

Sequence Stratigraphy as a tool for water resources management in alluvial coastal aquifers: application to the Llobregat delta (Barcelona, Spain)

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APPENDIX I and II

PhD Thesis

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Appendix I

Onshore-Offshore data

I.1 ONSHORE DATA

I.1.1 Core sources

Table I.1: Cores used in this thesis. Reference column is shown below. Depth is in meters.

CORE NAME					SOURCE INFORMATION			GEOLOGIC ANALYSIS		
Code	ACA Code	APSA-Iribar Code	Marques Code (1984)	Core Depth	End Drilling campaign	Company	References	Cores described in thesis	Other sources	This thesis
A-11'	3716/5/108			105.0			Informe EDES-1971			
A-11'-d	A02	IR16		103.4			PHPO, 1985			
6Z			6Z	110.0			Marques, 1984			
Port-2b				58.0	2001	GEOCISA	UPC, 2001 (DB)			
5Y			5Y	68.0			Marques, 1984			
A-10-2-b				65.0			Manzano, 1986			
A-10	3716/5/157			84.0	1965		PHPO, 1985			
A-10-d				86.6			PHPO, 1985			
A'-10			5X	110.0			Marques, 1984			
Port-1				64.0	2001	GEOCISA	UPC, 2001 (DB)			
A9'			4X	110.0			Manzano, 1986			
A-9'-b	3617/4/262	IR59		150.0	1965		PHPO, 1985			
A-9-b	3617/4/056			83.0	1965		PHPO, 1985			
3W			3W	83.0			Marques, 1984			
A-8-3-b		IR60		70.0			Manzano, 1986			
A-8"-b	3617/4/264	IR65		130.0			Piezometro ACA (parte sondist Junta de agujas, 1998 or UPC, 2000)			
2U			2U	73.0			Marques, 1984			
2U			2U	72.0			Marques, 1986			
2T			2T	74.0			Marques, 1986			
Gc-b	3617/4/266	IR67		133.0			Manzano, 1986			
Gc-1-d	3617/4/324			110.0			Manzano, 1986			
PI-1				200.0	2002	Gestoria G.A Ambiental	1			
A-7'-b				80.0	1965		Informe EDES-1971			
A-7	3617/4/49		Q1	79.0			Marques, 1984			
1'Q			1'Q	78.0			Sondeo de investigación			
A-6-b	3617/4/168			150.0	1965		PHPO, 1985			
A-6			1N	138.0	1965		Marques, 1984			
A-5'-b	3617/4/176	IR54		150.0	1965		Informe EDES-1971			
A-5-b	3617/4/051			73.0	1965		PHPO, 1985			
A-5			2M	80.0	1965		Marques, 1984			
A-4			2J	78.0	1965		Marques, 1984			
A-3	3617/3/204		3F	173.0	1965		Marques, 1984			
A3c				190.0	1965		PHPO, 1985			
A3d				99.0	1965		PHPO, 1985			
PI-4				250.0	2002	Gestoria G.A Ambiental	1			
A-2			4D	116.0			Marques, 1984			
A-1			5A	75.0			Marques, 1984			
PI-3				60.0	2002	Gestoria G.A Ambiental	1			
B-8'-c	3616/8/174			60.0	1965		PHPO, 1985			
B-8'-c		F65-IR12		104.6			APSA			
B-7-2-b	3616/8/176	F61-IR13		50.0			PHPO, 1985			
B-8-c	3616/8/135		7Y	110.0			Marques, 1984			
7X			7X	116.0			Marques, 1984			
B-7-1-c	3617/4/254	F63		84.0		Geocisa	PHPO, 1985			
B-7-0-b				65.0			Manzano, 1986			
B-7-b	3617/4/057	F68	5V	80.0			Manzano, 1986			
B-7'-b				63.0			Manzano, 1986			
B-6'-d	3617/4/320			130.0			PHPO, 1985			
B-6				75.3			PHPO, 1985			
B-6-b	3617/4/161		5S	75.0			Marques, 1984			
B-5'				66.0			Manzano, 1986			
B-5'-b	3617/4/256	F70-IR64		150.0			PHPO, 1985			
B-5-b	3617/4/159			70.0			PHPO, 1985			
4'Q			4'Q	150.0			Marques, 1984			
4Q			4Q				Marques, 1984			
B-4'-b	3617/3/219	IR-23	4M	150.0			Marques, 1984			
B-4-b	3617/3/217	IR-31	4L	90.0			Marques, 1984			
Can Simo	3617/3/005			57.9			PHPO, 1985			
5J			5J	150.0			Marques, 1984			
B-3-c	3617/3/222	IR21		130.0			PHPO, 1985			
B-2-c	3617/3/230		5F	130.5			PHPO, 1985			
8R			8R	130.0			Marques, 1984			
B-1	3617/4/332		6C	90.0			Marques, 1984			
Rocalla 4	3617/3/264			45.0			ACA (DB)			
9J			9J	101.0			Marques, 1984			
s-57				14.0	1998	Bosch y Ventayol	ICC, 2000			
B-9-c	3616/8/138	IR-7	10Z	55.0	1985		Marques, 1984			
PHM-02				50.0	2000	Ibérica	8a			
PHM-01				51.0	2000	Ibérica	8a			
Butano	3616/8/147			50.0			PHPO, 1985			
s-77				60.0	1998	Bosch y Ventayol	ICC, 2000			
Seat B-8	SEAT-B8			100.0			ACA (DB)			
C-7'-d	3616/8/169	F67-IR11	7W	150.0			Marques, 1984			
C-7-b	3616/8/124			77.0			PHPO, 1985			
C-6-b	3617/4/59		8T	76.0			Marques, 1984			
C-5'-b	3617/4/260			69.0			PHPO, 1985			
Cal Estruch	3617/4/164			78.0			PHPO, 1985			
C-4-b	3617/4/156		6P	60.0			Marques, 1984			
C-3-b	3617/4/153		6N	64.0			Marques, 1984			
Mias Orelleta	3617/3/8			55.0			PHPO, 1985			
C-2-b	3617/3/194		6M	57.0			Marques, 1984			
7K			7K	150.0			Marques, 1984			
7G			7G	100.0			Marques, 1984			
C1b							Manzano, 1986			
C-1-b	3617/3/208			100.0			PHPO, 1985			
P-3 ASL				36.0			ACA (DB)			
Rocalla 264 pozo 4				50.0			ACA (DB)			
C-0-d	3617/3/268	IR-34		55.0	1965		PHPO, 1985			
S-54				58.5	1998	Bosch y Ventayol	ICC, 1999			
S-58				20.0	1998	Bosch y Ventayol	ICC, 2000			
S-59				25.0	1998	Bosch y Ventayol	ICC, 2000			
S-60				64.0	1996	Bosch y Ventayol	ICC, 2000			
S-62				20.0	1997	Bosch y Ventayol	ICC, 2000			
S-63					1997	Bosch y Ventayol	ICC, 2000			
S-68				20.0	1991	Bosch y Ventayol	ICC, 2000			
S-69				12.1	1998	Bosch y Ventayol	ICC, 2000			
S-70				15.0	1994	Bosch y Ventayol	ICC, 2000			

