

[illegible]

Core description well VLA-978

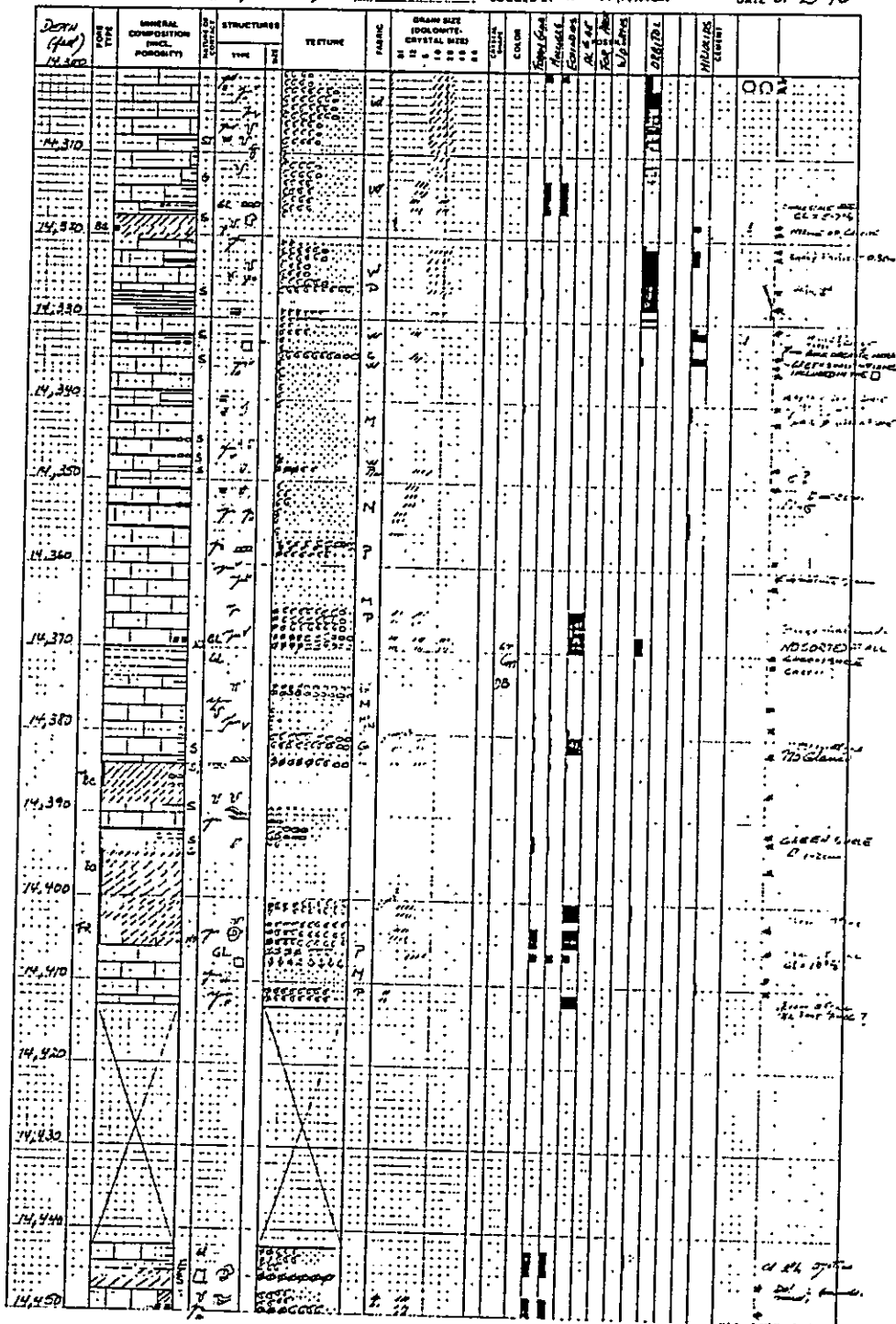
Core description well VLA-722

WELL VLA-722

STRATIGRAPHIC INTERVAL 14,300' - 14,500'

LOGGED BY I. AZPITZAL

DATE 07-23-90



Core description well 712

WELL VLA-712

STRATIGRAPHIC INTERVAL 13880' - 13927

LOGGED BY I. ALPHEITXACA

DATE 06-25-70

[illegible]

