

551.79241

D698

Report on core analyses from 5 ponds
in western Maine and New Hampshire:
Cushman Pond, Lower Black Pond, Surplus
Pond, Pond of Safety, Quimby Pond

Christopher C. Dorion

8 January 1996

Report on core analyses from 5 ponds in western Maine and New Hampshire: Cushman Pond, Lower Black Pond, Pond of Safety, Quimby Pond, Surplus Pond

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Introduction

Five ponds were cored the week of July 24-28, 1995 along a south to north transect near the Maine and New Hampshire border. This work was funded by the Maine Geological Survey. The objective of the work is to more accurately date the emplacement of ice marginal deposits along this transect. Ultimately, these radiocarbon dates will constrain the age of stillstands of the ice margin which signify cold, stable climatic periods. This is a first cut, rough transect and the preliminary results will be used to help focus future, more detailed chronologic studies.

Methods

Cores were cleaned, logged, photographed and sampled for loss on ignition. The core descriptions, color slides, and loss on ignition data and accompanying graphs are located under each pond's heading in this notebook. Loss on ignition procedures were followed after Bengtsson and Enell (1986). Sieving on 212 μ and 425 μ sieves for macrofossils was carried out using tap water. All sediment and macrofossils captured by the sieves was flushed into 30ml plastic vials where identification and picking of the macrofossils under a microscope could take place. Macrofossils were ultimately saved into 1/2 dram glass vials where they were dried at 50^o C for 48 hours. Paperwork was filled out on each sample for Woods Hole Oceanographic Institution's (WHOI) accelerator lab. The author's responsibility ended with Federal Express picking up the sample packages.

Results

Detailed descriptions of the cores and macrofossils identified can be found under each pond's heading in this notebook. The exact material and its stratigraphic level in the core is found on the WHOI sample submittal form. Lastly, the field descriptions of each core have been photocopied and are located under the proper heading.

Discussion

A discussion of the results will have to wait until May, 1996 when the radiocarbon age determinations will be finished. All cores and subsamples are archived at the Paleoecology and Paleohydrology Lab at the University of Maine.

References Cited

Bengtsson, D. F., and Enell, M., 1986, Chemical analysis, *in* Berglund, B. E., ed., Handbook of Holocene Paleoecology and Paleohydrology: New York, J. Wiley, P. 423-451.

locations of coring sites done by
Chris Dorian / Woody Thompson - 1995

Pond of Safety Randolph, N.H. Pliny Range $7\frac{1}{2} \times 15'$ quad
↳ $71^{\circ}20'31''$, $44^{\circ}24'36''$

Lower Black Pond Oxbow, Me. Twin Peaks quad
↳ $70^{\circ}57'25''$, $45^{\circ}15'36''$

Surplus Pond Andover North Surplus, Me. Andover quad
↳ $70^{\circ}51'54''$, $44^{\circ}40'30''$

Cushman Pond Lovell, Me. North Waterford quad
↳ $70^{\circ}49'55''$, $44^{\circ}13'12''$

~~Jimby~~ Jimby Pond Rangeley, Me. Rangeley quad
↳ $70^{\circ}44'34''$, $44^{\circ}59'27''$

National Ocean Sciences AMS Sample Submittal Form

Please return to: Woods Hole Oceanographic Institution
NOSAMS, Mail Stop 8
Attn: S.K. Handwork
Woods Hole, MA 02543-1539

Phone: 1-508-289-2469
Fax: 1-508-457-2183
E-Mail: shandwork@whoi.edu

For multiple samples of identical types, please submit one form with an attached list identifying the differences.

Submission date(mm/dd/yy) 1/4/96 Date Requested _____

Title (Dr, Prof, Ms, Mr) _____ Submitter's name Christopher C. Dorion
Address: Organization Name Univ. of Maine Department Quaternary Institute
Project Global Climate Change Building 5711 Boardman Hall
Street Number and Name _____
Post Office Box number _____ City/Town Orono
State ME Country U.S.A. Zip Code 04469-5711
Telephone number (207) 581-2190 FAX number (207) 581-1203
Telemail/E Mail address cdorio41@maine.maine.edu

SAMPLE IDENTIFICATION:

Sample name Cushman Pond 1800-1735cm Sample number _____
Funding agency (if applicable) N.S.F. P.O.# Pro Forma invoice to
Maine Geological Survey

LOCATION OF SAMPLE COLLECTION:

Geographic location name Cushman Pond, Lovell, Maine
Decimal Degrees Latitude 44 13 12 N Degrees Longitude 70 49 55 W
Stratigraphic information 1800-1735cm below lake surface
Vessel name (ship) if applicable _____ Cruise/Leg/Core A & B
Additional environmental information None.

SAMPLE INFORMATION:

1. Sample Origin: a) Marine b) Terrestrial c) Atmospheric

2. Sample submitted as: a) Unprocessed b) CO₂ gas c) Graphite

3. Sample Kind/Type:

3a. Organic carbon (requires combustion process)

a) Plant/Wood b) Charcoal c) Sediment (total C_{org}) d) Other (please specify) Daphnia sp., insect parts.

Provide measured % C_{org} by weight _____

(If not provided or incorrect value, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg) 5 mg

3b. Inorganic carbon (requires acid hydrolysis)

a) Foraminifera b) Coral c) Mollusc d) Sediment (total C_{inorg})
f) Other (please specify) _____

Provide %CaCO₃ by weight _____ a) measured b) estimated

Sample weight (mg) _____

NOSAMS SAMPLE SUBMITTAL FORM

2

3c. Both organic and inorganic processed (2 radiocarbon results from one sample)

a) Sediment b) Other (please specify) _____

Provide a) % CaCO₃ by weight _____

b) % C_{org} by weight _____ (If not provided, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg) _____

3d. Water samples (dissolved inorganic carbon, DIC)

a) sample volume (ml) _____

b) DIC concentration (mM/kg) _____

4. If applicable please identify/classify sample organism (e.g., Genus, Species): leaves of Salix herbaceae, Daphnia sp., insect parts.

5. $\delta^{13}\text{C}$ (PDB) value of the sample (required for AMS data analysis)

a) Measured by NOSAMS (\$15 fee)

b) Provided by submitter: Value _____

c) Assumed:

(1) Marine Org. Carbon, - 20 ‰ (VPDB) (2) Plant/Wood, - 25 ‰ (VPDB)

(3) Marine Carbonates, 0 ‰ (VPDB) (4) Other _____

6. Estimated age range (yBP) of sample:

a) >Modern*

b) 0 -10,000

c) 10,000-30,000

d) > 30,000

e) NA

*Modern=1950

7. Describe reliability of estimate:

a) Excellent

b) Good

c) Fair

d) Poor

e) NA

8. Basis for age estimate:

a) Existing ¹⁴C data in series

b) Correl. w/ similar ¹⁴C dated records

c) Stratigraphic position

d) Correl. w/ stable isotopic records

e) Correl. w/ faunal/floral records

f) Intuition

9. Is there any evidence of sample contamination?

a) Yes

b) No

If yes, describe:

10. Describe any special handling requirement for this sample

(Large samples are assumed to be homogeneous and will be subsampled if necessary.)

None.

11. Collection/Treatment/Storage:

11a) Collector: Christopher C. Dorion

Address: Institute for Quaternary Studies, 5711 Boardman Hall

Orono, ME 04469-5711

Phone: (207) 581-2190

FAX (207) 581-1203

11b) Collection date (mm/dd/yy) 7/24/95

11c) Has sample been treated prior to submittal? If so, please describe briefly (e.g. processing, cleaning or storage)

Gentl. washing with tap water on sieves to disaggregate macrofossils.

11d) Drying 48 hrs. @ 50° C

12. Scientific objectives: The basal date from this lake will constrain regional ice marginal positions that are correlated with glacial stades and interstades.

Please note:

a. If other than standard precision required, please contact NOSAMS.

b. Established fees are based on routine analyses. If after evaluating sample(s), it is determined that sample(s) do not fall in this category, client will be notified of the actual fee before proceeding.

Quaternary Paleoecology and Paleohydrology
Core Log

Site CUSHMAN POND

Date cored 7/24/95

Crew DOELON/MGS

Segment 1700 - 1600cm

Date described 12/13/95

Analyst DOELON

Depth	Hole: <u>(A)</u>	Description	Depth	Hole: <u>(A)</u>
1600				
1603		GUNGE		
			1610	
			1615	
		Gt, laminated 5Y 2.5/1 (black)	1620	
		5Y 2.5/2 (black)	1625	
			1630	
			1635	
			1640	
			1645	
			1650	
			1655	
1660			1660	
			1665	
			1670	
			1675	
			1680	
		5Y 4/3 (olive) silty, stiff,	1685	
		drier GY	1690	
			1695	
1700				

12/19
9:00 am - 12:00 am

Quaternary Paleocology and Paleohydrology Core Log

Site CUSHMAN POND

Date cored 7/24/95

Crew DORION/MGS

Segment 1782 - 1700 cm

Date described 12/13/95

Analyst DORION

Depth	Hole: <u>(A)</u>	Description	Depth	Hole: <u>601</u>
1700				
1706		Curved	1708	
		Microgenetic Gf	1710	
			1715	
			1720	
			1725	
1730		grading over 10 cm	1730	
			1735	
		moss begin level - S. herbacea	1740	
			1745	
1750		73 graded laminae, mm-scale, mud/f.s. alternate	1755	
1754				
1758		Daphnia, coleoptera PARTS	1765	
1782		FELL OFF BOTTOM (SAND)	1775	
1800				

1740
1750
1754
1758
1782

CUSH

**Quaternary Paleocology and Paleohydrology
Core Log**

Site CUSHMAN Pond

Date cored 7/24/95

Crew DoRion/MCS

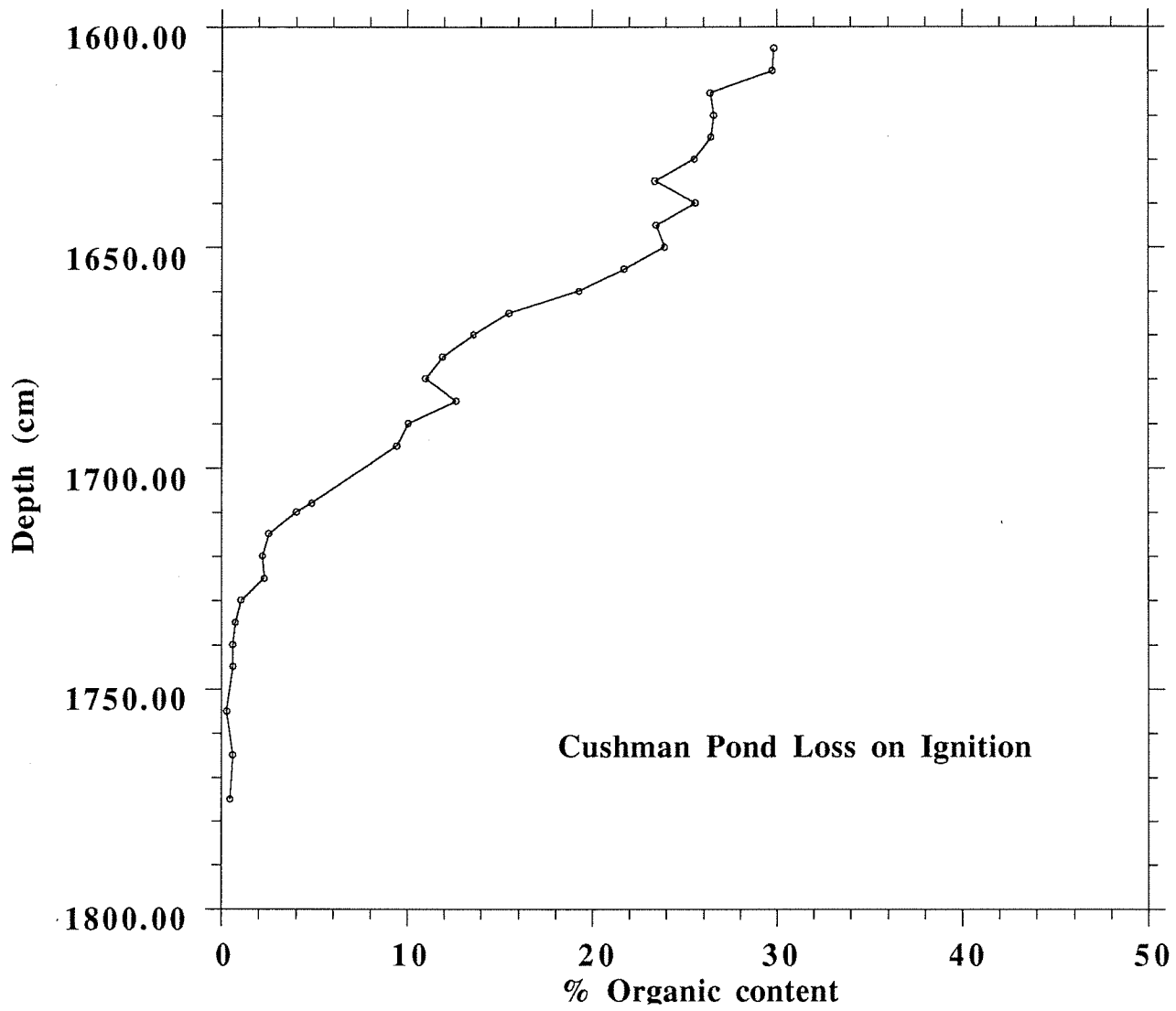
Segment 1800-1700 cm (B)

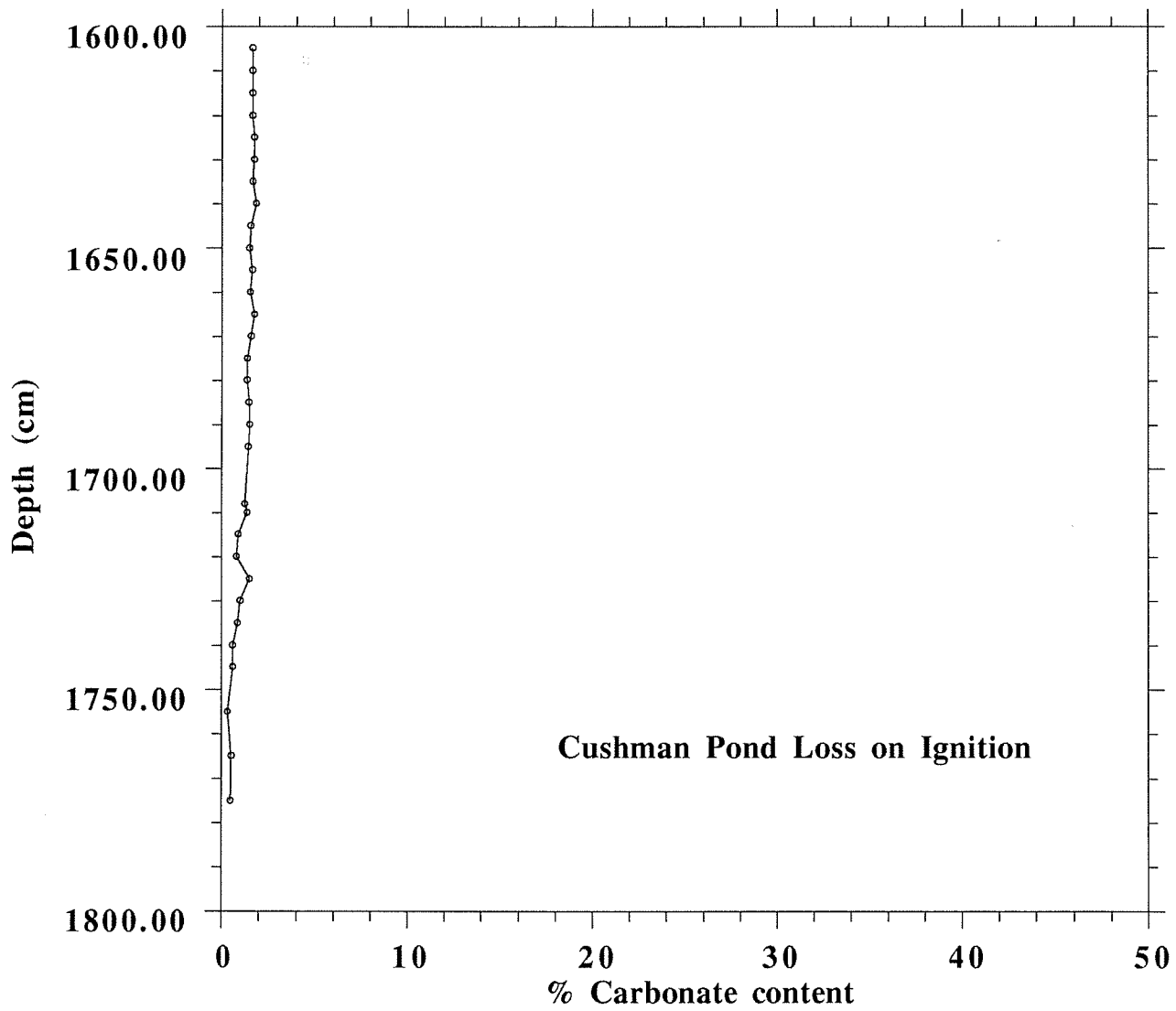
Date described 12/12/95

Analyst DoRion

Depth	Hole (B) 10 cm 3 in. diam.	Description	Depth	Hole: _____	
1700		5Y 3/2 (dark olive gray) (L)			
1714		grading transition w/ black mottling			
1729		diffuse contact } Daphnia sp., Chara, D. integrifolia - leaves Coleoptera parts			
1735					
1740					
			gray 5Y 5/1		
			Chara spores		
		woody twig, Chara, Daphnia, aquatic veg.			
1760					
		moss parts woody twigs	Daphnia, insect parts		
1770					
		" "			
		F1, alternating mud/ f.s. laminae			
1800					

