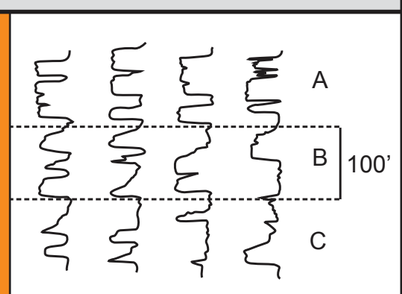
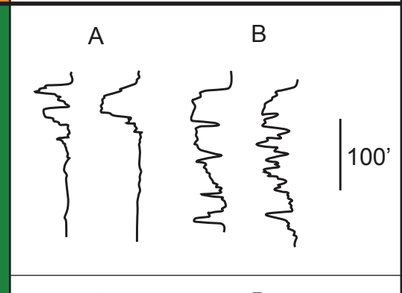
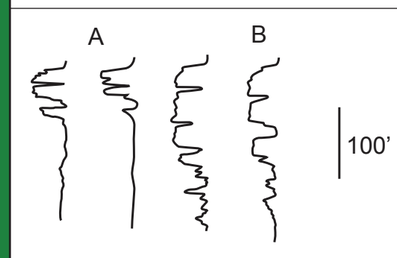
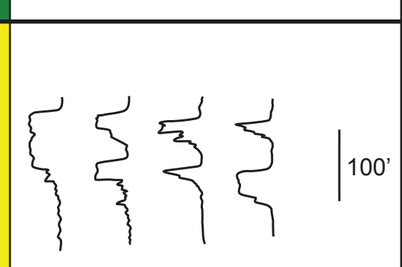
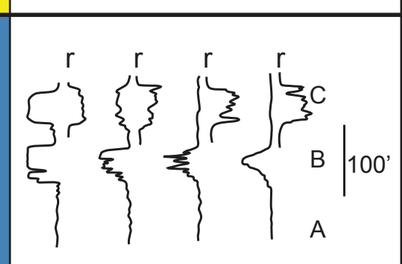
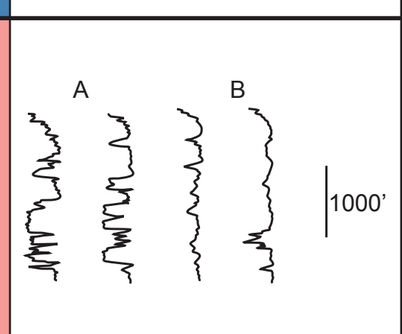
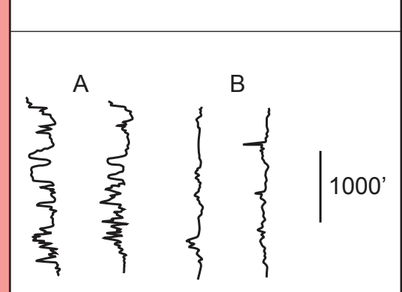
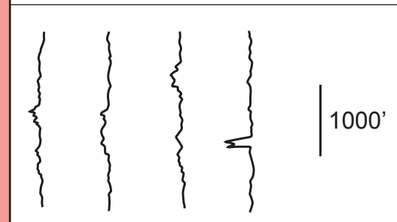
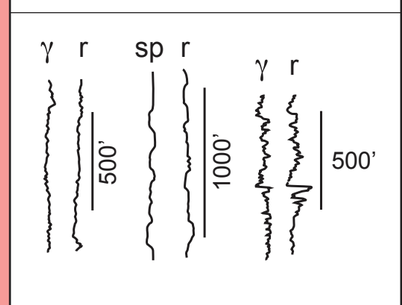
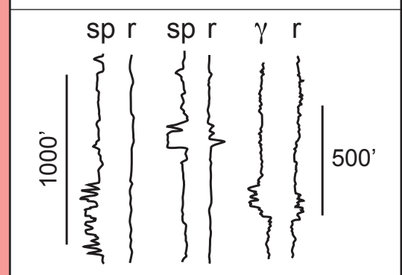
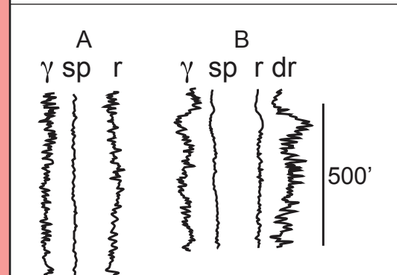
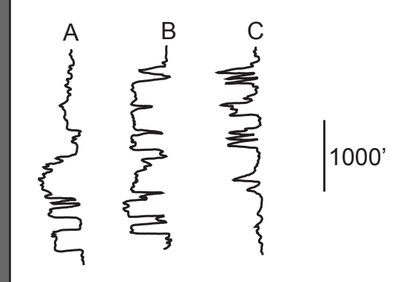
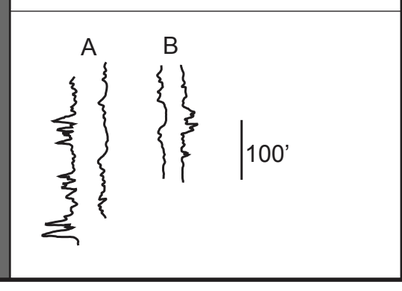
WELL LOG FACIES DEFINITION AND DEPOSITIONAL INTERPRETATION - CENOZOIC
Gulf of Mexico Basin

	REPRESENTATIVE LOG PATTERNS (note: all logs are sp unless otherwise labeled)	DEPOSITIONAL SYSTEM AND FACIES ASSOCIATION	LITHOFACIES DESCRIPTION	INTERPRETATION	OCCURRENCE IN BASIN	FACIES ASSOCIATION
FLUVIAL		A. Bedload dominated river B. Mixed-load dominated river C. Suspended-load dominated river	Aggradational facies succession. Sand (A) to mud (C) dominated, heterolithic succession containing discontinuous sand bodies Sharp basal, variably sharp (A) to transitional, upward-fining (B,C) upper contacts. Laterally discontinous lithofacies.	Constructional alluvial plain succession landward of delta or shore zone system.	Major fluvial systems source deltaic depocenters. Bedload systems occur primarily in the N.W. Gulf, Rio Grande and Burgos basins.	fbl fml fsl
DELTA		Fluvial dominated delta A. Platform delta B. Shelf-margin delta	Progradational facies succession. Heterolithic composition. Upward coarsening, lenticular, discontinuous sand bodies overlying prodelta mud. Digitate, laterally discontinuous sand bodies.	Major delta system prograding across shelf platform (A) or directly onto the continental slope (B).	Major fluvial-dominated deltas are prominent in the S. Louisiana, Houston and Macuspana depocenters.	dfp dfsm
		Wave-dominated delta A. Platform delta B. Shelf-margin delta	Progradational facies succession Sand rich. Upward-coarsening to massive delta margin sand bodies overlying prodelta mud. Tabular to lobate, laterally continuous sand bodies.	Major delta system prograding across shelf platform (A) or directly onto the continental slope (B).	Wave-dominated deltas dominate the N.W. Gulf, Rio Grande and Burgos depocenters	dwp dwsm
SHORE ZONE		Wave-dominated shore zone	Progradational to aggradational facies successions. Sand rich. Upward-coarsening to massive, lenticular to tabular, clean sand bodies. Transitional to sharp base; sharp top.	Constructional shorelines supplied by longshore reworking from major deltaic systems and/or reworking of non-deltaic coastal plain fringes. Includes barrier/lagoon and strandplain complexes.	Thick shore-zone systems occur in Paleogene through Middle Miocene deposodes.	sz
