CORE ANALYSIS REPORT

FOR

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

EXBRY - 1

HENDRY COUNTY, FLORIDA



**PETROLEUM SERVICES** 

#### CORE ANALYSIS REPORT

FOR

#### SOUTH FLORIDA WATER MANAGEMENT DISTRICT

EXBRY - 1

HENDRY COUNTY, FLORIDA

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom; and for whose exclusive and confidential use; this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories (all errors and omissions excepted); but Core Laboratories and its officers and employees, assume no responsibility and make no varranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other erroral well or formation in connection with which such report is used or relied upon.



Petroleum Services Division

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July 7, 2004

SOUTH FLORIDA WATER MANAGEMENT DISTRICT P.O. Box 24680 West Palm Beach, Florida 33416-4680

File No.: 57181-18707

Subject:

Core Analysis

EXBRY-1 & EXPM-1 Wells Hendry County, Florida

#### Gentlemen:

The subject well was cored using diamond coring equipment and coring fluid to obtain 4 inch to 2 5/8 inch diameter cores from 555 to 1354 feet from the Tertiary Limestone formation.

Core analysis data is presented in tabular and graphical form for your convenience. A porosity vs. permeability plot was prepared for statistical evaluation. Core analysis data is contained on a 3 1/2 inch computer diskette.

We trust these data will be useful in the evaluation of your property and thank you for the opportunity of serving you.

> Very truly yours, CORE LABORATORIES

John Sebian

Laboratory Supervisor

JS/ym



SOUTH FLORIDA WATER MANAGEMENT DISTRICT EXBRY-1 & EXPM-1 Wells File No. 57181-18707 Procedural Page

The cores were transported to Midland by Core Laboratories in Houston, Texas personnel.

Core analysis was made on selected intervals requested on full diameter samples. Sample number 15 was plugged for permeability measurements (EXPM-1 Well).

Fluid removal was achieved using convection oven drying method.

No saturation data was requested.

Full diameter porosity was determined by direct pore volume measurement using Boyle's law helium expansion. Bulk volume was measured by Archimedes Principle. Grain density was calculated from dry weight, bulk volume and pore volume measurements.

In addition, plug direct grain volume measurement was made using Boyle's law helium expansion. Bulk volume was measured by Archimedes Prínciple on samples after cleaning. Porosity was calculated using bulk volume and grain volume measurements.

Steady State Air Permeability was measured in two horizontal directions and vertically while the core was confined in a Hassler rubber sleeve. Please note sample number 15 was plugged for permeability measurement (EXPM-1 Well).

The core was returned to Core Laboratories in Houston, Texas upon completion of analysis on July 1, 2004.

Company : SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Well : EXBRY - 1

Location :

Co, State: HENDRY COUNTY, FLORIDA

Field

Formation :

Coring Fluid:

Elevation :

File No.: 57181-18707

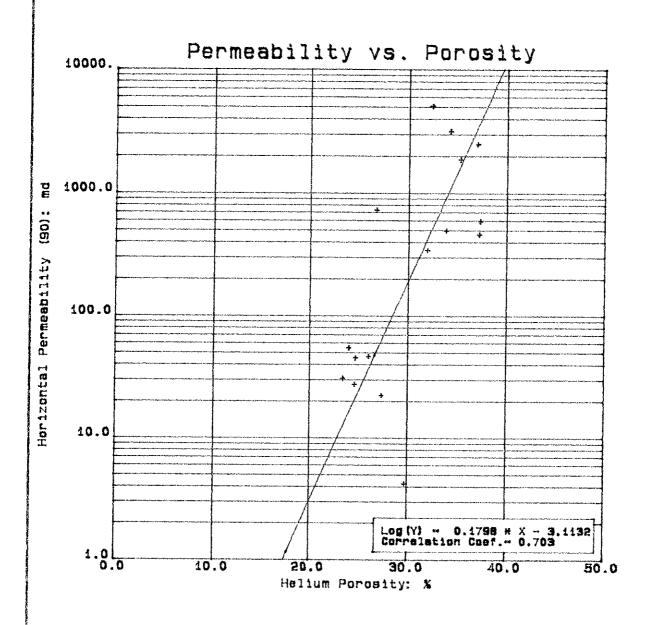
Date : 7-1-04

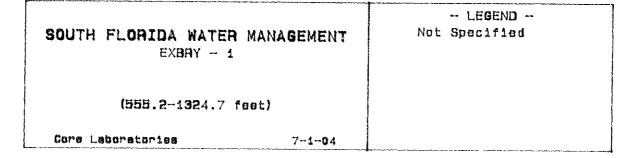
API No. :