AMS (1800-1735 cm)





Cushman Pond LOI

Site: Cushman Pond Analysis: Dorion Date: 0.009717
 Core: A Analyst: Dorion Segment: 1782-1600

No.	Depth cm	Vol cc	cruc g	cruc + wet	cruc + dry	cruc + ash 550	cruc + ash 925	wet bulk density g/cc	wet weight of sample
1	1775	6	12.507	20.472	19.786	19.755	19.729	1.328	7.966
2	1765	6	13.303	21.327	20.390	20.349	20.322	1.337	8.025
3	1755	6	12.837	20.657	20.375	20.355	20.337	1.303	7.820
4	1745	6	12.228	22.808	21.471	21.416	21.375	1.763	10.581
6	1740	6	12.551	22.990	21.695	21.641	21.601	1.740	10.438
7	1735	6	12.678	29.619	27.084	26.981	26.891	2.824	16.941
8	1730	6	11.510	20.166	18.685	18.611	18.559	1.443	8.656
10	1725	6	12.730	22.778	20.401	20.227	20.143	1.675	10.048
11	1720	6	12.420	23.797	20.705	20.524	20.476	1.896	11.377
12	1715	6	12.257	22.674	19.707	19.520	19.472	1.736	10.417
13	1710	6	12.472	20.613	17.554	17.350	17.300	1.357	8.141
14	1708	6	12.761	20.569	17.309	17.089	17.047	1.301	7.808
16	1695	6	13.056	20.150	15.392	15.173	15.148	1.182	7.094
18	1690	6	11.795	18.921	13.995	13.774	13.750	1.188	7.126
19	1685	6	12.158	19.233	14.138	13.888	13.867	1.179	7.075
20	1680	6	12.507	19.887	14.682	14.443	14.422	1.230	7.380
21	1675	6	12.287	19.564	14.310	14.069	14.049	1.213	7.277
22	1670	6	12.110	19.058	13.876	13.637	13.617	1.158	6.948
23	1665	6	12.178	18.755	13.723	13.484	13.464	1.096	6.577
24	1660	6	12.633	19.332	14.049	13.776	13.760	1.116	6.698
25	1655	6	12.758	19.116	14.024	13.749	13.734	1.060	6.358
26	1650	6	12.380	18.731	13.616	13.321	13.307	1.058	6.351

Cushman Pond LOI

dry weight of sample weight	% water	% organic	% inorganic	%carb
7.280	8.613	0.435	99.565	0.475
7.087	11.678	0.584	99.416	0.514
7.538	3.609	0.265	99.735	0.318
9.244	12.634	0.598	99.402	0.603
9.144	12.404	0.588	99.412	0.592
14.407	14.962	0.718	99.282	0.851
7.175	17.111	1.029	98.971	0.991
7.671	23.655	2.272	97.728	1.491
8.285	27.179	2.179	97.821	0.799
7.450	28.479	2.514	97.486	0.884
5.082	37.576	4.004	95.996	1.354
4.548	41.756	4.842	95.158	1.232
2.336	67.064	9.408	90.592	1.409
2.200	69.131	10.029	89.971	1.490
1.980	72.013	12.631	87.369	1.442
2.175	70.528	10.970	89.030	1.338
2.022	72.211	11.883	88.117	1.365
1.766	74.578	13.547	86.453	1.563
1.545	76.513	15.491	84.509	1.743
1.416	78.866	19.278	80.722	1.528
1.266	80.089	21.692	78.308	1.622
1.236	80.535	23.898	76.102	1.474

Cushman Pond LOI

27	1645	6	13.064	19.161	14.320	14.025	14.011	1.016	6.097
28	1640	6	12.304	18.478	13.419	13.134	13.119	1.029	6.175
29	1635	6	12.307	19.280	13.499	13.220	13.206	1.162	6.973
30	1630	6	12.032	18.204	13.043	12.785	12.772	1.029	6.173
32	1625	6	12.492	17.958	13.315	13.098	13.088	0.911	5.466
33	1620	6	12.701	18.513	13.649	13.397	13.386	0.969	5.813
35	1615	6	12.799	18.864	13.699	13.462	13.451	1.011	6.065
36	1610	6	12.194	18.389	13.017	12.772	12.762	1.033	6.195
37	1605	6	12.331	18.183	13.138	12.897	12.888	0.975	5.852

Cushman Pond LOI

1.256	79.402	23.443	76.557	1.538
1.115	81.939	25.565	74.435	1.841
1.192	82.911	23.380	76.620	1.644
1.012	83.612	25.504	74.496	1.721
0.824	84.929	26.390	73.610	1.733
0.949	83.683	26.537	73.463	1.620
0.900	85.163	26.358	73.642	1.632
0.823	86.715	29.745	70.255	1.636
0.807	86.209	29.823	70.177	1.618

(68)

7/24/95 WATER DEPTH = 787cm
CASHMAN POND, LOVELL

(69)

DEPTH	REC'D.	FATE	DESCRIPTION
900-1000	cm		
1000-1100	100cm	disc.	olive brown gy
1100-1200	100	disc	olive brown gy.
1200-1300	100	disc	olive brown gy.
1300-1400	100	disc	olive brown gy.
1400-1500	100	disc	stiffer, slightly silty olive brown gy.
1500-1600	100	disc	alternating light green + dark brown gy.
1600-1700	100	disc	laminated thin 1500-1600 gy.
1700-1800	100	SAVE	3cm gauge, 1603-1660 lam. gy., 1660-1700 grading down to greyish brown gy.
1700-1800	82	SAVE	1700-1728 gauge, 1705-1728 grading down from grey olive gy. to lam. grey mud + grey sand.
1800-1900	0		1728-1755 lam. mud + sand, 1755-1782 sand, 1759-1782 lam. grey mud + sand, 1782-1800 fell off bottom (gravel). All sand, fell off bottom.

(70)

(B)

Depth	Rec	Fine	Desc
1000-1100		Disc	
1200-1300		Disc	
1250-1380		Disc	
1350-1450		Disc	
1450-1550	Lost H ₂ O?	Disc	
	Redrive From		
1200-1300		Disc	
1300-1400		Disc	
1400-1500		Disc	
1500-1600		Disc	Sand
1600-1700	100	Save	1600-1607 fine 1607-1678 laminated Transition point 1675-1700 massive gray to olive gray
1700-1800	100	Save	1700-1714 massive gray-brown olive gray

~~1714-1714 stop~~

(71)

gray organic mud

1714-1729 grading into gray - laminated

1729-1740 gray lami.

1740-1800 grey sand
1800-1900 63 1800-1862

gray sand with laminated grey mud at bottom

National Ocean Sciences AMS Sample Submittal Form

Please return to: Woods Hole Oceanographic Institution
NOSAMS, Mail Stop 8
Attn: S.K. Handwork
Woods Hole, MA 02543-1539

Phone: 1-508-289-2469
Fax: 1-508-457-2183
E-Mail: shandwork@whoi.edu

For multiple samples of identical types, please submit one form with an attached list identifying the differences.

Submission date(mm/dd/yy) 1/8/96 Date Requested _____

Title (Dr, Prof, Ms, Mr) _____ Submitter's name Christopher C. Dorion
Address: Organization Name Univ. of Maine Department Quaternary Institute
Project Global Climate Change Building 5711 Boardman Hall
Street Number and Name _____
Post Office Box number _____ City/Town Orono
State ME Country U.S.A. Zip Code 04469-5711
Telephone number (207) 581-2190 FAX number (207) 581-1203
Telemail/E Mail address cdorio41@maine.maine.edu

SAMPLE IDENTIFICATION:

Sample name Lower Black Pond 1598-1560 cm B Sample number _____
Funding agency (if applicable) N.S.F. P.O.# _____ Pro Forma invoice to: _____
Maine Geological Survey

LOCATION OF SAMPLE COLLECTION:

Geographic location name Lower Black Pond, Oxbow TWP. T4 R5 WBKP
Decimal Degrees Latitude 45 15 36 N Degrees Longitude 70 57 25 W
Stratigraphic information 1598-1560 cm below pond surface
Vessel name (ship) if applicable _____ Cruise/Leg/Core B
Additional environmental information None.

SAMPLE INFORMATION:

1. Sample Origin: a) Marine b) Terrestrial c) Atmospheric

2. Sample submitted as: a) Unprocessed b) CO₂ gas c) Graphite

3. Sample Kind/Type:

3a. Organic carbon (requires combustion process)

a) Plant/Wood b) Charcoal c) Sediment (total C_{org}) d) Other (please specify) Insect parts.

Provide measured % C_{org} by weight 30%

(If not provided or incorrect value, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg) 5 mg

3b. Inorganic carbon (requires acid hydrolysis)

a) Foraminifera b) Coral c) Mollusc d) Sediment (total C_{inorg})
f) Other (please specify) _____

Provide %CaCO₃ by weight _____ a) measured b) estimated

Sample weight (mg) _____

NOSAMS SAMPLE SUBMITTAL FORM

2

3c. Both organic and inorganic processed (2 radiocarbon results from one sample)

a) Sediment b) Other (please specify) _____

Provide a) % CaCO₃ by weight _____

b) % C_{org} by weight _____ (If not provided, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg) _____

3d. Water samples (dissolved inorganic carbon, DIC)

a) sample volume (ml) _____

b) DIC concentration (mM/kg) _____

4. If applicable please identify/classify sample organism (e.g., Genus, Species): Insect parts: Daphnia sp., moss parts: seeds (Carex sp.?), Drvas integrifolia leaves; aquatic veg. parts: woody twigs.

5. $\delta^{13}C$ (PDB) value of the sample (required for AMS data analysis)

a) Measured by NOSAMS (\$15 fee)

b) Provided by submitter: Value _____

c) Assumed:

(1) Marine Org. Carbon, - 20 ‰ (VPDB) (2) Plant/Wood, - 25 ‰ (VPDB)

(3) Marine Carbonates, 0 ‰ (VPDB) (4) Other _____

6. Estimated age range (yBP) of sample:

a) >Modern*

b) 0 -10,000

c) 10,000-30,000

d) > 30,000

e) NA

*Modern=1950

7. Describe reliability of estimate:

a) Excellent

b) Good

c) Fair

d) Poor

e) NA

8. Basis for age estimate:

a) Existing ¹⁴C data in series

b) Correl.w/ similar ¹⁴C dated records

c) Stratigraphic position

d) Correl. w/ stable isotopic records

e) Correl. w/ faunal/floral records

f) Intuition

9. Is there any evidence of sample contamination?

a) Yes

b) No

If yes, describe:

10. Describe any special handling requirement for this sample

(Large samples are assumed to be homogeneous and will be subsampled if necessary.)

* If there is insufficient carbon, I have enclosed a second glass vial labelled "RESERVE" which can be combusted.

11. Collection/Treatment/Storage:

11a) Collector: Christopher C. Dorion

Address: Institute for Quaternary Studies, 5711 Boardman Hall

Orono, ME 04469-5711

Phone: (207) 581-2190

FAX: (207) 581-1203

11b) Collection date (mm/dd/yy) 7/27/95

11c) Has sample been treated prior to submittal? If so, please describe briefly (e.g. processing, cleaning or storage)

Gentle washing on sieves with tap water to disaggregate microfossils.

11d) Drying 48 hrs. @ 50° C

12. Scientific objectives: The basal date from this core will constrain the emnlacemnet of the Frontier moraine complex. a maior stadial event during late Wisconsinin time.

Please note:

a. If other than standard precision required, please contact NOSAMS.

b. Established fees are based on routine analyses. If after evaluating sample(s), it is determined that sample(s) do not fall in this category, client will be notified of the actual fee before proceeding.