SHELF		A. Mud-dominated shelf B. Sandy wave-dominated shelf C. Carbonate-dominated shelf	Aggradational to progradational blankets and prisms. Sharp to transitional vertical boundaries. Transitional lateral boundaries. Massive to interstratified lithologies. Neritic faunas.	Constructional shelves marginal to major delta systems, fronting shore-zone systems, or capping transgressive coastal successions.	Carbonate shelves and ramps dominate the Florida and Yucatan margins. Relatively thick, clastic shelf systems occur in Paleogene-Miocene deposodes along N.W. and N.C. Gulf margins.	sm ss sc
SLOPE TO BASINAL		Progradational delta-fed apron A. Sandy B. Muddy	Offlapping succession of sandy to muddy turbidite and debris flow deposits. Upward-shoaling succession with bathyal faunas. Discontinuous, sharp to transitionally bounded sand bodies. Abundant syndepositional faults. Capped by delta system facies.	Constructional continental margin primarily supplied by a superjacent shelf-margin delta complex.	Front major delta depocenters of N., N.W. and S.W. Gulf.	sbpsd sbpmd
		Progradational shelf-fed apron A, Sandy B. Muddy	Offlapping succession of sandy to muddy turbidite and debris flow deposits. Upward-shoaling succession with bathyal faunas. Discontinuous, sharp to transitionally bounded sand bodies. Capped by shelf system facies.	Constructional continental margin primarily supplied by a superjacent shelf.	Front major shelf and shore-zone depositional system tracts of the N.W. and N.C. Gulf Paleogene-Miocene deposodes.	sbpss sbpms
		Sandy retrogradational slope apron	Offlapping succession of muddy to sandy turbidite, debris flow and slump deposits. Upward-deepening and fining succession with bathyal or mixed faunas. Heterolithic interbedded, discontinuous facies association	Destructional sandy to heterolithic continental margin undergoing long-term mass wasting.	Locally prominent within OF, LM, PGa, and PAB deposodes.	sbras
		Muddy retrogradational slope apron	Onlapping succession of muddy debris flow and slump deposits. Upward deepening paleobathymetry.	Destructional muddy continental margin undergoing long-term mass wasting.	Locally prominent within OF, PGa, and PAB deposodes.	sbram
		Submarine canyon fill	Laterally bounded by deeply incised erosion surface. Dominantly mud fill with lenticular to lobate turbidite channel and lobe sand bodies and discontinuous heterolithic slump and debris flow deposits. Capped by progradational upper slope mud and sandy shelf or deltaic facies.	Large-scale focused mass-wasting and submarine erosion creating a canyon, subsequently filled with onlapping debris flow and turbidite deposits capped by an offlapping succession of shelf or prodelta sediment.	Locally prominent in the early Paleogene deposodes of the W., N.W. and C. Gulf and in the PS deposodes of the N.C. Gulf.	sbsc
