88°W 84°W 82°W 80°W 78°W

N

100 mi

200-mile racture Zone

Explanation

Normal fault

Strike-slip fault

Fracture Zone

Figure 2.5.1-253 Basement Faults of Florida Platform

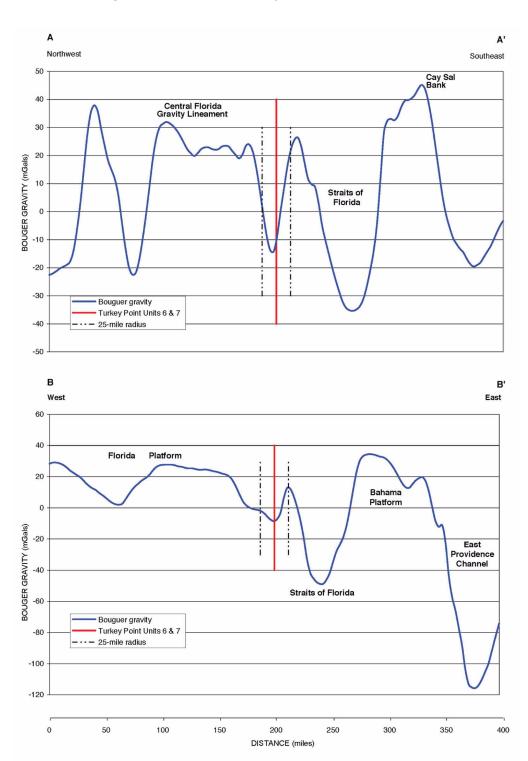
Modified from: References 212 and 458

84°W 81°W 78°W Explanation Gravity profiles Gravity field mGal High: 114 Central Florida Gravity Lineament Little 27°N Bahama Low: -143 Bank Areas over land are simple Bouguer anomalies; areas over Providence Channel ocean are free-air anomalies ORIDA PLAT FOR M Turkey Point Units 6 & 7 Straits of BAHAMA PLATFORM 24°N CAY SAL BANK 80 Miles 0 80 Kilometers

Figure 2.5.1-254 Gravity Field for the Site Region

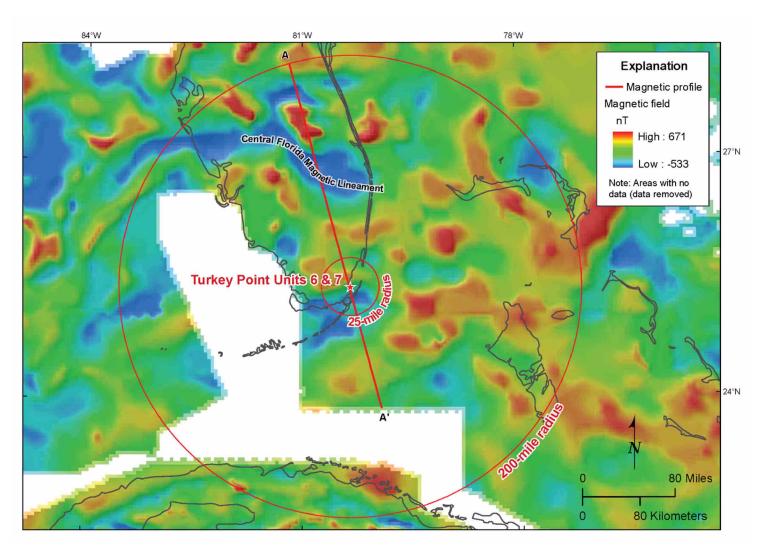
Note: Gravity includes Bouguer over land and free-air over water. Source of Bouguer gravity information: References 452 and 453 Source of physiographic features: Reference 409

Figure 2.5.1-255 Gravity Profile A-A' and B-B'



- Gravity includes Bouguer over land and free-air over water
- Physiographic features adapted from Reference 307