1/8/96:
10:am - 10:30
AMS FORMS

VIX CORE 1/3/95, 1512-1598 cm (B)
Sieved 1/3/95

8:30am - 10:30am
1:30 - 4:15

Quaternary Paleocology and Paleohydrology

Core Log

1/6:1 1/2
DONE

1/4/95: 9:am - 10:30

1/5/95: 9:15 - 11:45
12:45 - 2:PM

Site LOWER BLACK POND

Date cored 7/27/95

Crew DORIAN/MGS

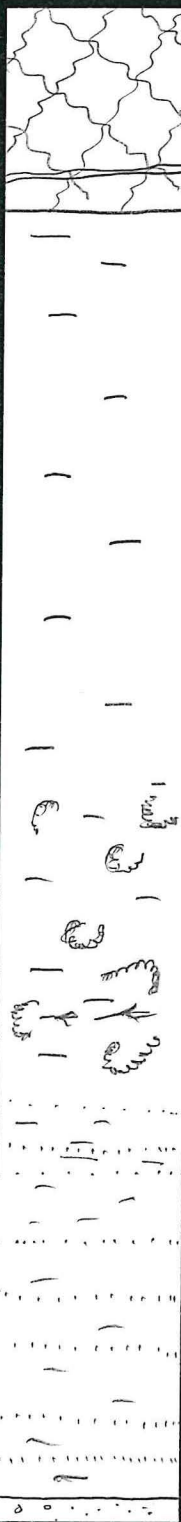
Segment 1598 - 1512 cm

Date described 10/23/95

Analyst DORIAN

Depth	Hole: (B)	Description	Depth	Hole: _____
1500cm				
		GT, 10xR 2/1 (black)	1508	L01
				L01
1514		2mm thick 2.5x 2.5/1 sharp contact	1512.5	L01
				L01
				L01
				L01
		Fm, 57 4/1 (dark gray)		L01
				L01
				L01
1550				L01
1557				L01
		Fm, mottled, 5B 4/1		L01 1555
				L01 1560
		Daphnia sp.		L01 1565
		* ~ 80% of material from here		L01 1570
1571		grading transition		L01 1575
				L01 1580
		F1, 5B 4/1 dark bluish gray, compact, sandy mud		L01 1585
		8 1-2mm graded v.f.s. laminae brown		L01 1590
				L01 1595
1598		6m, fell out		L01 1598
1600cm				

AMS



insect parts
3 woody twigs
1 seed (Cores sb.)
D. integrifolia leaves
woody twigs
woody twigs
D. integrifolia leaves
aquatic veg. parts
insect parts, aquatic veg.
insect wings, parts, Daphnia sp., moss parts
insect parts - heard
moss fragments

Quaternary Paleocology and Paleo hydrology
Core Log

Site Lower Black Pond

Date cored 7/27/95

Crew DORIAN/MGS

Segment _____

Date described 1/5/95

Analyst DORIAN

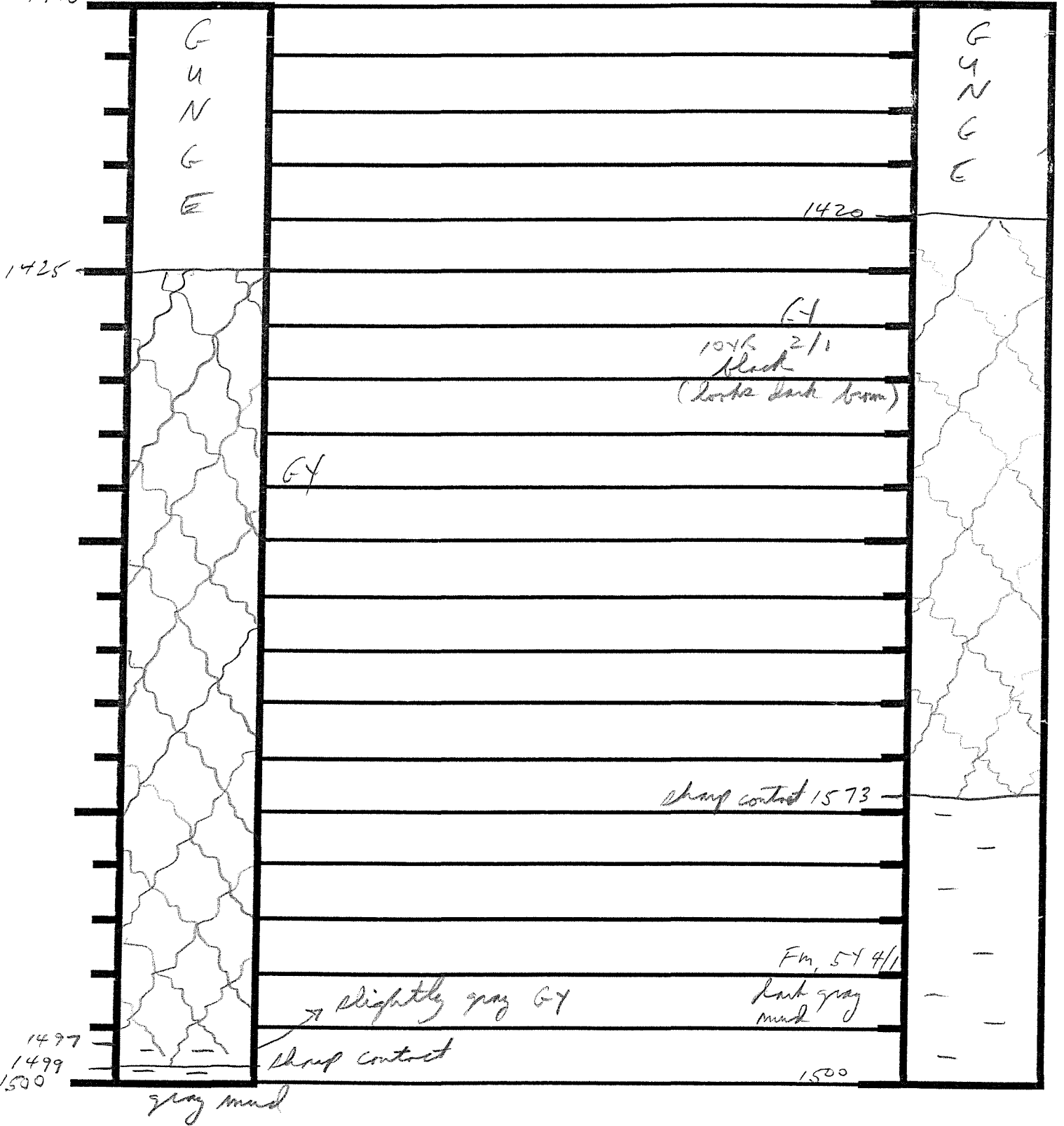
Depth
1490

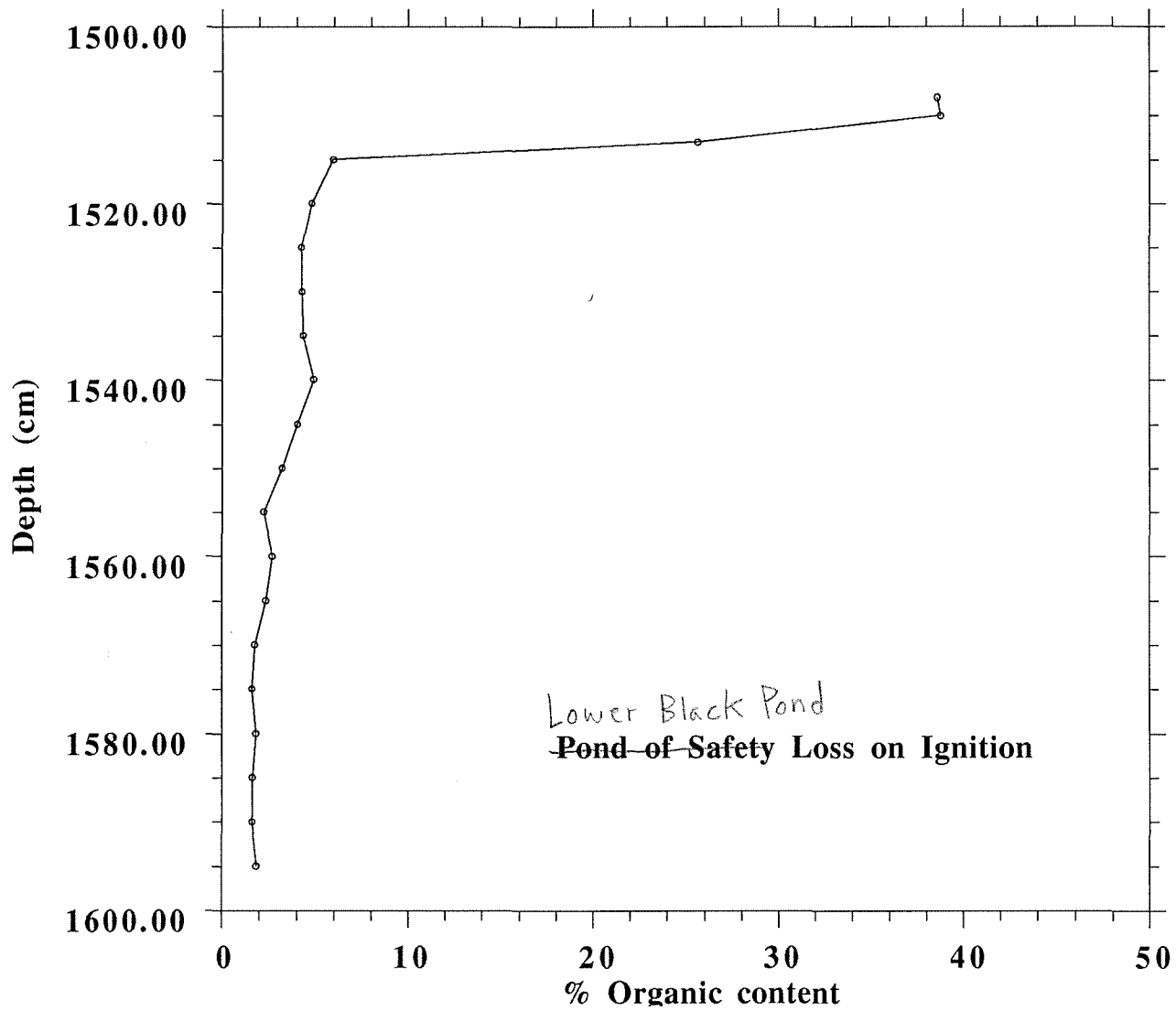
Hole: (C)

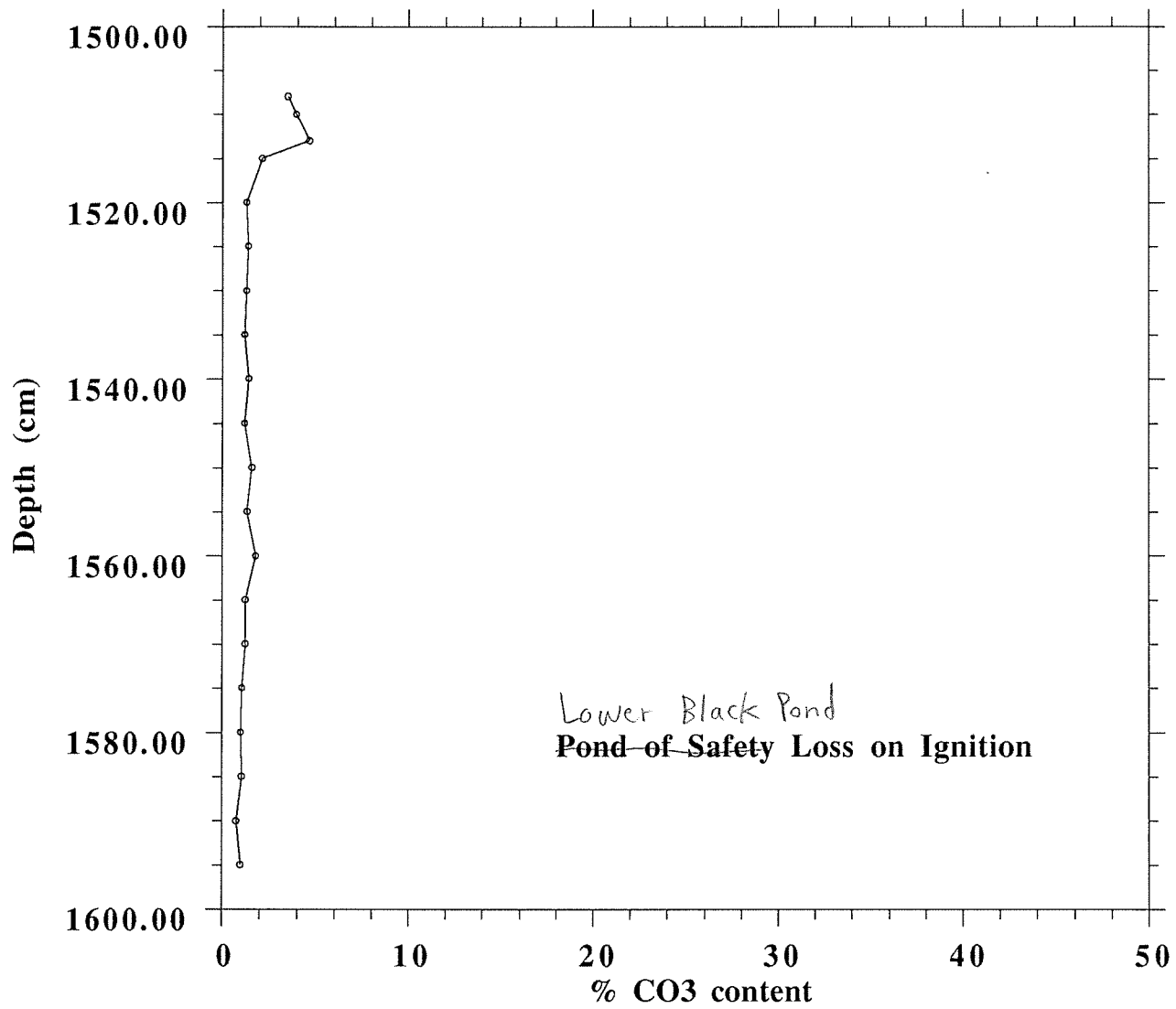
Description

Depth

Hole: (D)







Site: Lower Black Pd. Analysis: Dorion
Core: B Analyst: Dorion

Date: 7/27/95
Segment: 1598-151

No.	Depth cm	Vol cc	cruc g	cruc + wet	cruc + dry	cruc + ash 550	cruc + ash 925
1	1595	6	12.495	24.195	21.478	21.315	21.251
10	1590	6	12.728	22.775	21.328	21.192	21.145
19	1585	6	12.157	23.547	21.472	21.324	21.254
20	1580	6	12.498	22.654	20.062	19.926	19.872
21	1575	6	12.286	24.394	21.866	21.715	21.640
26	1570	6	12.377	22.475	19.737	19.610	19.544
27	1565	6	13.055	21.475	18.151	18.033	17.987
28	1560	6	12.300	21.274	17.113	16.984	16.922
36	1555	6	12.193	19.939	16.746	16.646	16.602
37	1550	6	12.325	20.199	16.625	16.487	16.438
38	1545	6	12.218	21.081	16.742	16.561	16.522
39	1540	6	12.282	19.691	15.818	15.645	15.609
40	1535	6	12.848	20.754	16.824	16.652	16.617
42	1530	6	12.486	20.626	16.535	16.361	16.324
43	1525	6	12.501	19.941	16.075	15.923	15.888
44	1520	6	12.016	20.749	16.050	15.857	15.819
45	1515	6	11.882	19.447	14.907	14.728	14.681
46	1512.	6	12.488	18.819	13.856	13.505	13.458
47	1510	6	12.527	18.394	13.416	13.072	13.046
48	1508	6	12.365	18.022	13.221	12.891	12.869

7cm

wet bulk density g/cc	wet weight of sample	dry weight of sample weight	% water	% organic	% inorganic	%carb
1.950	11.700	8.984	23.216	1.814	98.186	0.972
1.675	10.047	8.600	14.402	1.588	98.412	0.745
1.896	11.391	9.316	18.216	1.595	98.405	1.020
1.693	10.156	7.564	25.527	1.790	98.210	0.978
2.018	12.108	9.580	20.879	1.578	98.422	1.055
1.683	10.098	7.360	27.116	1.728	98.272	1.220
1.403	8.420	5.096	39.474	2.327	97.673	1.225
1.496	8.973	4.813	46.364	2.680	97.320	1.772
1.291	7.746	4.553	41.225	2.199	97.801	1.308
1.312	7.874	4.300	45.394	3.198	96.802	1.556
1.477	8.862	4.524	48.951	4.007	95.993	1.169
1.235	7.409	3.536	52.282	4.890	95.110	1.389
1.318	7.906	3.975	49.717	4.326	95.674	1.170
1.357	8.141	4.049	50.262	4.283	95.717	1.256
1.240	7.441	3.574	51.965	4.236	95.764	1.362
1.456	8.734	4.034	53.809	4.779	95.221	1.271
1.261	7.566	3.026	60.006	5.926	94.074	2.104
1.055	6.331	1.367	78.401	25.631	74.369	4.644
0.978	5.867	0.889	84.842	38.761	61.239	3.930
0.943	5.658	0.856	84.863	38.568	61.432	3.462

(82)

7/27/95

Lower Black Pond,
Oxbow (T4R5 W3 KP), me.