Core description well VLB-704

STRATIGRAPHIC INTERVAL

LOGGED BY

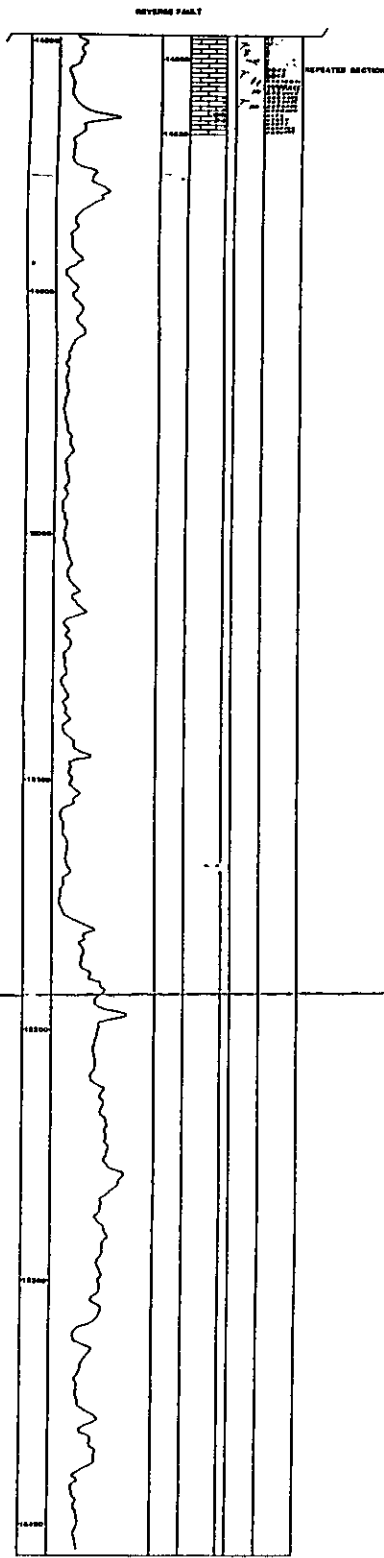
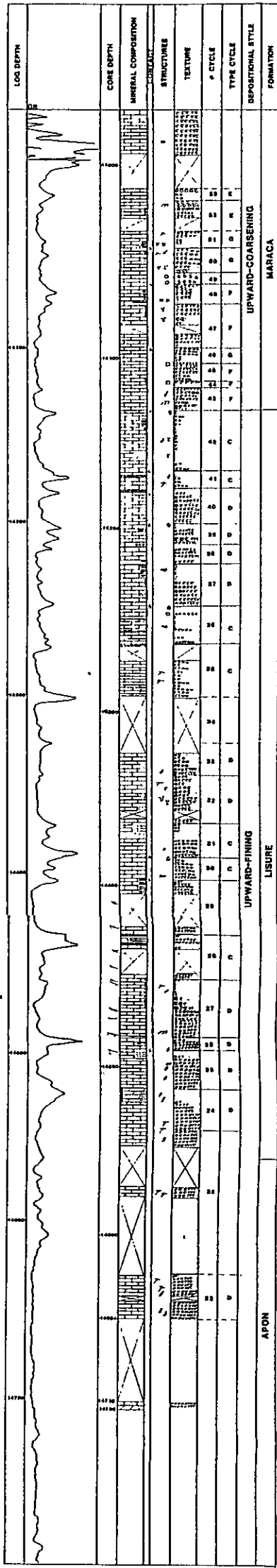
DATE _____

[illegible]

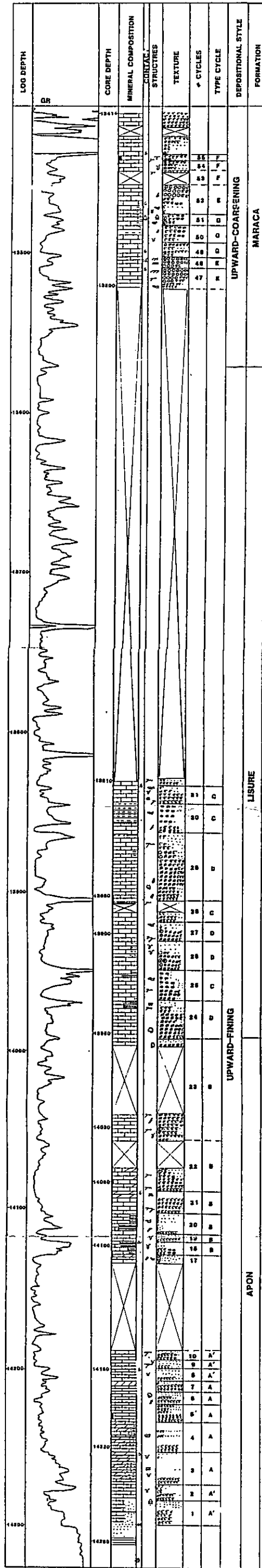
[illegible]