Table I.1: continuation

CORE NAME					SOURCE INFORMATION			GEOLOGIC ANALYSIS		
Code	ACA Code	APSA-Iribar Code	Marques Code (1984)	Core Depth	End Drilling campaign	Company	References	Cores described in thesis	Other sources	This thesis
S-71				16.0	1992	Bosch y Ventayol	ICC, 2000			
S-74				20	1992	Bosch y Ventayol	ICC, 2000			
S-75					1997	Bosch y Ventayol	ICC, 2000			
S-76					1997	Bosch y Ventayol	ICC, 2000			
S-78				30.5	1997	Bosch y Ventayol	ICC, 2000			
S-79					1998	Bosch y Ventayol	ICC, 2000			
S-80					1998	Bosch y Ventayol	ICC, 2000			
C-8-c	3616/8/130		10W	64.5			Marques, 1984			
C-8'	3616/8/143	IR8		101.0			PHPO, 1985			
Pepsi	3616/8/034			40.0			PHPO, 1985			
Bv-b	3616/8/159			110.0			Marques, 1984			
D-5-b	3616/8/126		10T	52.0			Marques, 1984			
D'-5				150.6			PHPO, 1985			
D-5'-b	3616/8/180	IR14		150.0			Manzano, 1986			
9Q			9Q	60.0			Marques, 1984			
Damm	F21-24			53		Perforacions Xartó	APSA (DB)			
D-3-c	3617/3/200	IR28		100.0			PHPO, 1985			
9N			9N	100.0			Marques, 1984			
D-0	3617/3/251		10L	40.0			Marques, 1984			
D-7	3616/8/145		12V	75.7			Marques, 1984			
11U			11U	40.0			Marques, 1984			
D-2'-b	3616/8/144		12Q	100.0			Marques, 1984			
D-2-b	3616/7/141	IR-1	10P	100.0			Marques, 1984			
p-3 pou cornellà	3616/7/076			41.0			PHPO, 1985			
p-4 pou cornellà	3616/7/077			40.0			PHPO, 1985			
P-12 cornellà bis	3616/7/083			40.0			PHPO, 1985			
P-11 cornellà	3616/7/081			45.0			PHPO, 1985			
E-2 (2)	3616/7/72			60.0			PHPO, 1985			
P-10 cornella	3616/7/81			46.0			PHPO, 1985			
Aeroport - Bombers	3617/4/200			52.0			PHPO, 1985			
D-1-c	3617/3/212			100.0			PHPO, 1985			
10V			10V	141.0			Marques, 1984			
8W			8W				Marques, 1984			
D-6-a	3616/8/129						PHPO, 1985			
p-1				27.0	2001	GEOCISA	UPC, 2001 (DB)			
					2001	GEOCISA	UPC, 2001 (DB)			
p-2				21.0	2001	GEOCISA	UPC, 2001 (DB)			
p-6				23.0	2001	GEOCISA	UPC, 2001 (DB)			
p-7				30.5	2001	GEOCISA	UPC, 2001 (DB)			
p-8				24.0	2001	GEOCISA	UPC, 2001 (DB)			
p-9				24.0	2001	GEOCISA	UPC, 2001 (DB)			
p-10				18.0	2001	GEOCISA	UPC, 2001 (DB)			
p-34				24.0	2001	GEOCISA	UPC, 2001 (DB)			
p-35				23.5	2001	GEOCISA	UPC, 2001 (DB)			
C-6-a				15.0	2001	FCHIS, 1997	UPC, 2001 (DB)			
c-6-2b				56.0	2001	GEOCISA	UPC, 2001 (DB)			
c-6-1-b		IR-58		58.0	2001	GEOCISA	UPC, 2001 (DB)			
c-6-3b				63.0	2001	GEOCISA	UPC, 2001 (DB)			
c-6-3a				25.0	2001	GEOCISA	UPC, 2001 (DB)			
c-6-2a				20.0	2001	GEOCISA	UPC, 2001 (DB)			
A-8"	3617/4/264			24.0	1965	GEOCISA	UPC, 2001 (DB)			
A'-7				151.2	2001	GEOCISA	Manzano, 1986			
A'-7-b				79.0	1965		Informe EDES-1971			
S-2(St Boi)				15.4	2004	Obras de perforacion SA	9			
s-2.3				40.0	2002	RSE	8c			
s-2.4				35.0	2002	RSE	8c			
s-2.6				35.0	2002	RSE	8c			
s-2.7				40.0	2002	RSE	8c			
s-2.8				35.0	2002	RSE	8c			
s-2.10				35.0	2002	RSE	8c			
s-2.11				30.0	2002	RSE	8c			
s-2.14				40.0	2002	RSE	8c			
s-2.15				29.0	2002	RSE	8c			
s-2.18				47.0	2002	RSE	8c			
s-2.19				39.0	2002	RSE	8c			
s-2.21				50.0	2002	RSE	8c			
s-2.22				47.0	2002	RSE	8c			
s-2.23				45.0	2002	RSE	8c			
s-2.24				49.0	2002	RSE	8c			
SRA-1					2004	LOSAN	8d			
SRA-2					2004	LOSAN	8d			
SRA-3					2004	LOSAN	8d			
SRA-4					2004	LOSAN	8d			
SRA-5				36.0	2004	LOSAN	8d			
SRA-6				49.6	2004	LOSAN	8d			
SRA-7					2004	LOSAN	8d			
SRA-8				50.0	2004	LOSAN	8d			
SRA-9					2004	LOSAN	8d			
SRA-10					2004	LOSAN	8d			
SPC12				25.5	2002	Geopayama	4a			
SPC7				54.0	2002	Geopayama	4a			
SPC8				30.0	2002	Geopayama	4a			
SPC5				30.0	2002	Geopayama	4a			
SPC6				30.0	2002	Geopayama	4a			
SPC2				52.0	2002	Geopayama	4a			
SPC1				54.0	2002	Geopayama	4a			
SPC3				30.0	2002	Geopayama	4a			
SPC4				30.0	2002	Geopayama	4a			
SPC13				55.0	2002	Geopayama	4a			
SPC9				55.5	2002	Geopayama	4a			
SPC10				54.0	2002	Geopayama	4a			
SPC11					2002	Geopayama	4a			
s-3.4				30.0	2003	Peyco, S.A	6			
s-3.5				30.0	2003	Peyco, S.A	6			
S-1				50.0	2003	Peyco, S.A	6			
S-2				45.0	2002	Peyco, S.A	6			
ST1				35.5	2003		5b			
ST2				40.5	2003		5b			
ST3				20.5	2003		5b			
ST4				40.0	2003		5b			