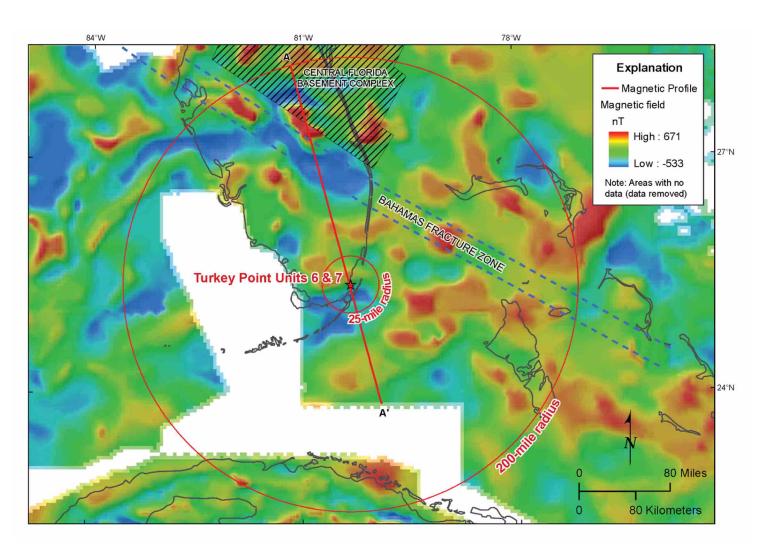
Figure 2.5.1-256 Magnetic Field for the Site Region



Source of basement complex and Bahama faults: Reference 212

2.5.1-370 Revision 2

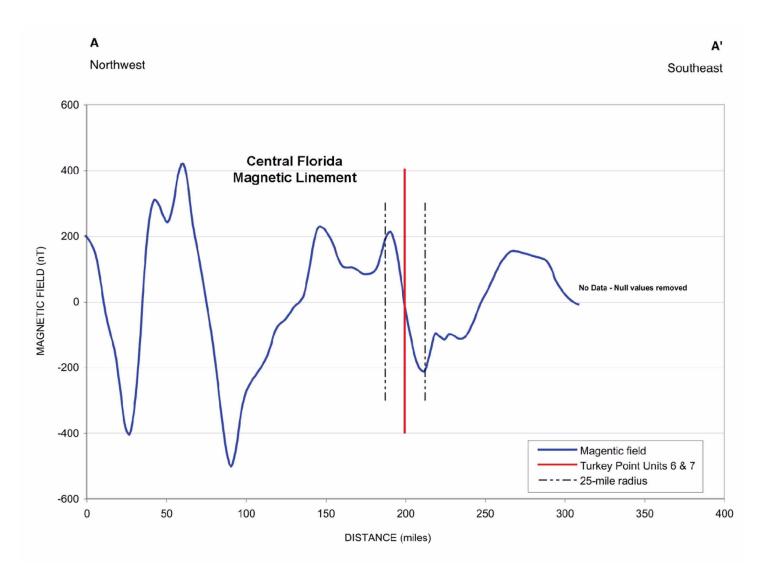
Figure 2.5.1-257 Regional Magnetic Field Annotated with Locations of the Central Florida Basement Complex and Bahama Fracture Zone



Source of magnetic information: References 452 and 453 Source of basement complex and Bahama faults: Reference 212

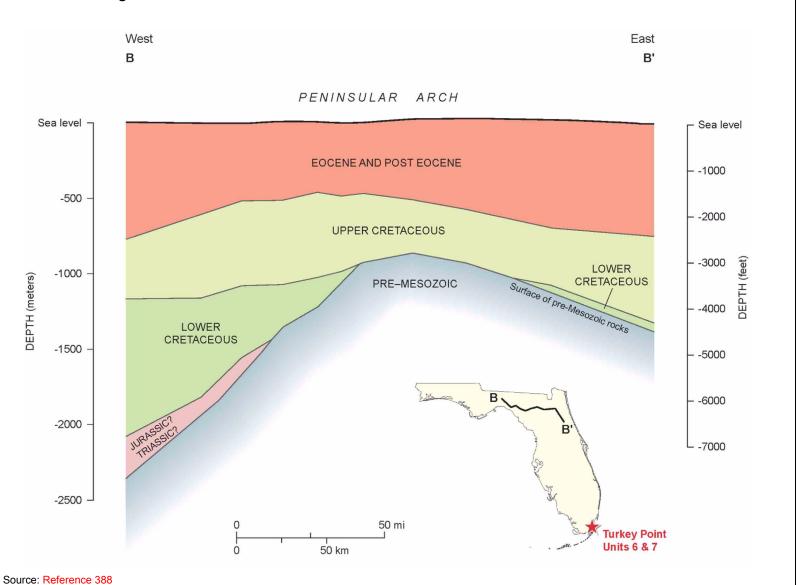
2.5.1-371 Revision 2

Figure 2.5.1-258 Magnetic Profile A-A'



