LONG HORN - 81 GEOCHEM.

103-0308 4020

#105188 LGHN 81-1
LONGHORN (#81013)
W. Florida Shelf
May 22-25, 1981
F. Manheim
SAMPLE LOG

Capt. Don Gibson
Bill (cook)
Noe (engineer)
Hayden (mate)

Caulking Gun Squ.

~~2 Filters~~ ~ Screen
~ 2 Filters
~ Compress so they're even sediment
~ Filter
~ refilter using small syrine
~ split ↗ ½ going to refract for reading

For Top of core (3-8 cm)

Tor bottom

Metal cap
screen
2 Filters
sed
teflon - wipe barrel
rubber
top w/ hammer

Longhorn - 81 - Geochem ①

1

Longhorn 22 MAY 81

Depart 1530 U. So. Florida

Sta 1 ~~1806 May 22~~ 2023

27°.32.34" x 82° 48.94"
9.5 m

2 m free fall - sharpest cutter
Phosphate tests slight yellow
significant - perhaps a few %
Fine grayish sand with occasional grayish
brown grain [illegible] phosphorate? [illegible] black
specks (sulfide smell on Mo addition)
grains rounded, occasional carbonate
fragment (whitish)

Core - 26 cm gray carbonate
sand.

Sub samples

Top 1cm → Wylie Poag

Longhorn - 81 - Geochem (1)

Longhorn 22 May 81

Sta. 2

13.5 m depth

Strike
@ 11:00pm

27° 23.94' X 82° 52.13'

Same Sharp cutter reused

Description Top - Sandy, Grey-Brown Grains; some shell debris; med. grain

Grading To → Grey; organic, fine-med. grains some shell debris;

Grading to → medium; grey-brown grains

Carbonate throughout

Core 28 cm

mixture qtz sand, shell & gray stained material.

p test -

Subsamples Top cm → WP

23 MAY 81

STA 3 0150

27°15.03 x 83°00.29

depth 25.5 m

Recovered bent core nose, POOR P test
hard white, light-gray sed
CC gray, hard nodular rock (carbonate)
faint tinge of phosphate

STA (4) 0420

33.5 m

27° 09.22 x 83° 06.44

blunt cutter 20' f.f.

Core Nose Hard black stained cavernous, honeycombed carbonate rock, gray on broken faces

ONLY 4 cm recovered. bottom 4-6 cm lost.

2 samples (black) showed strong greenish stain; 1 showed P-trace, 1 v. sl trace

STA 5 0627 May 23

41 m

27°02.00 x 83°10.98

Next to sharpest cutter

20' f.f. ~~Rm~~

Lost Pipe - set screw sheared from previous core.

No core

Repeat - 30' f.f.

0845

27°02.08 x 83°11.17

41 m

45 cm of barrel polished by cutsy

Nose hot hard gray-white lumps wedged in core catcher teeth torn off nose bent

NoP 0 - 16 cm Speckled med-coarse carb. sand, white, black
~ .4 mm mean gr. size with m-size shell frags.

NoP 16-23 Semi-lithified carbonate hash, coarse
fossil with large quant of black grains

NoP 24-34 cm Lumps of cemented ~~matrix~~ carbonate
hash in matrix of finer material, incl. gtesd. black grains

NoP Bottom Core nose LS, hard, cemented, gray
-whole consistent of coarse ~~calc~~ carbonate
shells, micromolluscs & molluscs, forams
NoP barnacles, etc. plus finer sand grains, incl
dark-colored grains of uncertain origin
Regulus cemented.
24 - 34 cm.

Very green coloration from P-test due to
dark grains (glauconite, FeS-stained)

Pore water 32-36 cm
S_{ref} = 37.2 lost filtrate

NO STA (5) - Too deep for
wire.

(Skipped Sta. 6) 23 May 1981

Sta. 7

Strike @ 1:20 pm

26° 42.07' x 83° 07.1' m

41.5 m

Barel hoist

Pipe set screw sheared again - holes off set ~ ¼ inch. Both chrome moly pipes gone.

1026 pipe: welded bead on end of pipe and filed to bring holes into alignment. Also ~~other~~ welded shackle to pipe and fitted section of chain from the pipe to the weight stand just in case shearing occurs again.

Will try 30' f.f. sharp cutter

Repeat STA 7

42.5 m 1540

Only two wraps left on crane reel, no trip. Swing rig around to stern, got trip.