Analysts: SEBIAN

### CORE ANALYSIS RESULTS

SAMPLE	DEPTH	PERMEABILITY			DODOCTTV	ODATN		
SAMPLE NUMBER	₩ ( ) [ ]	(MAXIMUM) Kair	(90 DEG) Kair	(VERTICAL) Kair	POROSITY (HELIUM)	GRAIN DENSITY	DESCRIPTION	
	ft	md	mď	mď	%	gm/cc		
				EXBRY -	1			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	555.9- 56.3 555.2- 55.5 562.0- 62.7 903.3- 03.9 901.6- 01.9 905.4- 05.9 906.8- 07.6 910.3- 10.8 908.7- 09.2 911.1- 11.8 1305.0- 05.4 1309.0- 09.7 1307.6- 08.7 1322.0- 22.7 1323.6- 24.0 1324.4- 24.7	437. 679. 28.7 4720. 2852. 4794. 488. 1990. 5154. 1070. 4.25 56.0 48.1 28.9 39.5 73.4	339. 587. 22.1 3145. 2470. 718. 455. 1861. 5044. 489. 4.18 54.2 46.0 27.1 30.5 44.8	193. 399. 10.3 2070. 998. 1809. 243. 819. 60.8 297. 4.29 9.37 19.9 11.3 8.69 10.3	31.9 37.3 27.3 34.2 37.0 26.7 37.2 35.2 32.3 33.8 29.7 24.0 26.0 24.6 23.4 24.7	2.71 2.70 2.69 2.71 2.70 2.71 2.71 2.71 2.71 2.74 2.79 2.79 2.79 2.76	Lim, foss, moldic, chalk Lim, foss, moldic, chalk Lim, foss, sli moldic, chalk Lim, foss, moldic Lim, foss, moldic Lim, foss, moldic Lim, foss, sli moldic, chalk Lim, foss, sli moldic, chalk Lim, foss, sli moldic, chalk Lim, foss, moldic, chalk Lim, foss, sli moldic, chalk Lim, foss, vf xln dol Dol, foss frag limy, vf xln dol Dol, foss frag limy, vf xln dol Lim, foss, vf xln dol	





Company : SOUTH FLORIDA WATER MANAGEMENT DISTRICT EXBRY - 1

Field Formation :

File No.: 57181-18707

Date : 7-1-04

TABLE I

### SUMMARY OF CORE DATA

ZONE:		ZONE:		PERMEABILITY:		
Identification NOT	SPECIFIED	Number of Samples	16			
Top Depth	555.2 ft	Thickness Represented -	8.9 ft	Flow Capacity	7608.0	
Bottom Depth	1324.7 ft			Arithmetic Average	855.	md - i
Number of Samples	16	POROSITY:		Geometric Average	186.	md
				Harmonic Average	41.2	md
DATA TYPE:		Storage Capacity	266,5 φ-ft	Minimum		md
	(HELIUM)	Arithmetic Average	29.9 %	Maximum	5044.	m d
Permeability (90	DEG) Kair	Minimum	23.4 %	Median	397.	md
		Maximum	37.3 %	Standard Dev. (Geom)	+n 923	
CUTOFFS:		Median	30.8 %	, , , , , , , , , , , , , , , , , , , ,	1, 10	HIG
Porosity (Minimum)	0.0 %	Standard Deviation	±5.1 %	HETEROGENEITY (Permeabili	tv)·	
Porosity (Maximum)	100.0 %		•	(, 0, 1, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,	· / / ·	
Permeability (Minimum)	0.0100 md	GRAIN DENSITY:		Dykstra-Parsons Var	0.899	
Permeability (Maximum)	10000, md			Lorenz Coefficient	0.691	
Water Saturation (Maximum)		Arithmetic Average	2.73 gm/cc	7-1 7-1	0.051	
Oil Saturation (Minimum) -		Minimum	2.68 gm/cc	AVERAGE SATURATIONS (Pore	Volume):	
Grain Density (Minimum)	2.00 gm/cc	Maximum	2.80 gm/cc	77 - 17 - 17 - 17 - 17 - 17 - 17 - 17 -	vulume).	
Grain Density (Maximum)	3.00 gm/cc	Median	2.71 gm/cc	0i1		
Lithology Excluded	NONE	Standard Deviation	±0.04 gm/cc	Water		

