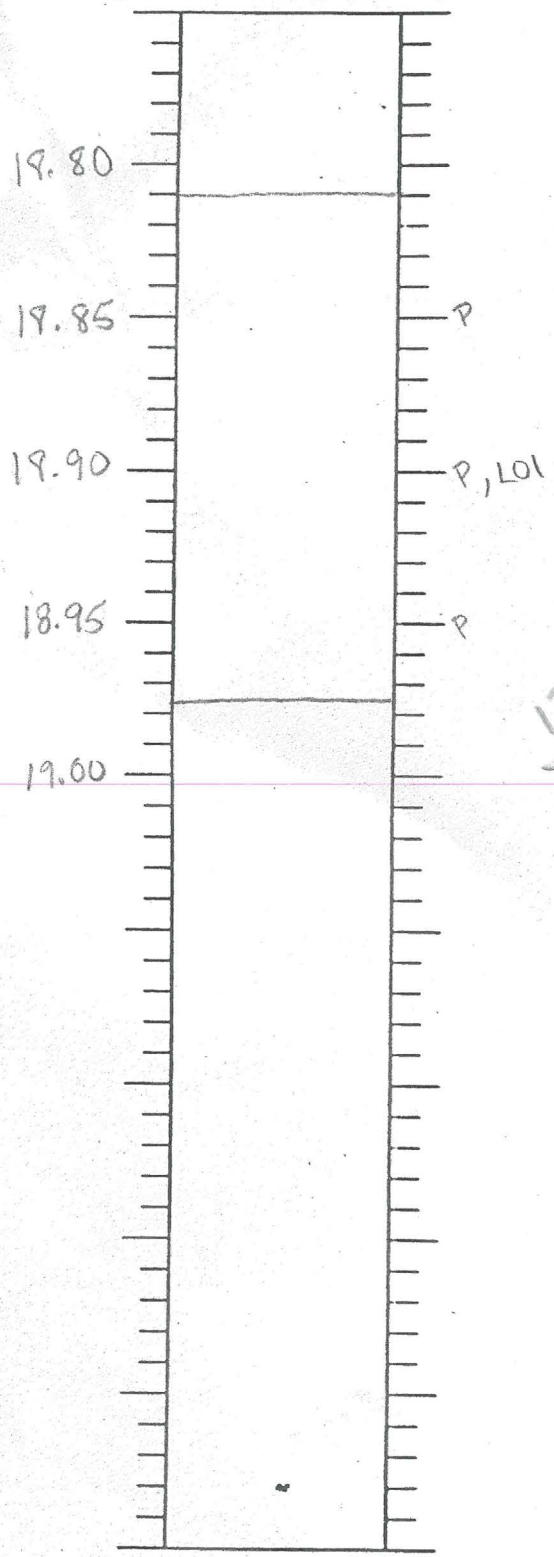
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake Core: WH-3 Sa.#34 '94

Depth: 61.75-62.25'(18.82-18.97m) Date: 11-19-94 Analyst: HUES

Depth below [water] [mud] surface



Total recovery: 15.5 cm

Lithology:

brown clay + silt

bottom 1cm - white tephra multiple graded beds - r/w?

sample WH-3-34-1

13-July-2012 photos 110-111

Sample size:

1 cc @ 18.85, 18.90, 18.95 for poll

1 cc @ 18.90 for LOI

Field notes:

ash at bottom

silt + rocky debris on top

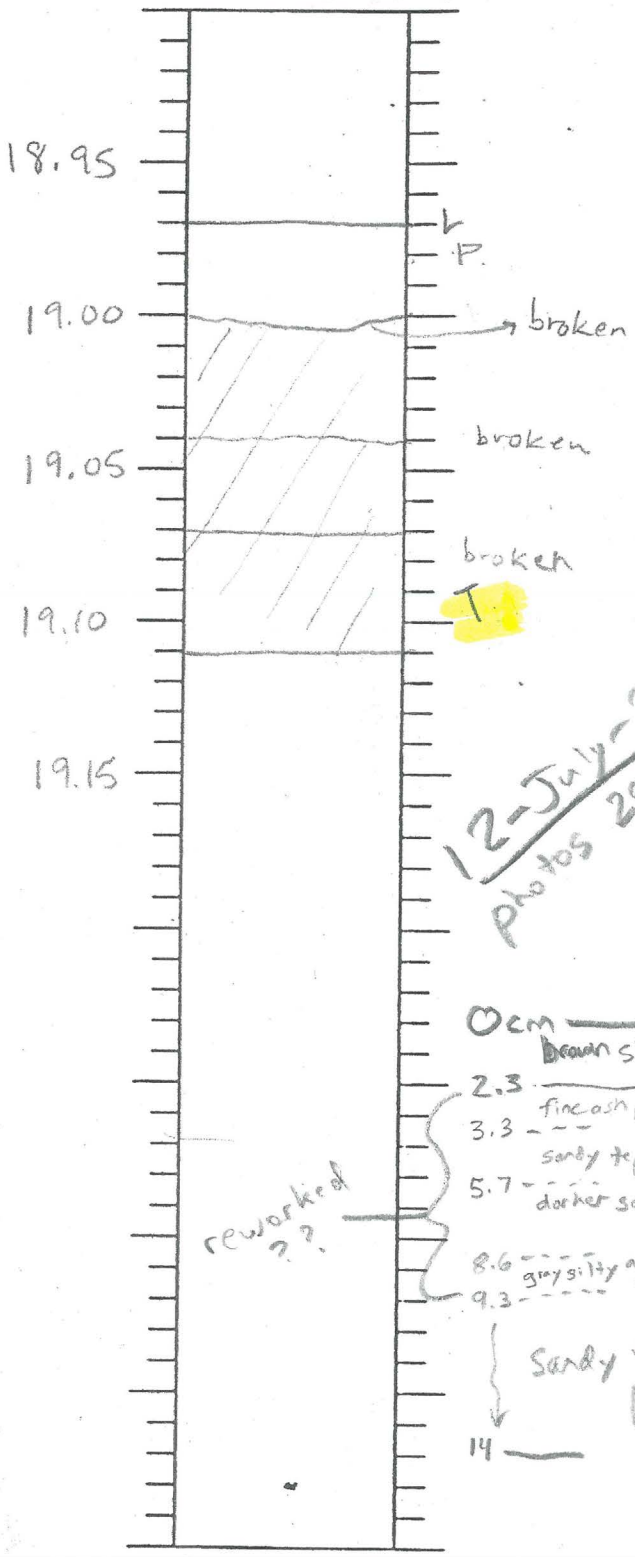
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake Core: WH-3 Sa #35 '94

Depth: 62.25'-62.75' (18.97-19.13m) Date: 11-22-94 Analyst: Hues

Depth below [water] [mud] surface



Total recovery: 14 cm

Lithology:

19.00 - 19.11 - ash

#11 ?

(3.5') ~1m shallower in 90A core segment 76

12-July-2012 photos 29-32, 33

0 cm — brown silt
2.3
3.3 — fine ash, laminated at top [WH-3-35-1]
sandy tephra [WH-3-35-2]
5.7 — darker sandy tephra [WH-3-35-3]
8.6 — gray silty ash — upper 2/3 darker, coarser → lower 1/3 graded [WH-3-35-4]
9.3
Sandy tephra [WH-3-35-5]
14

reworked ??

Sample size: 1cc @ 18.97 for LOI
1 cc @ 18.98 for Pollen
ash sample @ 19.07-19.11 for Tephra

Field notes: ash on bottom
silt on top + bottom
not observed

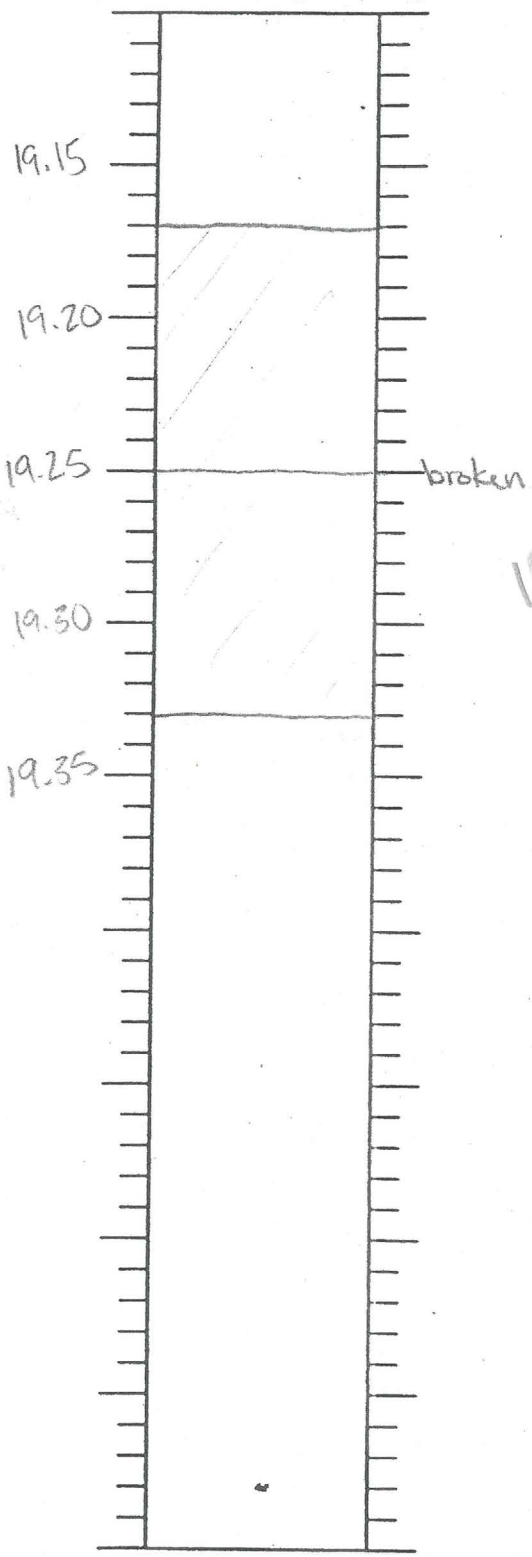
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake Core: WH-3 SA#36 194

Depth: 62.9-63.4' (19.17-19.32m) Date: 11-22-94 Analyst: Hines

Depth below [water] [mud] surface



Total recovery: 16cm

Lithology:

all tephra - coarse/sandy

Sample WH-3-36-1

13-July-2012

Sample size:

Field notes:

ash on both top & bottom

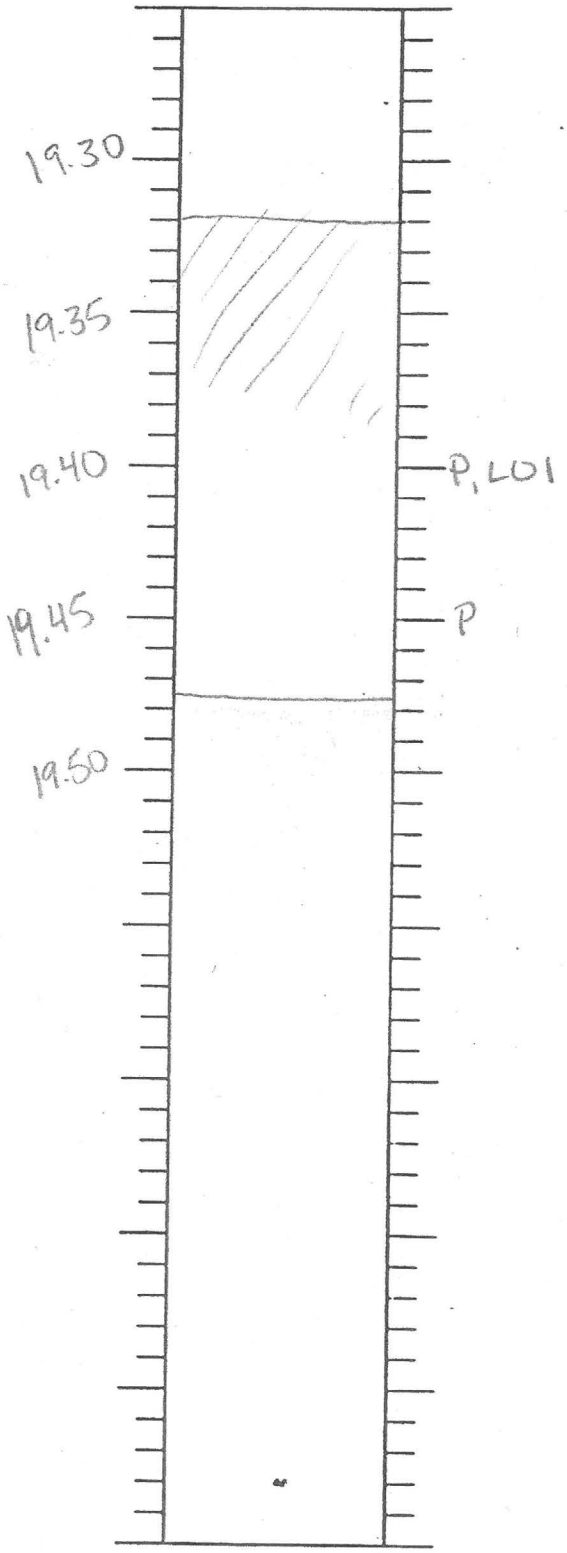
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake Core: WH-3 Sa#37 '94

Depth: 63.4-63.9' (19.32-19.48m) Date: 11-22-94 Analyst: HUES

Depth below [water] [mud] surface



Total recovery: 15.5cm

Lithology:

Sample WH3-37-1 (top end) → 0 cm – tephra-rich, increasing silt downward – pumice up to 5 mm – 7 cm –

ash WH3-37-2 → 13.4 cm – – sandy tephra w/ pumice to 2mm ~2mm thick

12-July-2012 photos 25-28

Sample size:

1cc @ 19.40 for Pollen, LOI

1cc @ 19.45 for Pollen

Field notes: ash on top half

silt, clay on bottom

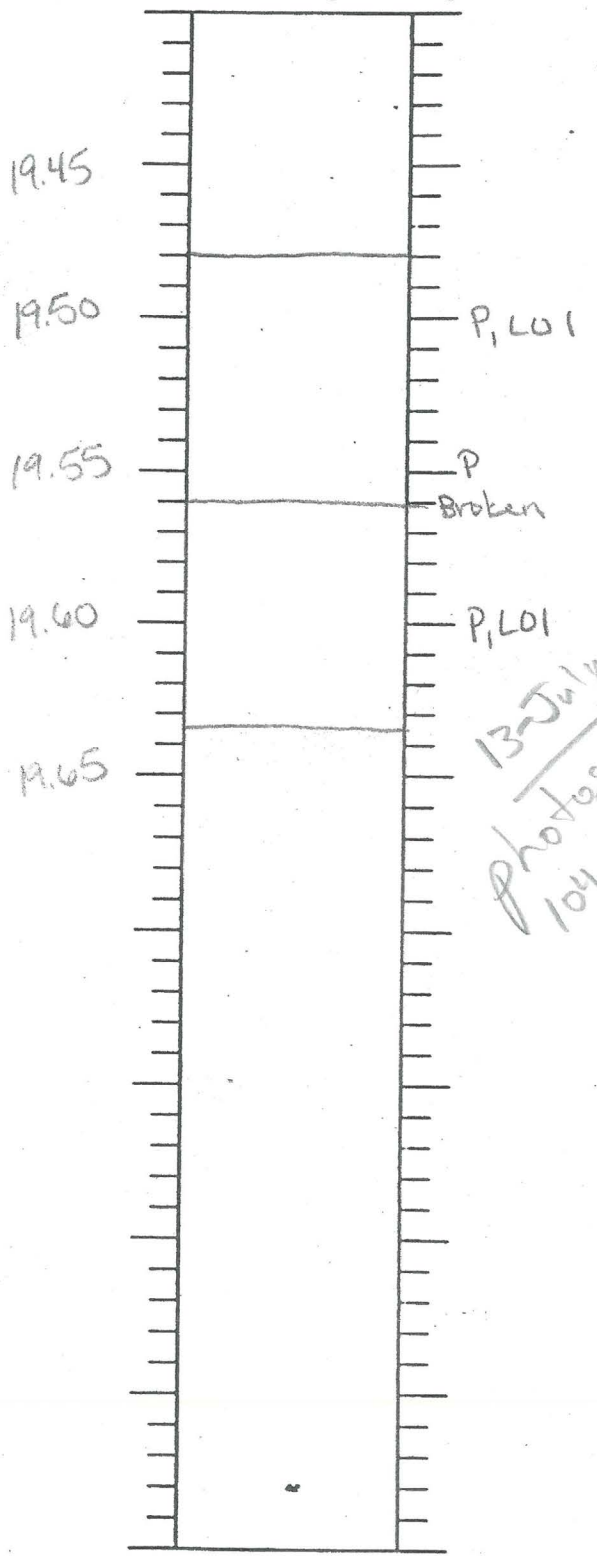
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake Core: WH-3 S#38 '94

Depth: 63.9'-64.4' (19.48-19.63m) Date: 11-22-94 Analyst: HOES

Depth below [water] [mud] surface



13-July-2012
photos 104-107

Total recovery: 15.5 cm now 14.5

Lithology:

0 —

3 cm — ← Sample WH-3-38-1 white sandy tephra w/ pumice approaching 2 m thickness on 1-2 mm, discontinuous

biotite to ~1.5-2mm

10.5 — sediment lighter in color below ~10.5 cm — broke open @ 10.5 & sampled for possible fine gray ash ?

Sample WH-3-38-2

Sample size:

1cc @ 19.50 for P, LOI

1cc @ 19.55 for P

1cc @ 19.60 for P, LOI

Field notes: silt, clay

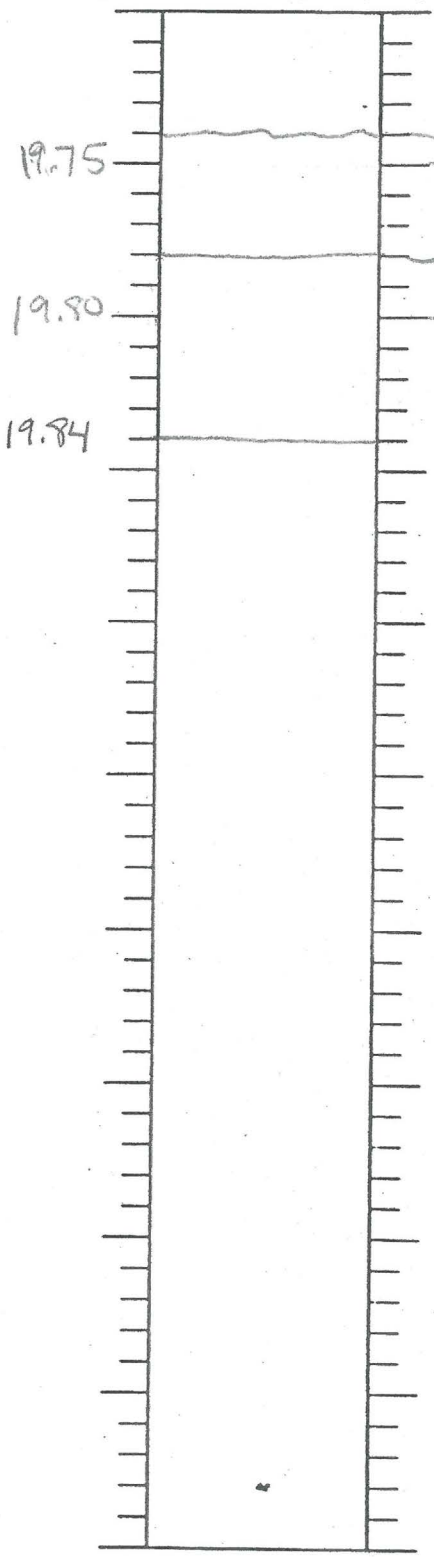
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake Core: WH-3 SA #39 '94

Depth: 64.8'-65.1' (19.75-19.84m) Date: 12-1-94 Analyst: Hues

Depth below [water] [mud] surface



Total recovery: .2' | .06m | lost

Lithology:

alot of sand mixed in

top may be slough/disturbed
has scattered coarse pumice fragments on surfaces of clay clumps

(black) dark sand ~4mm, possibly basaltic tephra
Sample WH-3-39-2

laminated at bottom

discontinuous (dark gray) dark sand 0-8 mm
possible basaltic tephra
Sample WH-3-39-1

Sample size:

1cc @ 19.75 for P

1cc @ 19.80 for P, LOI

Field notes: very dense clay

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

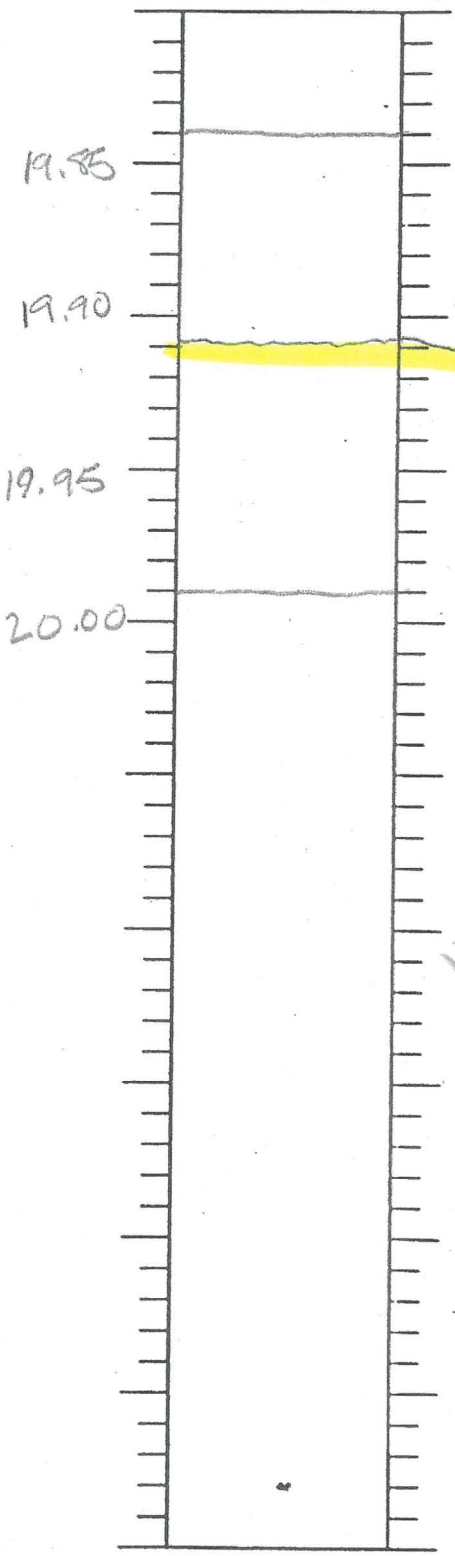
Site: CARP LAKE Core: WH-3 SA#40 '94

Depth: 65.1-65.6' (19.84-19.99m) Date: 12-1-94 Analyst: Hues

Depth below [water] [mud] surface

Total recovery: .15m

Lithology:



Sample WH-3-40-1

Broken, Ash in center — sample sent to Sarna-Wojcicki USGS 2/26/96 19.91-19.915 (5mm)

unknown - CL-12

13-July-2012 photos 99-103

Sample size: 1cc @ 19.95 for P
1cc @ 19.90 for P, L01
1cc @ 19.95 for P

Field notes: very dense clay

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

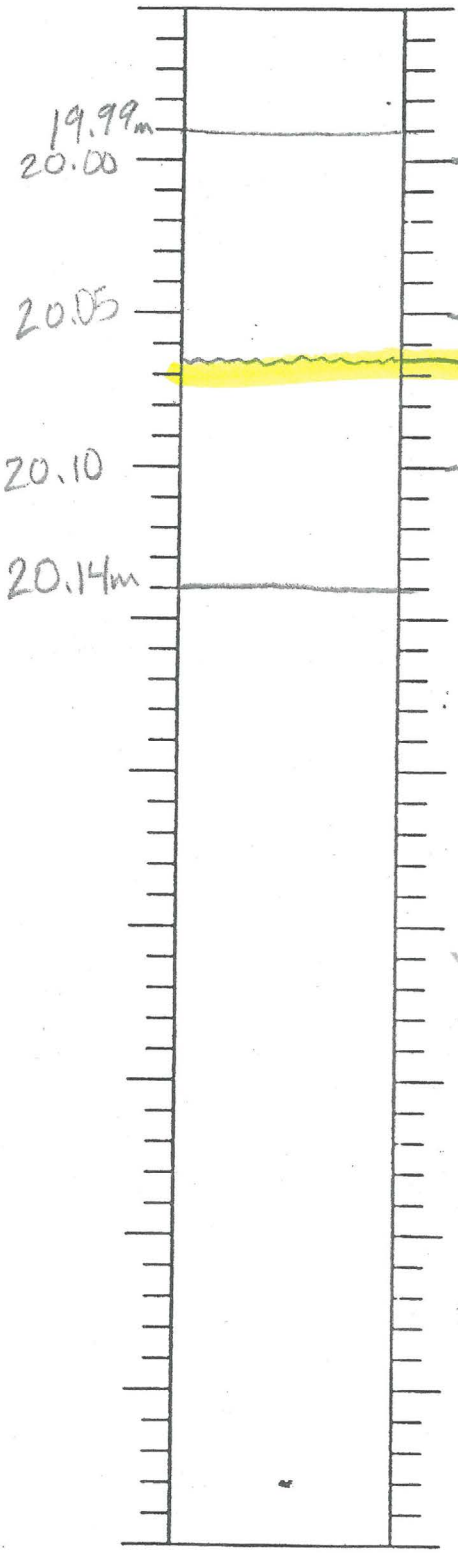
Site: CARP LAKE Core: WH-3 St#41 194

Depth: 65.6-66.1' (19.99-20.14m) Date: 1-9-95 Analyst: Hwes

Depth below [water] [mud] surface

Total recovery: .15 m

Lithology:



Sample WH-3-41-1

Sent to Sarna-Wojcicki USGS

Ash in center

core broken in center along thin ash layer

surrounding core is clayey

2-3mm seems more likely unless a huge sample went to Andrei

In 90A, it is CL-11, 20.17-20.18

20.065 - 20.070 (5mm) 2/26/96

start here add 11.5 cm

CL-13 = unknown Ash "CL11"

tie point

end of 90A is 20.22 (in 90A cm)

13-July-2012

photos 94-98

Sample size: 1cc @ 20.00m for P, LO

1 cc @ 20.05 for P

1 cc @ 20.10 for P, LOI

Field notes: very dense clay

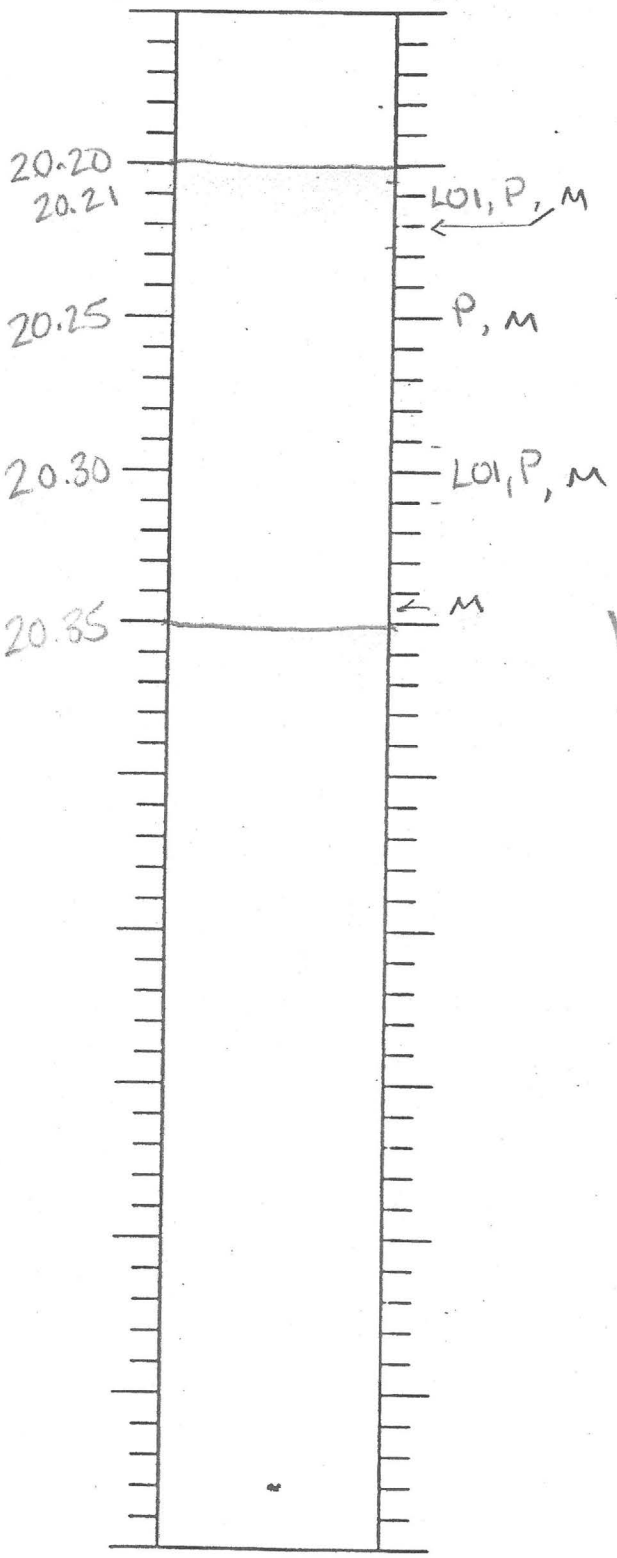
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carp Lake Core: WH-3 Sa #42 '94

Depth: 66.25-66.75' (20.20-20.35m) Date: 1-9-95 Analyst: Hiles

Depth below [water] [mud] surface



Total recovery: .15m

Lithology:

0-cm

Sand

1.3
1.8] 5mm white ash, fine sand

Sample WH-3-42-1

WH-3-42-2 — 7.5 - probable white ash on parting surface <1mm

12-July-2012
photos 19-24

Sample size: 1 cc @ 20.21 for LOI,
1 cc @ 20.25 for P
1 cc @ 20.30 for LOI, P

Field notes: dense silt/clay

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
Mg magnetic properties

Core Description ✓ ~~no core?~~

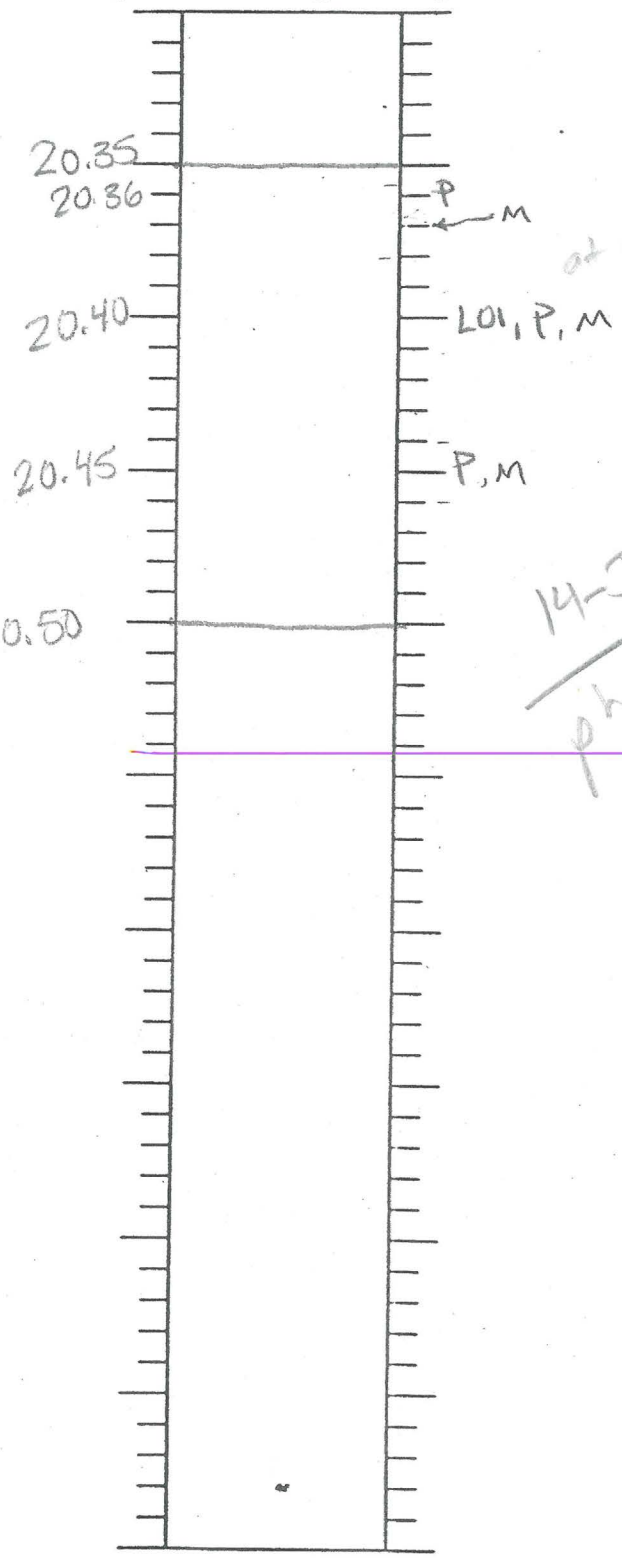
Site: Carp Lake Core: WH-3 Sa#43

Depth: 66.75-67.25' (20.35-20.50m) Date: 1-10-95 Analyst: HUES

Depth below [water] [mud] surface

Total recovery: .15m

Lithology:



at 5.5cm — gray-tan silty layer, may not be tephra, but sampled just in case (WH-3-43-1)

14-July-2012 photo

Sample size: 1 cc @ 20.36 for P
1 cc @ 20.40 for LOI, P
1 cc @ 20.45 for P

Field notes: dense silt/clay

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

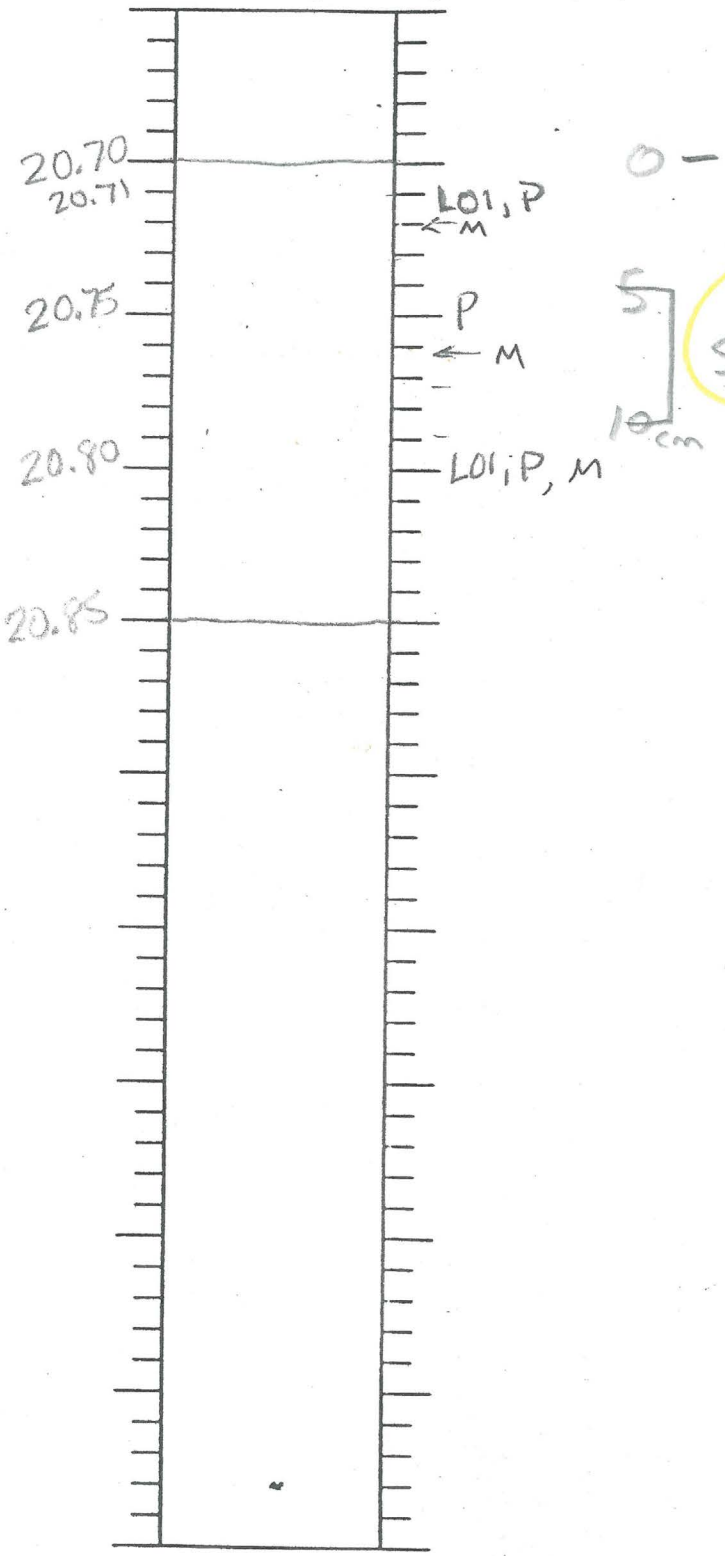
Site: Carp Lake Core: WH-3 Sa#44

Depth: 67.90-68.40' (20.70-20.85m) Date: 1-10-95 Analyst: Hues

Depth below [water] [mud] surface

Total recovery: .15m

Lithology:



thick sandy tephra

Sample WH-3-44-1

13-July-2012

photos. 92-93

why sandy tephra not previously recorded? mislabeled ???

Sample size: 1cc @ 20.71 for LOI, P
1cc @ 20.75 for P
1cc @ 20.80 for LOI, P

Field notes: very loose, wet mud/? gravel crumbly btw #44 + 45

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description ✓ ~~no core~~ ?

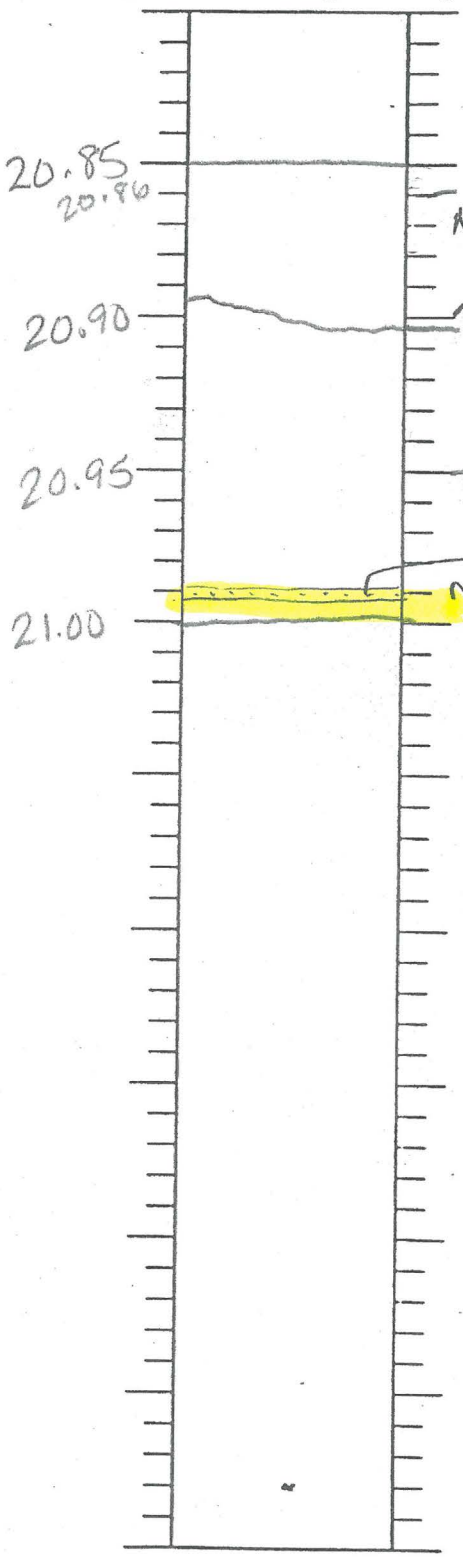
Site: Carp Lake Core: WH-3 Sa#45

Depth: 68.4'-68.9' (20.85-21.00m) Date: 1-11-95 Analyst: Hues

Depth below [water] [mud] surface

Total recovery: .15m

Lithology:



sample WH-3-45-1

ASH - sent to Sarna 2/26/96 20.99-20.995

Ash-14 = orange Bed

14-July-2012

photos 189-191

Sample size: 1cc @ 20.86 for P
1cc @ 20.90 for LOI, P
1cc @ 20.95 for P

Field notes: Organic matter on bottom

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M=magnetic properties

Core Description

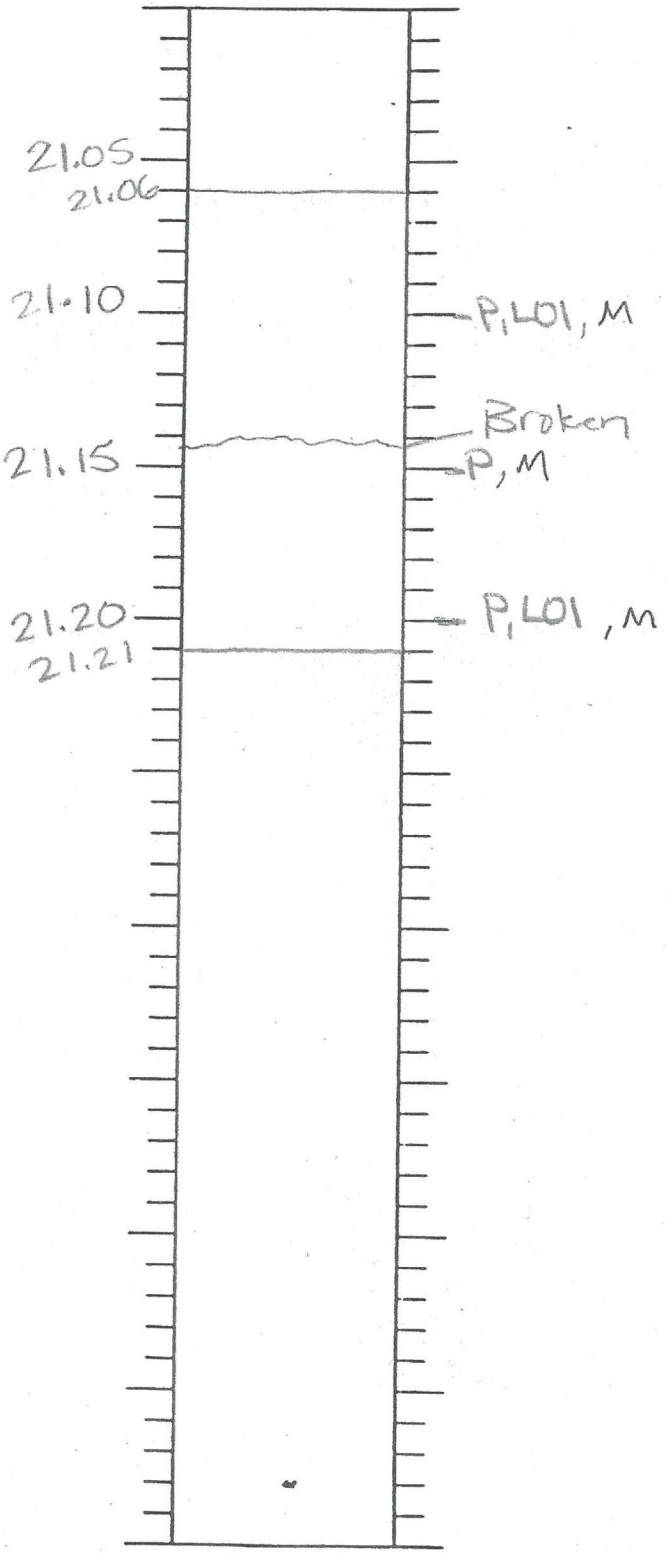
Site: Carp Lake Core: WHS Sa#46

Depth: 69.1-69.6' (21.06-21.21m) Date: 1-11-95 Analyst: Hines

Depth below [water] [mud] surface

Total recovery: .15m

Lithology:



12-July-2012
photos #8+9

Sample WHS-46-1

~5.5cm down pocket of sandy material, possibly tephra, not a continuous layer
=14 ash from segment above?

Sample size: 1cc @ 21.10 for P, LOI
1cc @ 21.15 for P
1cc @ 21.20 for P, LOI

Field notes: Some small gravel on top

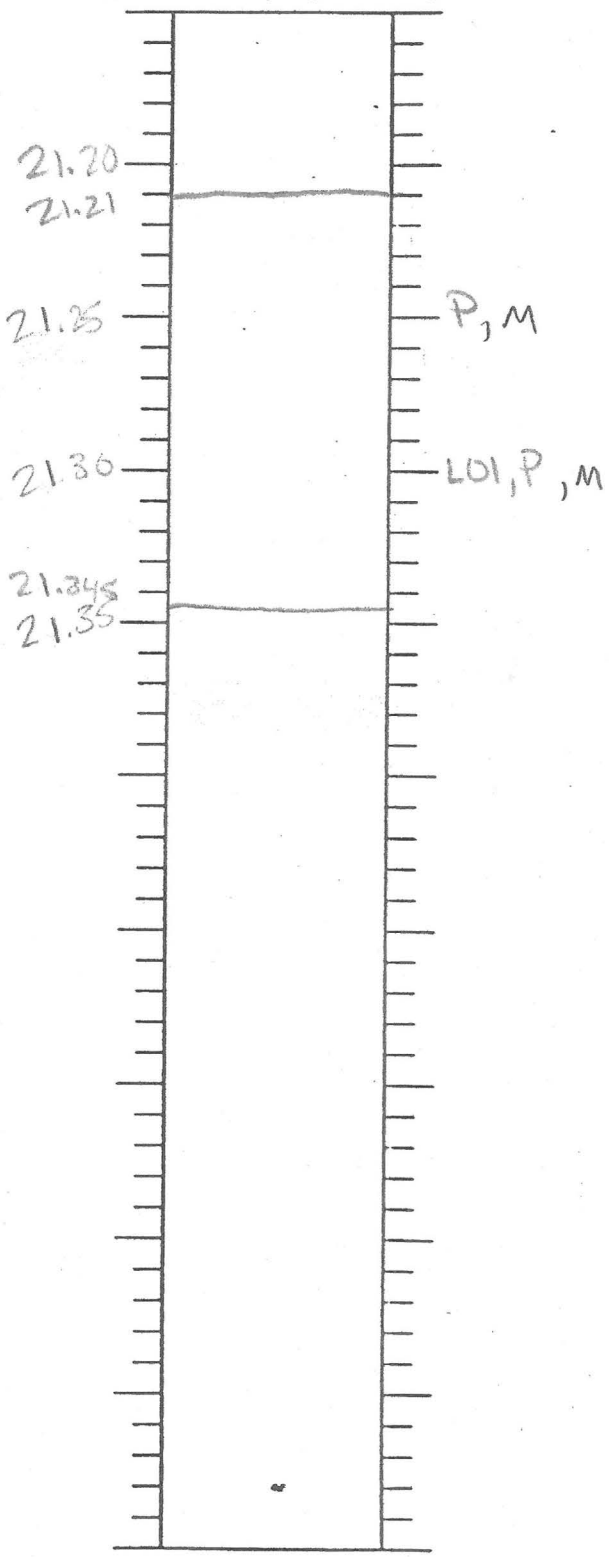
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition

Core Description

Site: Carplake Core: WH-3 Sa#47

Depth: 69.6'-70.1' (21.21-21.37m) Date: 1-11-95 Analyst: HUES

Depth below [water] [mud] surface



Total recovery: .135 m recove
(.015 loss on botti

Lithology:

12-July-2012
photo #10

Sample size: 1cc @ 21.25 for F
1 cc @ 21.30 for LOI, P

Field notes: silt/organic matter

F=photo P=pollen R=radiocarbo
T=tephra L=loss-on-ignition
M= magnetic properties

✓ ~~NO CORE~~ ?

Core Description

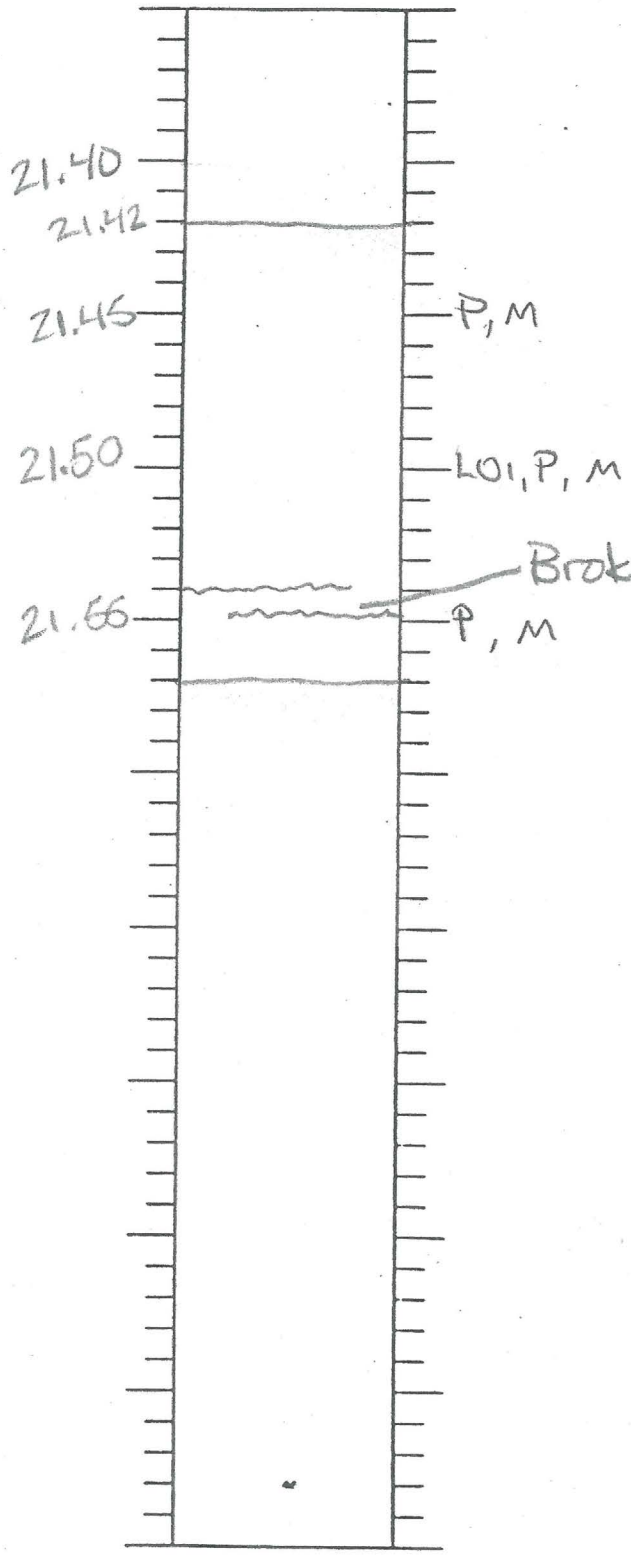
Site: Carp Lake Core: WH-3 Sa#48

Depth: 70.26-70.75'(21.41-21.57m) Date: 1-11-95 Analyst: HUES

Depth below [water] [mud] surface

Total recovery: .14 m

Lithology:



14-July-2012
photo 188

Sample size: 1cc @ 21.46 for P
1cc @ 21.50 for LOI, P
1cc @ 21.55 for P

Field notes: silty clay

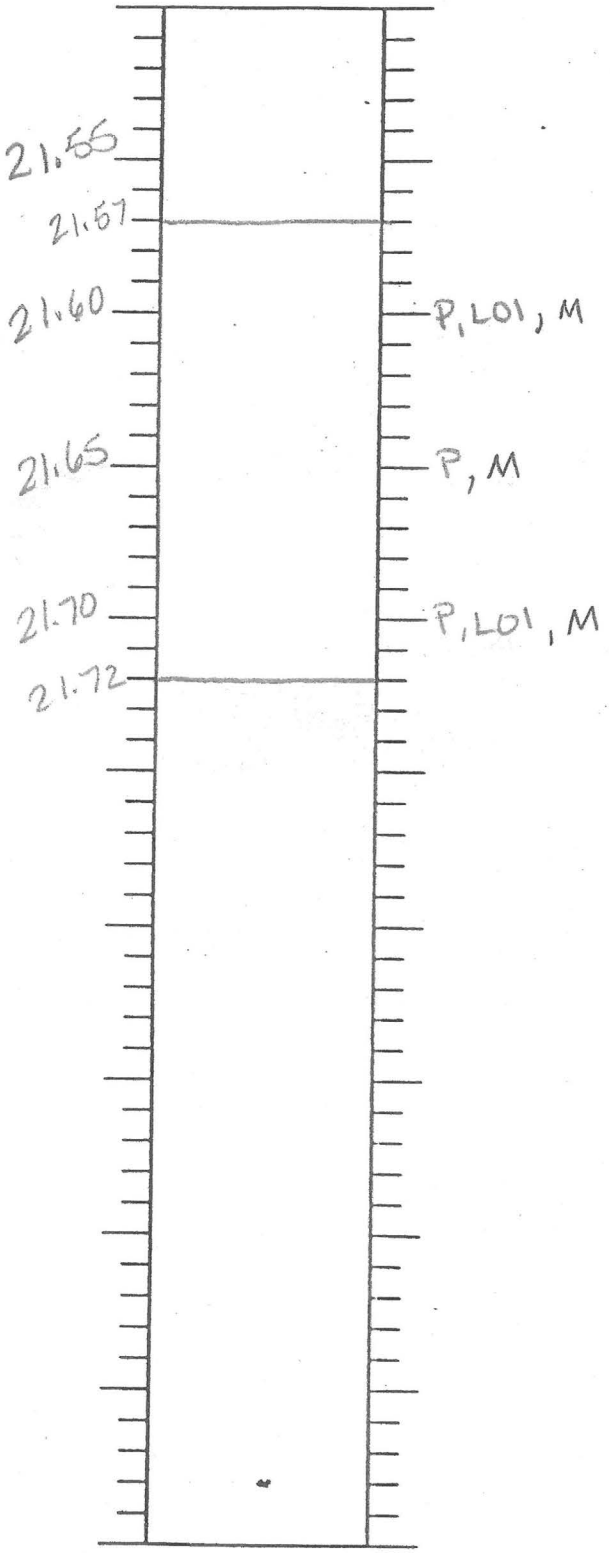
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