26° 42.09 x 83° 07.09

4' penetration

83.5 cm length
Tap 1 can to W. Bag. → contents of catcher & cutter in bag

1-16 – Uniformly grey; med-fine clayey-silt; a few shell frags; a few dark flecks (phosphate? phosphorite?)
16-24 – Same as above but finer
24-34 – Same
35-50 – Same
51-60 – Same
61-70 – Same
71-83.5 – Same w/ some brownish streaks

Phosphate Test = negative

Sta #7 Ray Hall noticed under scope fair amt of carbonates and forams relative to other stations

* Sta 8

5/23/81

41 m

26° 37.17' X 82° 49.76' 6:41 pm

Clayey smell ≈ 87 cm core length (100 cm incl. catcher)

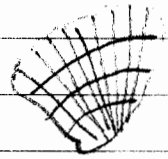
8-18 cm - green-grey; carbonate fraction over .5 mm to 20 mm; dark grains in frac. fr. 10ths - mm's; some quartz - fine-med some small shell hash;

19-29: AA; shell frags increasing in freq. & size

shells are all crumulated

30-40: Phosphorite fleck found @ 34 cm (test positive) a couple of whole shells of same spp found; coral frag.

41-45 - AA; incr. amts of shell, coral & bryozoan (?) frags;



46-51- Phosphorite flecks present (test positive) 1/2 core taken out → represents area of hi shell conc; con't on next pg.

pore water top 3-8 cm S = 33.7

CC 88-100 cm 34.7

1.0 x x 1.00

~~[illegible]~~ 149.5 CC ; .180 reduced 1.0

31-37 [illegible]

70-75 [illegible]

10-15 TOP 83 [illegible]

* lgr; more phosphorite flecks present, the further down the core you go

Sta. 8 cont'd

Core Catcher - Fleck Volcan @ 1 cm from top is phosphorite (test positive)

52-62: AA but shell hash drops off; returns to same composition as 8-15 cm;

63-73 - AA; 1 whole & 1 half version of same shell spp. found @ 67 cm

74-80: band of w/ hi amt. of small shell hash;

81-88: AA but w/ smaller amt of small shell hash.

Sta. 9 26° 33.11' N x 82° 35.11' W

0135 = time Course = 203°

First core returned empty

Left & returned

2nd Attempt

26° 32.87' N x 82° 35.01' W

0407 = time 22 m depth.

~~10:05~~ pm

2205

• 2nd try returned w/ minor amt of sed. → tests for phosphorite = ~~negative~~

1st time - sed was seen to be slipping out as we raised

2nd time sock was attached but to no avail

not enough penetration?

• 1 lg. rock frag → Traces of P found

black rock has much sulfide

creates strong blue color

24 MAY 81

Sta 10 14.5 m Hard bottom

20' ff.

26° 29.07' N x 82° 19.92 W

little in cutter / pink & white

Try 30' ff. shells w/ coarse sand

May 24 STA (10) repeat

30' ff. 14.5m

26° 29.16 N x 82° 19.98 W

~~sta~~

3rd attempt got full nose & catcher
nose not badly bent but full
of highly cemented rock; strong
phosphate signature

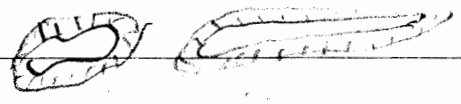
Total recovery 30cm

top 0-8 cm yellowish coarse quartz sand
~~with~~ Qtz., rounded ~ .2-.6 mm
with larger grains shell hash
highly bored, dark minerals
partly dolomite?

Gray cast may be fine carbonate sand

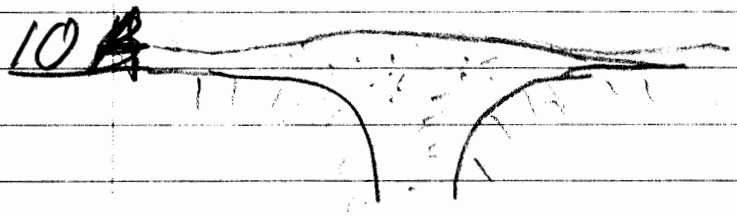
8-22 cm Gray med-coarse sand
(qtz) with large proportion shell hash
& dark grains, often phosphorite
dark gray, bluish, all sizes

22-30 Core nose aa, with hard
cemented cobble, 6cm long
gray blue with shell (white)

9 

strongly recrystallized ring lining on host rock; small dark (Phosphorite) grains cemented into matrix

* CANDIDATE FOR THIN SECTION

10 

sink hole with mounding ore

May 24 0312

STA. 10 A - Sink Hole

0345
First attempt failed to recover sediment only 1m sand shown on acoustics

Rec. few mg of med-fine sand with few dark grains & some phosphorite

Sta 10A 2nd attempt - hard to find

few grains med-coarse sand only, with coarse carbonate particles

Probably lost sand during cover raising, due to banging against hull. Not [illegible] [illegible]

Sta 11 8 AM 20° 21.27' Depth 22 m
82 30.22

First attempt

Nearly empty sand & shell with dark particles (1-2 grams) med-coarse

2nd Attempt

1) Used long tapered core, sharpened.
2) Very slow lowering
3) Carefully trimmed catcher
4) Long sleeve, fully covering
5) Raise 6" off bot, then hold 30 sec
6) 30' fall height