#### CORE ANALYSIS REPORT

FOR

#### SOUTH FLORIDA WATER MANAGEMENT DISTRICT

EXPM - 1

HENDRY COUNTY, FLORIDA

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Company : SOUTH FLORIDA WATER MANAGEMENT DISTRICT Well

: EXPM - 1

Location : Co, State: HENDRY COUNTY, FLORIDA Field Formation

Coring Fluid : Elevation :

File No.: 57181-18707

Date : 7-1-04

API No. :

Analysts: SEBIAN

### CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH	PERMEABILITY		DODOSITY CDATA		DEGGETATION	
NUMBER		(MAXIMUM) Kair	(90 DEG)	(VERTICAL)	POROSITY (HELIUM)	GRAIN DENSITY	DESCRIPTION
	<u>ft</u>	mď	`Kair´ md	`Kair' md	%	gm/cc	
				EXPM	- 1	<del></del>	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	916.3- 16.9 917.7- 17.7 920.0- 20.4 925.7- 26.2 927.9- 28.3 931.3- 31.7 932.2- 32.8 934.0- 34.4 1056.4- 56.8 1057.6- 58.1 1059.7- 60.1 1060.3- 60.7 1064.0- 64.3 1065.4- 65.8 1350.5- 50.9 1352.7- 53.1 1354.0- 54.4 637.4- 37.8 638.7- 39.3 640.2- 41.2 641.2- 42.0 642.0- 42.9 643.9- 44.4 644.4- 44.8	3652. 499. 115. 228. 693. 33.9 302. 4.34 1557. 1052. 124. 272. 3182. 1337. 579. 251. 617. 199. 3010. 0.05 3.18 0.86 0.44	3089. 469. 115. 228. 499. 31.7 208. 3.84 1397. 989. 81.3 258. 2175. 1313. 382. 384. 206. 320. 10.0 204. <.01 2.70 0.75 0.44	1589. 361. 76.6 228. 189. 3.12 5.89 8.98 284. 286. 19.1 36.1 16.2 305. 437. 16.7 26.4 25.9 2.03 <.01 <.01 <.01 0.59	37.1 46.7 41.6 41.6 423.0 45.7 40.1 40.1 40.1 40.1 40.1 40.1 40.1 40.1	2.71 2.70 2.70 2.71 2.70 2.72 2.70 2.70 2.71 2.72 2.68 2.65 2.68 2.65 2.46 2.48 2.60 2.59	Lim, foss, sli moldic, chalk Lim, foss, chalk Lim, foss, chalk Lim, foss, chalk Lim, foss, sli chalk Lim, foss, rootlet, chalk Lim, foss, sli chalk Lim, foss, sli chalk Lim, foss, chalk, sli kerogen Lim, foss, ool Lim, foss, ool Lim, foss, ool Lim, foss, chalk, sli kerogen Lim, foss, chalk Lim

Company : SOUTH FLORIDA WATER MANAGEMENT DISTRICT Well : EXPM - 1

Field

Formation :

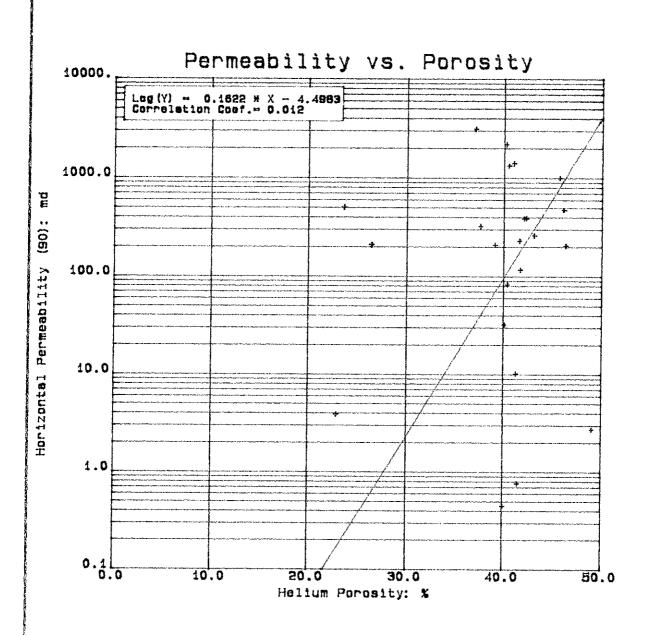
File No.: 57181-18707

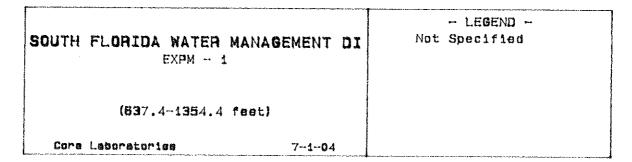
Date : 7-1-04

CORE ANALYSIS RESULTS

SAMPLE	DEPTH	PERMEABILITY			SOBORTE		
NUMBĒR	<i>5</i>	(MAXIMUM) Kair	(90 DEG)	(VERTICAL) Kair	POROSITY (HELIUM)	GRAIN DENSITY	DESCRIPTION
	ft	md	Kair md	md	%	gm/cc	