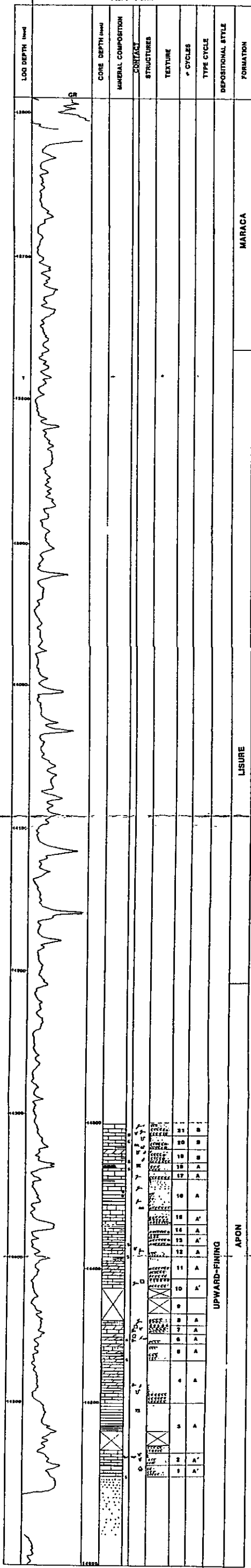
APPENDIX B
(Core-Log Correlation)

Core-log correlation VLA-711



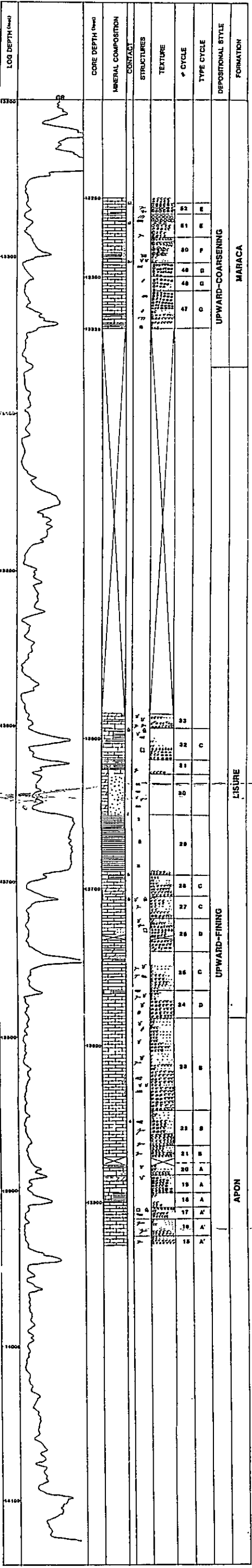
Core-log correlation VLA-978



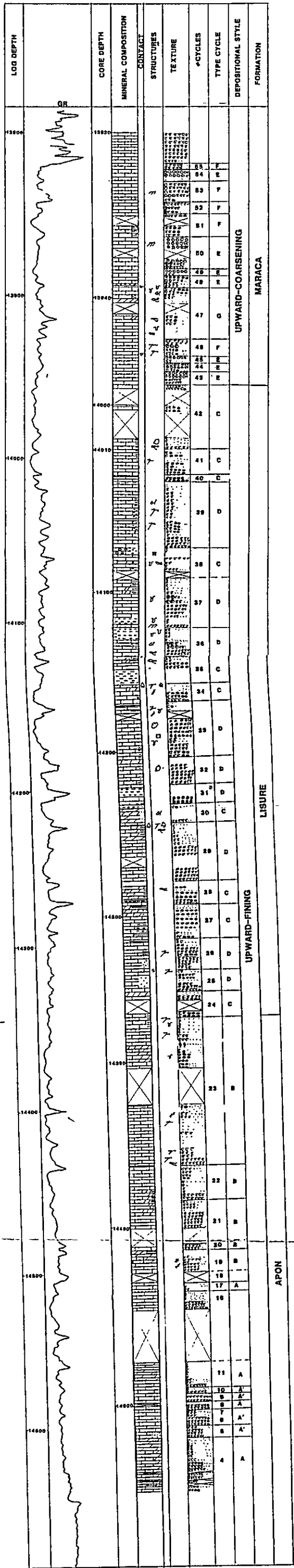


Core-log correlation VLA-722

Core-log correlation VLA-712



Core-log correlation VLB-704



APPENDIX C
(Correlations)