Hole A

Water depth: 906 cm

Datum: 943 cm

Depth (cm)	recon.	Fate	Description
900-1000	0	—	(soft - gy)
1000 - 1190	100	disc.	sl. - brown gy
1100 - 1150	50	save	(—)

(83)

Hole A, 1100-1161 cm:

1100-1120: 'grunge'

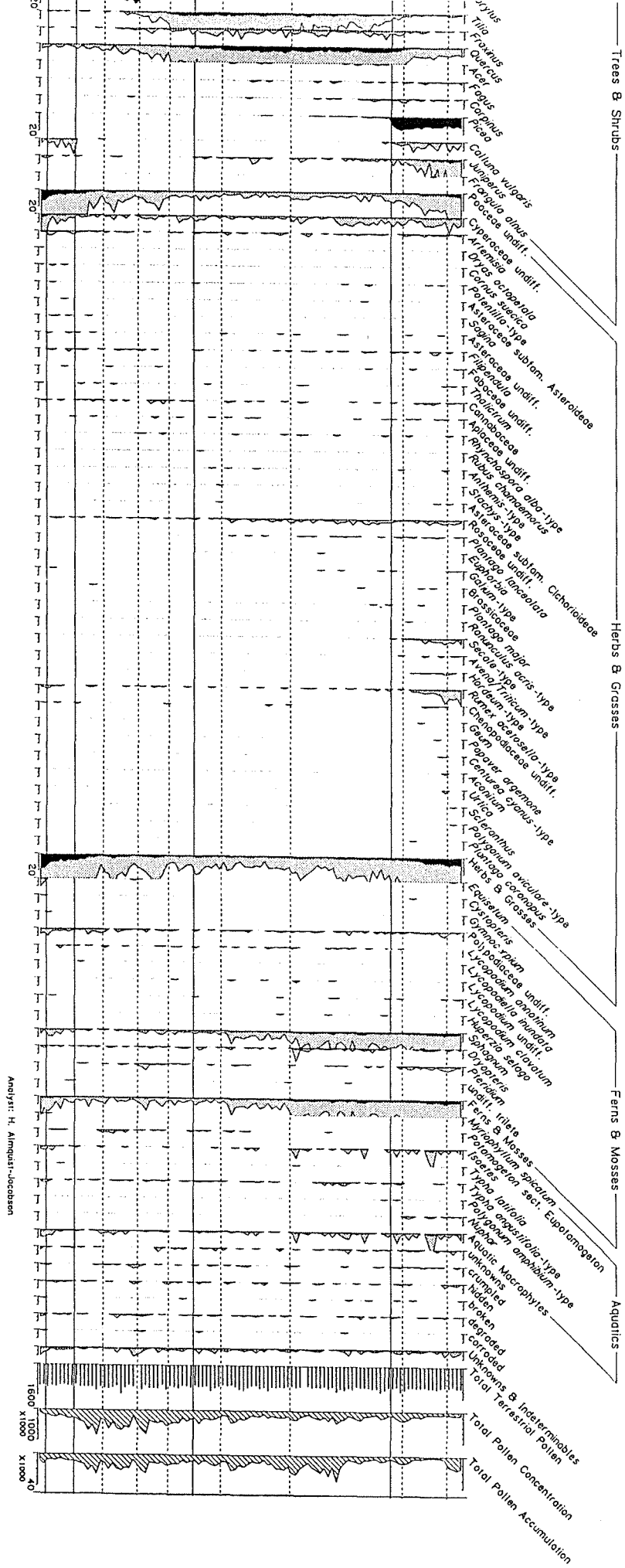
1120-1140: ol. - brown gy
(laminated toward bottom)

1140-1150: gray mud (sharp)

1150: pebble gravel (slaty pebbles)

1150-1161: lost (fell away)

ALPHIVE (A) - RECORD SHEET



Analysit: H. Amquist-Jacobsen

1600
1000
40
X1000
X1000

Trees & Shrubs

Herbs & Grasses

Ferns & Mosses

Aquatics

Xylus
Tilia
Fraxinus
Quercus
Acer
Populus
Picea

Calluna vulgaris
Juniperus
Pinus

Poaceae
Cyperaceae undiff.
Gramineae undiff.

Cyperaceae undiff.
Gramineae undiff.
Cyperaceae undiff.

Asteraceae undiff.
Asteraceae undiff.
Asteraceae undiff.

Rubus
Rosa
Rosaceae undiff.
Rosaceae undiff.

Cichoriaceae undiff.
Cichoriaceae undiff.
Cichoriaceae undiff.

Plantaginaceae undiff.
Plantaginaceae undiff.
Plantaginaceae undiff.

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Plantaginaceae undiff.

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Plantaginaceae undiff.
Plantaginaceae undiff.

84

Jones Black Pond, Me
Cotton (T4R5 WBRP)
Hole B (deepest part of lake)
Water depth: 1010 cm

Datum: 1247 cm

Depth (cm)	recovery	date	description
1300-1400	100	disc	olive-brown ol. - brown ol. - massive ol. - brown
1400-1500	100	disc	gy (finer) gy (finer) → (gravelly sand)
1500-1600	100 98	keep	
1600-1700	0	—	

THIS IS THE LONGEST CORE - (6)

85

Hole B) 1500-1600

~~1598~~ (1598 - 1600 was sand
& fell off)

~~1517~~ : ~~ol.~~ : ~~fin~~

1500-1512 : gurgly

1512-1517 : ol - brown gy.

1517-1545 : ol - gray organic-rich mud

1545-1573 : mottled, laminated

fleck & gray mud

1573-1598 : laminated, interbedded

gray mud & sand
(graded beds)

No obvious Younger Dryas!
(probably too young)

(86)

Lower Black Pond,
T4R5 (W3K P) ? me.

Hole C

Water depth: 1210 cm
Datum: 1247

Depth (cm)	recon	Fate	Description
1300-1400	100	disc	ol-brown qtz
1400-1500	100	save	
1500-1600	0	save lost	lost! (piston slipped on anything up - would wrap!)

(87)

Hole C, 1400-1500 cm

1400-1425: discarded
1425-1499: ol-brown qtz
1499-1500: ~~disc~~ ol-brown qtz
square-neck mud

88

Lower Black Pond, me
14 RE (WBKF)

Hole D

Water depth: 1210 cm
Datum: 1247 cm

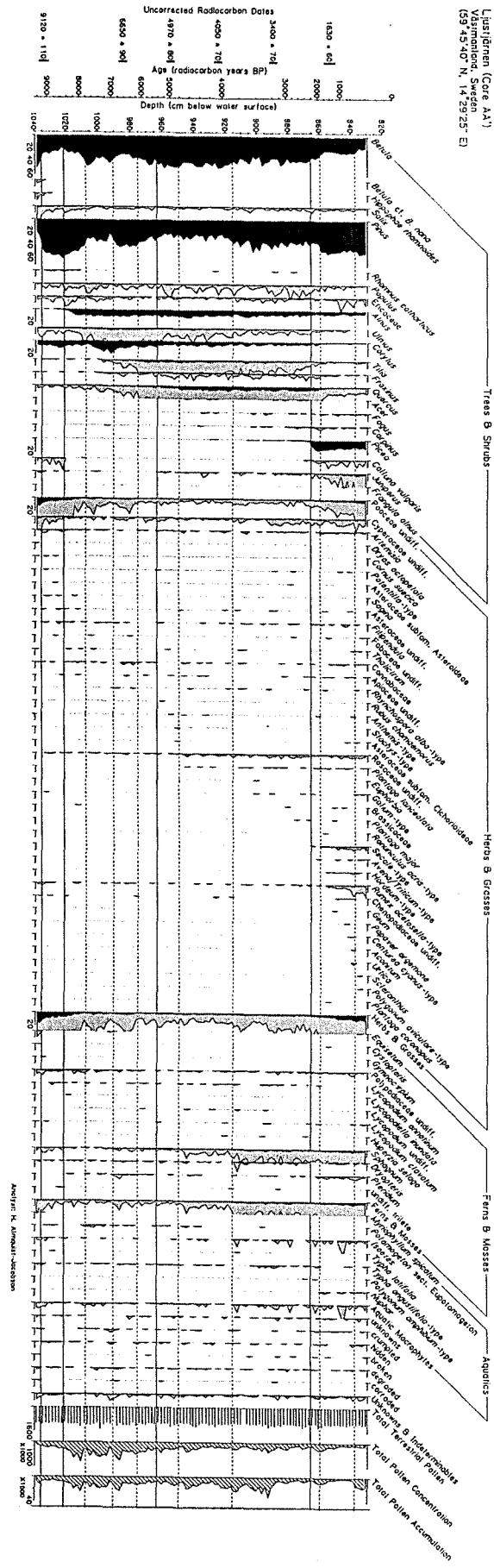
Depth (cm)	recov.	Fate	description
1300-1400	100	disc.	d.-brown gy
1400-1500	100	save	
1500-1600	0	lost	all slipped out! (amid)

89

(shaved off upper 20 cm)
Hole D, 1420-1500 cm

1420-1472 : d.-brown gy
(sharp contrast)
1472-1500 : d.-gray
organic mud

Ljustidnen (Core A1)
 Västerås, Sweden
 (59°45'40" N, 14°29'25" E)



Analys: N. Amundson, Stockholm

National Ocean Sciences AMS Sample Submittal Form

Please return to: Woods Hole Oceanographic Institution
NOSAMS, Mail Stop 8
Attn: S.K. Handwork
Woods Hole, MA 02543-1539

Phone: 1-508-289-2469
Fax: 1-508-457-2183
E-Mail: shandwork@whoi.edu

For multiple samples of identical types, please submit one form with an attached list identifying the differences.

Submission date(mm/dd/yy) 1/4/96 Date Requested _____

Title (Dr, Prof, Ms, Mr) _____ Submitter's name Christopher C. Dorion
Address: Organization Name Univ. of Maine Department Quaternary Institute
Project Global Climate Change Building 5711 Boardman Hall
Street Number and Name _____
Post Office Box number _____ City/Town Orono
State ME Country U.S.A. Zip Code 04469-5711
Telephone number (207) 581-2190 FAX number (207) 581-1203
Telemail/E Mail address cdorio41@maine.maine.edu

SAMPLE IDENTIFICATION:

Sample name Pond of Safety 700-650cm Sample number _____
Funding agency (if applicable) N.S.F. P.O.# Pro Forma invoice to:
Maine Geological Survey

LOCATION OF SAMPLE COLLECTION:

Geographic location name Pond of Safety, Randolph, NH
Decimal Degrees Latitude 44 24 36 N Degrees Longitude 71 20 31 W
Stratigraphic information 700-650cm below lake surface
Vessel name (ship) if applicable _____ Cruise/Leg/Core A, B, C
Additional environmental information None.

SAMPLE INFORMATION:

1. Sample Origin: a) Marine b) Terrestrial c) Atmospheric
2. Sample submitted as: a) Unprocessed b) CO₂ gas c) Graphite
3. Sample Kind/Type:

3a. Organic carbon (requires combustion process)

- a) Plant/Wood b) Charcoal c) Sediment (total C_{org}) d) Other (please specify) insect parts

Provide measured % C_{org} by weight _____

(If not provided or incorrect value, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg) 8 mg

3b. Inorganic carbon (requires acid hydrolysis)

- a) Foraminifera b) Coral c) Mollusc d) Sediment (total C_{inorg})
f) Other (please specify) _____

Provide %CaCO₃ by weight _____ a) measured b) estimated

Sample weight (mg) _____

NOSAMS SAMPLE SUBMITTAL FORM

3c. Both organic and inorganic processed (2 radiocarbon results from one sample)
a) Sediment b) Other (please specify)

Provide a) % CaCO3 by weight
b) % Corg by weight (If not provided, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg)

3d. Water samples (dissolved inorganic carbon, DIC)

a) sample volume (ml) b) DIC concentration (mM/kg)

4. If applicable please identify/classify sample organism (e.g., Genus, Species): moss parts, Dryas integrifolia leaves, Daphnia sp., Carex seeds, insect parts (90% of sample), Characea spores.

5. delta 13C (PDB) value of the sample (required for AMS data analysis)

- a) Measured by NOSAMS (\$15 fee)
b) Provided by submitter: Value
c) Assumed: (1) Marine Org. Carbon, - 20 ‰ (VPDB) (2) Plant/Wood, - 25 ‰ (VPDB) (3) Marine Carbonates, 0 ‰ (VPDB) (4) Other

6. Estimated age range (yBP) of sample: a) >Modern* b) 0 -10,000 c) 10,000-30,000
d) > 30,000 e) NA *Modern=1950

7. Describe reliability of estimate: a) Excellent b) Good c) Fair d) Poor e) NA

8. Basis for age estimate: a) Existing 14C data in series b) Correl.w/ similar 14C dated records c) Stratigraphic position
d) Correl. w/ stable isotopic records e) Correl. w/ faunal/floral records f) Intuition

9. Is there any evidence of sample contamination? a) Yes b) No
If yes, describe:

10. Describe any special handling requirement for this sample
(Large samples are assumed to be homogeneous and will be subsampled if necessary.)
None.

11. Collection/Treatment/Storage:

11a) Collector: Christopher C. Dorion
Address: Institute for Quaternary Studies, 5711 Boardman Hall
Orono, ME 04469-5711
Phone: (207) 581-2190 FAX (207) 581-1203

11b) Collection date (mm/dd/yy) 7/25/95

11c) Has sample been treated prior to submittal? If so, please describe briefly (e.g. processing, cleaning or storage)

Sieving with tap water.

11d) Drying 48 hrs. @ 50 C

12. Scientific objectives: The basal date from this lake will constrain regional ice marginal positions that are correlated with glacial stades and interstades.

- Please note: a. If other than standard precision required, please contact NOSAMS.
b. Established fees are based on routine analyses. If after evaluating sample(s), it is determined that sample(s) do not fall in this category, client will be notified of the actual fee before proceeding.

National Ocean Sciences AMS Sample Submittal Form

Please return to: Woods Hole Oceanographic Institution
NOSAMS, Mail Stop 8
Attn: S.K. Handwork
Woods Hole, MA 02543-1539

Phone: 1-508-289-2469
Fax: 1-508-457-2183
E-Mail: shandwork@whoi.edu

For multiple samples of identical types, please submit one form with an attached list identifying the differences.

Submission date(mm/dd/yy) 1/4/96 Date Requested _____

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Project Global Climate Change Building 5711 Boardman Hall
Street Number and Name _____
Post Office Box number _____ City/Town Orono
State ME Country U.S.A. Zip Code 04469-5711
Telephone number (207) 581-2190 FAX number (207) 581-1203
Telemail/E Mail address cdorio41@maine.maine.edu

SAMPLE IDENTIFICATION:

Sample name Pond of Safety 639-638cm Sample number _____
Funding agency (if applicable) N.S.F. P.O.# Pro Forma invoice to:
Maine Geological Survey

LOCATION OF SAMPLE COLLECTION:

Geographic location name Pond of Safety, Randolph, NH
Decimal Degrees Latitude 44 24 36 N Degrees Longitude 71 20 31 W
Stratigraphic information 639-638cm below lake surface
Vessel name (ship) if applicable _____ Cruise/Leg/Core B
Additional environmental information None.

SAMPLE INFORMATION:

1. Sample Origin: a) Marine b) Terrestrial c) Atmospheric
2. Sample submitted as: a) Unprocessed b) CO₂ gas c) Graphite
3. Sample Kind/Type:

3a. Organic carbon (requires combustion process)

- a) Plant/Wood b) Charcoal c) Sediment (total C_{org}) d) Other (please specify) _____

Provide measured % C_{org} by weight 1.8 %

(If not provided or incorrect value, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg) 27 grams

3b. Inorganic carbon (requires acid hydrolysis)

- a) Foraminifera b) Coral c) Mollusc d) Sediment (total C_{inorg})
f) Other (please specify) _____

Provide %CaCO₃ by weight _____ a) measured b) estimated

Sample weight (mg) _____

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State ME Country U.S.A. Zip Code 04469-5711
Telephone number (207) 581-2190 FAX number (207) 581-1203
Telemail/E Mail address cdorio41@maine.maine.edu

SAMPLE IDENTIFICATION:

Sample name Pond of safety Sample number _____
Funding agency (if applicable) N.S.F. P.O.# _____ Pro Forma invoice to: _____
Maine Geological Survey

LOCATION OF SAMPLE COLLECTION:

Geographic location name Pond of Safety, Randolph, NH
Decimal Degrees Latitude 44 24 36 N Degrees Longitude 71 20 31 W
Stratigraphic information 626-625cm
Vessel name (ship) if applicable _____ Cruise/Leg/Core B
Additional environmental information None.