<sup>\*</sup> INDICATES PLUG ANALYSIS





Company : SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Well : EXPM - 1

Field : Formation :

File No.: 57181-18707

Date : 7-1-04

TABLE I

### SUMMARY OF CORE DATA

ZONE:		ZONE:				
Identification NOT	SPECIFIED			PERMEABILITY:		
Top Depth	637.4 ft	Number of Samples Thickness Represented -	23			
Bottom Depth	1354.4 ft	inicksess Represented -	11.7 ft	Flow Capacity	5917.3 md-f	
Number of Samples	24	POROSITY:		Arithmetic Average Geometric Average	506, md 110, md	
DATA TYPE:		Storage Capacity	170 7	Harmonic Average	5.56 md	
Porosity	(HELIUM)	Arithmetic Average	473.7 φ-ft 40.5 %	Minimum	0.44 md	
Permeability (90		Minimum	22,9 %	Maximum	3089. md	
		Maximum	49.1 %	Median	228. md +1 080	
CUTOFFS:		Median	41.0 %	Standard Dev. (Geom)	$K \cdot 10^{\pm 1.080}$ md	
Porosity (Minimum)	0.0 %	Standard Deviation	±8.7 %	HETEROCENETTY /B		
Porosity (Maximum)	100.0 %		20.7 %	HETEROGENEITY (Permeabili	ty):	
Permeability (Minimum)	0.0100 md	GRAIN DENSITY:		Dules was a		
Permeability (Maximum)	10000, md			Dykstra-Parsons Var	0.718	
Water Saturation (Maximum)		Arithmetic Average	2.65 gm/ce	Lorenz Coefficient	0.673	
Oil Saturation (Minimum) -		Minimum	2.46 gm/cc	AVERACE CATURATIONS (5		
Grain Density (Minimum)	2.00 gm/cc	Maximum	2.73 gm/cc	AVERAGE SATURATIONS (Pore	Volume):	
Grain Density (Maximum)	3.00 gm/cc	Median	2.70 gm/cc	0il		
Lithology Excluded	NONE	Standard Deviation	±0.08 gm/cc	Water		



### LITHOLOGICAL ABBREVIATIONS

Anhy, anhy Anhydrite (-ic) Ark, ark arkos (-ic) bnd band (-ed) brec breccia Calc, calc calcite (-ic) carb carbonaceous crs gr course grained Chk, Chky chalk (-y) Cht, cht chert (-y) Cgl, cgl conglomerate (-ic) crs xln coursely crystalline dns dense Dol, dol dolomite (-ic) Frac randomly oriented fractures frac slightly fractured f gr fine grained foss fossil (-iferous) f xln finely crystalline Gil, gil gilsonite Glauc, clauc glauconite (-itic) Grt granite Gyp, gyp gypsum (-iferous) hor frac perdominantly horizontally fractured incl inclusion (-ded) intbd lamina (-tions,-ated)	Lim, lim limestone  med gr medium grain  Mtrx matrix  NA interval not analyzed  Nod, nod nodules (-ar)  Ool, ool piso pisolite (-itic)  pp pin-point (porosity)  Pyr, pyr pyrite (-itized, itic)  Sd, sdy sand (-y)  Shr solid hydrocarbon residue  sli/ slightly  Sltstn, slty siltstone, silty  styl stylolite (-itic)  suc sucrosic  Su, su sulphur, sulphurous  TBFA TOO BROKEN FOR ANALYSIS  Trip, trip tripolitic  V/ very  vert frac perdominantly vertically fractured  vug  vuggy  xbd crossbedded  xln medium crystalline  xtl crystal
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THE FIRST WORD IN THE DESCIPTION COLUMN OF THE CORE ANALYSIS REPORT DESCIBES THE ROCK TYPE. FOLLOWING ARE ROCK MODIFIERS IN DECREASING ABUNDANCE AND MISCELLANEOUS DESCRIPTIVE TERMS.