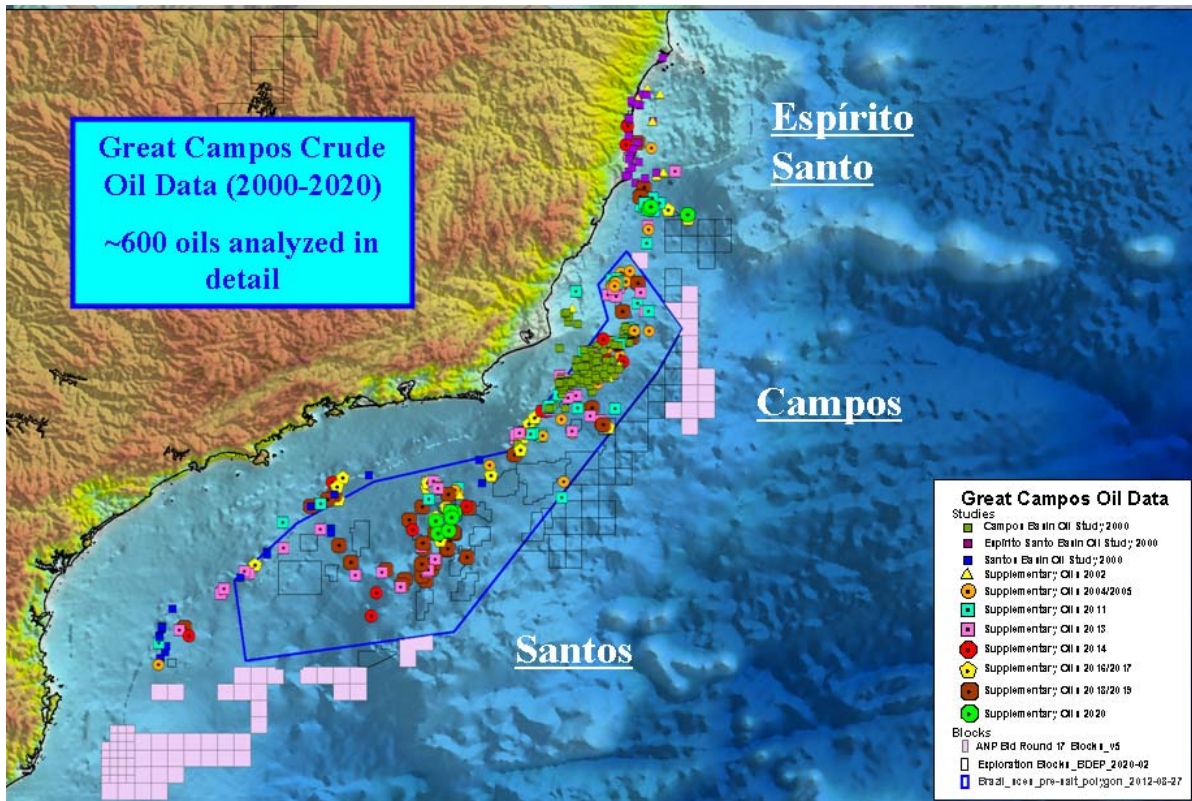




REGIONAL GEOCHEMICAL EVALUATION OF CRUDE OILS FROM THE GREATER CAMPOS BASIN, SOUTHEAST BRAZIL

2020 SUPPLEMENTARY DATA



A New Study from

GEOCHEMICAL SOLUTIONS INTERNATIONAL, INC.

2020

Prospectus

Executive Summary

In its continuing effort to provide a more thorough understanding of the various Petroleum Systems contributing to reserves in Brazil, **GEOCHEMICAL SOLUTIONS INTERNATIONAL INC. (GSI)** has completed a study of supplementary crude oils to complement previous, basin-specific crude oil studies conducted in the Campos, Santos and Espírito Santo sub-basins.

GSI obtained and analyzed ten (10) additional oils from nine (9) wells located in this important area. Information for these additional wells is provided below and locations are shown in green on the accompanying map. This is the seventh supplementary data package increasing coverage to five hundred ninety-three (593) crude oils from four hundred forty-five wells (445).

These new oil data have also been integrated within the multi-disciplinary **MARIMBA** (Margins of the Atlantic Region, Integrated Multi-Disciplinary Basin Analysis) project conducted jointly with Dickson International Geosciences (www.digsgeo.com). **MARIMBA** continues to be developed as a unique combination exploration and acreage evaluation tool.

WELL NAME	ALT WELL	OPERADOR	BASIN	FIELD	STATE	DEPTH	WATER	CADASTRO	LATITUDE	LONGITUDE	DATUM
1-BRSA-1143D-ESS	1ESS216DESS	Petrobras	Espirito Santo		ES	6485	2021	34271026733	-20.1885030	-38.9059920	SIRGAS2000
3-BRSA-1211-ESS	3GLF35AESS	Petrobras	Espirito Santo	GOLFINHO	ES	4785.5	1566	34271027326	-20.1038590	-39.4845920	SIRGAS2000
4-BRSA-1001-ESS	4GLF31ESS	Petrobras	Espirito Santo	GOLFINHO	ES	5503	1513	34271025805	-20.0694120	-39.4643830	SIRGAS2000
1-BRSA-1116-RJS	1RJS704RJS	Petrobras	Santos	ITAPU	RJ	5992	2009	74316026513	-24.8017150	-42.7038090	SIRGAS2000
3-BRSA-1132-RJS	1RJS706RJS	Petrobras	Santos	BERBIGAO	RJ	5906	2198	74316026640	-24.9908120	-42.6730610	SIRGAS2001
3-BRSA-1184-RJS	3RJS723RJS	Petrobras	Santos	BÜZIOS	RJ	5899	2015	74316027143	-24.6653330	-42.4266940	SIRGAS2000
3-BRSA-1243-RJS	3RJS729RJS	Petrobras	Santos	OESTE DE ATAPU	RJ	5852	2262	74316027583	-24.9481200	-42.5124540	SIRGAS2000
9-BRSA-1191-RJS	9RJS708RJS	Petrobras	Santos	BÜZIOS	RJ	5792	2013	74316027198	-24.6614360	-42.4795040	SIRGAS2000
9-BRSA-1197-RJS	9RJS716RJS	Petrobras	Santos	BÜZIOS	RJ	5756	2024	74316027235	-24.7487860	-42.4687410	SIRGAS2000

Each sample has been characterized through the use of a detailed analytical program including API Gravity, weight percent sulfur, oil composition (% saturate and aromatic hydrocarbons and polar compounds), stable carbon isotopes (C15+ saturate and aromatic hydrocarbons), whole oil deuterium isotopes, quantitative whole oil gas chromatography (GC), and quantitative biomarker analysis of saturate and aromatic fractions by gas chromatography/mass spectrometry (GC/MS). These results have been interpreted within the previously established geochemical and geological framework through the use of multivariate statistical analyses.

Deliverables include a detailed interpretive report. All geochemical data are provided in digital format in a database contained on CD, which includes a proprietary data browser to facilitate access.

For additional information concerning future supplementary data packages please contact:

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