Cores Correlation

VLA-711

VLA-978

VLA-722

VLA-712

VLB-704

LA LUNA FM

ORBITOLINA ZONE

RIO NEGRO FM

COFFATELLA ZONE

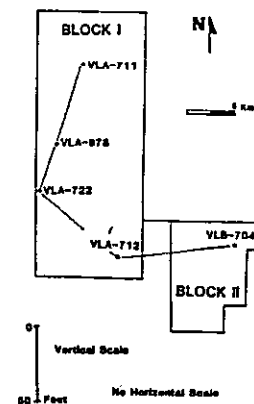
MARACA

LISURE

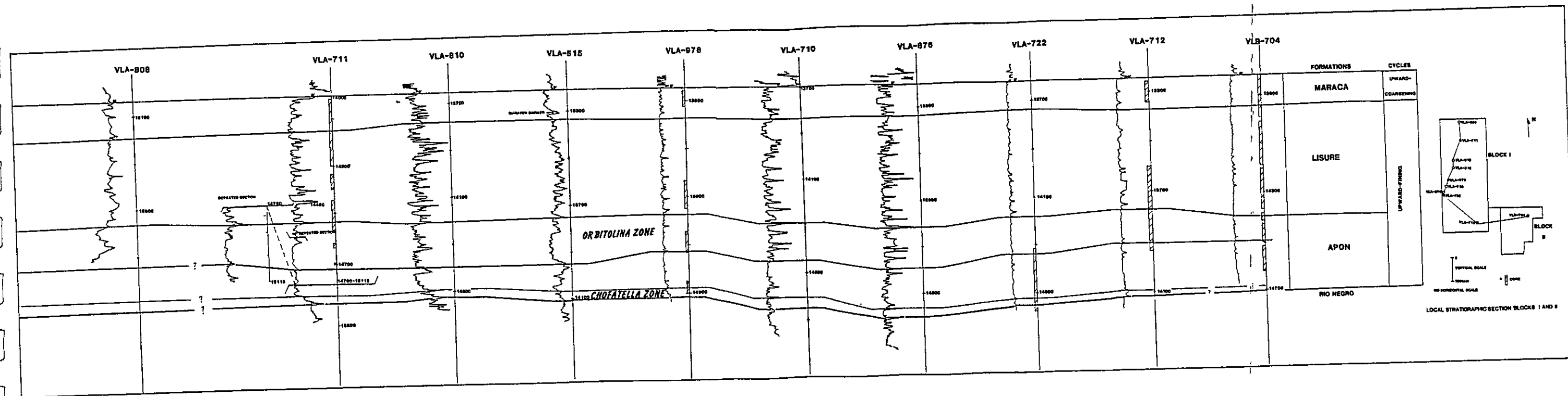
COGOLLO GP

APON

BLOCK I AND BLOCK II CORE CORRELATION



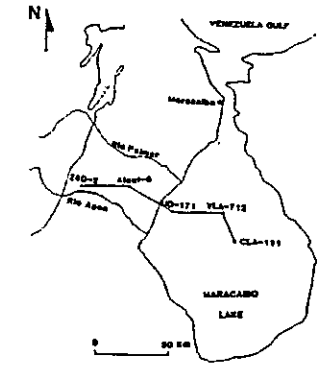
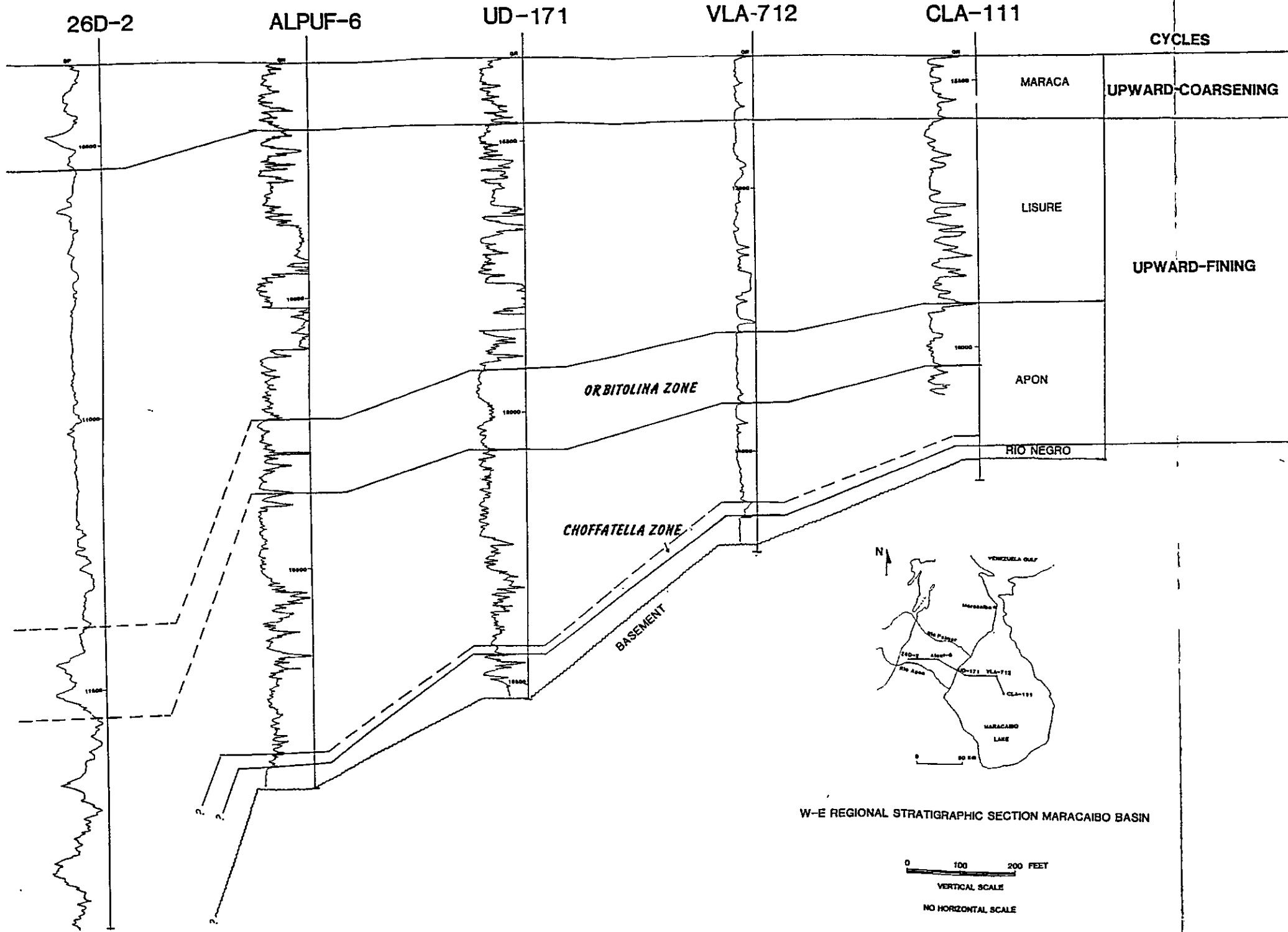
Block I and ,II Correlation



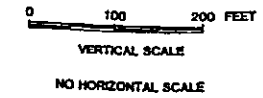
Regional Correlation

W

E



W-E REGIONAL STRATIGRAPHIC SECTION MARACAIBO BASIN



APENDIX D
(Dolomite Isotopes)

Samples	Type	Grain size	C	O
VLA-978 14,201	Shaly dolomite	0.025 mm	+ 3.5	+ 0.2
VLA-722 14,454	Dolomite	0.025 mm	+ 3.9	+ 1.3
VLA-722 14,319	Dolomite	0.01 mm	+ 3.3	- 3.2
VLA-978 13,884	Shaly dolomite	0.125 mm	+ 2.8	- 0.2
VLA-722 14,396	Dolomite	0.162 mm	+ 2.8	- 0.5
VLA-978 13,932	Dolomite	0.25 mm	+ 3.3	- 6.6

REFERENCES

- Ball, M.M., 1967, Carbonate sand bodies of Florida and the Bahamas: *Journal of Sedimentology Petrology*, V.37, p.556-591
- Bartok, P., Reijers T.J.A., and Juhasz, I., 1981, Lower Cretaceous Cogollo Group, Maracaibo Basin, Venezuela: Sedimentology, Diagenesis, and Petrophysics: *American Association of Petroleum Geologists Bulletin*, V. 65, N.6, p. 1110-1134.
- Bathurst, R.G.C., 1977, Carbonate sediments and their diagenesis: 2nd Ed., Elsevier, New York, 658 p.
- Bebout, D.G., 1972, Lower Cretaceous limestone facies and porosity, Lake Maracaibo, Venezuela: Unpublished, internal report, Esso Production Research Company, Caracas, Lagoven S.A., 8 p.
- Bebout, D.G., and Loucks, R. G., 1984, Handbook for logging carbonate rocks: The University of Texas at Austin, Bureau of Economic Geology, p. 43.