		Megaslide complex	Bounded updip at base by slide plane. Rotated fault blocks to chaotic debris apron. Upper progradational facies succession overlies middle muddy unit; turbidite and sandy debris flow deposuts and/or disarticulated blocks of upper slope, shelf-margin delta or other shallow facies concentrated in lower part of wedge.	Subregional failure of upper slope and shelf margin creating an embayment or re-entrant in basin margin. Slide blocks and incompletely evacuated debris flow form basal fill. Turbidites and smaller debris flows scour and pond between these. Prograding muddy slope apron deposits heal the embayment.	Locally prominent within OF, PGa, PAB and PTA deposodes.	sbms
		Carbonate ramp	Progradational, aggradational, and/or retrogradational facies succession. Mixed carbonate and terrigenous mud deposited in deep water seaward of platform. Gradational successions of thin, variably resistive beds.	Generally slow accumulation of suspended sediment and pelagics on low-gradient continental slope and deep terraces.	Primarily found along N.E., E. and S. GOM margins seaward of Florida and Yucatan platforms. Commonly over-steepened at depth in GOM. Present is all Cenozoic deposodes.	sbcr
BASINAL		Abyssal plain apron/fan A. Channel/lobe/mass flow association B. Sand-rich channel/ lobe complex C. Sand-rich to heterolithic sheet turbidites	Aggradational succession of thick, sandy units deposited by turbidity currents and gravity flows. Channel fills with sharp base and blocky to upward-fining and thinning beds. Sand-rich turbidite lobe deposits; thick bedded with sharp to transitional upper and lower boundaries. Mass flow deposits of variable lithology; massive, sharp top and base. Bathyal to abyssal faunas.	Rapid accumulation from muddy to sandy debris flows and sandy turbidity currents in lower slope aprons; extending onto adjacent basin floor as basin-floor aprons and proximal parts of submarine fans.	Found in deepest sections of outer shelf and slope wells. Prominent facies within Wilcox, Miocene, PGa, amd PTA deposoded in the N.E. Gulf.	sbsf
		Aggradational basin floor deposits A. Heterolithic to mud-rich sheet turbidites Muddy turbidites/hemipelagic drape B. Hemipelagic drape	Mud; sand and mud; calcareous mud. Interbedded to homogeneous. Aggradational successions to thin, fossil-rich beds. Deep bathyal to abyssal faunas.	Deposition on bathymetric highs, sediment-starved slope, and basin floor by muddy turbidity currents and hemipelagic and pelagic settling.	Penetrated by deep-water wells, primarily in N.E. Gulf slope in all Neogene sequences. Abundant in Green Canyon and Mississippi Canyon areas in PL1. Also caps salt structures and folds.	b bhd

The University of Texas at Austin
UT
GBDS
Gulf Basin Depositional Synthesis

Compiled by
W.E. Galloway
2011 update, version 6
2014 color code update