Table I.1: continuation

CORE NAME				SOURCE INFORMATION			GEOLOGIC ANALYSIS			
Code	ACA Code	APSA-Iribar Code	Marques Code (1984)	Core Depth	End Drilling campaign	Company	References	Cores described in thesis	Other sources	This thesis
ST5				40.5	2003		5b			
ST6				32.0	2003		5b			
ST8				45.0	2003		5b			
ST9					2003		5b			
ST10				30.0	2003		5b			
SPZ-4				82.0	2003		5b			
SPZ-16				72.0	2003		5b			
Airport				138.0	2003	Intecasa	4b			
SRB-1				29.4	2005	Eptisa	8j			
SRB-2				61.0	2005	Eptisa	8j			
SRB-14				54.9	2005	Eptisa	8j			
S2+445(L9 6)				30.0	2005	Geotest	8j			
PK 2+537				35.0	2005	RSE	8j			
2+766 (L9)				42.0	2005	RSE	8j			
S-2 L9				50.0	2004	Intecasa	8e			
S-A L9				33.0	2004	Bosch y ventayol	8e			
S-B L9				40.0	2004	Bosch y ventayol	8e			
S-1(C. Aprestadora)				20.6	2004	Bosch y ventayol	8h			
S-2 (C. Aprestadora)				20.0	2004	Bosch y ventayol	8h			
S-3 (C. Aprestadora)				37.00	2004	Bosch y ventayol	8h			
SRB-12				29.4	2005	Eptisa	8n			
SRB-13				30.0	2005	Eptisa	8n			
SRB-3				21.6	2005	Eptisa	8n			
SRB-4				30.0	2005	Eptisa	8n			
S-4 C-1 Prop				57.7	2004	Geotec 262	8g			
Prop c-2					2004	Sondeos y anclajes	8g			
SC Provensana					2004	RSE	8g			
S-1				60.0	2004	JOLSA	8g			
CERC-C1				75.4	2004	Intecasa	8g			
CERC-C2					2004	Sondeos y anclajes	8g			
SC-CERDA 1				65.0	2004	RSE	8f			
SRB-9				68.0	2005	Eptisa	8k			
S-2				52.8	2004	JOLSA	8g			
FON-C1				75.0	2004	Intecasa	8g			
FON-C2				68.0	2004	Geotec 262	8g			
SC-FONERIA				68.0	2004	RSE	8f			
P1-BN-FON				68.0	2004	Sondeos del Sur	Obradors, 2006			
P2-BN-FON				68.0	2004	Sondeos del Sur	Obradors, 2006			
P3-BN-FON				68.0	2004	Sondeos del Sur	Obradors, 2006			
P4-BN-FON				68.0	2004	Sondeos del Sur	Obradors, 2006			
P5-BN-FON				68.0	2004	Sondeos del Sur	Obradors, 2006			
P6-BN-FON				68.0	2004	Sondeos del Sur	8g			
S-3				48.0	2004	JOLSA	8g			
FOC-C1				72.0	2004	Intecasa	8g			
FOC-C2				75.0	2004	Geotec 262	8g			
SC-FOC					2004	RSE	8f			
SRB-11				32.0	2005	Intecasa	8i			
gornal SG-3				48.3	2004	Sondeos y anclajes	8g			
gornal (SG-2o SG-1)				59.0	2004	Sondeos y anclajes	8g			
S-A				40.0	2002	Geoconsult	5a			
S-B				40.0	2002	Geoconsult	5a			
S-C				41.3	2002	Geoconsult	5a			
S-D				44.5	2002	Geoconsult	5a			
S-E				35.5	2002	Geoconsult	5a			
S-F				31.0	2002	Geoconsult	5a			
S-G				21.1	2002	Geoconsult	5a			
S-H				25.0	2002	Geoconsult	5a			
S-I				15.0	2002	Geoconsult	5a			
S-J				25.0	2002	Geoconsult	5a			
S-L				20.0	2002	Geoconsult	5a			
S-N				15.0	2002	Geoconsult	5a			
Farré (espluques)				175.0			PHPQ, 1985			
SIT 1				70.0	2002	RSE	8b			
SIT 2				66.5	2002	RSE	8b			
SIT 3				65.0	2002	RSE	8b			
SIT 4				65.0	2002	RSE	8b			
SIT 5				66.8	2002	RSE	8b			
SIT 6				70.0	2002	RSE	8b			
SIT 7				70.0	2002	RSE	8b			
SIT 8				65.0	2002	RSE	8b			
SIT 9				60.0	2002	RSE	8b			
SIT 10				57.0	2002	RSE	8b			
SIT 11				55.8	2002	RSE	8b			
SIT 12				55.0	2002	RSE	8b			
SIT 13				51.3	2002	RSE	8b			
SIT 14				60.0	2002	RSE	8b			
SIT 15				60.0	2002	RSE	8b			
SIT 15 bis				60.5	2002	RSE	8b			
SIT 16				46.2	2002	RSE	8b			
SIT 16 bis				55.0	2002	RSE	8b			
SIT 17				45.0	2002	RSE	8b			
SIT 18				49.5	2002	RSE	8b			
SIT 19				45.5	2002	RSE	8b			
SIT 20				46.0	2002	RSE	8b			
SIT 21				56.0	2002	RSE	8b			
SIT 22				52.0	2002	RSE	8b			
SIT 23				58.8	2002	RSE	8b			
SIT 24				60.4	2002	RSE	8b			
SIT-24b				75.0	2002	RSE	8b			
SIT 25				61.5	2002	RSE	8b			
SIT 26				60.2	2002	RSE	8b			
SIT 26 bis				60.0	2002	RSE	8b			
SIT 27				59.6	2002	RSE	8b			
SIT 28				60.5	2002	RSE	8b			
SIT 29				52.0	2002	RSE	8b			
SIT 30				55.0	2002	RSE	8b			
SIT 31				40.5	2002	RSE	8b			
SIT 32				35.0	2002	RSE	8b			
SIT 33				33.7	2002	RSE	8b			
SIT 34				48.5	2002	RSE	8b			
SIT 35					2002	RSE	8b			
SIT 36				51.0	2002	RSE	8b			
SIT 37				35.6	2002	RSE	8b			
SIT 38				50.0	2002	RSE	8b			
SIT 39				35.6	2002	RSE	8b			
SIT 40				52.1	2002	RSE	8b			
SIT 41				35.0	2002	RSE	8b			