Site: Carp Lake Core: WH-3 #49

Depth: 70.75-71.25' (21.57-21.72 m) Date: 1-12-95 Analyst: HUES

Depth below [water] [mud] surface



Total recovery: .15 m

Lithology:

12-July-2012
photo #11

Sample size: 1cc @ 21.60 for LOI, P
1cc @ 21.65 for P
1cc @ 21.70 for P, LOI

Field notes: silty

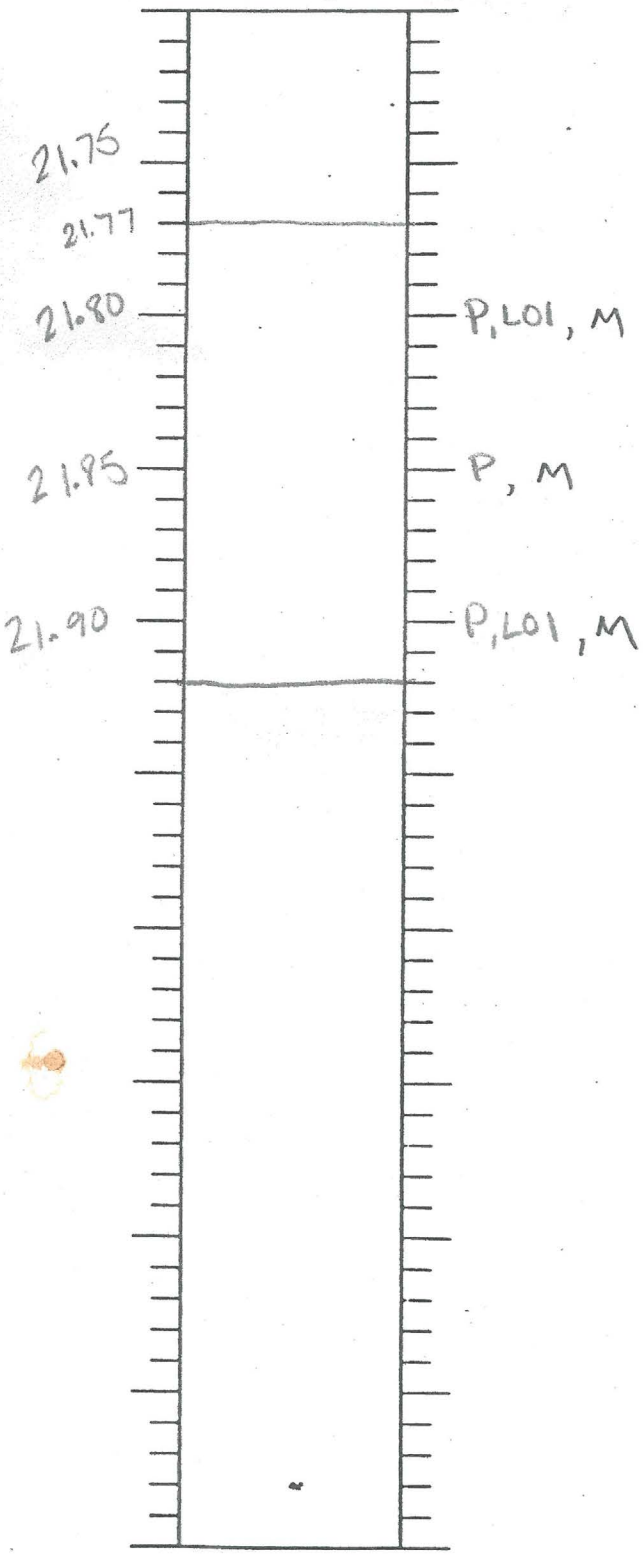
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M=macrofossil [illegible]

Core Description

Site: Carp Lake Core: WH-3 Sa #50

Depth: 71.4'-71.9' (21.76-21.92m) Date: 1-12-95 Analyst: Hiers

Depth below [water] [mud] surface



Total recovery: .14m

Lithology:

13-July-2012
photo #117

Sample size: 1cc @ 21.80 for LOI, P
1cc @ 21.85 for P
1cc @ 21.90 for P, LOI

Field notes: loose on top

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M=magnetic properties

Core Description

Site: Carp Lake Core: WH-3 Sa#S1

Depth: 71.9-72.4' (21.92-22.07m) Date: 1-12-95 Analyst: Huis

Depth below [water] [mud] surface

Total recovery: .15 m

Lithology: 0 cm

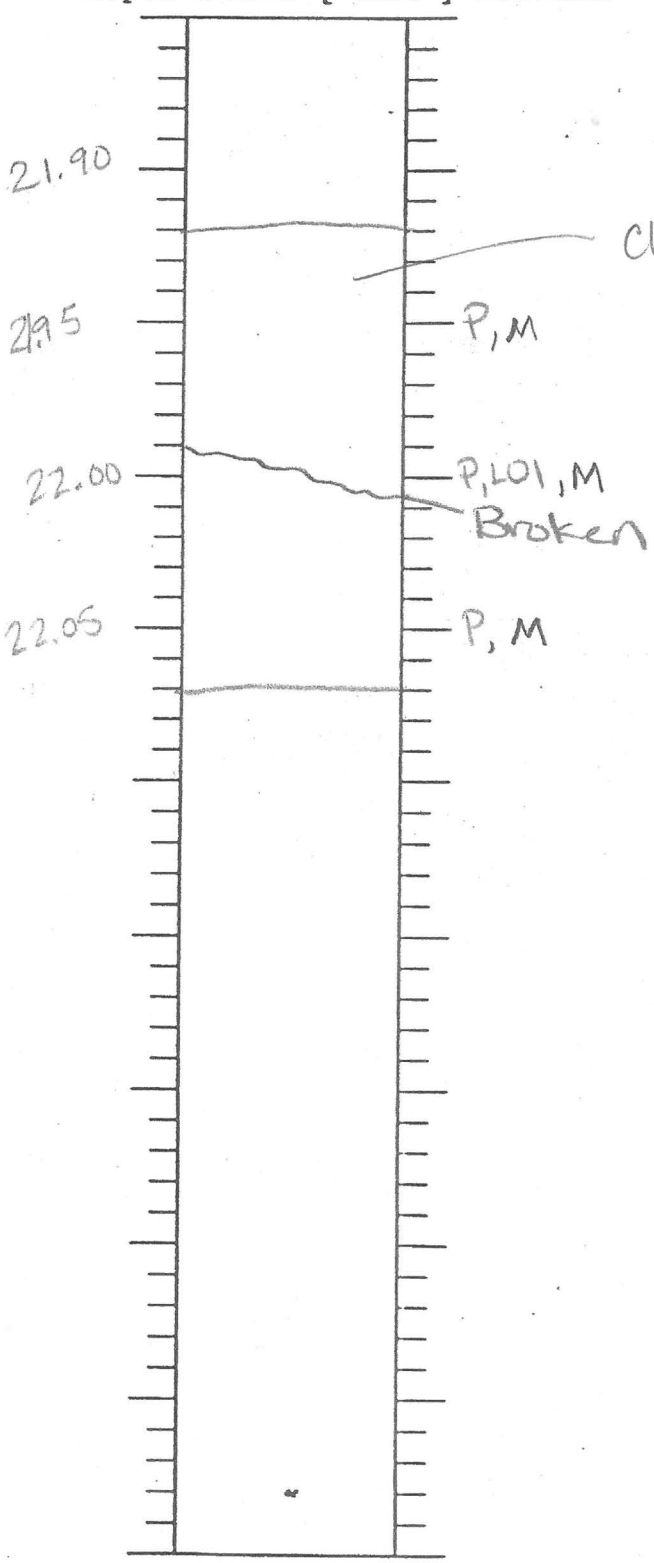


photo 16 (upper) 17 (lower) ~1cm 8- 9- lighter color, coarser tephra?

1-2mm pumice on peaty?

WH-3-S1-1

WH-3-S1-2 <1mm 13- sandy white material on peaty tephra?