Bjorlykke, K., 1989, *Sedimentology and Petroleum Geology*: Springer-Verlag, New York, 363 p.

Bot, P., and Perdomo, J., L., 1986, Evolucion tectonica en la cuenca de Maracaibo: Transactions Tercer Congreso Geologico Venezolano, p. 484-493.

Burchette, T.P., and Escalona, N., 1984, Sedimentology and reservoir potential of fractured Cretaceous limestone west Maracaibo area, Venezuela: Unpublished, internal report, Caracas, Corpoven S. A., 36 p.

Caldwell, W.G.E., 1984, Early Cretaceous transgressions and regressions in the Southern Interior plains, in Scott, D.F., and Glass, D.J., eds., *The Mesozoic of Middle North America*: Canadian Society of Petroleum Geologists Memoir 9, p. 173-203.

Clark, J.A., Farrel, W.E., and Peltier, W.E., 1978, Global changes in post-glacial sea level: a numerical calculation; *Quaternary Research*, V. 9, p. 265-287.

Donovan, D.T., and Jones, E.J.W., 1979, Causes of world-wide changes in sea level: *Geological Society of London Journal*, V. 136, p. 187-192.

- Eva, A.N., Burke, K., Mann, P., and Wadge, G., 1989, Four-phase tectonostratigraphic development of the southern Caribbean: *Marine and Petroleum Geology*, V. 6, p. 9-21.
- Fairbridge, R.W., 1961, Eustatic changes in sea level, in Ahrens, L.H., Press, F., Rankama, K., and Runcorn, S.K., eds., *Physics and Chemistry of the Earth*: Pergamon Press, London, V. 4, p. 99-185.
- Flexer, A., Rosenfeld, A., Lipson-Benitah, S., and Honigstein, A., 1986, Relative sea level changes during the Cretaceous in Israel: *American Association of Petroleum Geologists Bulletin*, V. 70, p. 1685-1699.
- Gallango, W., Chin-A-Lien, M., Talukdar, S., 1984, Estudio geoquímico regional de la cuenca de Maracaibo: Unpublished, internal report, Los Teques, Intevep, 177 p.
- García-Mondejar, J., 1990, The Aptian-Albian carbonate episode of the Basque-Cantabrian Basin (northern Spain): general characteristic, controls and evolution, in Tucker, M.E., Wilson, J.L., Crevello, P.D., Sarg, J.R., and Read, J.F., Special Publication N.9 of the International Association of Sedimentologists: Blackwell Scientific Publications, p. 257-290.

- Goldhammer, R.K., Dunn, P.A., and Hardie, L.A., 1987, High frequency glacio-eustatic sea level oscillations with Milankovitch characteristics recorded in middle Triassic platform carbonates in northern Italy: *American Journal of Science*, V. 287, p. 853-892.
- Gonzalez de Juana, C., Iturralde de Arozena, J.M., and Picard, X., 1980, *Geologia de Venezuela y de sus cuencas petroliferas*: Caracas, FONINVES, 1031 p.
- Gornitz, V., Lebedeff, S., 1987, Global sea-level changes during the past century, in Nummeral, D., Pilkey O.H., and Howard, J.D., eds., *Sea-level fluctuation and coastal evolution*: Society of Economic Paleontologists and Mineralogists, Special Publication, N.41, p. 3-16.
- Haq, B.U., Hardenbol, J., Vail, P.R., 1987, Chronology of fluctuating sea levels since the Triassic: *Science*, V. 235, P. 1156-1167.
- Halley, R.B, Harris, P.M., and Hine, A., 1983, Bank margin environment, in Scholle, P.A., Bebout, D.G., Moore, C.H., *Carbonate Depositional Environments*: American Association of Petroleum Geologists, Memoir 33, 708 p.

Harris, P.M., 1979, Facies anatomy and diagenesis of a Bahamas ooid shoal, in Ginsburg, R.N., ed.: *Sedimentation & Comparative Sedimentology* Laboratory, University of Miami, 163 p.

Harris, P.M., 1984, Cores from a modern carbonate sand body-the Joulter ooid shoal, Great Bahamas Bank, in Harris, P., *Carbonate Sands and Core Workshop: Society of Economic Paleontologists and Mineralogists, Core Workshop, No. 5*, San Antonio, p. 429-464.