SAMPLE INFORMATION:

1. Sample Origin: a) Marine b) Terrestrial c) Atmospheric

2. Sample submitted as: a) Unprocessed b) CO₂ gas c) Graphite

3. Sample Kind/Type:

3a. Organic carbon (requires combustion process)

a) Plant/Wood b) Charcoal c) Sediment (total C_{org}) d) Other (please specify) _____

Provide measured % C_{org} by weight 2.1 %

(If not provided or incorrect value, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg) 19 grams

3b. Inorganic carbon (requires acid hydrolysis)

a) Foraminifera b) Coral c) Mollusc d) Sediment (total C_{inorg})
f) Other (please specify) _____

Provide %CaCO₃ by weight _____ a) measured b) estimated

Sample weight (mg) _____

NOSAMS SAMPLE SUBMITTAL FORM

3c. Both organic and inorganic processed (2 radiocarbon results from one sample)

- a) Sediment b) Other (please specify) _____

Provide a) % CaCO3 by weight _____

b) % Corg by weight _____ (If not provided, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg) _____

3d. Water samples (dissolved inorganic carbon, DIC)

a) sample volume (ml) _____

b) DIC concentration (mM/kg) _____

4. If applicable please identify/classify sample organism (e.g., Genus, Species): _____

5. δ 13C (PDB) value of the sample (required for AMS data analysis)

a) Measured by NOSAMS (\$15 fee)

b) Provided by submitter: Value _____

c) Assumed:

(1) Marine Org. Carbon, - 20 ‰ (VPDB) (2) Plant/Wood, - 25 ‰ (VPDB)

(3) Marine Carbonates, 0 ‰ (VPDB) (4) Other _____

6. Estimated age range (yBP) of sample:

a) >Modern*

b) 0 -10,000

c) 10,000-30,000

d) > 30,000

e) NA

*Modern=1950

7. Describe reliability of estimate:

a) Excellent

b) Good

c) Fair

d) Poor

e) NA

8. Basis for age estimate:

a) Existing 14C data in series

b) Correl. w/ similar 14C dated records

c) Stratigraphic position

d) Correl. w/ stable isotopic records

e) Correl. w/ faunal/floral records

f) Intuition

9. Is there any evidence of sample contamination?

a) Yes

b) No

If yes, describe:

10. Describe any special handling requirement for this sample

(Large samples are assumed to be homogeneous and will be subsampled if necessary.)

None.

11. Collection/Treatment/Storage:

11a) Collector: Christopher C. Dorion

Address: Institute for Quaternary Studies, 5711 Boardman Hall

Orono, ME 04469-5711

Phone: (207) 581-2190

FAX (207) 581-1203

11b) Collection date (mm/dd/yy) 7/25/95

11c) Has sample been treated prior to submittal? If so, please describe briefly (e.g. processing, cleaning or storage)

None.

11d) Drying 48 hrs. @ 50° C

12. Scientific objectives: This bulk sample will provide an age estimate for the termination of the Younger Dryas chronozone in northern New England.

Please note:

a. If other than standard precision required, please contact NOSAMS.

b. Established fees are based on routine analyses. If after evaluating sample(s), it is determined that sample(s) do not fall in this category, client will be notified of the actual fee before proceeding.

Word of Safety

639 - 638 cm (B)

6% sig.

$$V = \pi r^2 h$$

$$V = \frac{m}{\rho}$$

$$h = \frac{V}{\pi r^2}$$

$$= \frac{m}{\rho \pi r^2}$$

$$= \frac{(0.30)(0.06) \left(\frac{1.2 \text{ g}}{\text{cm}^3} \right)}{\pi (7.5 \text{ cm})^2} =$$

$$\pi (7.5 \text{ cm})^2$$

$$h = 0.03 \text{ cm}$$

$$h = \frac{m}{\rho \pi r^2}$$

$$m = (h)(\rho)\pi(r^2) = (1 \text{ cm})(1.2 \frac{\text{g}}{\text{cm}^3})(\pi)(7.5 \text{ cm})^2$$

$$= 212 \text{ g} (0.30)(0.06) = 3.82 \text{ g carbon}$$

12/21/25

$$m = (1 \text{ cm}) \left(\frac{1.17}{\text{cm}^3} \right) \pi (7.5 \text{ cm})^2 (0.30)(0.07)$$

$$= 4.08 \text{ g carbon}$$

Load of Safety 626-625 cm (B)

Quaternary Paleocology and Paleohydrology
Core Log

12/21
9:00 - 11:30
12:30 - 1:45

Site POND OF SAFETY Date cored 7/25/95 Crew DORIAN / MGS
Segment 603-674 cm Date described 12/20/95 Analyst DORIAN

Depth	Hole: (A)	Description	Depth	Hole: _____
600				
603	GUNGE	G1		
616		grading contact		
630		mineralogenic G1		
631		G1		
		mineralogenic G1		
649		sharp contact		
		F1, gray		
667		} 1 moss stem, ~3 cm long nothing else		
	5m			
674	REFUSAL			
700				

SIEVED FOR AAS

12/17 16:25
6:45 - 9:30

Quaternary Paleoecology and Paleohydrology Core Log

12/20: 10:00 - 12:30
11:30 - 3:15 - DATA
REDUCTION

Site POND OF SAFETY

Date cored 7/25/95

Crew DORION/MGS

Segment 609-700 cm

Date described 12/19/95

Analyst DORION

Depth	Hole: <u>(B)</u>	Description	Depth	Hole: _____
600				
		GUNGE		
609		GY		
623		diffuse, gradational contact over 5cm around	623 cm	
		minero-genic GY		
639		sharp contact		
		GY		
		minero-genic GY		
663		weak mottling		
665		95% of moths are insect parts Chara spores Moss parts D. integrifolia leaves Cyperus sp. seed or conelet		
667				
770				
680				
690		F1, gray 28 Complots counted		
696				
700		granules in muddy sand, 2/3 are dusts (not at all rounded)		

SIEVED FOR AMS

28 COMLOTS

10 COMLOTS

Daphnia, insect parts, 1 seed eaten

no insect part very sparse

6 insect parts nothing else

Quaternary Paleoecology and Paleohydrology

Core Log

49 samples

12/19 : 9:00 - 10:00

12:00 - 4:15

5 1/4

Site POND OF SAFETY

Date cored 7/25/95

Crew DORION/MCS

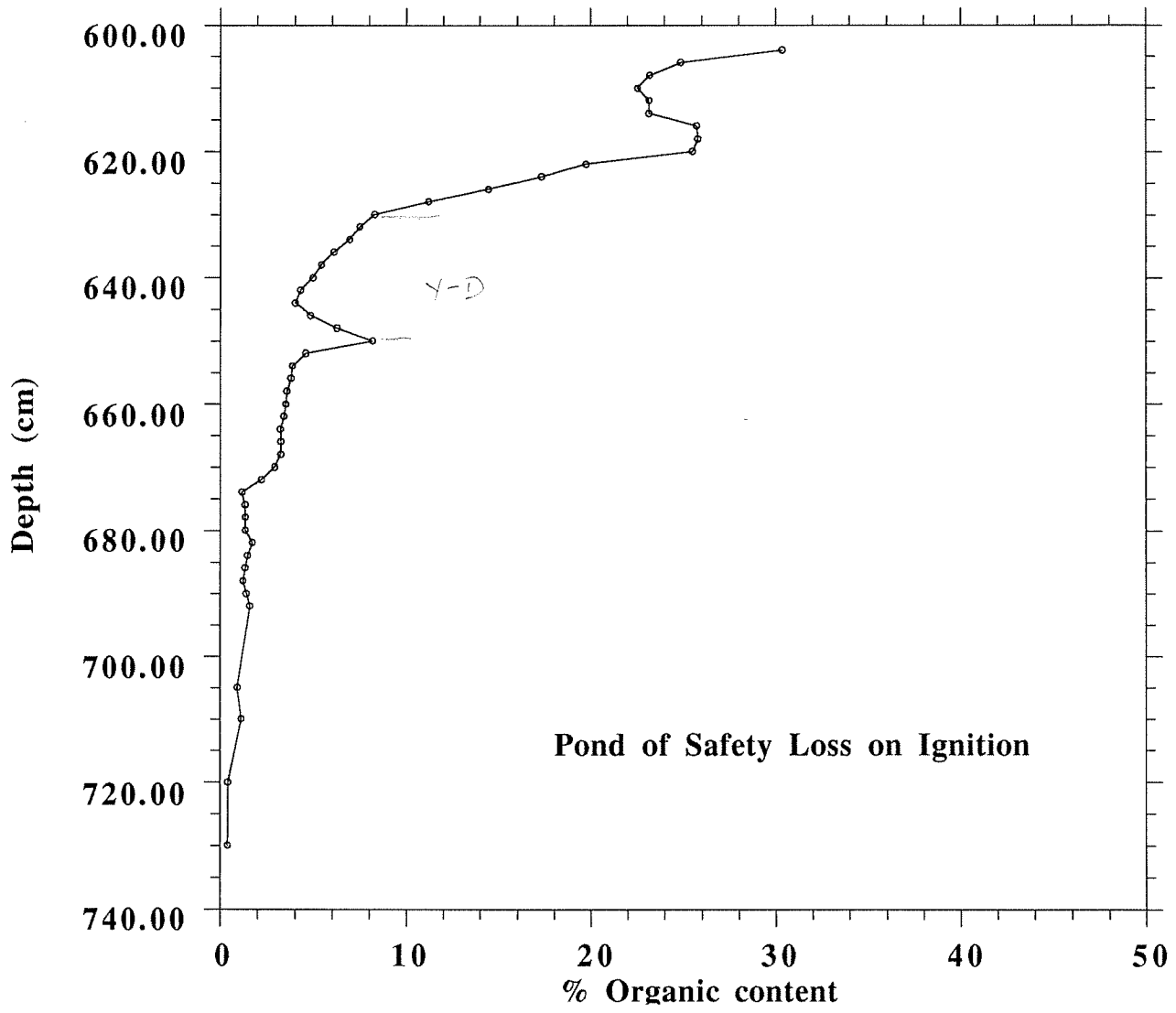
Segment 695-600cm

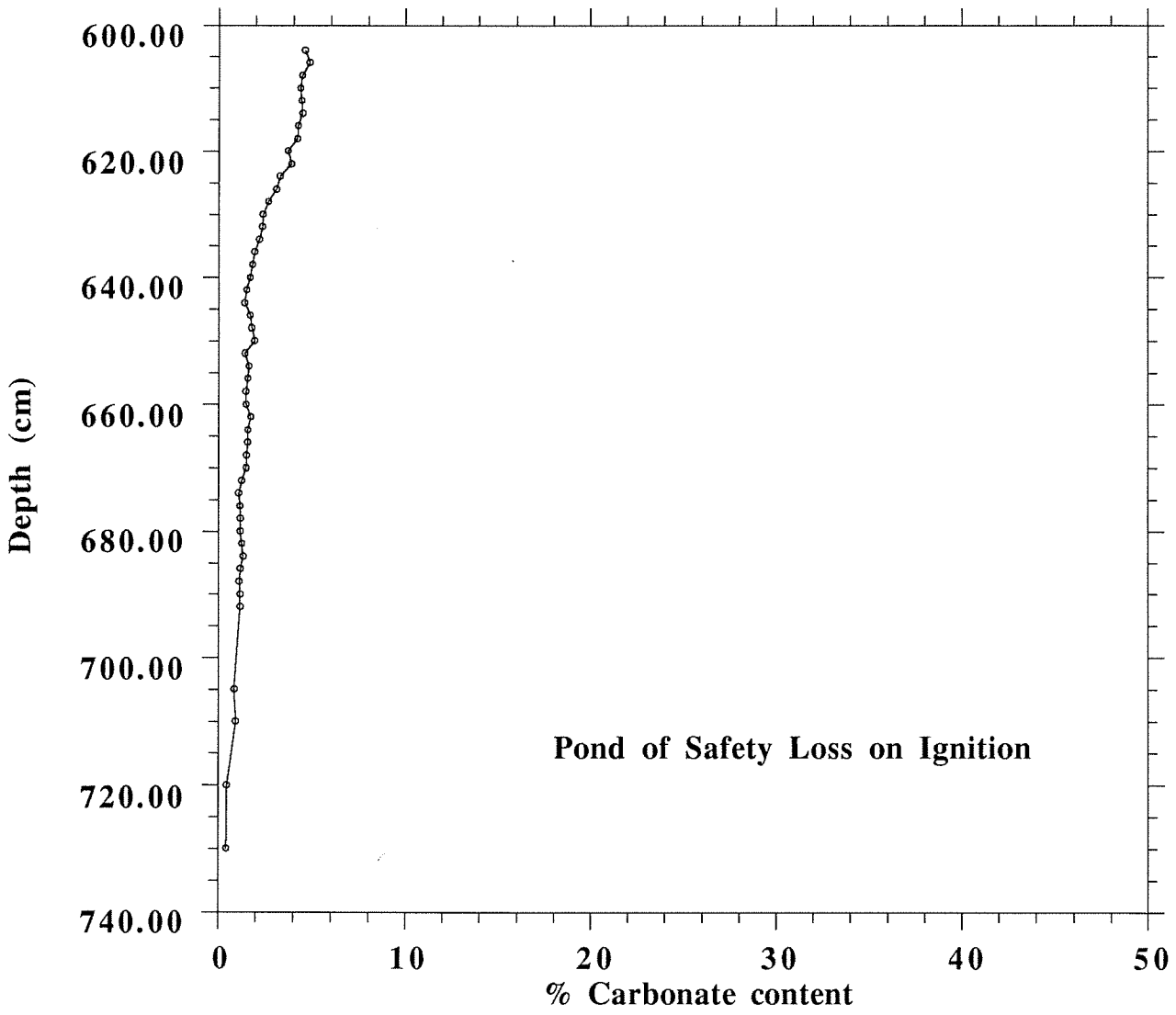
Date described 12/15/95

Analyst DORION

Depth Hole: ⊙ Description Depth Hole:

			604	
		GT 10TR 2/2 (very -) - really looks dark brown dark line	606	
			608	
			610	
			612	
			614	
			616	
			618	
			620	
			622	
			624	
			626	
628 -		} grading transition	628	
631 -			630	
			632	
			634	
		microgenetic GT (5Y 3/1) very dark gray	636	
			638	
			640	
			642	
			644	
			646	
649		sharp contact	648	
		5Y 3/2 (dark blue gray) GT	650	
			652	
			654	
			656	
			658	
			660	
		microgenetic GT, 5Y 4/1 (dark gray)	662	
			664	
			666	
			668	
672 -		} grading transition; faint black mottling	670	
675 -			672	
			674	
			676	
			678	
			680	
			682	} through mds. Chron. 9. 5. has been leaf
		F1 (mm-scale v.f.s./ mud laminae)	684	
			686	
			688	
			690	
		5G 4/1 (dark greenish gray)	692	
75		LOST		
700				





Pond of Safety LOI

Site: Pond of Safety Analysis: Dorion Date: 12/15/95
 Core: 730-600 cm C Analyst: Dorion Segment:

No.	Depth cm	Vol cc	cruc g	cruc + wet	cruc + dry	cruc + ash 550	cruc + ash 925	wet bulk density g/cc	wet weight of sample
39	730	6	12.284	23.257	20.782	20.750	20.724	1.829	10.973
40	720	6	12.848	24.232	21.960	21.924	21.895	1.897	11.384
42	710	6	12.485	24.490	22.318	22.210	22.144	2.001	12.004
43	705	6	12.502	23.072	21.388	21.308	21.253	1.762	10.570
44	692	6	12.016	22.710	20.555	20.421	20.349	1.782	10.693
45	690	6	11.881	23.931	21.557	21.424	21.342	2.008	12.050
46	688	6	12.487	24.146	21.850	21.737	21.662	1.943	11.660
47	686	6	12.526	22.676	19.809	19.714	19.652	1.692	10.150
38	684	6	12.218	20.823	18.207	18.121	18.064	1.434	8.604
48	682	6	12.364	21.851	18.704	18.596	18.539	1.581	9.487
59	680	6	11.953	21.153	18.335	18.250	18.196	1.533	9.200
60	678	6	11.179	20.674	17.554	17.470	17.416	1.583	9.495
61	676	6	13.062	22.904	19.864	19.776	19.719	1.640	9.842
67	674	6	12.272	23.228	20.231	20.140	20.078	1.826	10.956
69	672	6	11.600	20.607	16.733	16.620	16.574	1.501	9.007
70	670	6	12.746	21.337	17.097	16.971	16.925	1.432	8.590
71	668	6	12.032	20.611	16.148	16.015	15.970	1.430	8.579
72	666	6	11.709	19.618	15.504	15.381	15.338	1.318	7.909
73	664	6	10.629	18.159	14.157	14.044	14.004	1.255	7.530
74	662	6	10.663	18.389	14.127	14.009	13.966	1.288	7.727
75	660	6	10.852	19.392	14.513	14.385	14.346	1.423	8.540
76	658	6	12.289	19.944	15.547	15.431	15.397	1.276	7.655

Pond of Safety LOI

dry weight of sample weight	% water	% organic	% inorganic	%carb
8.498	22.557	0.377	99.623	0.408
9.112	19.955	0.396	99.604	0.430
9.833	18.090	1.103	98.897	0.910
8.886	15.935	0.894	99.106	0.837
8.539	20.145	1.574	98.426	1.148
9.676	19.702	1.377	98.623	1.148
9.363	19.697	1.209	98.791	1.081
7.283	28.243	1.313	98.687	1.161
5.989	30.394	1.443	98.557	1.299
6.341	33.163	1.706	98.294	1.229
6.382	30.628	1.330	98.670	1.151
6.376	32.857	1.324	98.676	1.158
6.802	30.885	1.302	98.698	1.134
7.959	27.356	1.146	98.854	1.058
5.133	43.014	2.199	97.801	1.224
4.351	49.349	2.907	97.093	1.450
4.116	52.024	3.234	96.766	1.474
3.795	52.010	3.249	96.751	1.530
3.528	53.146	3.206	96.794	1.546
3.465	55.157	3.406	96.594	1.700
3.661	57.127	3.510	96.490	1.456
3.257	57.447	3.558	96.442	1.436

Pond of Safety LOI

77	656	6	10.818	18.422	13.970	13.851	13.815	1.267	7.603
78	654	6	11.247	18.722	14.318	14.199	14.163	1.246	7.475
79	652	6	10.116	18.291	13.281	13.137	13.104	1.362	8.175
80	650 -	6	10.958	18.123	12.992	12.826	12.797	1.194	7.165
81	648	6	11.142	18.407	13.397	13.256	13.227	1.211	7.265
82	646	6	11.599	19.179	14.386	14.252	14.218	1.263	7.580
83	644	6	11.793	19.109	14.857	14.735	14.703	1.219	7.316
84	642	6	10.454	18.313	13.518	13.387	13.353	1.310	7.858
85	640	6	10.501	17.632	13.053	12.927	12.895	1.188	7.131
86	638	6	11.841	19.043	14.246	14.116	14.084	1.200	7.201
87	636	6	10.577	17.545	12.783	12.649	12.618	1.161	6.968
88	634	6	10.795	17.488	12.701	12.569	12.538	1.116	6.693
89	632 -	6	10.964	17.580	12.746	12.613	12.582	1.103	6.616
90	630	6	11.670	18.419	13.336	13.198	13.169	1.125	6.749
91	628	6	11.274	17.364	12.520	12.381	12.356	1.015	6.089
92	626	6	12.284	18.249	13.292	13.147	13.124	0.994	5.965
93	624	6	12.824	18.859	13.719	13.564	13.542	1.006	6.035
94	622	6	12.124	17.761	12.861	12.715	12.694	0.940	5.638
95	620	6	12.033	18.347	12.829	12.626	12.605	1.052	6.314
96	618	6	13.297	19.267	13.982	13.806	13.784	0.995	5.970
97	616	6	12.065	18.050	12.732	12.560	12.540	0.998	5.986
98	614	6	11.892	17.898	12.598	12.435	12.411	1.001	6.006
99	612	6	11.322	17.378	12.038	11.872	11.848	1.009	6.056
100	610	6	10.230	16.489	10.953	10.790	10.767	1.043	6.258
101	608	6	10.545	16.523	11.233	11.073	11.051	0.996	5.978
102	606	6	10.750	16.600	11.429	11.260	11.236	0.975	5.851
103	604	6	11.844	18.235	12.496	12.299	12.276	1.065	6.391

Pond or Safety LOI

3.152	58.546	3.785	96.215	1.553
3.071	58.918	3.862	96.138	1.608
3.165	61.279	4.568	95.432	1.388
→2.034	71.618	8.158	91.842	1.913
2.256	68.953	6.242	93.758	1.754
2.788	63.227	4.818	95.182	1.664
3.065	58.114	4.001	95.999	1.380
3.064	61.010	4.289	95.711	1.483
2.552	64.212	4.945	95.055	1.679
2.404	66.613	5.411	94.589	1.799
2.206	68.337	6.083	93.917	1.911
1.906	71.530	6.933	93.067	2.170
→1.782	73.066	7.464	92.536	2.320
1.666	75.321	8.273	91.727	2.360
1.245	79.550	11.170	88.830	2.654
1.009	83.092	14.436	85.564	3.088
0.895	85.174	17.289	82.711	3.268
0.737	86.923	19.737	80.263	3.893
0.796	87.395	25.493	74.507	3.708
0.685	88.524	25.777	74.223	4.208
0.667	88.855	25.723	74.277	4.240
0.706	88.239	23.146	76.854	4.467
0.716	88.177	23.156	76.844	4.426
0.723	88.443	22.536	77.464	4.362
0.688	88.485	23.199	76.801	4.465
0.680	88.382	24.864	75.136	4.862
0.652	89.793	30.334	69.666	4.607

7/25/95

Pond of Safety, Randolph (A),
N. H. water Depth = 110
Datum = 147 cm

(A) hole

Depth (cm)	Receiv	Fate	Description
200 - 300	100 cm	disc	gy.
300 - 400	100 cm	disc	gy (ol.-green)
400 - 500	100 cm	disc	gy (ol.-green)
500 - 600	100 cm	disc	gy. (ol.-green)
600 - 700 674	74 cm	keep	→

Refound @ 674 cm ; 3 cm "gauge"

- 603 - 616 : ol.-brown gy.
- 616 - 630 : gray, silty gy
- 630 - 633 : brown gy
- 633 - 650 : mottled gray/
- (sharp contact at 650)
- 650 - 665 : laminated gray mud
- (sharp contact)
- 665 - 674 : gray sand w/ gray muddy silt lenses

Pond of Safety, Rand-tpn
N, H.

(B) hole

Water depth = 110 cm
datum = 147 cm

Depth (cm)	Recon	Fate	Description
200-300	100	disc.	gy.
300-400	100	disc	gy.
400-500	100	disc	gy.
500-600	100	disc	gy.
600-700	100	keep	

near refusal at 700 cm
9 cm gauge

- 609-621: olive brown gy
- 621-638: gray-brown gy
- 638-641: olive-brown gy
- 641-660: gray/dark gray mottled gy
- 660-663: transitional gy - silt contact
- 663-692: laminated gray muddy silt
- 692-700: gray sand

Pond of Safety, Sandip.
N.H.

⊙ - hole

Water depth: 110 cm
datum: 147 cm

Depth (cm)	Recov.	Core	Description
300-340	100	disc	gy
300-400	100	disc	gy
400-500	100	disc	gy
500-600	100	disc	gy
600-700	100	save	→
700-733	33	save	→

3 cm loat from bottom
(flouage)

600-630: olive-brown gy
630-651: gray-brown gy
651-653: flou-brown gy
653-674: gray-dark gray
mottled gy

671-675: transitioned
gy-sill contact
675-695: laminated gray
muddy sill

695-700: loat (sill)
700-710: laminated gray
muddy sill w
v.f.s laminae

710-730: massive gray sand
730-733: loat (sand)
reference at 733
(firm, but not rock)

Quincy Pond, 1395-1305 cm (A)

opened core, cleaned core.

Mark laminae between grey sand and GY.

Abrupt contact @ 1365 cm looks like ~ 9,800 BP in other large surface area lakes in Maine. Layers of brown mosses matted together were seen all the way down core to 1365 cm.

Talked with Woody and we decided not to date basal portion as it most likely looks very young compared to the basal portions of other ponds in this project.

Cores are archived in pollen lab cooler.

(90) 7/28/75

~~Star~~ Quimby Pond,
Rangleley, Me.

Water Depth: 248 cm
37
285

Hole A

Return: 285 cm

Depth (cm)	recov.	date	description
300-400	100	disc	gy
400-500	100	disc	gy
500-600	100	disc	gy
600-700	100	disc	aquatic macro 200-740- 740-840- gy
700-800	100	disc	gy
800-900	100	disc	ol green gy
900-1000	100	disc	stuff ol green gy
1000-1100	100	disc	form ol green gy
1100-1200	100	disc	stuff ol green gy (granger)
1200-1300	100	disc	
1300-1400	100	save	

Note A, 1300-1400 cm:

1300-1303: grange.
1303-1320: massive d. green gy
1320-1365: laminated gy. mud
gray mud
1365-1395: massive gray
fine band
1395-1400: fell off

(wood layer at 1343 cm)

Jumbo Pond, Rangely

Hole B

Water Depth: 248 cm
Datum: 285 cm

Hole B

Depth (cm)	recov.	Fate	Description
500-400			
400-500	100	disc	aqueous
500-600	100	disc	"
600-700	100	disc	"
700-800	100	disc	gy
800-900	100	disc	gy
900-1000	100	disc	gy
1000-1100	100	disc	gy
1100-1200	100	disc	stiff, lam. gy
1200-1300	100	save	→
1300-1400	80	save	→

Jumbo Pond, Hole B,
1200-1300 cm

- 1200-1205: gray gy
- 1205-1237: mottled gy
- 1237-1272: massive gy
- 1272-1292: massive gy,
(gray N. on above)
- 1292-1300: gray-black
mottled mud

- 1300-1302: gyenge
- 1302-1309: laminated
gray-black mud
- 1309-1314: massive gray mud
- 1314-1319: laminated gray
mud w. abundant flint
masses (masses?)
- 1319-1326: laminated
gray mud
- 1326-1375: massive gray
fine sand
- 1375-1400: loam (loam
sand)

National Ocean Sciences AMS Sample Submittal Form

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NOSAMS, Mail Stop 8
Attn: S.K. Handwork
Woods Hole, MA 02543-1539

Phone: 1-508-289-2469
Fax: 1-508-457-2183
E-Mail: shandwork@whoi.edu

For multiple samples of identical types, please submit one form with an attached list identifying the differences.

Submission date(mm/dd/yy) 12/12/95 Date Requested _____

Title (Dr, Prof, Ms, Mr) Mr. Submitter's name Christopher C. Dorion
Address: Organization Name Maine Geological Survey Department _____
Project Climate Change Building 5711 Boardman Hall
Street Number and Name _____
Post Office Box number _____ City/Town Orono
State ME Country U.S.A. Zip Code 04469-5711
Telephone number (207) 581-2026 FAX number (207) 581-1203
Telemail/E Mail address cdorio41@maine.maine.edu

SAMPLE IDENTIFICATION:

Sample name Surplus Pond 1340-1345 A&B Sample number _____
Funding agency (if applicable) N.S.F. P.O.# Pro Forma invoice to Maine Geological Survey

LOCATION OF SAMPLE COLLECTION:

Geographic location name Surplus Pond, Andover-North Surplus, Maine
Decimal Degrees Latitude 44 40 30 N Degrees Longitude 70 51 54 W
Stratigraphic information 1340-1345 cm below lake surface
Vessel name (ship) if applicable _____ Cruise/Leg/Core A & B
Additional environmental information None.

SAMPLE INFORMATION:

1. Sample Origin: a) Marine b) Terrestrial c) Atmospheric

2. Sample submitted as: a) Unprocessed b) CO₂ gas c) Graphite

3. Sample Kind/Type:

3a. Organic carbon (requires combustion process)

a) Plant/Wood b) Charcoal c) Sediment (total C_{org}) d) Other (please specify) _____

Provide measured % C_{org} by weight 30%

(If not provided or incorrect value, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg) 5 mg

3b. Inorganic carbon (requires acid hydrolysis)

a) Foraminifera b) Coral c) Mollusc d) Sediment (total C_{inorg})
f) Other (please specify) _____

Provide %CaCO₃ by weight _____ a) measured b) estimated

Sample weight (mg) _____

3c. Both organic and inorganic processed (2 radiocarbon results from one sample)

a) Sediment b) Other (please specify) _____

Provide a) % CaCO₃ by weight _____

b) % C_{org} by weight _____ (If not provided, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg) _____

3d. Water samples (dissolved inorganic carbon, DIC)

a) sample volume (ml) _____

b) DIC concentration (mM/kg) _____

4. If applicable please identify/classify sample organism (e.g., Genus, Species): leaves of Salix herbacea

5. δ ¹³C (PDB) value of the sample (required for AMS data analysis)

a) Measured by NOSAMS (\$15 fee)

b) Provided by submitter: Value _____

c) Assumed:

(1) Marine Org. Carbon, - 20 ‰ (VPDB) (2) Plant/Wood, - 25 ‰ (VPDB)

(3) Marine Carbonates, 0 ‰ (VPDB) (4) Other _____

6. Estimated age range (yBP) of sample:

a) >Modern*

b) 0 -10,000

c) 10,000-30,000

d) > 30,000

e) NA

*Modern=1950

7. Describe reliability of estimate:

a) Excellent

b) Good

c) Fair

d) Poor

e) NA

8. Basis for age estimate:

a) Existing ¹⁴C data in series

b) Correl. w/ similar ¹⁴C dated records

c) Stratigraphic position

d) Correl. w/ stable isotopic records

e) Correl. w/ faunal/floral records

f) Intuition

9. Is there any evidence of sample contamination?

a) Yes

b) No

If yes, describe:

10. Describe any special handling requirement for this sample

(Large samples are assumed to be homogeneous and will be subsampled if necessary.)

None.

11. Collection/Treatment/Storage:

11a) Collector: Christopher C. Dorion

Address: 5711 Boardman Hall

University of Maine

Phone: on front

FAX _____

11b) Collection date (mm/dd/yy) 07/26/95

11c) Has sample been treated prior to submittal? If so, please describe briefly (e.g. processing, cleaning or storage)

Gentle washing on sieves with tap water to disaggregate organics.

11d) Drying 48 hrs. @ 50° C

12. Scientific objectives: This is a basal date on a continuing transect from southwest Maine northward. The organic material underlying the lake sediment will be used to determine an age for the withdrawal of the last ice mass and ultimately to delineate its margin.

Please note: a. If other than standard precision required, please contact NOSAMS.

b. Established fees are based on routine analyses. If after evaluating sample(s), it is determined that sample(s) do not fall in this category, client will be notified of the actual fee before proceeding.