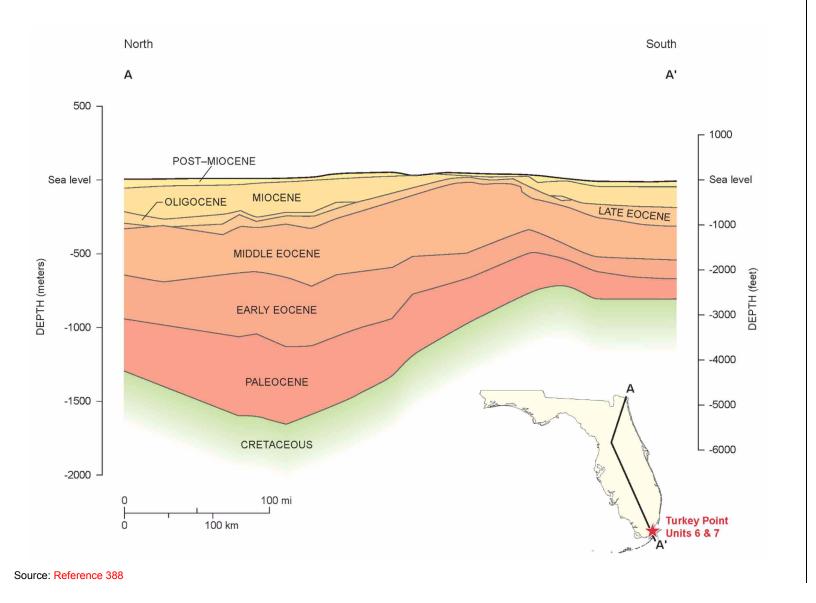
2.5.1-372 Revision 2

Figure 2.5.1-259 Generalized West-East Cross Section across Northern Florida



2.5.1-373 Revision 2

Figure 2.5.1-260 Cretaceous and Younger Strata North-South Geologic Cross Section of Florida



2.5.1-374 Revision 2

Sinctoir I. Williams Oil Des NW SE Magnetic anomaly values in hundreds of gammas TERTIARY UPPER CRETACEOUS Subsea depths Lower Combrion granifold batholith Precombilion

Melamorphic & Volconic

Complex LOWER CRETACEOUS Triospic thousands 1001 and Lower Jurassic igneous and volcanic complex South Georgia Rift Basin Florida Basin 30 20 10 0 -10 -20 30 80 10 0 - 10 - 20 Bouguer anomaly values in milligals SCALE IN MILES BOUGUER PROFILE 85° W 80° W 30° N

Figure 2.5.1-261 Cross Section of Florida Platform

81 80 /GREAT BAHAMA BANK 80° W 79° W 26° N POURTALES TERRACE 0.4 **25° N** NORTHWEST PROVIDENCE CHANNEL - 0.4 6970

Figure 2.5.1-262 Seismic Line Interpretations across the Straits of Florida

Figure 2.5.1-263 Interpretation of Seismic Line and Well Correlation, Straits of Florida