Table I.1: continuation

CORE NAME				Core Depth	SOURCE INFORMATION			GEOLOGIC ANALYSIS		
Code	ACA Code	APSA-Iribar Code	Marques Code (1984)		End Drilling campaign	Company	References	Cores described in thesis	Other sources	This thesis
A-11'	3716/5/108			105.0	1971		Informe EDES-1971			
SIT 42				35.6	2002	RSE	8b			
SIT 43				33.5	2002	RSE	8b			
SM-020				30.1	2000	RSE	8b			
SM-022				29.6	2000	RSE	8b			
SM-023				28.3	2000	RSE	8b			
SM-024				36.0	2000	RSE	8b			
SM-028				34.5	2000	RSE	8b			
SM-030				35.7	2000	RSE	8b			
SM-034				42.0	2000	RSE	8b			
SM-045				35.3	2000	RSE	8b			
SM-047				45.8	2000	RSE	8b			
SM-C1				60.5	2000	RSE	8b			
SM-C2				60.0	2000	RSE	8b			
SM-C4				55.5	2000	RSE	8b			
SM-C5				50.6	2000	RSE	8b			
spc1				60.0	2001?	Eurogeotecnia	2			
spc 2				62.0	2001?	Eurogeotecnia	2			
spc3				67.0	2001?	Eurogeotecnia	2			
1do1				65.0	2001?	Eurogeotecnia	2			
3do3				63.0	2001?	Eurogeotecnia	2			
4do4				58.0	2001?	Eurogeotecnia	2			
5do2				40.0	2001?	Eurogeotecnia	2			
6do6				59.0	2001?	Eurogeotecnia	2			
10do8				65.0	2001?	Eurogeotecnia	2			
9do7				63.0	2001?	Eurogeotecnia	2			
S1-1				45.0	1991		3			
S1-2				45.0	1991		3			
S1-3				46.0	1991		3			
S1-4				31.0	1991		3			
S1-5				30.0	1991		3			
S1-6				30.0	1991		3			
S1-7				30.0	1991		3			
S1-8				30.0	1991		3			
S1-9				30.0	1991		3			
S1-10				27.0	1991		3			
S1-11					1991		3			
S1-12				30.0	1991		3			
S5-1				45.6	1991		3			
S5-2				45.0	1991		3			
s-1				40.6	1996	Rodio	3			
s-1a				40.0	1996	Rodio	3			
s-2				58.0	1996	Rodio	3			
s-3				40.6	1996	Rodio	3			
s-4				40.6	1996	Rodio	3			
s-5				53.0	1996	Rodio	3			
s-6				40.6	1996	Rodio	3			
s-7				40.0	1996	Rodio	3			
NS-1				76.9	1999	Eurogeotecnia	3			
NS-2				58.3	1999	Eurogeotecnia	3			
s-1m				74.5	1999	Eurogeotecnia	3			
s-3m				76.9	1999	Eurogeotecnia	3			
sud s-4				104.0	1999	Eurogeotecnia	3			
sud s-5				105.0	1999	Eurogeotecnia	3			
sud s-6				122.0	1999	Eurogeotecnia	3			
est s-7				125.0	1999	Eurogeotecnia	3			
est s-8				111.0	1999	Eurogeotecnia	3			
s-3				64.0	1999	Eurogeotecnia	3			
s-5				64.0	1999	Eurogeotecnia	3			
s-11				67.5	1999	Eurogeotecnia	3			
s-12				65.0	1999	Eurogeotecnia	3			
s-14				63.5	1999	Eurogeotecnia	3			
s-23				62.0	1999	Eurogeotecnia	3			
NPz-4					1999	Eurogeotecnia	3			
NPz-5					1999	Eurogeotecnia	3			
NPz-6				69.6	1999	Eurogeotecnia	3			
s-1				10.0	1999	Eurogeotecnia	3			
s-2				50.0	1999	Eurogeotecnia	3			
s-3				11.0	1999	Eurogeotecnia	3			
s-4					1999	Eurogeotecnia	3			
s-5				40.0	1999	Eurogeotecnia	3			
s-6				38.5	1999	Eurogeotecnia	3			
s-7				40.0	1999	Eurogeotecnia	3			
s-8				50.0	1999	Eurogeotecnia	3			
s-9				40.5	1999	Eurogeotecnia	3			
s-10				40.0	1999	Eurogeotecnia	3			
s-11				40.0	1999	Eurogeotecnia	3			
s-12				35.0	1999	Eurogeotecnia	3			
s-13				40.5	1999	Eurogeotecnia	3			
C-1					1989	IGME	Medialdea et al, 1989			
B-1					1989	IGME	Medialdea et al, 1989			
E-1					1989	IGME	Medialdea et al, 1989			
A-1					1989	IGME	Medialdea et al, 1989			
D-1					1989	IGME	Medialdea et al, 1989			
G-1					1989	IGME	Medialdea et al, 1989			
MBA				17		Mercabarna	Riera 1994c			
SOGIT-1				15.5	2004	Geotec 262	5c			
SOGIT-2				35.0	2004	Geotec 262	5c			
SOGIT-3				35.0	2004	Geotec 262	5c			
SOGIT-4				41.5	2004	Geotec 262	5c			
SOGIT-5				35.0	2004	Geotec 262	5c			
SOGIT-6				42.2	2004	Geotec 262	5c			
SOGIT-6c				27.0	2004	Geotec 262	5c			
SOGIT-7				34.7	2004	Geotec 262	5c			
SOGIT-8				47.6	2004	Geotec 262	5c			
SOGIT-9				43.0	2004	Geotec 262	5c			
SOGIT-10				30.0	2004	Geotec 262	5c			
SOGIT-11				20.6	2004	Geotec 262	5c			