WH-3-S1-3 <1mm 14- white sand material on peaty (photo 15) #18 tephra?

appears to fill small root holes or burrows on lower side

12-July-2012 photos 13-15

Sample size: 1cc @ 21.95 for P
1cc @ 22.00 for P, LOI
1cc @ 22.05 for P

Field notes: dense silt/clay

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

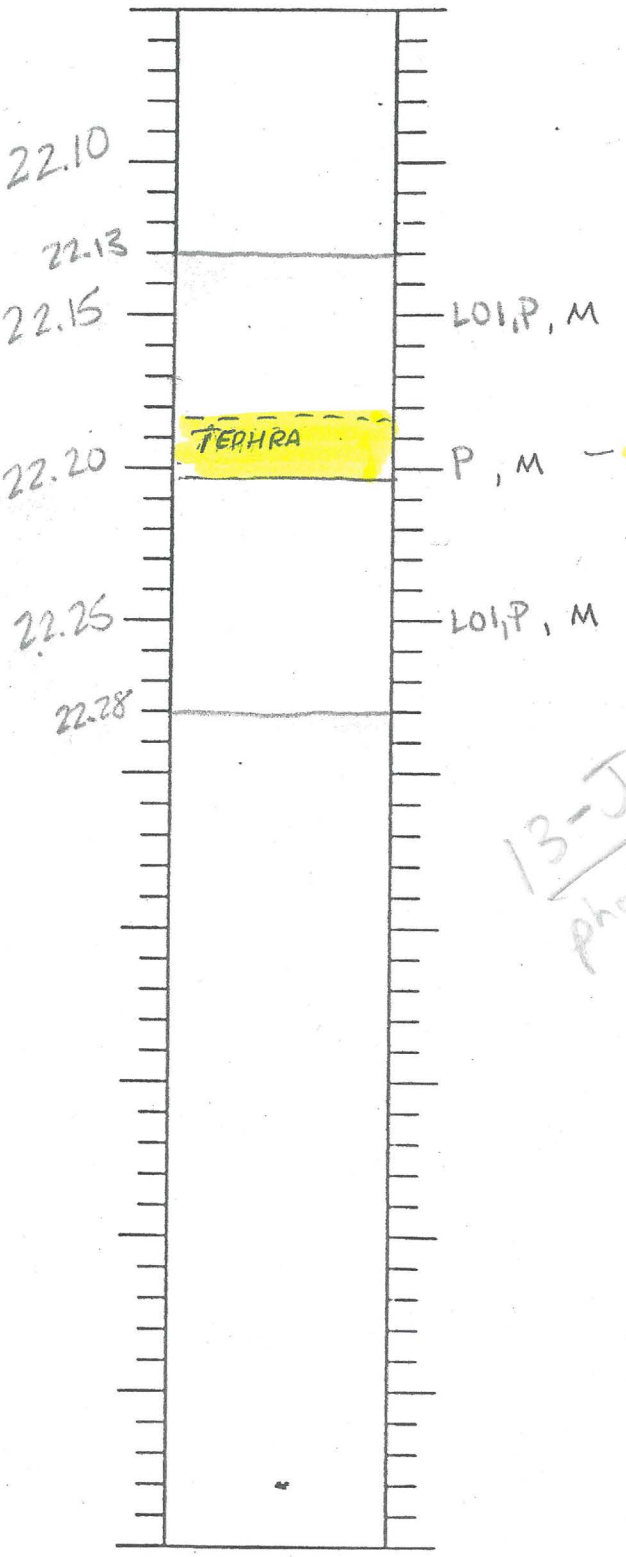
Site: Carp Lake Core: WH-3 Sa#52

Depth: 72.6-73.1'(22.13-22.28m) Date: 1-12-95 Analyst: Hues

Depth below [water] [mud] surface

Total recovery: .15m

Lithology:



— T sent to Sarna 2/26/96
22.18 - 22.20
Ash 15 = "Orange Beds"
see letter from Sarna 5/14/97

Sample WH-3-52-17

13-July-2012
photo 91

Sample size: 1cc @ 22.15 for LOI, P
1cc @ 22.20 for P
1cc @ 22.25 for LOI, P

Field notes: silty top
middle silt w/ organic debris
ash?

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M: magnetic properties

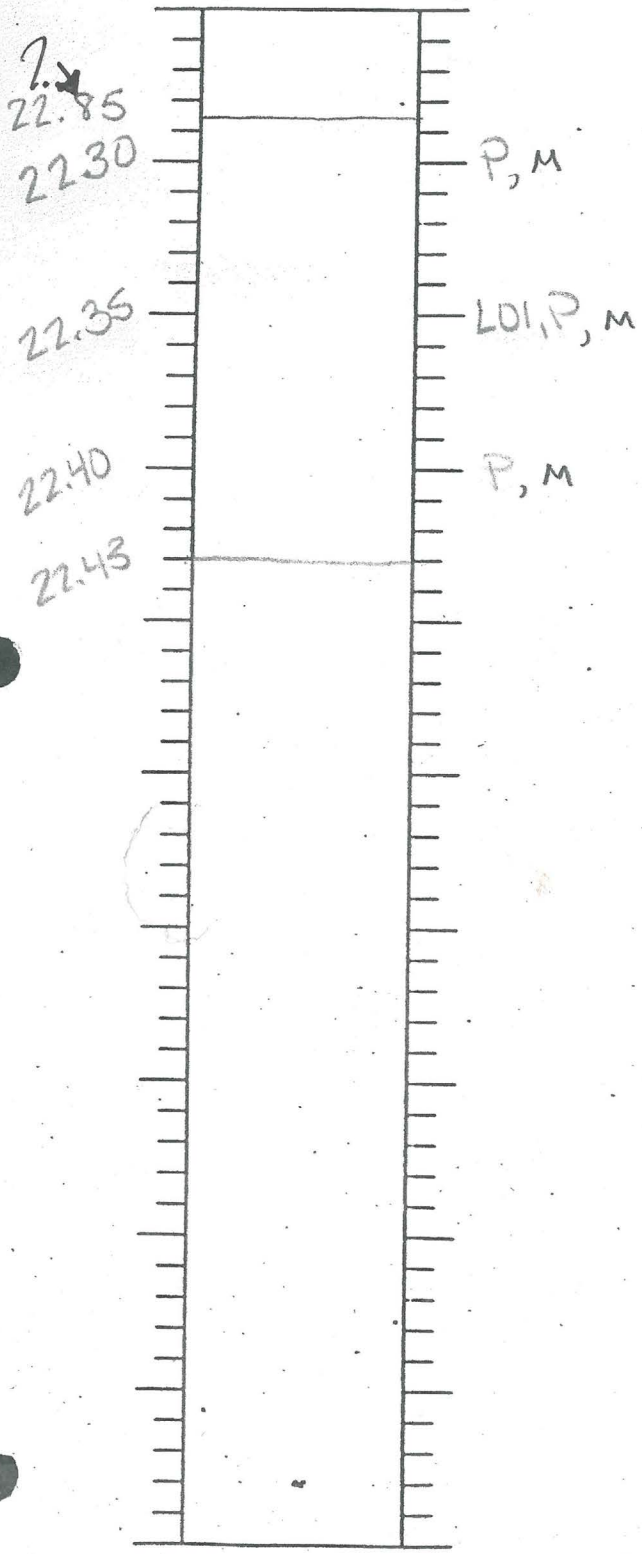
Core Description

no core?

Site: Carp Lake Core: WH-3 Sa#53

Depth: 73.1-73.6' (22.28-22.43m) Date: 1-12-95 Analyst: Huis

Depth below [water] [mud] surface



Total recovery: .145 m

Lithology:

Sample size: 1cc @ 22.3 for P
1cc @ 22.35 for LOI, P
1cc @ 22.40 for P

Field notes: bottom muddy

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M: Magnetic properties

Core Description ✓ ~~no core~~ ?

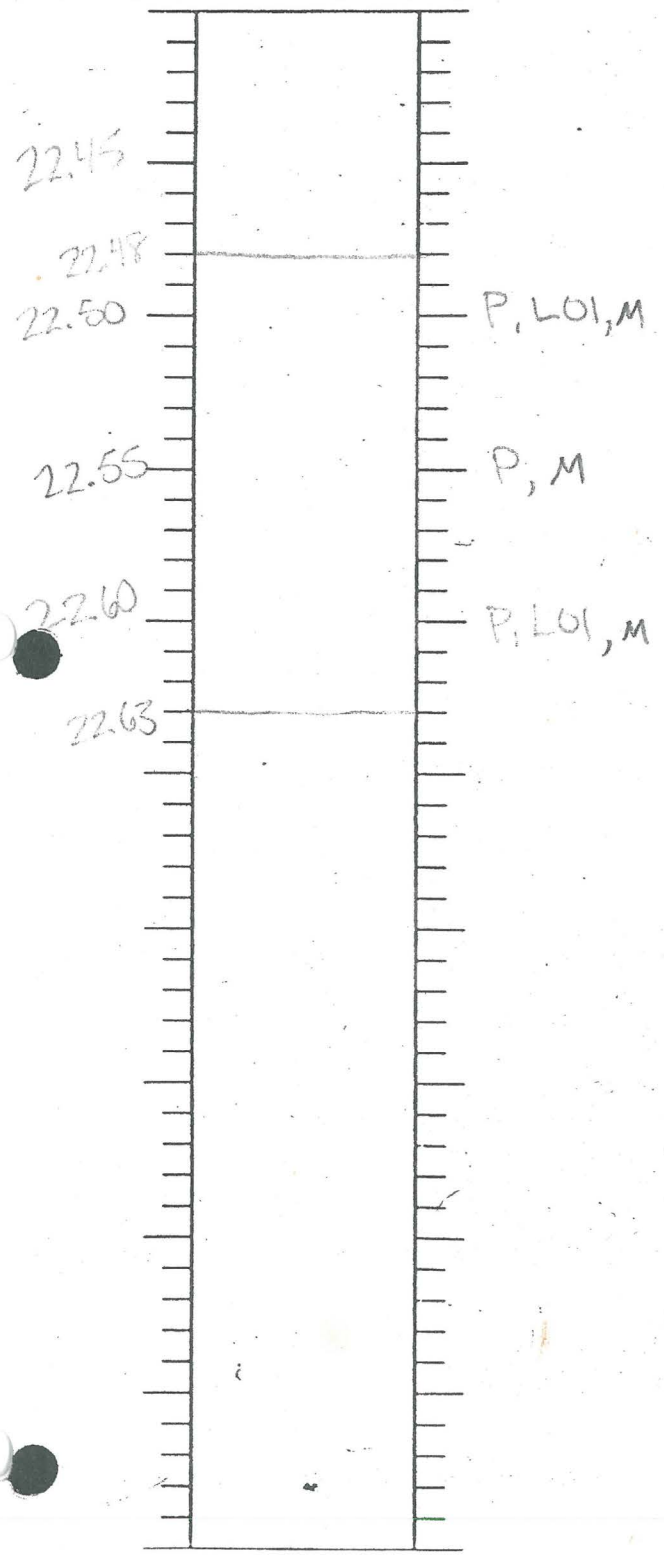
Site: Carp Lake Core: WH-3 Sa#54

Depth: 73.75-74.25' (22.48-22.63m) Date: 1-28-95 Analyst: Hwis

Depth below [water] [mud] surface

Total recovery: .15m

Lithology:



14-July-2012
photo 187

Sample size: 1cc @ 22.50 for P, LOI
1cc @ 22.55 for P
1cc @ 22.60 for P, LOI

Field notes: top loose
middle solid silt

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M: magnetic properties

Core Description

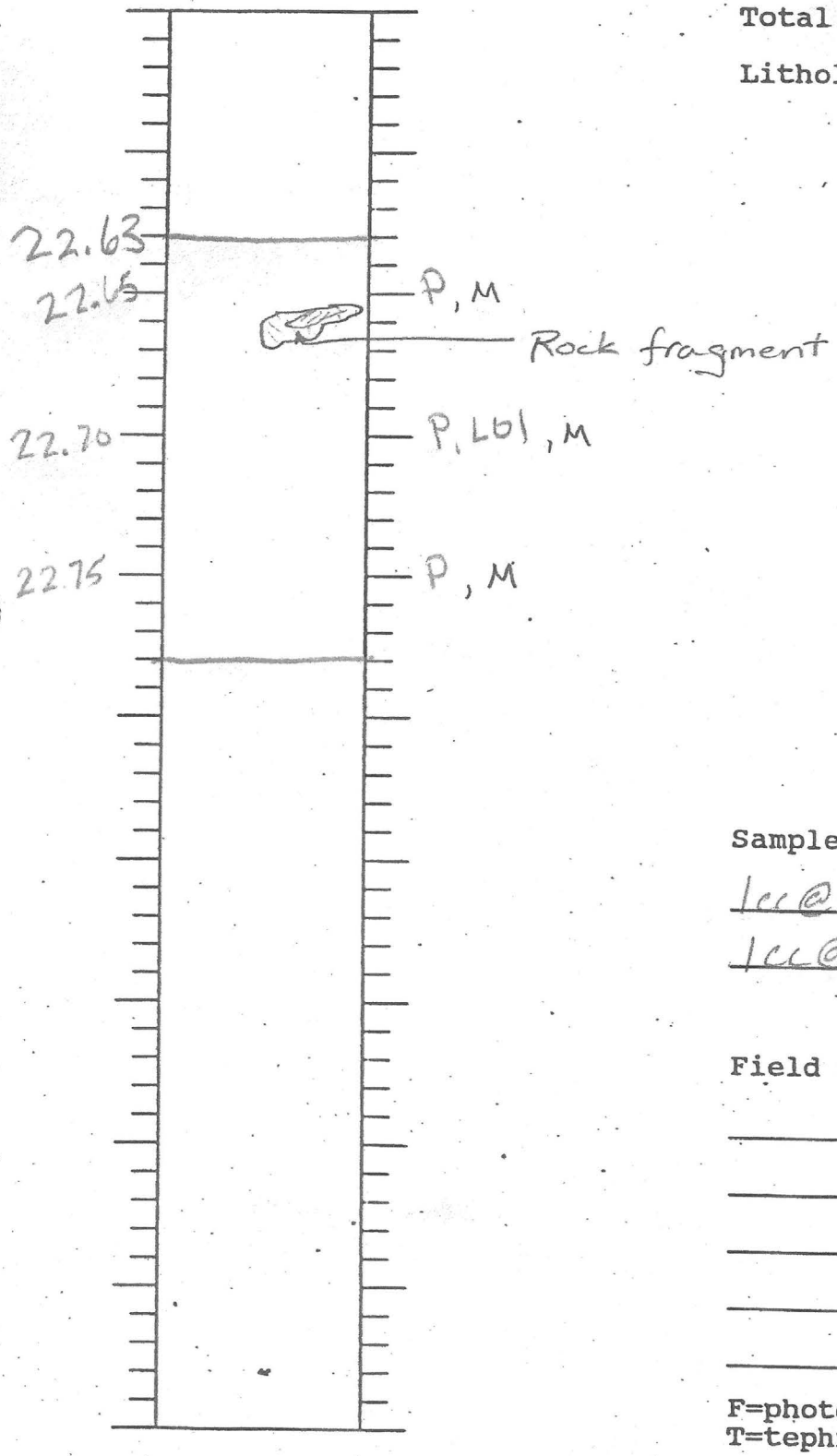
Site: Carplake Core: WH-3 Sa# 55

Depth: 74.25-.75'(22.63-.78m) Date: 1-29-95 Analyst: Hwes

Depth below [water / mud] surface

Total recovery: .15m

Lithology:



13-July-2012
photo 90

Sample size: 1cc @ 22.65 for P
1cc @ 22.70 for P, LOI
1cc @ 22.75 for P

Field notes: Bottom solid silt

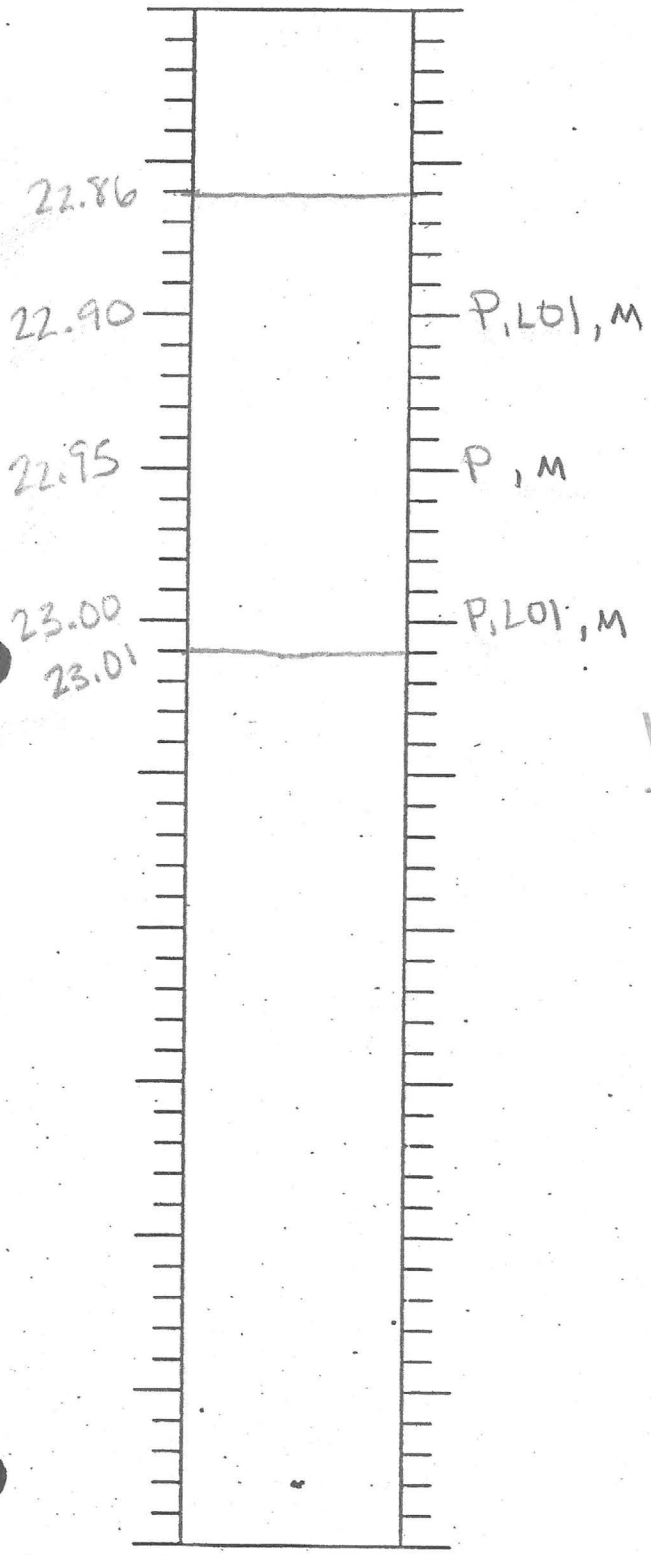
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M= magnetic properties

Core Description

Site: Carp Lake Core: WH-3 Sa #56

Depth: 75-75.5' (22.86-23.01m) Date: 1-29-95 Analyst: Hues

Depth below [water] [mud] surface



Total recovery:

Lithology:

13-July-2012
photo # 118

Sample size: 1cc @ 22.9 for P, LOI
1cc @ 22.95 for P
1cc @ 23.00 for P, LOI

Field notes: top solid silt
middle solid silt

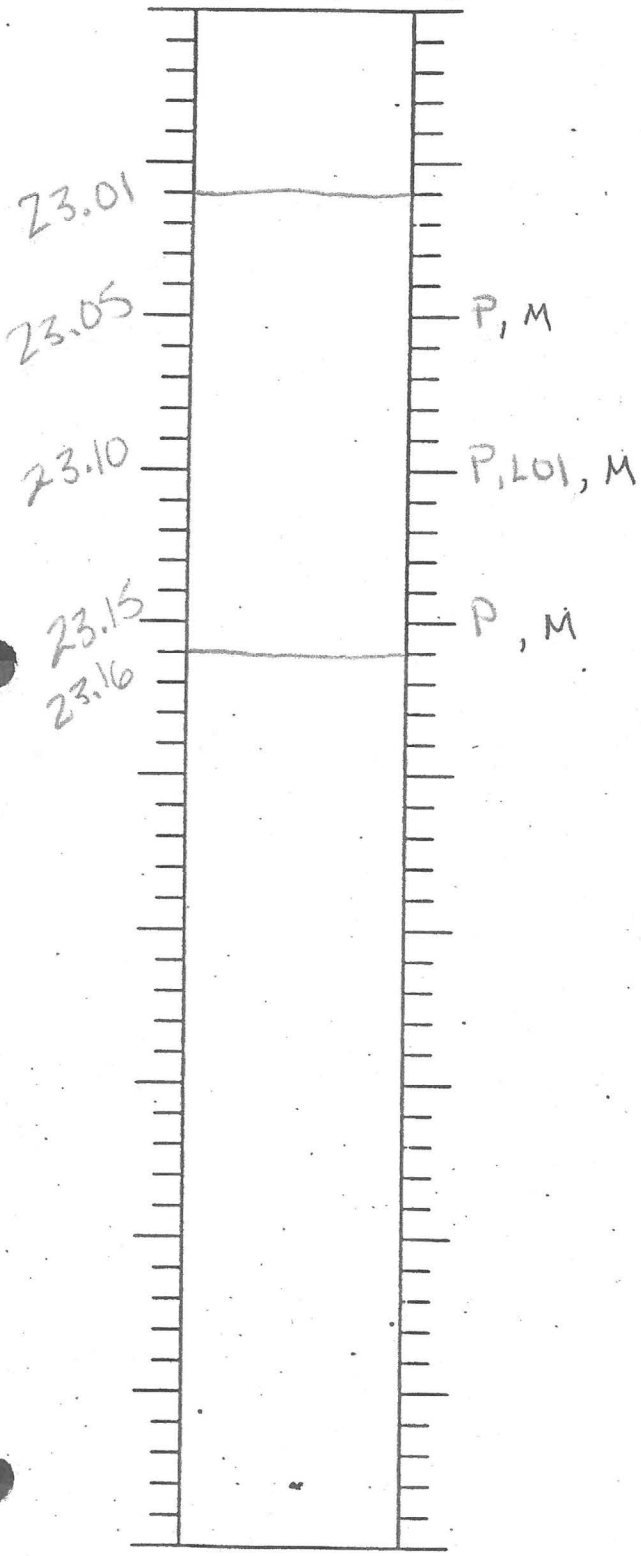
F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M: magnetic properties

Core Description

Site: Carp Lake Core: WH-3 Sa#67

Depth: 75.5-76'(23.01-23.16m) Date: 1-29-95 Analyst: Hines

Depth below [water] [mud] surface



Total recovery: .15 m

Lithology:

13-July-2012
photo 89

Sample size: 1cc @ 23.05 for P
1cc @ 23.10 for P, LOI
1cc @ 23.15 for P

Field notes: bottom solid silt

F=photo P=pollen R=radiocarbon
T=tephra L=loss-on-ignition
M: magnetic properties