Total recover 78 cm

0-10 SURFACE BROWN, iron-stained coarse qtz sand with some carbonate particles
qtz sand - sub angular to rounded - some dark grains

10-20 med-coarse quartz sand w/ 20% coarse carbonate particles, 5-10% black particles overall gray-brown appearance

20-30 coarse angular to subrounded gray quartz sand w/ 20% carbonates and 15% coarse black particles (shell hash)

30-40 med. grain gray quartz sand w/ coarse CO_3 shell hash (15%) — black particles - coarse grain about 12%

40 - 50 med. grain angular → sub rounded quartz
paint w/ 25% Carbonates (coarse) and 5-10%
med to coarse black particles

50 - 60 medium grain quartz A.A w/ ~ 20% med-coarse
Carbonate and 5-10% Coarse black particles.
Note: one black particle - granule (2-4mm)
60 - 70 (core catcher)
Coarse grain gray quartz w/ 25-30%
coarse Carbonate and 20% coarse angular black
particles.

Porew. Bottom 34.0 Spef.
Porew. Surface 37.0

Site 8 Box 1, 2 Phosphate
Site 7 Box 4, 5 6
Site 3 8, 9, 10 Archais Ungulatus
Site 2 25, 26, 27 All glauconite NoP
Archais - R. Subrecent glauc.
Ungulatus

Site 12

5/24/81
Re.

26°12.09' X 82°40.26' 31.75m

12:20pm
28cm length Ruckeles core catcher

0-10. (Top 2cm to W. Poag)
Outer layer of core: ½ very fine; clayey [illegible]
grey in color; faint oxide streak @ 3.9 @ 10 cm.
very few shell frags.
½ speckled dark quartz sand

11-15 Incr. Amount of shell hash; AA
One valve of spp. Pecten found @ 13.5 cm

16-20: AA

21-28. AA; Incr. amt of lgr. shell hash;
lg pebbles, black;

Manhain descr.
phosphate tests

0-5 a) Carbonate silt, gray, with padding stained fine-med
qtz + carbonate grains, blue specks
b) Sand 1/3 blue black grain 1/3 light Carbonate (fine-med)
some with gtgrains > 1mm, 1/3 qtz, rounded
clean

5-10 Carbonate-qtz sand, f-med, 25% dark grains
10-15 Quartz - carbonate sand, med-coarse 30% dark grains
15-20 aa, with larger shell hash (mollusca)
20-28 aa > 1cm carbonate; bryozoan debris; some broken
Carbonate sand + shell has rock

1/16 - 1/8 v. fine
1/8 - 1/4 fine
1/4 - 1/2 med
1/2 - 1 coarse
1 - 2 v. coarse

25-28 Large pieces of cemented black rock with equal parts black & white carbonate 10-15% quartz sand, well rounded, under gray whole bivalve shells fine-med. 1-4 cm coral

Sta 13 5/24/81 26 2.22' x 82° 49.04'

3:00 pm First attempt failed: lost catcher & cutter

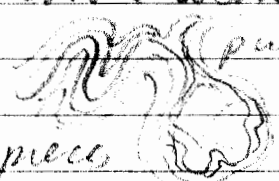
2nd Attempt 3:44

Catcher fell apart and lost most of sample. Small sample left before catcher.

primary piece - Algal mat? → stromatoparoid? stromatolite? recrystallization - in sample replacement in vugs where organic material was.

Description of sample - pieces of concretized rubble fr. sand size - 2 inches

Algal - stromatolite rock, gray - yellowish with



pudding of narrow cemented white calcite

debris pieces Buff, very dense, low porosity cemented rock; pieces up to 5 cm; well-preserved mollusc shell

Note: First attempt took less wire - 10 wraps left
2nd " took more 2 wraps left
Difference of 8 wraps ~ 8' ≅ 2.3 m
Possibly hit some kind of promoting pass

made of algal mats. Ray Hall said not impossible to have them grow up.

— 1615 - 1637 Power Outage

Between Sta 13 & 14 Surf Salinity 33.8
from top

P Tests

loose grains —
scrape from rock —
dark stain " " " —
dark loose grains —

(all carbonate fizz to acid

Station 14

25°54.28' X 82°22.99'

0127 Z

7:27 pm Attempt yielded sm. amt of rubble, mostly shell hash & sm. amt. of carbonate

(fr. C.C.) brown color sand.

Several chunks of limestone 1-2 cm.
two chunks have freshly sheared faces.
also several intact mollusc shells.

P. Testo

sand grains -
rock scrape (stain) -

Station 15 : The host! Faithfully Recorded by Temporary Master of Ceremonies D.T. Quedley

5/24/81

25° 45.59' X 81° 54.31'

0530 Z Cemented Carbonate rubble

11:09 pm Chunks sand size - 1.5" ~~on the avg.~~

Entire sample is

→ gray coarse grain bioclastic cemented carbonate, glazed surface.

P Tests

Bag 1 –

" 2 –

core cat. –

wash –