Table I.1: continuation

CORE NAME				SOURCE INFORMATION			GEOLOGIC ANALYSIS			
Code	ACA Code	APSA-Iribar Code	Marques Code (1984)	Core Depth	End Drilling campaign	Company	References	Cores described in thesis	Other sources	This thesis
SOGIT-12				35.0	2004	Geotec 262	5c			
SOGIT-15				58.8	2005	Geotec 262	5c			
SLD-1				42.5	2004	Geotec 262	6			
SLD-2				38.2	2003	Geotec 262	6			
SLD-4bis				37.0	2003	Geotec 262	6			
SLD-5				46.5	2003	Geotec 262	6			
SLD-5bis				46.5	2003	Geotec 262	6			
SLD-53				41.7	2003	Geotec 262	6			
SLD-7				51.2	2003	Geotec 262	6			
SLD-10				48.7	2003	Geotec 262	6			
SLD-16				57.0	2006	Geotec 262	6			
SLD-15				56.9	2006	Geotec 262	6			
SLD-13				50.4	2006	Geotec 262	6			
SLD-11				50.2	2006	Geotec 262	6			
Sondeo 1-4 (E2(4))	3616/7/068			38			PHPO, 1985			
Sondeo 1-1 E2(2a y 2b)	3616/7/069			37.5			PHPO, 1985			
Sondeo 2-2 (E2(3))	3616/7/072			60			PHPO, 1985			
E-3-1	3616/7/154			50			PHPO, 1985			
Pozo 18 SGAB	3616/7/170			51			PHPO, 1985			
Pozo 20 SGAB	3616/7/172			42			PHPO, 1985			
Pou Garrigosa 1	3616/7/182			26			PHPO, 1985			
Pou Garrigosa 2	3616/7/183			28			PHPO, 1985			
Sondeo 2-3 (E3(2))	3616/7/073						PHPO, 1985			
Sondeo 1-3	3616/7/067						PHPO, 1985			
Pizometro 24 (E1)	3616/7/074						PHPO, 1985			
E2-4-b	3616/7/074			36.00	1965		PHPO, 1985			
pozo 13 Cornella	3616/7/084						PHPO, 1985			
SV	3616/7/057			26.50	1965		PHPO, 1985			
F-4				45.70			PHPO, 1985			
FL	3616/7/075			30.20	1965		PHPO, 1985			
T		IR-3		35.00			PHPO, 1985			
Aeropuerto		S11				Perforaciones Lujan, S. L.	APSA (DB)			
Aeropuerto		S12		57		Perforaciones Lujan, S. L.	APSA (DB)			
Aeropuerto		S13				Perforaciones Lujan, S. L.	APSA (DB)			
Invest-										
Rolonda(APSA)						Perforaciones Lujan, S. L.	APSA (DB)			
POZO N° 1 (APSA)				42.8		Perforaciones Lujan, S. L.	APSA (DB)			
POZO N° 6 (APSA)				45.6		Perforaciones Lujan, S. L.	APSA (DB)			
POZO N° 7 (APSA)				51		Perforaciones Lujan, S. L.	APSA (DB)			
POZO N° 8 (APSA)				46.3			APSA (DB)			
	8			68			APSA (DB)			
SEAT POZO N° 5		S42					APSA (DB)			
SEAT POZO N° 12		F58					APSA (DB)			
SEAT POZO N° 15		S48					APSA (DB)			
AVE1						Laboratorios PROYEX	APSA (DB)			
AVE2						Laboratorios PROYEX	APSA (DB)			
AVE3				45		Laboratorios PROYEX	APSA (DB)			
Caixa Catalunya		F31		49		Perforaciones Lujan, S. L.	APSA (DB)			
Camping-gas		S22		47			APSA (DB)			
Polimers		S28				Perforaciones Lujan, S. L.	APSA (DB)			
Polimers		S28				Perforaciones Lujan, S. L.	APSA (DB)			
Carrefour		F10a		48		Perforaciones Lujan, S. L.	APSA (DB)			
Pozo Cometsa-1		A07					APSA (DB)			
La Seda		S64				Perforaciones Lujan, S. L.	APSA (DB)			
La Seda		S68				Perforaciones Lujan, S. L.	APSA (DB)			
Damm		F21		53		Perforaciones Lujan, S. L.	APSA (DB)			
Damm		F22		52		Perforaciones Lujan, S. L.	APSA (DB)			
Pz4-1Pz3						Eurogeotecnia	2			
S-1(EDAR)				61		Eurogeotecnia	2			
S-2(EDAR)				64		Eurogeotecnia	2			
ELF				66		Perforaciones Lujan, S. L.	APSA (DB)			
Forest		F54		61			APSA (DB)			
Hermanos Valles				51		Perforaciones Lujan, S. L.	APSA (DB)			
La seda		S 31					APSA (DB)			
La seda		S 34		52		Perforacions Xartó	APSA (DB)			
Ossa		A08		57			APSA (DB)			
parque Davis		S 31?		50			APSA (DB)			
PESA 2		#41					APSA (DB)			
Golf		G01		66		Perforaciones Lujan, S. L.	APSA (DB)			
Sandoz		#4				Perforaciones Lujan, S. L.	APSA (DB)			
Sarrió		F12		58		Perforaciones Lujan, S. L.	APSA (DB)			
Can Malet		CM		73			Manzano, 1993			
S7							Manzano, 1996-1997			
Cal rovira		M36-IR24		47		Perforaciones Lujan, S. L.	APSA (DB)			
Cal salatm		M58		42		Perforaciones Lujan, S. L.	APSA (DB)			
Cal nani		M88		45		Perforaciones Lujan, S. L.	APSA (DB)			
Cal lombarella		M90				Perforaciones Lujan, S. L.	APSA (DB)			
Cal balanyá		M93		49		Perforaciones Lujan, S. L.	APSA (DB)			
		X01				Perforaciones Lujan, S. L.	APSA (DB)			
		X03		40		Perforaciones Lujan, S. L.	APSA (DB)			
Cal ingalda		X08		47		Perforaciones Lujan, S. L.	APSA (DB)			
Balenyá		X09		40		Perforaciones Lujan, S. L.	APSA (DB)			
Balenyá		X11		48		Perforaciones Lujan, S. L.	APSA (DB)			
S-1 (AVE)				39	2005?	Jolsa	5d			
S-2 (AVE)				35	2005?	Jolsa	5d			
S-3 (AVE)				38	2005?	Jolsa	5d			
S-4 (AVE)				40	2005?	Jolsa	5d			
S-5 (AVE)				40	2005?	Jolsa	5d			
S-6 (AVE)				40	2005?	Jolsa	5d			
S-7 (AVE)				38	2005?	Jolsa	5d			
S-8 (AVE)				40	2005?	Jolsa	5d			
S-10 (AVE)				40	2005?	Jolsa	5d			
S-11 (AVE)				39.6	2005?	Jolsa	5d			
S-12 (AVE)				32	2005?	Jolsa	5d			
SR-1+658				30.1	2004?	Jolsa	5d			
SR-1+912				30	2004?	Jolsa	5d			
SE-2+112				30.1	2004?	Jolsa	5d			
SR-2+265				34.1	2004?	Jolsa	5d			
SR-2+420				29	2004?	Jolsa	5d			

Table I.1: continuation

CORE NAME					SOURCE INFORMATION			GEOLOGIC ANALYSIS		
Code	ACA Code	APSA-Iribar Code	Marques Code (1984)	Core Depth	End Drilling campaign	Company	References	Cores described in thesis	Other sources	This thesis
SE-2+597				30.5	2004?	Jolsa	5d			
SR-2+692				30	2004?	Jolsa	5d			
SR-2+726				30.1	2004?	Jolsa	5d			
SR-2+772				30	2004?	Jolsa	5d			
SE-2+900 IZQ				36	2004?	Jolsa	5d			
SE-2+950 DER				50	2004?	Jolsa	5d			
SE-2+990 IZQ				50.1	2004?	Jolsa	5d			
SE-3+060 DER				36.6	2004?	Jolsa	5d			
SE-3+160 DER				36.4	2004?	Jolsa	5d			
SE-3+240 IZQ				49	2004?	Jolsa	5d			
SR-3+365 IZQ				30	2004?	Jolsa	5d			
SR-3+610 DER				35	2004?	Jolsa	5d			
EL-03				32	2000	Iberica	8a			
PB-02				24	2000	Maroto	8a			
PB-09				20	2000	Aragonesa de sondeos	8a			
PCV-01		PH-2		60	2000	Iberica	8a			
PCV-02		PH-3		49	2000	Iberica	8a			
PCV-03		PH-6		58	2000	Iberica	8a			
PCV-04		PH-8		50	2000	Iberica	8a			
PCV-05		PH-9		53	2000	Iberica	8a			
PH-13				25	2000	Iberica	8a			
PH-14				58	2000	Iberica	8a			
PH-18				25	2000	Iberica	8a			
San Lorenzo1	3617/3/257			40			PHPO, 1985			
San Lorenzo2	3617/3/261			31			PHPO, 1985			
Finca Canyars	3617/3/32			28.4			PHPO, 1985			
Riera Canyars	3617/3/262			24.5			PHPO, 1985			
Resintex	3617/3/244			22			PHPO, 1985			
San Lorenzo3	3617/3/260			35.5			PHPO, 1985			
Hules1	3617/3/184			28			PHPO, 1985			
pozo Sandor	3617/3/010			17.5			PHPO, 1985			
Mas Orelleta (Grande)	448/3/9			40.1			PHPO, 1985			
Can Simon2	3617/3/006			48.3			PHPO, 1985			
S-A				30	2004	GYC SA	5a			
S-B				40	2004	GYC SA	5a			
S-C				41.8	2004	GYC SA	5a			
S-D				39	2004	GYC SA	5a			
S-E				37	2004	GYC SA	5a			
S-Ell				34.5	2004	GYC SA	5a			
S-F				35.4	2004	GYC SA	5a			
S-G				30	2004	GYC SA	5a			
S-H				30	2004	GYC SA	5a			
S-I				35	2004	GYC SA	5a			
S-J				35	2004	GYC SA	5a			
S-K				30	2004	GYC SA	5a			
S-L				30	2004	GYC SA	5a			
S-M				30	2004	GYC SA	5a			
S-N				34.5	2004	GYC SA	5a			
S-N				50.1	2004	GYC SA	5a			
S1				30	2004?	Geocisa	5a			
S2				29	2004?	Geocisa	5a			
S3				27	2004?	Geocisa	5a			
S4					2004?	Geocisa	5a			
F-PA-03				12	2005	RSE	8i			
F-PA-04				30	2005	RSE	8i			
F-PA-05				41	2005	RSE	8i			
F-PA-6 /1+800....				24	2005	RSE	8i			
F-PA-7 /1+8000				24	2005	RSE	8i			
F-PA-01				24	2005	RSE	8i			
F-PA-02				35	2005	RSE	8i			
F-PA-08				33	2005	RSE	8i			
S-4	3617/2/116			100.3			PHPO, 1985			
Estany mutra	3617/3/001			55.3			PHPO, 1985			
Capo corredora	3617/2/044			112			PHPO, 1985			
Roca s-5	3617/2/117			99.5			PHPO, 1985			
Norma fustes	3617/2/192			14			PHPO, 1985			
2+576(40.2)R				40.2	2006	RSE	8m			
I-2+580 (40)R				40	2006	RSE	8m			
2+594(40)R				40	2006	RSE	8m			
PK-2+600(40)R				40	2006	RSE	8m			
2+607(35)R				35	2006	RSE	8m			
2+621(35.2)R				35.2	2006	RSE	8m			
2+627.6 (35)R				35	2006	RSE	8m			
SIT-16bis-2(40)R				40	2006	RSE	8m			
IN-1				51	2006	Applus	8n			
S2A119R08PA					2006	RSE	8n			
S2A117R08PA					2006	RSE	8n			
S2A117L08PA					2006	RSE	8n			
Sant Boi				8			Riera 1994a			
Mutrassa				3			Riera 1994b			
arids garrigosa				9.5	1994		Gimenez et al., 1994			
Sorres I						archeologic site	izquierdo, 1998			
Les Sorres II						archeologic site	izquierdo, 1998			
Sorres Illa						archeologic site	izquierdo, 1998			
Sorres Illb						archeologic site	izquierdo, 1998			
Les Sorres IV						archeologic site	izquierdo, 1998			
Les Sorres V						archeologic site	izquierdo, 1998			
Les Sorres VI						archeologic site	izquierdo, 1998			
Sorres VII						archeologic site	izquierdo, 1998			
Les Sorres VIII						archeologic site	izquierdo, 1998			
Sorres IX						archeologic site	izquierdo, 1998			
Sorres X						archeologic site	izquierdo, 1998			
El Remolar						archeologic site	Izquierdo, personal communication			
Platja ibérica de la Roca						archeologic site	Izquierdo, personal communication			
Mines Can Tintorer						archeologic site	Riera 1994a			
La Ricarda										