National Ocean Sciences AMS Sample Submittal Form

Please return to: Woods Hole Oceanographic Institution
NOSAMS, Mail Stop 8
Attn: S.K. Handwork
Woods Hole, MA 02543-1539

Phone: 1-508-289-2469
Fax: 1-508-457-2183
E-Mail: shandwork@whoi.edu

For multiple samples of identical types, please submit one form with an attached list identifying the differences.

Submission date(mm/dd/yy) 12/12/95 Date Requested _____

Title (Dr, Prof, Ms, Mr) Mr. Submitter's name Christopher C. Dorion
Address: Organization Name Maine Geological Survey Department _____
Project Climate Change Building 5711 Boardman Hall
Street Number and Name _____
Post Office Box number _____ City/Town Orono
State ME Country U.S.A. Zip Code 04469-5711
Telephone number (207) 581-2026 FAX number (207) 581-1203
Telemail/E Mail address cdorio41@maine.maine.edu

SAMPLE IDENTIFICATION:

Sample name Surplus Pond 1277-1275 cm B Sample number _____
Funding agency (if applicable) N.S.F. P.O.# Pro Forma invoice to Maine Geological Survey

LOCATION OF SAMPLE COLLECTION:

Geographic location name Surplus Pond, Andover-North Surplus, Maine
Decimal Degrees Latitude 44 40 30 N Degrees Longitude 70 51 54 W
Stratigraphic information 1277-1275 cm below lake surface
Vessel name (ship) if applicable _____ Cruise/Leg/Core B only
Additional environmental information None.

SAMPLE INFORMATION:

1. Sample Origin: a) Marine b) Terrestrial c) Atmospheric

2. Sample submitted as: a) Unprocessed b) CO₂ gas c) Graphite

3. Sample Kind/Type:

3a. Organic carbon (requires combustion process)

a) Plant/Wood b) Charcoal c) Sediment (total C_{org}) d) Other (please specify) _____

Provide measured % C_{org} by weight 30%

(If not provided or incorrect value, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg) 5 mg

3b. Inorganic carbon (requires acid hydrolysis)

a) Foraminifera b) Coral c) Mollusc d) Sediment (total C_{inorg})
f) Other (please specify) _____

Provide %CaCO₃ by weight _____ a) measured b) estimated

Sample weight (mg) _____

NOSAMS SAMPLE SUBMITTAL FORM

2

3c. Both organic and inorganic processed (2 radiocarbon results from one sample)

a) Sediment b) Other (please specify) _____

Provide a) % CaCO₃ by weight _____

b) % C_{org} by weight _____ (If not provided, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg) _____

3d. Water samples (dissolved inorganic carbon, DIC)

a) sample volume (ml) _____

b) DIC concentration (mM/kg) _____

4. If applicable please identify/classify sample organism (e.g., Genus, Species): woody twigs. No further I.D.

5. δ¹³C (PDB) value of the sample (required for AMS data analysis)

a) Measured by NOSAMS (\$15 fee)

b) Provided by submitter: Value _____

c) Assumed:

(1) Marine Org. Carbon, - 20 ‰ (VPDB) (2) Plant/Wood, - 25 ‰ (VPDB)

(3) Marine Carbonates, 0 ‰ (VPDB) (4) Other _____

6. Estimated age range (yBP) of sample:

a) >Modern*

b) 0 -10,000

c) 10,000-30,000

d) > 30,000

e) NA

*Modern=1950

7. Describe reliability of estimate:

a) Excellent

b) Good

c) Fair

d) Poor

e) NA

8. Basis for age estimate:

a) Existing ¹⁴C data in series

b) Correl. w/ similar ¹⁴C dated records

c) Stratigraphic position

d) Correl. w/ stable isotopic records

e) Correl. w/ faunal/floral records

f) Intuition

9. Is there any evidence of sample contamination?

a) Yes

b) No

If yes, describe:

10. Describe any special handling requirement for this sample

(Large samples are assumed to be homogeneous and will be subsampled if necessary.)

None.

11. Collection/Treatment/Storage:

11a) Collector: Christopher C. Dorion

Address: on front

Phone: _____

FAX _____

11b) Collection date (mm/dd/yy) 07/26/95

11c) Has sample been treated prior to submittal? If so, please describe briefly (e.g. processing, cleaning or storage)

Gentle washing on sieves with tap water to disaggregate organics.

11d) Drying 48 hrs. @ 50° C

12. Scientific objectives: This sample dates the onset of the Younger Dryas cooling in Maine and is crucial to bracketing the onset of this event. The timing of the cooling is being correlated with other lake cores from 45° south latitude.

Please note: a. If other than standard precision required, please contact NOSAMS.

b. Established fees are based on routine analyses. If after evaluating sample(s), it is determined that sample(s) do not fall in this category, client will be notified of the actual fee before proceeding.

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State ME Country U.S.A. Zip Code 04469-5711
Telephone number (207) 581-2026 FAX number (207) 58101203
Telemail/E Mail address cdorio41@maine.maine.edu

SAMPLE IDENTIFICATION:

Sample name Surplus Pond 1258-1255 cm A & B Sample number _____
Funding agency (if applicable) N.S.F. P.O.# Pro Forma invoice to Maine Geological Survey

LOCATION OF SAMPLE COLLECTION:

Geographic location name Surplus Pond, Andover-North Surplus, Maine
Decimal Degrees Latitude 44 40 30 N Degrees Longitude 70 51 54 W
Stratigraphic information 1259-1255 cm Core A & B
Vessel name (ship) if applicable _____ Cruise/Leg/Core A & B
Additional environmental information None.

SAMPLE INFORMATION:

1. Sample Origin: a) Marine b) Terrestrial c) Atmospheric

2. Sample submitted as: a) Unprocessed b) CO₂ gas c) Graphite

3. Sample Kind/Type:

3a. Organic carbon (requires combustion process)

a) Plant/Wood b) Charcoal c) Sediment (total C_{org}) d) Other (please specify) _____

Provide measured % C_{org} by weight 30%

(If not provided or incorrect value, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg) 5 mg

3b. Inorganic carbon (requires acid hydrolysis)

a) Foraminifera b) Coral c) Mollusc d) Sediment (total C_{inorg})
f) Other (please specify) _____

Provide %CaCO₃ by weight _____ a) measured b) estimated

Sample weight (mg) _____

NOSAMS SAMPLE SUBMITTAL FORM

2

3c. Both organic and inorganic processed (2 radiocarbon results from one sample)

- a) Sediment b) Other (please specify) _____

Provide a) % CaCO₃ by weight _____

b) % C_{org} by weight _____ (If not provided, additional fee will be charged to cover %OC determination and sample may be delayed)

Sample weight (mg) _____

3d. Water samples (dissolved inorganic carbon, DIC)

a) sample volume (ml) _____

b) DIC concentration (mM/kg) _____

4. If applicable please identify/classify sample organism (e.g., Genus, Species): woody twigs with bark; Alnus sp. or Betula sp.; seeds; Daphnia sp.; Coleoptera parts; moss parts; sedge parts.

5. δ¹³C (PDB) value of the sample (required for AMS data analysis)

a) Measured by NOSAMS (\$15 fee)

b) Provided by submitter: Value _____

c) Assumed:

(1) Marine Org. Carbon, - 20 ‰ (VPDB) (2) Plant/Wood, - 25 ‰ (VPDB)

(3) Marine Carbonates, 0 ‰ (VPDB) (4) Other _____

6. Estimated age range (yBP) of sample:

a) >Modern*

b) 0 -10,000

c) 10,000-30,000

d) > 30,000

e) NA

*Modern=1950

7. Describe reliability of estimate:

a) Excellent

b) Good

c) Fair

d) Poor

e) NA

8. Basis for age estimate:

a) Existing ¹⁴C data in series

b) Correl. w/ similar ¹⁴C dated records

c) Stratigraphic position

d) Correl. w/ stable isotopic records

e) Correl. w/ faunal/floral records

f) Intuition

9. Is there any evidence of sample contamination?

a) Yes

b) No

If yes, describe:

10. Describe any special handling requirement for this sample

(Large samples are assumed to be homogeneous and will be subsampled if necessary.)

None.

11. Collection/Treatment/Storage:

11a) Collector: Christopher C. Dorion

Address: on front

Phone: _____

FAX _____

11b) Collection date (mm/dd/yy) 07/26/95

11c) Has sample been treated prior to submittal? If so, please describe briefly (e.g. processing, cleaning or storage)

Gentle washing with tap water on sieves to disaggregate organics.

11d) Drying 48 hrs. @ 50° C

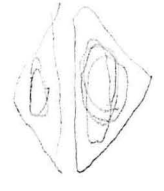
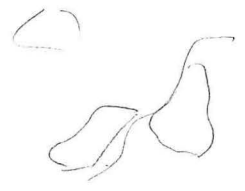
12. Scientific objectives: To determine the termination of the Younger Dryas chronozone at 45° north latitude. This chronology is being correlated with other records from 45° south to develop a high precision record of synchronous global climate events.

Please note: a. If other than standard precision required, please contact NOSAMS.

b. Established fees are based on routine analyses. If after evaluating sample(s), it is determined that sample(s) do not fall in this category, client will be notified of the actual fee before proceeding.

Slide 16, Surplus Pond

elytron of Scarabidae or Carabidae



$$h = \frac{5g}{(0.30)(0.08)} \div \frac{(1.26 \frac{g}{cm^3})(\pi)(7.5 cm)^2}{4} = 0.94 cm$$

1255-1254 cm (B), 1 cm slab cut out.

Corresponds with 1255-1254 cm (A)

$$V = \pi r^2 h$$

$$\rho = \frac{m}{V}$$

$$m = \rho V$$

1296-1294 cm (B) sample, 2 cm thick slab.
 corresponds with 1299-1297 cm (A)
 5g carbon
 0.30 (4.0g.)



$$h = \frac{V}{\pi r^2}$$

$$h = \frac{\frac{m}{\rho}}{\pi r^2} = \frac{5g \text{ carbon}}{0.30 (4.0g.)}$$

$$h = \frac{m}{\rho \pi r^2}$$

$$h = \frac{5g}{0.30 (4.0g.)} = \frac{5g}{(0.30)(0.06)} = \frac{5g}{1.275 \frac{g}{cm^3} (\pi) (7.5cm)^2} = 1.24 \text{ cm}$$

$$= 3.89 \text{ cm}$$

$$1.24 \text{ cm}$$

127. @ 1282 cm (A)

$$h = \frac{5g}{(0.30)(0.12)} = 0.66 \text{ cm}$$

$$\frac{(1.19 \frac{g}{\text{cm}^3})(\pi)(7.5 \text{ cm})^2}{}$$

1 cm slab Sample taken from 1279-1278 cm (B)

corresponds with 1282-1283 (A)

Juniperus / Jun

1395 - 1360 cm (B)

moss stem

Acid case - deflated

1 seed

insect part

99% of material is from 1546 cm

moss stems

insect parts

S. herbaceae leaves

V. uliginosum

not Saururus sp.

61X

S. herbaceae

0 2
+1 15
-1 15

- ① down core
- ② log core
- ③ pit of core
- ④ Log

Quaternary Paleocology and Paleohydrology Core Log

11/20
 1 hr. cor 8:45-11:45
 12/4 12:45-1:45
 10:45-12:00 4:15-5:45
 12/5 1:45-4:15 7:15-7:45

Site SURPLUS POND Date cored 7/26/95 Crew DOLAN/MGS

Segment 1381-1306 cm Date described 11/29/95 Analyst DOLAN

6 1/4
 Core
 Made
 (1 hr)

Depth	Hole: <u>A</u>	Description	Depth	Hole: _____
1300				
	GUNGE			<u>Log 1:</u>
1306		→ macro - big stick Very weakly organic mud 5/3/1 (very dark gray) (almost mineralogic Gt)	1310	
			1312.5	
			1315	
		Relativous, soft	1317.5	
1321		grading transition to laminated mud / v.f.s. complete mm to cm scale	1320	
		5/6/4/1 (dark greenish gray)	1325	
		Very stiff, compact	1330	
			1335	
		F1 (mm to < mm scale)	1340	
1340				
1345		sherbacea zone		
AMS 1347		f.s., 5m, loaded contacts leaves are in mud Ft, stiff (5 laminae / cm) lying horizontally	1350	Laminated,
1351		v.f.s. at top of bed		
			1360	
		Sg (base of bed is granule sand)		
			1370	
1376		5m, v.f.s. dark greenish gray (5/6/4/1)	1378	
1381				
	REFUSAL			

Cores
 A & B
 195

Quaternary Paleoecology and Paleohydrology
Core Log

Site JURPLUS POND

Date cored 7/26/95

Crew DORION/MES

Segment _____

Date described 11/29/95

Analyst DORION

Depth	Hole: <u>A</u>	Description	Depth	Hole: _____
1200				
1205				
				LOI:
				1206
				1210
				1215
				1220
				1225
				1230
				1235
				1240
1242				1242
1242.5				1244
				1246
				1248
1250				1250
1251				1252
1253				1254
1255				1256
1255				1258
1257				1260
1259				1262
				1264
				1266
				1268
				1270
				1272
1275				1274
				1276
1279				1278
				1280
				1282
				1284
				1286
				1288
				1290
				1292
				1294
				1296
				1298
1300				

GUNGE

sandy mud, 5Y 4/1 (dark gray)

black (N2.5/1) Gy, cm-scale laminated bands

alternate with black (5Y 2.5/1) bands

sharp contrast

→ sandy mud, 5Y 4/1 (dark gray)

Fm, 5Y 3/1 (very dark gray)

@ 1275cm, 2mm thick macro lamina

sharp contrast

monogenic ct, 5Y 2.5/1 (black) to 5Y 3/1

(very dark gray)

AMS

Quaternary Paleoecology and Paleohydrology
Core Log

Site SURPLUS POND

Date cored 7/26/95

Crew DORION/MES

Segment 1205-1300 cm

Date described 12/6/95

Analyst DORION

Depth

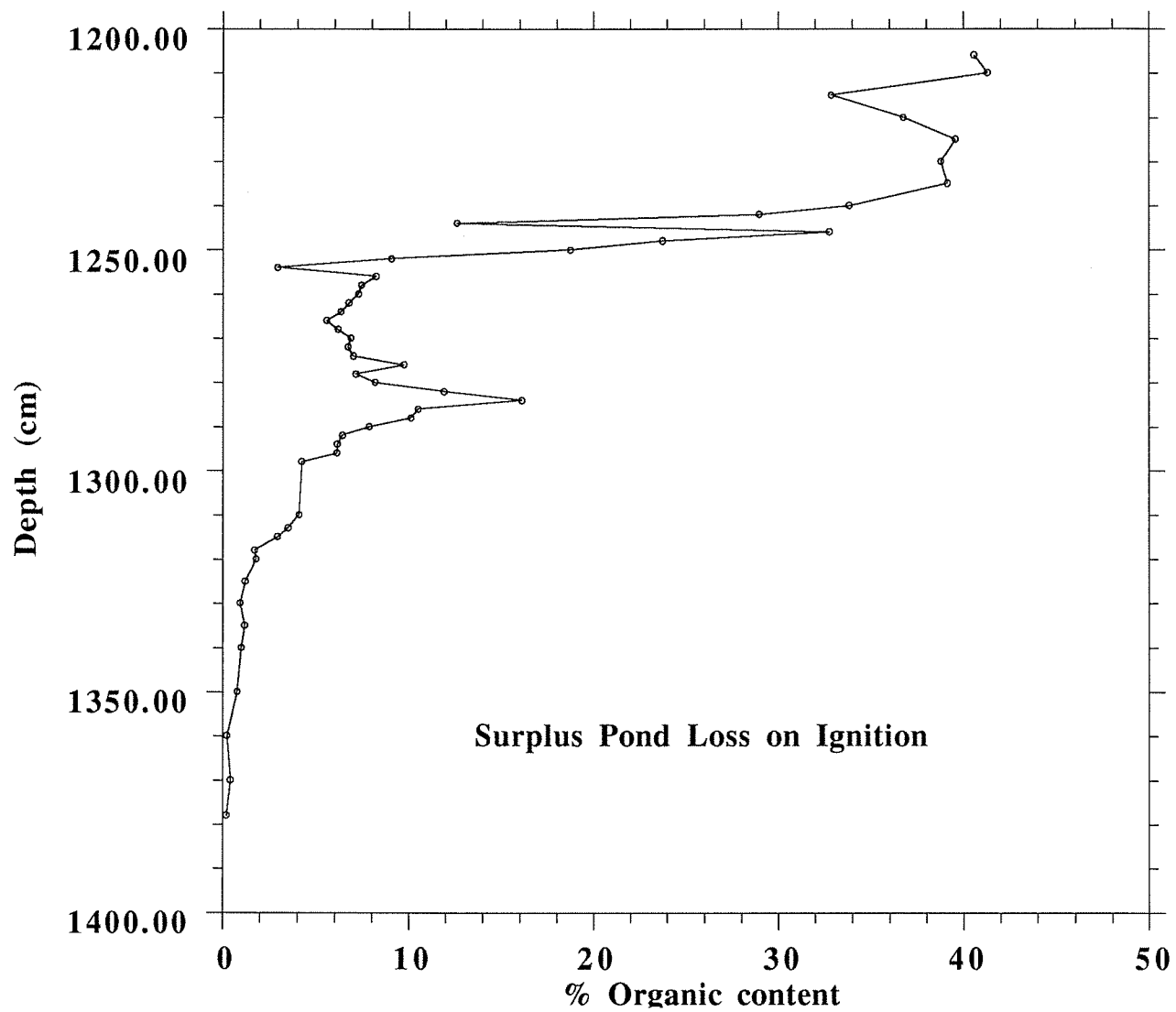
Hole: (B)

