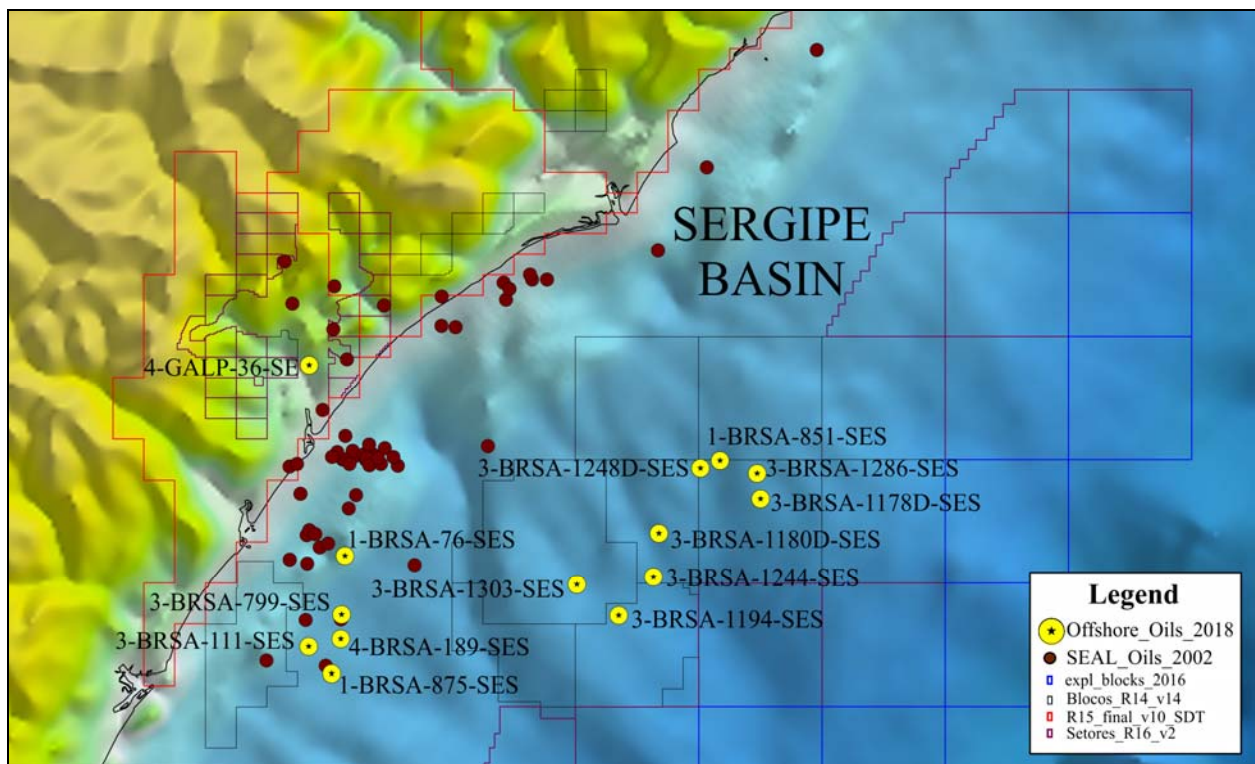


GEOCHEMICAL CHARACTERIZATION OF CRUDE OILS FROM THE SERGIPE- ALAGOAS BASIN



**A Prospectus from
GEOCHEMICAL SOLUTIONS INTERNATIONAL,
INC.**

2018

Executive Summary

Geochemical Solutions International Inc. (GSI) has conducted a crude oil study of the Sergipe-Alagoas basin, eastern Brazilian margin in order to provide a consistent and objective analysis of the petroleum systems active in this region.

The Sergipe-Alagoas Basin is situated along the northeastern region of Brazil and spans the states of Sergipe and Alagoas. The majority of the basin is situated offshore; the onshore portion comprises an area of approximately 13,000 square km. Recent light oil/condensate discoveries in the deepwater by Petrobras have resulted in renewed interest in this important area.

Oil geochemistry is a fundamental component of any regional exploration and production program. It can be used to determine the number of discrete sources in a basin and their respective stratigraphic and aerial distribution, source age, lithology, depositional environment (marine, non-marine, lacustrine) and thermal maturity.

Fifteen crude oil samples from fourteen wells mainly distributed in deepwater areas have been added to the existing set of sixty-eight (68) crude oils from sixty-one wells distributed throughout the study area. The new oils have been analyzed using state-of-the-art oil fingerprinting techniques to evaluate the major factors governing oil quality and quantity including: (1) source facies, (2) thermal maturity, (3) distance of migration from source to trap, (4) extent and timing of biodegradation, and (5) degree of oil mixing.

Well	Operator	Final Depth	Water Depth	Latitude	Longitude	Datum	Conclusion	Well #
1-BRSA-851-SES	Petrobras	6510	2321	-11.017396	-36.246078	SIRGAS2000	9/15/2011	90121024894
1-BRSA-875-SES	Petrobras	3501	1400	-11.433591	-36.994184	SIRGAS2000	12/22/2010	90121025095
1-BRSA-76-SES	Petrobras	0	30	-11.194948	-36.967236	SIRGAS2000	6/29/2001	90121019466
3-BRSA-111-SES	Petrobras	3262	551	-11.379314	-37.040905	SIRGAS2000	12/25/2001	90121019685
3-BRSA-1178D-SES	Petrobras	6261	2476	-11.079652	-36.124116	SIRGAS2000	10/19/2013	90121027048
3-BRSA-1180D-SES	Petrobras	5630	2432	-11.149555	-36.330561	SIRGAS2000	8/18/2013	90121027061
3-BRSA-1194-SES	Petrobras	5434	2803	-11.316446	-36.411977	SIRGAS2000	2/4/2014	90121027228
3-BRSA-1248D-SES	Petrobras	4914	2266	-11.002254	-36.206283	SIRGAS2000	10/26/2014	90121027630
3-BRSA-1286-SES	Petrobras	6064	2469	-11.027933	-36.131359	SIRGAS2000	4/2/2015	90121027916
3-BRSA-1303-SES	Petrobras	0	0	-11.253378	-36.496471	SIRGAS2000	9/1/2015	90121028150
3-BRSA-799-SES	Petrobras	3524	813	-11.314814	-36.973973	SIRGAS2000	5/7/2010	90121024477
3-BRSA-1244-SES	Petrobras	5528	2772	-11.237559	-36.341415	SIRGAS2000	8/29/2014	90121027587
4-BRSA-189-SES	Petrobras	3753	1150	-11.363733	-36.975761	SIRGAS2000	3/17/2003	90121020342
4-GALP-36-SE	Petrogal Bras	1062	0	-10.808101	-37.039966	SIRGAS2000	10/27/2010	90120025077

Deliverables include a brief synthesis of interpreted results including maps showing distributions of key geochemical properties and location of oil families. Results of the study are presented in both analytical and interpretive formats to insure that all findings are accessible to explorationists and research personnel. All geochemical data will be provided in hard copy and in digital format in a database contained on CD, which includes a proprietary data browser to facilitate access. For additional information regarding this study please contact:

Geochemical Solutions International
Telephone: +1 281 586 0661
Email: info@geochemsol.com

GSI Brazil Office
Telephone: 55 21 2513 03 63
Email: info@geochemsol.com