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3- Harbor extension, different campaigns

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a) 2002, Proyecto de construcción de la nueva area Terminal en el aeropuerto de Barcelona

b) UPC, 2003. Estudio del impacto potencial de las alternativas de bomba para el suministro de agua a las instalaciones del Aeropuerto del Prat

5- Projects AVE (GIF, Gestión d'Infraestructuras Ferroviarias)

a) 2002-2007 Proyecto constructivo de plataforma del tramo la Torrassa-Sants (Barcelona), en la línea de alta velocidad Madrid-Zaragoza-Barcelona-frontera francesa

b) UPC, 2003 Estudio de la interacción entre el tramo Hospitalet-Can Tunis 2004, Línea AVE Tramo St. Boi - L'Hospitalet de Llobregat

c) 2004 Proyecto constructivo del Tramo Sant St Boi-Hospitalet. Línea de alta velocidad Madrid-Zaragoza-Barcelona-frontera francesa

d) 2005? Proyecto constructivo del Tramo Santa Coloma de Cervelló -Hospitalet. Línea de alta velocidad Madrid-Zaragoza-Barcelona-frontera francesa

6- Projects L1 metro (GISA)

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7- Projects L2 metro (GISA)

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8- Projects L9 metro (GISA)

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j) 2005 Línia 9 del fmb. tram 2n Parc logístic-Zona Universitària

k) 2005 L-9 del metro de Barcelona. tram 2n Parc Logístic - Zona Universitària: Estació Ildefons Cerdà

l) UPC, 2005 Problemática entre els 20-26 m en la estació de Foc Cisell

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n) 2005-2006 Línia 9 del fmb. tram 2n. Estació Motors

9-St Boi Project

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I.1.2. Onshore geological analysis

Table I.2: Geological analysis of the Llobregat delta cores

CORE	DEPTH (m)	Foraminifera	Calcareous Nannofossils	DATING		X-Ray	Petrographic slides	RESULTS
				Radiocarbon	Aspartic acid racemization			
Airport	48.92							Chapter 3
	48.98							Chapter 3
	49.06							Chapter 3
	49.11							Chapter 3
	54.86							Chapter 3
	55.5							Annex II
	60.9							Chapter 3, Annex II
	63.18							Chapter 3
	65.1							Annex II
	65.68							Chapter 3
	71.8							Chapter 3, Annex II
	78.6							Chapter 3, Annex II
	88.1							Annex II
	99.1							Chapter 3
	99.7							Annex II
	103.5							Chapter 3
	105.2							Chapter 3, Annex II
	109.6							
	112.78							Annex II
	116.1							
	118.9							Chapter 3
	119.5							
	120.47							Annex II
121.8								
123.6								
126.36							Chapter 3, Annex II	
132.7							Annex II	
135.45								
Depuradora	S1 Cerda	29						No fauna
	3	4.20						
	SP3	9.6						
	3pz7	17.7						
	11dx	28.95						Chapter 3
	12d09	38.5						
	4 do4	51.8						
	1pz3	56.4						
FON	SZFONC-1	28.7						Chapter 3
	P2-BN-FON	42.3-42.5						Annex V
		13.27						Chapter 3
	P5-BN-FON	18						Chapter 3
		21.2						Chapter 3
		43						Annex V
		3						Annex V
		6						Annex V
		12						Annex V
		13						Annex V
		15						Annex V
		18						Annex V
		20						Annex V
		21						Annex V
		24						Annex V
		27						Annex V
		29.5						Annex V
		31						Annex V
		35						Annex V
		38						Annex V
		42						Annex V
		44.5						Annex V
		48						Annex V
		48.5-48.6						Annex V
		51						Annex V
		54						Annex V
		57.5						Annex V
		58-58.1						Annex V
		60						Annex V
		62.5						Annex V
		64						Annex V
		64.5-64.58						Annex V
	FOC	S3	28.4					
		38.3						Annex V
FOC -C1		7.7						Chapter 3
		67.25						Annex V
		18						Chapter 3
		6.6						Chapter 3
SC FON-1		9.5						Chapter 3
		11.6						Chapter 3
	18.3						Chapter 3	
I2+580	31						Chapter 3	

