



SHELL OIL COMPANY

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JUNE 27, 1975

OFFSHORE DIVISION

4/78
Mr. Larry Hayes
U.S. Department of the Interior
Geological Survey
P. O. Box 615
Yemassee, South Carolina 29945

Dear Mr. Hayes:

Reference is made to our agreement to furnish paleontological results from the water wells borrowed from you this year. Mr. A. F. Tesch of our palynological staff has completed work on two of these wells. Reports on his findings are enclosed.

As you can observe, 30' or 30' composite samples were examined at approximately 120' intervals. The lack of greater detail accounts for the AT/IN, POSS. and PROB. age qualifiers. Sequential palynomorph events found in the South Carolina wells compared favorably with our work experience in the Mesozoic of the Gulf Coast.

Our paleo lab is currently preparing your wells for foraminiferal examination. This data should be available within the next few months. Palynological data on several more wells including those furnished us by Mr. Grady Calmes (USDI, Columbia, S.C.) will be forthcoming in the near future.

If clarification is necessary relative to European stages vs. South Carolina formations please let me know.

Included in this report are wells listed below:

Beaufort Co., S.C. - Fripp Test No.2
Beaufort Co., S.C. - Jack Carlson - Sea Pines Corp. D.W.

Sincerely,

Blake W. McNeely
Blake W. McNeely

Enclosures:

Beaufort Co., S.C.
Fripp Test #2

Listed below are cutting samples examined for palynological results.

1507-1527	
1627-1647	Poss. in Campanian
1747-1778	At/In Santonian
1868-1898	
1938-1970	
Sample Gap	
2233-2263	
2350-2380	
2417-2447	
2467-2497	Late Coniacian/Early Santonian
2587-2617	
2707-2737	
2807-2837	
2927-2957	
2957-2977	
2987-3012	Early Turonian
3047-3077	
3077-3107	
3117-3147	

A. F. Tesch
Shell Oil Company
6/19/75

Beaufort Co., S.C.
Jack Carlson - Sea Pines Corp. D.W.

Listed below are cutting samples examined for palynological results.

1495-1525	
1592-1624	
1713-1723	
1763-1775	Prob. Maastrichtian
1885-1917	
1917-1946	Santonian/Campanian
1946-2100	
2122-2144	
Sample Gap	
2722-2732	Poss. At/In Coniacian/Santonian
2854-2884	
2936-2946	
3004-3030	
3030-3050	At/In Coniacian/Santonian (
3065	

NOTE: Sample quality generally very poor. Age determinations questionable.

A. F. Tosch
Shell Oil Company
6/19/75

GENERAL STRATIGRAPHIC SECTION OF UPPER CRETACEOUS FORMATIONS
IN THE LOWER COASTAL PLAIN OF SOUTH CAROLINA

<u>Stratigraphic Unit</u>	<u>Provincial Stage</u>	<u>European Stage</u>
Peedee (Unit A ¹)	Navarro-Taylor	Maestrichtian
Upper Black Creek (Unit B)	Taylor-Austin	Campanian
Lower Black Creek (Unit C)	Austin	Late Santonian
Upper Eutaw (Unit C)	Austin	Early Santonian
Lower Eutaw (Unit C)	Austin	Coniacian
Upper Tuscaloosa (Unit D)	Eagleford	Late Turonian
Middle Tuscaloosa (Unit D)	Eagleford	Early Turonian
Lower Tuscaloosa (Unit E)	Eagleford-Woodbine	Late Cenomanian
(Unit E)	Woodbine	Middle Cenomanian
(Unit F)	Upper Washita	Early Cenomanian

¹Chronostratigraphic units defined in Prof. Paper 796, Brown and others.

FRIPPS ISLAND
WATER WELL
HENRIEFT COUNTY,
SOUTH CAROLINA
31°27'39" Lat.
80°27'42" Long.

FAUNAL SUMMARY

- MARKS: The 10' samples were analyzed every 10' from 0' to 124'; 30' from 214' to 1010'; 10' from 1010' to 1818'; 30' from 1838' to 1970'; 10' from 2233' to 2273'; and every 30' from 2293' to T.D. at 3147'. Sample quality was excellent with respect to quantity, but fair to poor with respect to downhole casing contamination.
- ST SAMPLE EXAMINED 0-10'
- FINITE LATE EOCENE ^{YORK} 100'
Based upon the first occurrence of Murrayina barclayi at this depth.
- FINITE OLIGOCENE ^{CRET} 120'
Based upon the first occurrence of Cytheretta alexanderi at this depth; Buntonia reticulata, Haplocytheridea montgomeryensis, and Uvigerina nuttalli at 130'.
- FINITE LATE EOCENE ^{6-50' 85} 140'
Based upon the first occurrences of Bolivina jacksonensis, Anomalina jacksonensis, and Uvigerina jacksonensis at this depth; Trachyleberis? pauca, Siphonina jacksonensis and Cibicides danvillensis at 160'; Dignocythere russelli at 184'; Bythocypris gibsonensis at 214'; Trachyleberis? montgomeryensis at 243'; Echinocythereis jacksonensis and Cytherelloidea montgomeryensis at 224'; Paracypris media at 304'; Cytheropteron variosum and Hermanites hensonensis at 334'; Bulinina jacksonensis at 404'; plus many others.
- FINITE EDGE OF LATE EOCENE 5-7'
FINITE GLOBIGERAPSIS SEMIINQUITA EOCENE
Based upon the first occurrence of Globigerapsis mexicana at this depth.