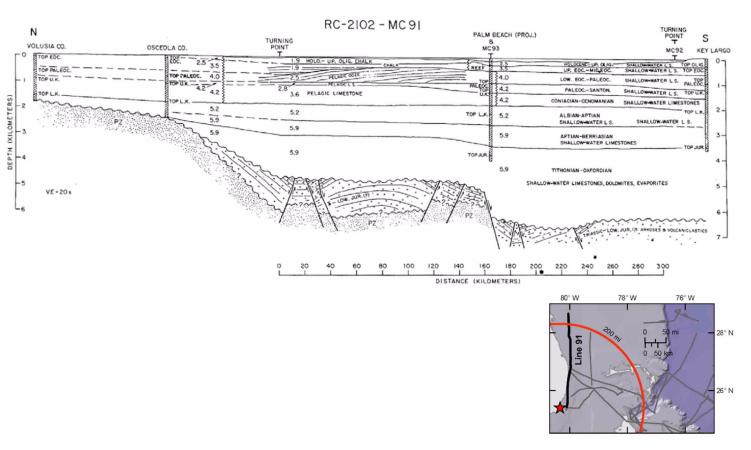
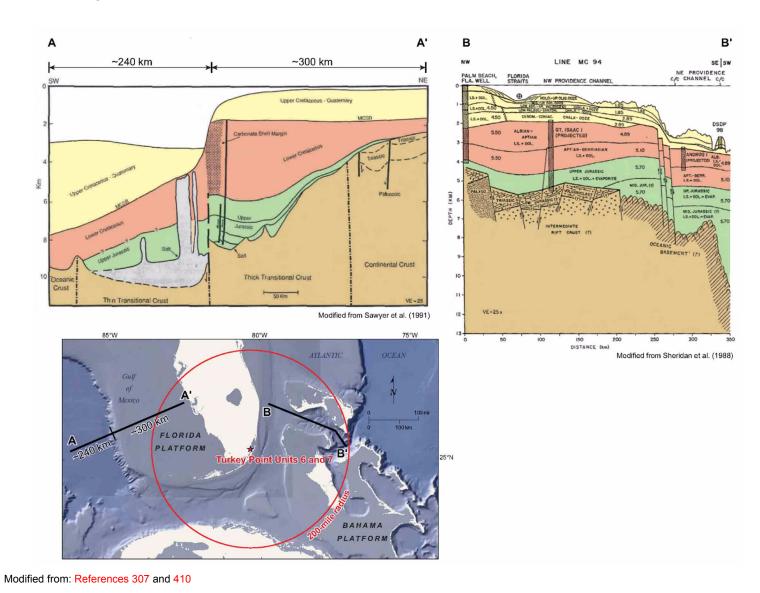
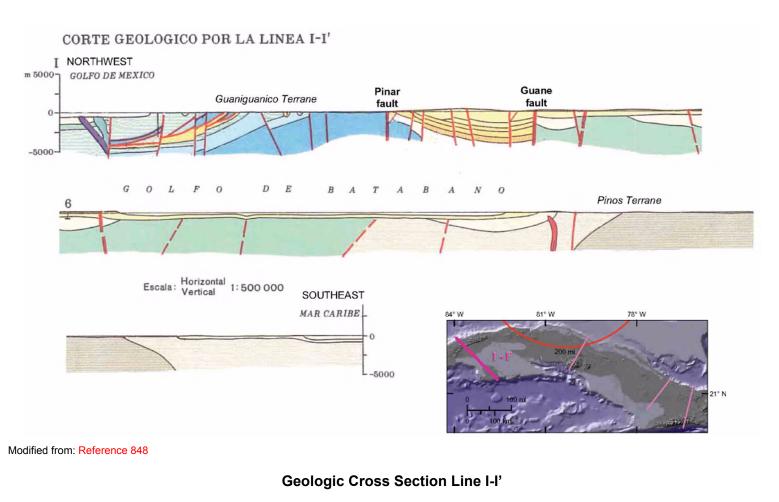


Figure 2.5.1-264 Generalized Cross Sections, from Gulf of Mexico to Bahama Platform



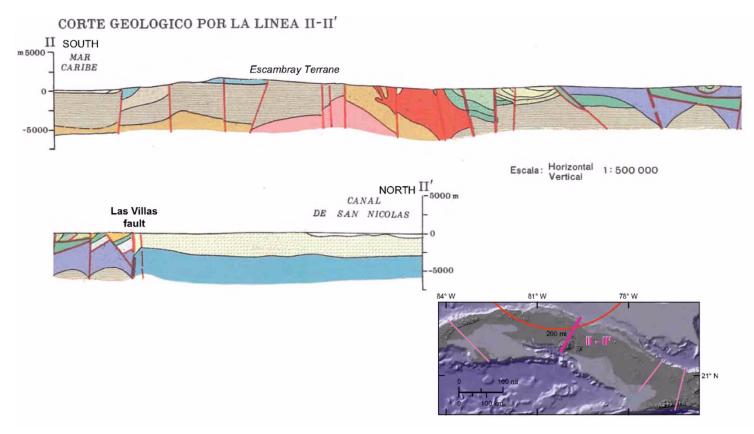
2.5.1-378 Revision 2

Figure 2.5.1-265 Geologic Cross Section of Cuba (Sheet 1 of 5)



2.5.1-379 Revision 2

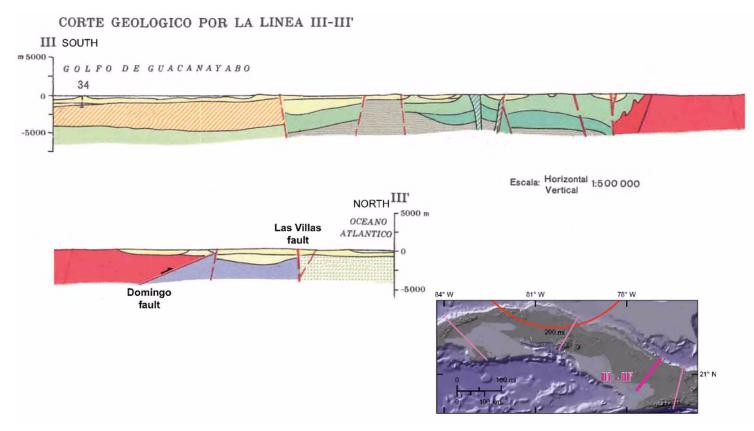
Figure 2.5.1-265 Geologic Cross Section of Cuba (Sheet 2 of 5)