Harris, P.M., Frost, S.H., Seiglie, G.A., and Schneidermann, N., 1984, Regional unconformities and depositional cycles, Cretaceous of the Arabian Peninsula, in Schlee, J.S., ed., *Interregional Unconformities and Hydrocarbon Accumulation: American Association of Petroleum Geologists Memoir 36*, p. 67-80.

Hines, A.C., 1977, Lily Bank, Bahamas: History of an Active Oolite Sand Shoal: *Journal of Sedimentary Petrology*, V.47, p. 1554-1581.

Keir, C.A., Mercadier, C.G.R., Willemse, E.J.M., and Forsyth, D., 1986, Fracture detection in the Cretaceous of Lake Maracaibo Block I, Venezuela: Unpublished, internal report, JRA status report 40, Caracas, Maraven S.A., 13 p.

- Kauffman, E.G., 1977, Geological and biological overview: Western Interior Cretaceous basin: *The Mountain Geologist*, V. 14, p. 75-99.
- , 1984, Paleobiography and evolutionary response dynamic in the Cretaceous Western Interior seaway of North America: *Geological Association of Canada Special Paper* 27, p. 273-306.
- Kummerow, E.C., and Perez de Mejias, D., 1989, Evolucion diagenetica de los carbonatos del Grupo Cogollo, cuenca del Lago de Maracaibo: *Septimo Congreso geologico Venezolano*, Barquisimeto, Venezuela, p. 746-769.
- Longoria, J.F., 1984, Mesozoic tectonostratigraphic domains in east-central Mexico: *Geological Association of Canada Special Paper* 27, p. 65-76.
- Maceralli, C., and De Vries, T., 1987, Late Cretaceous upwelling and anoxic sedimentation in northwestern South America: *Palaogeography, Palaeoclimatology, Palaeoecology*, Elsevier Science Publishers B.V., Amsterdam, V. 59, p. 279-292.
- Maceralli, C.E., 1988, Cretaceous paleogeography and depositional cycles of western South America: *Journal of South America Earth Sciences*, V. 1, N. 4, p 373-418.

McFarlain, E. Jr., 1977, Lower Cretaceous sedimentary facies and sea level changes, U.S. Gulf Coast: University of Texas at Austin, Bureau of Economic Geology, Report of Investigations, N. 89, p. 5-11.

Maze, W.B., 1984, Jurassic La Quinta Formation in the Sierra de Perija, northwestern Venezuela: Geology and tectonic environment of red beds and volcanic rocks, in Bonini, W.E., Hargraves, R.B., and Shagam, R., eds., The Caribbean-South America plate boundary and regional tectonics: Geological Society of America Memoir 162, p. 262-282.

Mendez, J. 1989, Porosidades en el Grupo Cogollo y su relacion con los ambientes deposicionales: Septimo Congreso Geologico Venezolano, Barquisimeto, Venezuela, p. 868-889.

Mercadier, C.G.L., Willemse, E.J.M., and Lagazzi, R., 1988, Reservoir geological investigations of cores from wells VLA-711 and VLA-722, Lake Maracaibo, Venezuela: Unpublished, internal report, JRA status report 53, Caracas, Maraven S.A., 23 p.

Moldovanyi, E.P., and Pinto-Auso, M., 1987, Trampas estratigraficas en carbonatos Cretacicos, Cuenca de Maracaibo: Unpublished, internal report, Los Teques, Intevep S.A., 117 p.

Posamentier, H.W., Jervey, M.T., Vail, P.R., 1988, Eustatic controls on Clastic deposition I-Conceptual framework, in Wilgus, C.K., Hastings B.S, Kendall, C.G.St.C., Posamentier, H.W., Ross, C.A, and Van Wagoner, J.C, eds., Sea-level Changes - An Integrated Approach: Society of Economic Paleontologists and Mineralogists Special Publication, N.42, p. 109-124.

Purdy, E.G., 1961, Bahamian oolite shoals: in Person, J.A. and Osmond, J.C., eds., Geometry of Sand Bodies, American Association of Petroleum Geologists Symposium, Tulsa, Oklahoma, p. 53-62.

Read, J.F., and Goldhammer, R.K., 1988, Use of Fischer plots to define third-order sea-level curves in Ordovician peritidal cyclic carbonates, Appalachians: Geology, V. 16, p. 895-899.