Table I.2: continuation

CORE	DEPTH (m)	Foraminifera	Calcareous Nannofossils	DATING		X-Ray	Petrographic slides	RESULTS
				Radiocarbon	Aspartic acid racemization			
IN-1	12.6							Annex V
	13.6							Annex V
	19							Annex V
	20.6							Annex V
	20.8-21							Continental
	22							Annex V
	24.2							Annex V
	30.4-30.6							
	33-33.4							Continental
	33.4-33.6							
42.1							Annex V	
48.7							Annex V	
pk2+537	15.3						Chapter 3	
Polvorin	33.6						Continental	
	Outcrop						Annex V	
S-2+445	16.8-51						Annex V	
	24.2-24.3						Annex V	
S-C	26.75-26.8						Annex V	
	37.2						Continental	
S-H	19.4						Chapter 3	
	6.3						Annex V	
SIT-4	15.7-15.8						Annex V	
	21.4						Annex V	
	24.2						Annex V	
	28.6						Annex V	
SIT-16 bis2	15						Chapter 3	
	17						Chapter 3	
	21						Annex V	
	29.0						Annex V	
SLD-10	7.7							
	18.8							
	19.5							
	23						Annex V	
	35.2							
	44.7							
	45.2							
SLD-11	43.4							
	43.8							
	43.9						Continental gasteropoda	
	45.6							
	49.9							
SOGIT-15	45.35						Chapter 3	
	47.80						Chapter 3	
SPZ-4	53.6						Continental	
	47.8						Chapter 3	
	48.6						Chapter 3	
	49.2							
	49.63						Chapter 3	
	50.0							
	50.8						Chapter 3	
	51.59							
	51.18							
	52							
	52.44						Chapter 3	
SPZ-16	52.8							
	58.4							
SRA-8	63.8							
	68.2							
SRB-2	50.3						Chapter 3	
	22.4						Chapter 3	
SRB-9	35.5						Chapter 3	
	38.9-39							
SRB-14	18.2						Chapter 3	
	13.6-13.68						Annex V	
	14.8-14.86						Annex V	
	25.45						Annex V	
	30.4-30.5						Annex V	
	35.3-35.35						Annex V	
	50.9-51						Annex V	
	1						Annex V	
	2.5						Annex V	
	3.5						Annex V	
7						Annex V		
9						Annex V		
13						Annex V		
19						Annex V		
22						Annex V		
25						Annex V		
28						Annex V		
31						Annex V		
33						Annex V		
36						Annex V		
36.5-36.6						Annex V		
38						Annex V		
38.85-38.9						Annex V		
39						Annex V		
43						Annex V		
43.65-43.7						Annex V		
44.9						Annex V		
46						Annex V		
50						Annex V		
51.9						Annex V		
52						Annex V		
52.6-52.8						Annex V		
52.9-52.95						Annex V		
54						Annex V		

LABORATORIES

Laboratories used in the geological analysis:

Foraminiferal analysis

Juan Usera, Departament of Geology, Faculty of Biology, University of Valencia (Spain)

Nannofossil analysis

Mário Cachão, Nannolab in Science faculty of University of Lisbon (Portugal)

Radiocarbon dating

Beta Analytic Inc., Florida (USA)

Aspartic acid racemization dating

Biomolecular Stratigraphy Laboratory of Madrid, Universidad Politécnica de Madrid,
(Spain)

X- Ray

Centre de Géosciences de l'École Nationale Supérieure des Mines de Paris (France)

Petrographic Slides

- Laboratori de làmines primes. Facultat de Geologia, Universitat de Barcelona (Spain)
- Departament of Geology, Universitat Autònoma de Barcelona, Bellaterra (Spain)



Figure I.1: Location map of cores from the Llobregat delta plain.

I. 2. OFFSHORE DATA

Table I.3: Monochannel Seismic Profile used in this thesis

Profile name	Surfboom	Geopulse	Interpretation
130-131			Annex IV
131-132	x		Chapters 3 and 4, Annex IV
132-133			Annex IV
4-5			Annex IV
10-11			Annex IV
14-15			Annex IV
164-165			Chapter 3, Annex IV
163A-164			Annex IV
P75			Annex IV
108		x	Annex IV
111		x	Annex IV
114		x	Chapter 3, Annex IV
118		x	Annex IV
120		x	Chapter 3, Annex IV

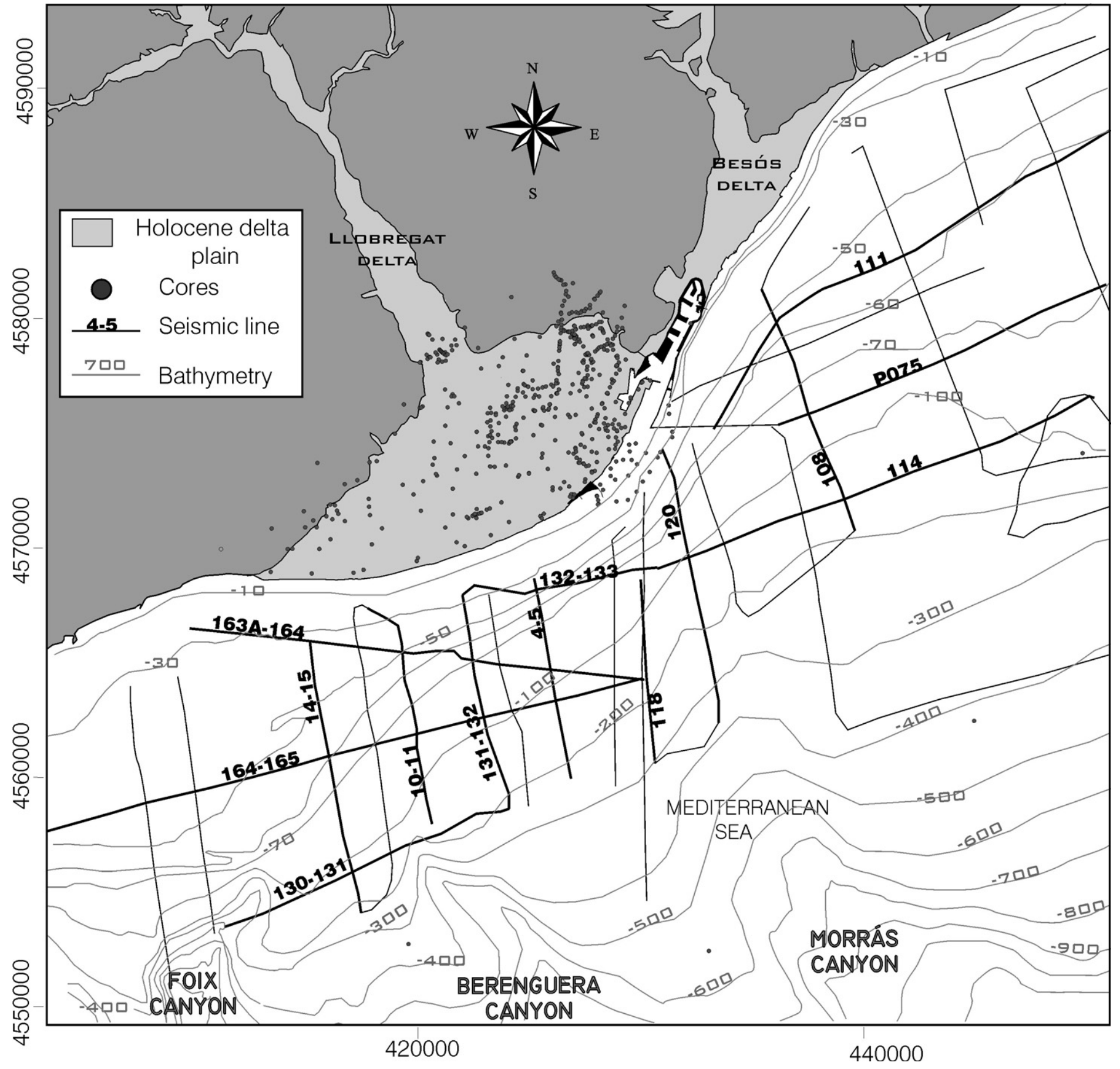


Fig I.3: Location of offshore seismic profiles

Appendix II

Nannofossil analysis

Methodology

A set of 22 samples from Pleistocene sediments were prepared for calcareous nannofossil identification (Fig. II.1). All these samples came from the Airport core foundations. The calcareous nannofossil analyses were carried out at the Nannolab of the Geological Center of the University of Lisbon (Portugal). Taxonomic determinations of calcareous nannofossils were performed on permanently mounted smear slides with a polarizing microscope (Leitz ORTHOLUX II POL-BK) at x1250 magnification. Rippled smear slides were used to obtain gradients of nannolith concentrations. Small portions of sediment were rippled by spreading (moderate friction with a toothpick) directly onto cover glass, and then mounted with synthetic balsam cement. This allows us to use the same slides to search for rare index species and to characterize the overall assemblages scanning from high to low concentration bands of the rippled smear slide. Taxonomic determinations followed Bown (1998).