**Geologic Cross Section Line II-II'** 

2.5.1-380 Revision 2

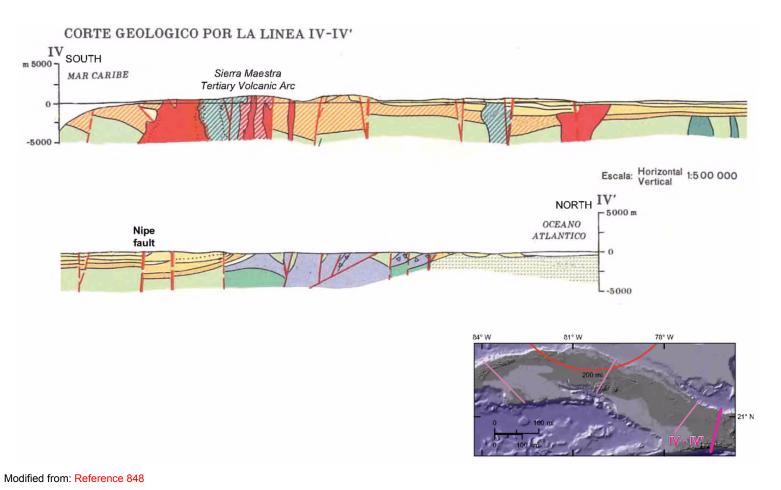
Figure 2.5.1-265 Geologic Cross Section of Cuba (Sheet 3 of 5)



**Geologic Cross Section Line III-III'** 

2.5.1-381 Revision 2

Figure 2.5.1-265 Geologic Cross Section of Cuba (Sheet 4 of 5)



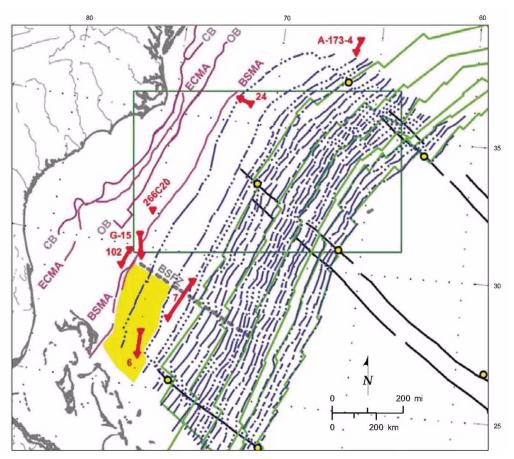
Geologic Cross Section Line IV-IV'

2.5.1-382 Revision 2

PLIOCENE-PLEISTOCENE MIOCENE OLIGOCENE EOCENE PALEOCENE CRETACEOUS JURASSIC Metamorphic Basement Igneous Units Diorite Pre-Jurassic? Gabbro Paleozoic? Mafic and ultramafic, undivided Proterozoic Ultramafics, including serpentinite, peridotite Modified from: Reference 848 **Simplified Legend for Cuban Cross Sections** 

Figure 2.5.1-265 Geologic Cross Section of Cuba (Sheet 5 of 5)

Figure 2.5.1-266 Magnetic Reversal Map of Oceanic Crust and Fracture Zones East of Bahama Platform



Notes: Fracture zones (thick black) and geomagnetic isochrons—North America. Chrons mapped by Reference 466 are blue; global Chrons are green. Control points used for plate reconstructions are located at the intersections of fracture zones, and isochrons are yellow circles. Inverted red triangles and heavy red lines are locations of refraction data that indicate oceanic crust. The East Coast Magnetic Anomaly (ECMA) and the Blake Spur Magnetic Anomaly (BSMA) are subparallel to the coast (magenta). Dark-purple lines are the mappable limits of continental (CB) and oceanic crust (OB). The Blake Spur Fracture Zone (BSFZ) is indicated by heavy, dashed, light-gray line. Yellow shaded area corresponds to continental extension of the Blake Plateau. The magnetic anomaly correlation example is outlined by the green box.