FINITE EARLY EOCENE TO LATE PALEOCENE 950'
Based upon the first occurrence of Glythrocytheridea
virginica at this depth.

FINITE EARLY EOCENE TO LATE PALEOCENE 1010'
GLOBOROTALIA FORMOSA FORMOSA THROUGH G. VELASCOENSIS ZONES)
Based upon the first occurrences of Globorotalia wilcoxensis
and Opinocythere marylandica at this depth; and Haplocytheri-
dea cf. H. wallacei at 1020'.

NEARLY WITHIN LATE PALEOCENE (LATE THANETIAN AGE) 1190'
Based upon the first occurrences of Phractocytheridea
veatchi aquia and Phractocytheridea woodyi at this depth.

INITIALLY WITHIN EARLY PALEOCENE (EARLY THANETIAN AGE) 1387'
GLOBOROTALIA TRINIDADENSIS ZONE)
Based upon the first occurrence of this species at this
depth.

INITIALLY WITHIN BASAL EARLY PALEOCENE (DABIAN AGE) 1457'
Based upon the first occurrence of Opinocythere browni
at this depth; and Eocytheropteron blackningensis at
1487'.

FINITE UPPER CRETACEOUS 1497'
MIDDLE MAASTRICHTIAN THROUGH CAMPANIAN
WITHIN GLOBOTRUNCANA GANSSERI THROUGH PLANOGLOBULINA
STRATA ZONES)

Based upon the first occurrences of Globotruncana goud-
loffii and Brachythere rhomboidalis at this depth; Globo-
truncana ventricosa, Pseudotextularia elegans, and Rugo-
globigerina rugosa at 1507'; Brachythere darensis and
Haplocytheridea? fabaformis at 1571'; Globotruncana
linneiana bulloides and Globotruncanella cf. G. petaloidea
at 1587'; Clavulinoides trilatera, Planulina dumbeii, and
Pairodonpilata pondera at 1547'; Cytherella tuberculifera
and Globotruncana foenicata at 1537'; Archaeoglobigerina
cretacea, Globotruncana stuarti stuarti, Globigerinelloides
cf. G. subcarinatus, Globigerinelloides multispina, Hetero-
helix reussi, Globotruncana arca and Cythereis cecumensis at
1567'; and others.

FINITE EUPHYPIA CHRISTNERI ZONE 1960'
Based upon the first occurrence of this species at this
depth--recognized in Parris Island #2 water well at 2065'.

PROBABLY WITHIN LATE SANTONIAN

2233'

Based upon the first occurrences of Haplocytheridea? plumeri, Brachycythere sphenoides, and Haplocytheridea? dibulla at this depth; Brachycythere ledaiforma porosa at 2243'; and Veenia paratriplicata and Schuleridea sp. (Crane (1965) describes this from Late Santonian Blufftown Fm. of Georgia and Mooreville Chalk Fm. of Mississippi) at 2263'.

DEFINITE MIDDLE TO LATE SANTONIAN
(MARGINOTRUNCANA CONCAVATA ZONE)

2293'

Based upon the first occurrence of Marginotruncana concavata, Brachycythere nausiformis, and Cythereis harnai at this depth. Swain and Brown (1972) indicate that Brachycythere nausiformis characterizes Chronostratigraphic Unit C of the Atlantic Coastal Plain--correlative with rocks of Austin age (Santonian-Coniacian) of the Gulf Coast Region.

PROBABLY WITHIN TURONIAN

2597'

Based upon the first occurrence of Cythereis ornatis-sima as indicative of strata of Chronostratigraphic Unit D of Atlantic Coastal Plain--correlative with strata of Eagle Ford Age (Turonian Age) of the Gulf Coastal Plain.

TOTAL DEPTH

3147'

No other zones observed to T.D.

ECOLOGIC SUMMARY

ZONE

DEPTH

Beach to Shallow Inner Neritic	0-90'
Shallow Inner Neritic to Shallow Middle Neritic	90-1497'
Shallow Middle Neritic to Shallow Outer Neritic	1497-2360'
Inner Neritic to Shallow Middle Neritic	2360-2597'
Shallow Inner Neritic	2597-2727'
Marginal Marine? to Continental (fluvial)	2727-T.D.