Reijers, T.J.A., and Bartok, P., 1985, Porosity characteristics and evolution in fractured Cretaceous carbonate reservoirs, La Paz field area, Maracaibo, Basin, Venezuela, in Roehl, P.O.,

- Choquette, P.W., eds., Carbonate Petroleum Reservoirs: Springer-Verlag, New York, p. 407-424.
- Renz, O., 1954, Estratigrafia del Cretaceo en Venezuela Occidental: Boletin de Geologia, Ministerio de Minas e Hidrocarburos, V. 5, N. 10, p.3-48.
- Renz, O., 1977, The lithologic units of the Cretaceous in western Venezuela: V Congreso Geologico Venezolano, Caracas, p. 45-57.
- Rey, J., 1982, Dynamique et paleoenvironnements du Bassin Mesozoique d'Estremadure (Portugal). au Cretace Inferieur: Cretaceous Research, v.3, p. 103-111.
- Rod, E, and Maync, W., 1954, Revision of Lower Cretaceous stratigraphy of Venezuela: American Association of Petroleum Geologists Bulletin, V. 38, N. 2, p. 193-241.
- Sarg, J.F., 1988, Carbonate sequence stratigraphy, in Wilgus, C.K., Hastings B.S, Kendall, C.G.St.C., Posamentier, H.W., RossC.A, and Van Wagoner, J.C, eds., Sea-level Changes - An Integrated Approach: Society of Economic Paleontologists and Mineralogists Special Publication, N.42, P.155-179.

- Scoffin, T.P., 1987, An introduction to carbonate sediments and rocks; Blackie USA, Chapman and Hall, New York, 274 p.
- Scott, R. W., 1990, Models and stratigraphy of Mid-Cretaceous reef communities, Gulf of Mexico: Society of Economic Paleontologists and Mineralogists (Society for sedimentary geology) concepts in sedimentology and paleontology, V.2, 102 p.
- Scott,R.W., Frost,S.H., Shaffer, B.I., 1988, Early Cretaceous Sea-level curves,gulf Coast and southeastern Arabia, in Wilgus, C.K., Hastings B.S, Kendall, C.G.St.C., Posamentier, H.W., RossC.A, and Van Wagoner, J.C, eds., Sea-level Changes - An Integrated Approach: Society of Economic Paleontologists and Mineralogists Special Publication, N.42, p.275-283.
- Slavione, J., Orta, D., Marin, A., Acuna,O., 1988, Estado actual y revision preliminar de los yacimientos del Cretaceo en el Lago de Maracaibo: Unpublished, internal report, Caracas, Maraven S.A., 30 p.
- Smith, J.E., 1951, The Cretaceous limestone producing areas of the Mara and Maracaibo district, Venezuela: 3rd. World Petroleum Congress Proc. Section 1, P.56-72.

Talukdar, S., Gallango, O., Chin-A-Lien, M., 1986, Generation and migration of hydrocarbons in the Maracaibo Basin, Venezuela: An integrated basin study: Organic Geochemistry, V. 10, P. 261-279.

Turker, M.E., and Wright, V.P., 1990, Carbonate Sedimentology; Blackwell Scientific Publications, London, 482 p.

Ward, W.C., 1974, Carbonate sand and gravel on the shallow shelf northeastern Yucatan Peninsula, in Weidie, A.E., ed., Field seminar on water and carbonate rocks of the Yucatan Peninsula, Mexico: New Orleans Geological Society for field trip 2, 1974 annual meeting Miami , of the Geological Society of America, p. 106-122.

Ward, W.C., 1985, Quaternary geology of northeastern Yucatan Peninsula, in Ward, W. C., Weidie, A. E., and Back, W., Geology and Hydrogeology of the Yucatan Peninsula: New Orleans Geological Society, p. 23-95.

Wilson, J.L., 1984, Carbonate facies in geologic history: Springer-Verlag New York, 471 p.

Vail, P.R., Mitchum, R.M., Jr., and Thompson, S., III, 1977, Seismic stratigraphy and global changes of sea level, part 4: Global cycles of relative changes of sea level, in Payton, C.E. ed., Seismic Stratigraphy-Applications to Hydrocarbon Exploration: American Association of Petroleum Geologists Memoir 26, p. 83-97.

Zambrano, E., Vasquez, E., Duval, B., Latreille, M., and Coffinieres, B., 1969, Sintesis paleogeografica y petrolera del occidente de Venezuela: Memoria Cuarto Congreso Geologico Venezolano, N 5, p. 483-546.