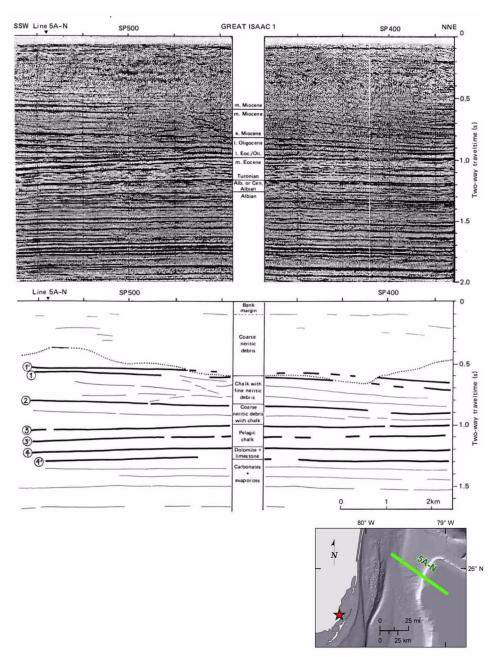
75° W 70° W 65° W FLORIDA PLATFORM 100 mi Gulf of Mexico 0 100 km YUCATAN YUCATAN PLATFORM

Figure 2.5.1-267 Earthquakes in the Caribbean Region

Note: Earthquake epicenters from Phase 2 catalog (Subsection 2.5.2.1.3),  $M_W \ge 3.0$ .

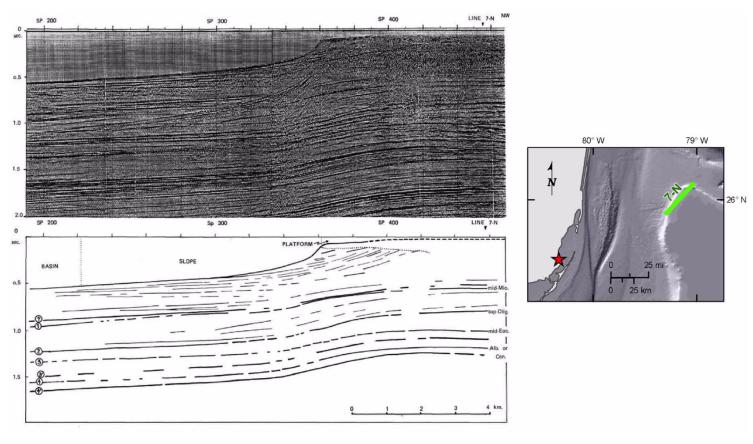
2.5.1-385 Revision 2

Figure 2.5.1-268 Seismic Line and Interpretation, with Correlation to Great Isaac 1 Well, Bahama Platform



- Circled numbers refer to reflectors traced to line 7-N (Figure 2.5.1-269).
- Dotted line delimits diachronous boundary of incoherent slope facies.
- Line cuts across lobe of Great Bahama Bank so that well represents innermost position on bank with thickest development of proximal slope facies.
- South-southwest and north-northwest ends of line approach present bank margin where only upper section is developed as proximal slope facies.

Figure 2.5.1-269 Seismic Line of Northwest Great Bahama Bank



- Circled numbers indicate reflectors identified on line 5A-N (Figure 2.5.1-268).
- Basin, slope, and platform environments are separated according to present-day topography.
- Boundary between basin and slope is drawn at a slope tangent of 0.025 (1.4°) and marked by a dotted line. Modified from: Reference 432

2.5.1-387 Revision 2

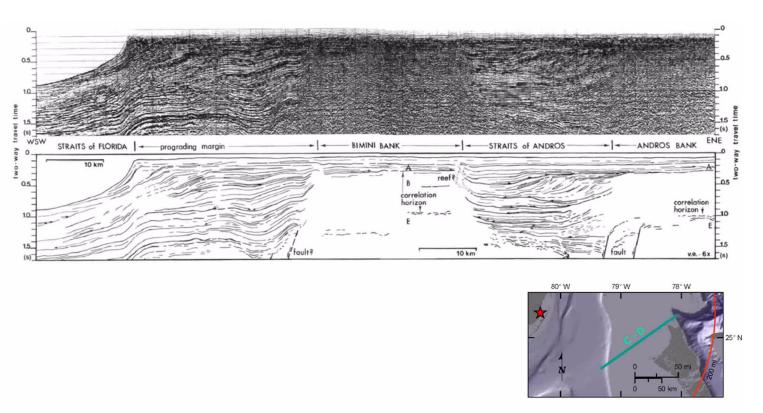
**EXUMA CANYON** NE BAHAMA ESCARPMENT 74° W 75° W Bermuda Rise + lantagenet + Hatteras incoherent reflections