Results- Calcareous Nannofossil identification

Micropalaeontological analysis of the Airport core revealed poor associations of calcareous nannoflora, which could reflect diagenetic recrystallization/dissolution processes (Table II.1). The occurrence of *Braarudosphaera bigelowii* together with the absence of *Discoaster* reflects unfavorable depositional conditions such as those provided by relatively shallow marine environments. The majority of nannoliths belong to the Upper Cretaceous and Paleogene (Table II.1), which indicates important erosion and reworking processes related to abundant sediment supply from emerged areas.

From a biostratigraphic point of view, the rare presence of *Sphenolithus* spp. (mostly remobilized) together with the occurrence of *Gephyrocapsa* spp. associated with *Pseudoemiliana ovata*, *Pseudoemiliana lacunosa* and *Helicosphaera sellii* (particularly at the bottom of the core) suggests a possible Middle Pliocene (Piacenzian) to Upper Pliocene (Gelasian) age. The absence of *Discoaster* in the samples does not allow us to determine this age interval with more precision.

Table II. 1: Calcareous nannofossil identification from the Airport core. 1) remobilization 2) recrystallization 3) dissolution 4) well preserved 5) poor nannolith density.

NANOFOSSILS	AGE	Airport																		
		55.5	60.9	65.1	71.8	78.64	88.1	99.7	105.22	109.6	112.78	118.1	119.5	120.47	121.8	123.6	126.3	123.36	132.7	135.45
		QUATERNARY								PLIOCENE										
<i>Braarudosphaera bigelowii</i>		x		x	x	x				x		x	x			x				
<i>Calcidiscus leptoporus</i>											x					x			x	x
<i>Chiasmolithus altus</i> ?	Oligocene																			x?
<i>Ciclagelosphaera</i> sp.	Upper Cretaceous									x										
<i>Ciclycargolithus floridanus</i>		x	x	x	x	x	x			x	x	x				x-2			x	
<i>Coccolithus formosus</i>	Lower Eocene – Lower Oligocene				x	x														
<i>Coccolithus miopelagicus</i>				x	x					x			x							x
<i>Coccolithus pelagicus</i>		x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x
<i>Cribrosphaerella ehrenbergii</i>	Upper Cretaceous											x	x	x				x	x	x
<i>Cribrosphaerella</i> sp.	Upper Cretaceous																	x		
<i>Cyclicargolithus abisectus</i>	Paleogene									x										
<i>Dictyococites antarcticus</i>		x		x	x	x	x	x	x		x	x	x	x	x	x	x			x
<i>Dictyococites productus</i>		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x			
<i>Discoaster</i> sp.				x-2	x-2								x-2							
<i>Discoaster kuupperi</i>	Eocene																			x-2
<i>Discoaster mohleri</i>	Paleocene													x						
<i>Discoaster saipanensis</i> ?	Eocene	x?																		
<i>Eiffelithus eximius</i> ?	Upper Cretaceous													x?						
<i>Eiffelithus gorkae</i>	Upper cretaceous																			x
<i>Eiffelithus parallelus</i>	Upper cretaceous																			x
<i>Eiffelithus turrisseiffelii</i>	Upper cretaceous																			x
<i>Ericsonia</i> sp.	Paleogene				x					x										
<i>Gephyrocapsa ericsonii-aperta</i>										x				x	x	x				x
<i>Gephyrocapsa magerelli-muellerae</i>														x	x	x	x			x
<i>Helicosphaera carteri</i>					x	x	x		x											x
<i>Helicosphaera intermedia</i>										x										x
<i>Helicosphaera sellii</i>										x				x	x	x				x
<i>Holodiscolithus macroporus</i>																x				
<i>Micrantholithus</i> sp.	Paleogene									x										
<i>Micrantholithus hoschulzii</i>	Berriasian-Aptian					x														
<i>Micrantholithus obtusus</i>					x															
<i>Micrantholithus bassiniensis</i>	Oligocene				x(sf)			x				x(sf)								
<i>Micula staurophora</i>	Upper Cretaceous																			x
<i>Nannoconus steinmannii</i>	Lower Cretaceous													x						
<i>Neocrepidolithus watkinsii</i> ?	Upper Cretaceous													x?						
<i>Pema stradneri</i>	Middle Eocene																			x
<i>Pontosphaera multipora</i>																				
<i>Pontosphaera</i> sp.										x										x
<i>Prediscosphaera ponticulata</i>	Upper Cretaceous																			x
<i>Pseudoemiliania lacunosa</i>				x		x														x
<i>Pseudoemiliania ovata</i>																				x
<i>Retecapsodeae (Bipodorhabdulu)</i>	Upper Cretaceous																			
<i>Retecapsa</i> sp.	Cretaceous			x																x
<i>Reticulofenestra bisecta</i>	Eocene													x						
<i>Reticulofenestra haqii-minutula</i>		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Reticulofenestra minuta</i>		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Reticulofenestra pseudoubilicus</i>		x		x	x															x
<i>Sphenolithus abies</i>					x	x				x										
<i>Sphenolithus heteromorphus</i>				x-1					x-1											
<i>Sphenolithus moriformis</i>					x	x								x						
<i>Sphenolithus cf. Obtusus</i>	Eocene													x						
<i>Sphenolithus</i> sp.		x-2		x-2										x-2	x-2					x-2
<i>Staurolithus flavus</i>	Upper Cretaceous																			x
<i>Syracosphaera</i> sp.						x		x												
<i>Watznaeria bernesae</i>	Cretaceous		x	x										x	x	x	x	x	x	x
<i>Watznaeria biporta</i>	Cretaceous													x	x					x
<i>Watznaeria britannica</i>	Cretaceous		x																	x
<i>Watznaeria ovata</i>																				x
<i>Watznaeria</i> sp.	Cretaceous																			
<i>Zeugrhabdotus xenotus</i>	Cretaceous																			x
OBSERVATIONS							2	2				2				4,5	4		2,3,5	

Reference

De Kaenel, E., W. G. Siesser, et al. (1999). "Pleistocene calcareous nannofossil biostratigraphy and the western mediterranean sapropels, sites 974 to 977 and 9791." Proceedings of the Ocean Drilling Program. Scientific results Ocean Drilling Program 161: 159-183.