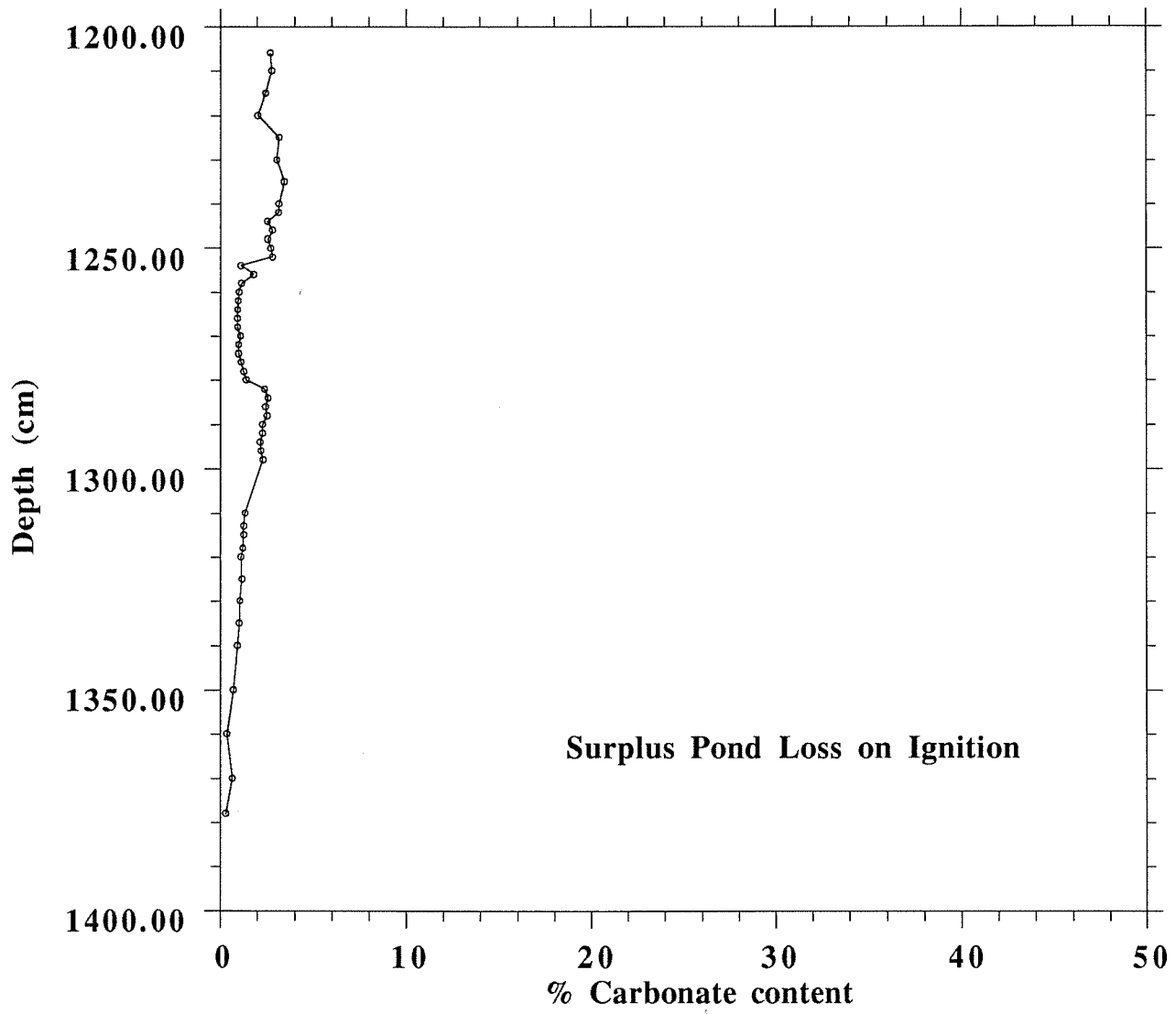
Description

Depth

Hole: _____

1205	Gravel	
		Same description as (A)
1241 1242		F1, gray
		1254 14C KRISTEN 1255
1251 1253		F1, gray
1255 AMS-A+B 1258 1259		{ woody twigs w/ bark preserved, Pr. Alnus or Betula seeds Daphnia sp. coleoptera sp. moss parts sedge parts
		moss parts large wood - bark not attached
MS of B 1275		known G-1
1277.5 1278 1279		14C KRISTEN
		gray/brown G-1
1294 1296		KRISTEN 14C
1300		





Surplus Pond Loss on Ignition Data, C. C. Dorion, Maine Geological Survey and University of Maine

Site: Surplus P
Core: A

Analysis: Dorion
Analyst: Dorion

Date: 11/29/95
Segment: 1381-1205 cm

No.	Depth cm		cruc g	cruc + wet	cruc + dry	cruc + ash 550	cruc + ash 925	wet bulk density g/cc	wet weight of sample
1	1378	6.000	12.502	23.537	21.553	21.537	21.519	1.839	11.035
2	1370	6.000	13.297	22.799	22.408	22.372	22.329	1.584	9.503
3	1360	6.000	12.836	23.346	21.941	21.924	21.902	1.752	10.511
4	1350	6.000	12.223	23.531	21.782	21.709	21.661	1.885	11.308
6	1340	6.000	12.549	24.050	21.773	21.682	21.620	1.917	11.502
7	1335	6.000	12.677	23.728	21.674	21.570	21.504	1.842	11.051
8	1330	6.000	11.510	22.514	20.547	20.464	20.394	1.834	11.004
10	1325	6.000	12.728	23.899	21.593	21.488	21.414	1.862	11.171
11	1320	6.000	12.419	22.108	18.959	18.842	18.790	1.615	9.689
12	1318	6.000	12.255	22.164	19.033	18.918	18.858	1.651	9.909
13	1315	6.000	12.468	21.591	17.875	17.716	17.666	1.520	9.122
14	1313	6.000	12.763	21.640	17.726	17.553	17.507	1.480	8.877
16	1310	6.000	13.057	21.941	18.017	17.815	17.766	1.481	8.884
18	1298	6.000	11.795	20.265	15.982	15.805	15.735	1.412	8.470
19	1296	6.000	12.159	20.026	15.274	15.084	15.034	1.311	7.868
20	1294	6.000	12.508	20.156	15.608	15.418	15.369	1.275	7.649
21	1292	6.000	12.288	19.640	15.029	14.853	14.808	1.225	7.352
22	1290	6.000	12.110	19.602	14.790	14.580	14.535	1.249	7.492
23	1288	6.000	12.179	19.422	14.592	14.348	14.304	1.207	7.243
24	1286	6.000	12.634	19.454	14.834	14.604	14.565	1.137	6.820
25	1284	6.000	12.759	19.620	14.492	14.213	14.181	1.144	6.862
26	1282	6.000	12.381	19.507	14.603	14.339	14.301	1.188	7.126

December 12, 1995

Surplus Pond Loss on Ignition Data, C. C. Dorion, Maine Geological Survey and University of Maine

dry weight of sample weight	% water	% organic	% inorganic	%carb
9.051	17.979	0.183	99.817	0.273
9.112	4.115	0.399	99.601	0.633
9.106	13.365	0.195	99.805	0.329
9.559	15.463	0.764	99.236	0.681
9.224	19.804	0.983	99.017	0.905
8.997	18.591	1.157	98.843	0.998
9.037	17.875	0.918	99.082	1.050
8.865	20.644	1.182	98.818	1.141
6.540	32.501	1.778	98.222	1.088
6.777	31.602	1.697	98.303	1.202
5.406	40.738	2.934	97.066	1.248
4.962	44.100	3.484	96.516	1.241
4.960	44.169	4.083	95.917	1.333
4.187	50.564	4.232	95.768	2.283
3.116	60.398	6.105	93.895	2.174
3.100	59.466	6.128	93.872	2.136
2.741	62.722	6.400	93.600	2.263
2.680	64.229	7.851	92.149	2.263
2.413	66.686	10.096	89.904	2.503
2.200	67.740	10.485	89.515	2.417
1.734	74.735	16.094	83.906	2.557
2.222	68.817	11.886	88.114	2.375

December 12, 1995

Surplus Pond Loss on Ignition Data, C. C. Dorion, Maine Geological Survey and University of Maine

2.870	63.038	8.161	91.839	1.379
3.035	59.526	7.134	92.866	1.246
2.644	61.936	9.712	90.288	1.096
2.945	58.361	6.999	93.001	0.970
3.046	58.195	6.703	93.297	0.978
3.101	59.097	6.862	93.138	1.074
3.077	57.507	6.169	93.831	0.919
3.769	51.674	5.566	94.434	0.909
3.058	57.691	6.331	93.669	0.916
3.005	59.941	6.759	93.241	0.937
2.569	62.230	7.276	92.724	0.995
2.397	63.758	7.438	92.562	1.118
2.541	66.286	8.214	91.786	1.793
5.525	39.315	2.941	97.059	1.081
2.023	69.436	9.051	90.949	2.803
1.238	80.669	18.737	81.263	2.702
1.038	81.959	23.745	76.255	2.543
0.885	85.236	32.753	67.247	2.797
2.314	67.925	12.586	87.414	2.528
0.697	88.993	28.959	71.041	3.124
0.808	86.692	33.820	66.180	3.148
0.707	87.763	39.117	60.883	3.426
0.685	87.427	38.774	61.226	3.038
0.745	87.422	39.546	60.454	3.157
0.750	86.457	36.738	63.262	2.013
0.949	84.549	32.842	67.158	2.436
0.745	87.760	41.289	58.711	2.758
0.745	86.915	40.561	59.439	2.684

December 12, 1995

Surplus Pond Loss on Ignition Data, C. C. Dorion, Maine Geological Survey and University of Maine

27	1280	6.000	13.071	20.835	15.941	15.707	15.678	1.294	7.764
28	1278	6.000	12.308	19.806	15.343	15.126	15.098	1.250	7.498
29	1276	6.000	12.309	19.255	14.953	14.696	14.675	1.158	6.947
30	1274	6.000	12.031	19.103	14.976	14.770	14.749	1.179	7.072
32	1272	6.000	12.490	19.777	15.536	15.332	15.310	1.214	7.287
33	1270	6.000	12.701	20.284	15.803	15.590	15.565	1.264	7.582
35	1268	6.000	12.798	20.039	15.875	15.685	15.664	1.207	7.241
36	1266	6.000	12.194	19.993	15.963	15.753	15.728	1.300	7.799
37	1264	6.000	12.328	19.556	15.386	15.192	15.172	1.205	7.228
38	1262	6.000	12.219	19.720	15.224	15.021	15.000	1.250	7.501
39	1260	6.000	12.283	19.084	14.852	14.665	14.646	1.133	6.801
40	1258	6.000	12.848	19.463	15.246	15.067	15.048	1.102	6.615
42	1256	6.000	12.487	20.023	15.028	14.819	14.785	1.256	7.537
43	1254	6.000	12.502	21.606	18.027	17.864	17.820	1.517	9.104
44	1252	6.000	12.018	18.637	14.041	13.858	13.816	1.103	6.619
45	1250	6.000	11.883	18.288	13.121	12.889	12.864	1.068	6.405
46	1248	6.000	12.488	18.240	13.526	13.279	13.260	0.959	5.752
47	1246	6.000	12.527	18.520	13.412	13.122	13.104	0.999	5.993
48	1244	6.000	12.365	19.578	14.679	14.387	14.344	1.202	7.213
59	1242	6.000	11.954	18.282	12.651	12.449	12.433	1.055	6.328
60	1240	6.000	11.181	17.251	11.988	11.715	11.696	1.012	6.070
61	1235	6.000	13.063	18.838	13.770	13.494	13.476	0.962	5.774
67	1230	6.000	12.274	17.722	12.959	12.693	12.678	0.908	5.448
69	1225	6.000	11.601	17.526	12.346	12.052	12.034	0.987	5.924
70	1220	6.000	12.747	18.285	13.497	13.222	13.211	0.923	5.537
71	1215	6.000	12.033	18.176	12.982	12.671	12.654	1.024	6.143
72	1210	6.000	11.710	17.793	12.455	12.147	12.132	1.014	6.083
73	1206	6.000	10.631	16.322	11.375	11.073	11.059	0.949	5.692

December 12, 1995

(80)

Auriparus Pond,
above north surplus
main

Hole B

Datum: 677 cm.

B Hole

Depth (cm)	recov.	rate	description
700-800	100	disc	gy
800-900	100	disc	gph
900-1000	100	disc	gph
1000-1100	100	disc	gy
1100-1200	100	disc	gph
1200-1300	100	save	save as A
1300- 1395 1395	95	save	

(81)

B Hole: 1300-1395 cm.

1300-1305: gray
1305-1342: silted bedded

gray-brown gy
laminated gray mud

1342-1395: vls - vls, gray,
w, interbedded laminated
gray mud

note: core from Hole B
has same yellow Dryas
interval as A!

(78)

7/26/95

Sample Pond
Arboretum North Campus, Me.

Water Depth - 6.4 m
+ 37 cm

Datum: 677 cm

(A) - hole

Depth (cm)	Recov.	Fate:	description:
700-800	100	disc.	gy (blue)
800-900	100	disc	gy (brown)
900-1000	100	disc	st-brown gy
1000-1100	100	disc.	st-brown gy (laminated?)
1100-1200	100	disc.	" "
1200-1300	100	save	" "
1300-1383	83	save	" "

(79)

Hole A, last 2 drives:

1200-1300:

1200-1205: bio-card (gy)
1205-1243: laminated, black

1243: gy mud, laminated
(\approx 1 cm)

1243-1255: laminated black gy

1255-1279: massive gray mud (youngest layers!)

1279-1300: ~~1280~~ dark-gray to brown mottled gy. w/ mud layers (laminated)

1300-1383:

1300-1306: gy + S

1306-1347: interbedded olive, gy & black gy. + gray laminated mud

1347-1383: vls. granules, gy, w/ mud laminae (possibly sand)