Figure 2.5.1-270 Seismic Line across Exuma Canyon and Bahama Platform

- (a) Seismic line OBC-8B, C, 48-trace, 24-fold; four air guns of 6000 cubic inches total volume, fired at 500 psi in 25-second intervals; data not deconvolved or migrated.
- (b) Interpretation of line OBC-8B, C Identification of reflectors seaward of escarpment is based on correlation with DSDP Site 99. Modified from: Reference 794

2.5.1-388 Revision 2

Figure 2.5.1-271 Seismic Line and Interpretation across Bahama Plateau



Note: Line showing complex filled Straits of Andros separating Andros bank from Bimini bank and westward-prograding margin of Bimini bank. Note that basal, high-amplitude reflector E is on same elevation within both banks but is displaced at western side of Andros bank and dips into Straits of Andros, where it underlies first reflectors of filling deposits. Compare structural similarities of western margin of Bimini and Andros banks and evolution of prograding sequences over slope deposits.

Modified from: Reference 475

2.5.1-389 Revision 2

Figure 2.5.1-272 Seismic Line Interpretation of the Western Straits of Florida

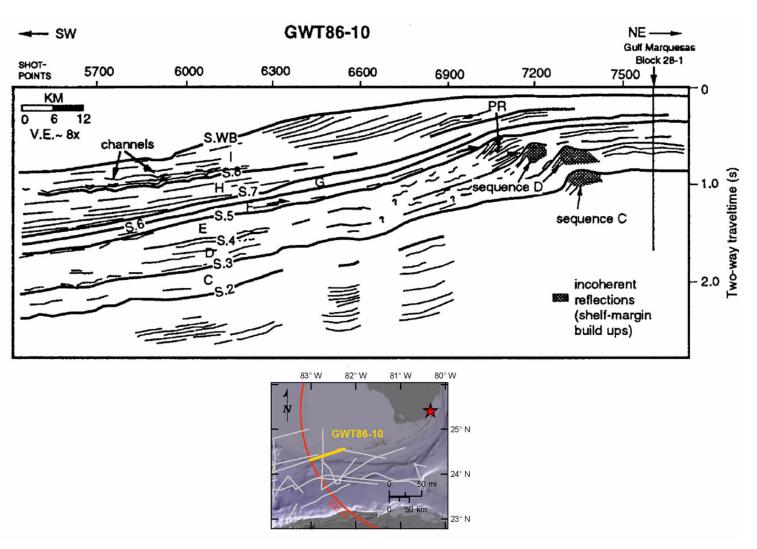
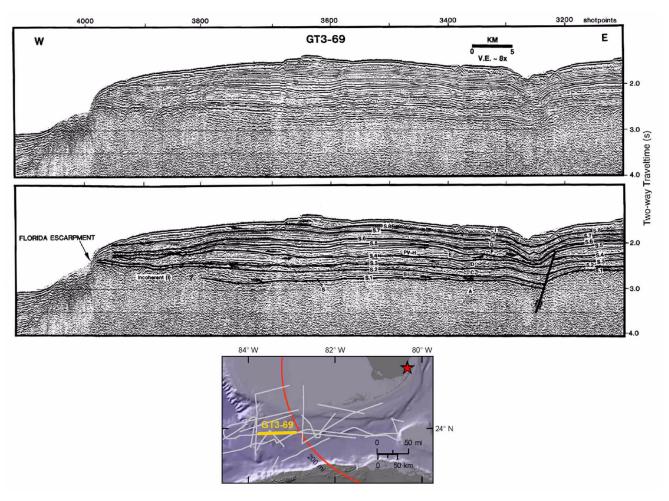
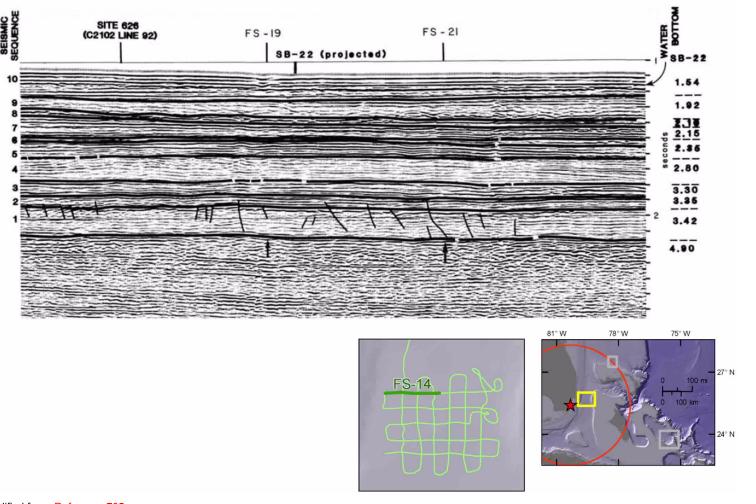


Figure 2.5.1-273 Seismic Line and Interpretation across Florida Platform



Note: Truncation of lower Paleocene—lower Eocene (?) sediments by S.4 may be related to erosion beneath a proto—Florida Current, which appears to have been concentrated over the central part of the southern Straits of Florida. Offset of S.5 and older horizons suggests a down-to-the-west normal fault at shot point 3210. At similar water depths (i.e., shot points 3400 and 3150), S.1 is at a deeper two-way travel time on the downthrown side of an inferred fault than on the upthrown side, suggesting this feature is not merely a velocity anomaly beneath the submarine canyon. Truncation by S.5 on the western flank of the submarine canyon may indicate this feature was active by the late middle Eocene.

Figure 2.5.1-274 Interpreted Versions of the Southern Half of Profile FS-08 in the Straits of Florida



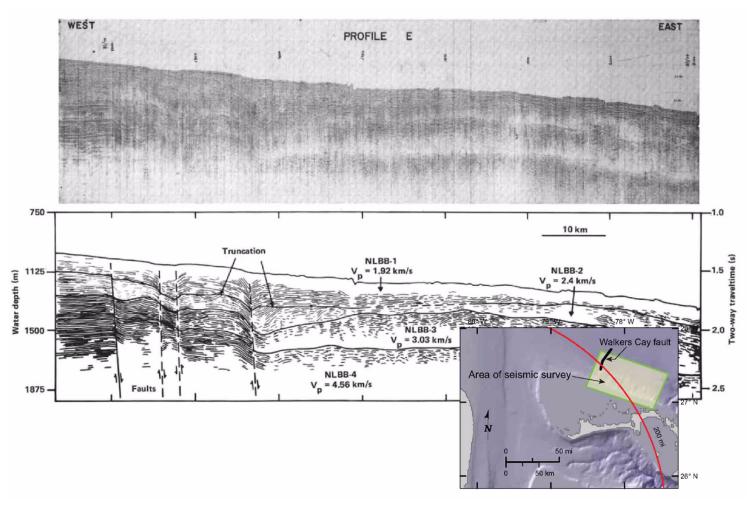
NLBB-1 V<sub>p</sub> = 1,92 km/s 375 80° W 79° W 78° W Walkers Cay fault 750 Water depth (m) Area of seismic survey NLBB-2  $V_p = 2.4 \text{ km/s}$ NLBB-3  $V_p = 3.03 \, \text{km/s}$ 

Figure 2.5.1-275 Seismic Line and Interpretation across the Walkers Cay Fault

- 2.0

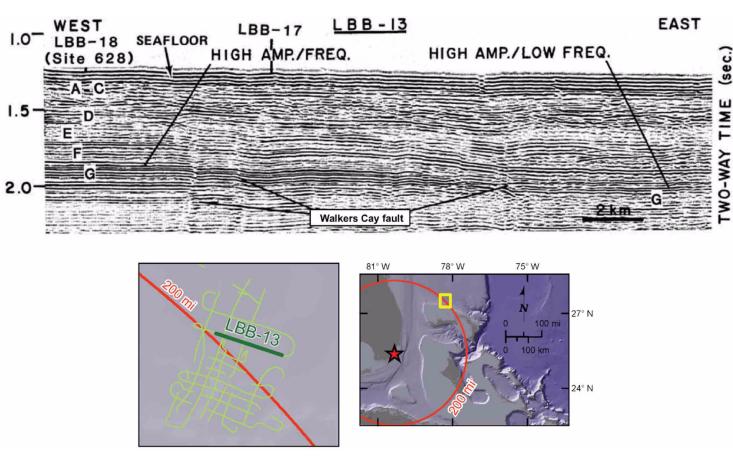
NLBB-4 V<sub>p</sub> = 4.56 km/s

Figure 2.5.1-276 Seismic Line and Interpretation across the Walkers Cay Fault



Source: Reference 791

Figure 2.5.1-277 Seismic Line along Edge of Little Bahama Bank and Walkers Cay Fault



Note: Red star denotes Turkey Point Units 6 & 7.

Figure 2.5.1-278 Seismic Line and Interpretation across the Santaren Anticline

