SUPPLEMENT TO

MANAGEMENT INFORMATION CIRCULAR

DATED AUGUST 27, 2018

September 11, 2018

Neither the TSX Venture Exchange Inc. nor any securities regulating authority has in any way passed upon the merits of the information contained in this supplement.

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GROWMAX RESOURCES CORP.
SUPPLEMENT TO MANAGEMENT INFORMATION CIRCULAR

This supplement (this "**Supplement**") to the management information circular dated August 27, 2018 (the "**Information Circular**") of GrowMax Resources Corp. ("**GrowMax**" or the "**Corporation**") supplements the Information Circular pursuant to which, among other things, the shareholders of GrowMax are being asked to consider and vote upon the proposed acquisition of PrimaSea Holdings Ltd. by GrowMax on the terms and conditions more particularly described in the Information Circular. Except as otherwise set forth in this Supplement, the terms and conditions previously set forth in the Information Circular continue to be applicable in all respects.

DEFINED TERMS

Except as otherwise defined in this Supplement, terms used in this Supplement have the meaning given to them in the Information Circular.

GENERAL INFORMATION

The information contained in this Supplement is provided as of September 11, 2018, unless indicated otherwise. No person has been authorized to give any information or make any representation in connection with matters to be considered at the Meeting other than those contained in this Supplement or the Information Circular and, if given or made, any such information or representation must not be relied upon as having been authorized by the Corporation or the management of the Corporation.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements contained in this Supplement constitute forward-looking statements. The use of any of the words "anticipate", "believe", "continue", "could", "estimate", "expect", "forecast", "guidance", "intend", "may", "plan", "predict", "project", "should", "target", "will" or similar expressions are intended to identify forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors that may cause actual results or events to differ materially from those anticipated in such forward-looking statements. GrowMax believes that the expectations reflected in those forward-looking statements are reasonable but no assurance can be given that these expectations will prove to be correct and such forward-looking statements included in this Supplement should not be unduly relied upon. These forward-looking statements speak only as of the date of this Supplement.

In particular, this Supplement may contain forward-looking statements pertaining to the following:

- the Acquisition and the ability to satisfy the conditions to, and to complete the, Acquisition;
- expectations as to the future operations of GrowMax after completion of the Acquisition;
- GrowMax's future development and growth prospects;
- lithothamnion production levels;
- capital expenditure programs;
- the quantity of extractable lithothamnion;
- supply and demand for production fertilizers, including natural fertilizers;

- expectations regarding the ability to raise capital and to increase lithothamnion extraction and production capacity, and the estimated lithothamnion through exploration and development;
- receipt of the requisite approvals for the matters to be acted upon at the Meeting; and
- treatment under governmental regulatory regimes.

Actual results could differ materially from those anticipated in these forward-looking statements as a result of (among other factors):

- the failure to realize the anticipated benefits of the Acquisition;
- the risks that the Acquisition will not receive all requisite Shareholder and TSXV approvals;
- the risks that other requisite approvals are not received;
- volatility in market prices for commodities, including lithothamnion;
- liabilities inherent in extraction operations;
- economic, political and social risks inherent in doing business in multiple jurisdictions, including in Brazil and Peru;
- the timing and amount of future production;
- domestic and international legislation;
- uncertainties associated with estimating lithothamnion;
- competition for, among other things, capital, acquisitions, undeveloped lands and skilled personnel;
- incorrect assessments of the value of acquisitions;
- geological, technical and processing problems;
- market position and future financial and/or operating performance;
- title disputes or claims;
- fluctuations in foreign exchange or interest-rates and stock market volatility; and
- the other factors discussed in the Information Circular under "*Appendix C- Information Concerning GrowMax after Completion of the Acquisition – Risk Factors*" and in this Supplement.

Undue reliance should not be placed on forward-looking statements, which are inherently uncertain, are based on estimates and assumptions, and are subject to known and unknown risks and uncertainties (both general and specific) that contribute to the possibility that the future events or circumstances contemplated by the forward-looking statements will not occur. There can be no assurance that the plans, intentions or expectations upon which forward-looking statements are based will in fact be realized. Actual results will differ, and the difference may be material and adverse. Forward-looking statements are provided for the purpose of providing information about current expectations of management and plans relating to the future. Reliance on such information may not be appropriate for other purposes, such as making investment or voting decisions.

Shareholders are cautioned that these factors and risks are difficult to predict and that the assumptions used in the preparation of such information, although considered reasonable at the time of preparation, may prove to be incorrect. Accordingly, Shareholders are cautioned that the actual results achieved will vary from the information provided herein and the variations may be material. Shareholders are also cautioned that the foregoing list of factors is not exhaustive. Consequently, there is no representation by GrowMax that actual results achieved wilt be the same in whole or in part as those set out in the forward-looking statements. Furthermore, the forward-looking statements contained in this Supplement are made as of the date of such

documents, and GrowMax does not undertake any obligation, except as required by applicable securities laws, to update publicly or to revise any of the included forward-looking statements, whether as a result of new information, future events or otherwise. The forward-looking statements contained in this Supplement are expressly qualified by this cautionary statement.

BACKGROUND TO THE SUPPLEMENT

Introduction

This Supplement has been prepared and filed in conjunction with the filing of an expert's report titled "Expert's Report on the Fertimar Lithothamnion Project, Bahia, Brazil" with an effective date of September 11, 2018 (the "**Expert's Report**") prepared by Hains Engineering Company Limited ("**Hains Engineering**"). The Expert's Report is not a technical report for purposes of NI 43-101 and could not be filed as such. A summary of the Expert's Report is included below in this Supplement, and the full Expert's Report has been filed at GrowMax's profile on SEDAR.

Background to the Acquisition

The following is an updated description of the chronology set out in the Information Circular;

- On December 11 and 12, 2017, the Board adopted a new strategic plan to look at strategic opportunities. A list of multiple potential targets was presented to the Board.

- From January 22 to 24, 2018, Stephen Keith (GrowMax's President and CEO) met with a PrimaSea Shareholder at "Fertilizer Latino Americano 2018 Sao Paulo". A subsequent meeting was held in Rio de Janeiro on April 6, 2018.

- On April 12, 2018, preliminary details on Fertimar were presented to the Board while analyzing another potential transaction.

- In April 2018, the PrimaSea Shareholders presented a term sheet for the Acquisition. Negotiations began on commercial terms.

- Upon determining that there was a reasonable prospect that GrowMax would seek to acquire PrimaSea, GrowMax sought to determine whether a project to extract lithothamnion would be considered a "mineral project" for purposes of National Instrument 43-101 Standards of Disclosure for Mineral Projects ("**NI 43-101**"). The definition is fact specific, and a substance either is or is not of the type described in the definition, such that answering the question involves the application of expert judgment. Where NI 43-101 applies, issuers are generally required to obtain an independent technical report (being a report prepared in accordance with NI 43-101 and Form 43-101F) from a "qualified person" (being an engineer or geoscientist that meets the educational, relevant experience and professional association standing criteria set out in NI 43-101) to support the scientific and technical information they disclose in respect of material mineral projects.

- Fertimar's project is considered to be, and licensed as, a mining project under Brazilian law. GrowMax was also advised that the nature of the lithothamnion to be extracted at Fertimar's project is such that the project would be a "mineral project" for purposes of NI

43-101. As a result, in seeking to comply with NI 43-101 (and related requirements of the TSXV), Hains Engineering was engaged on or about May 1, 2018 to undertake the site visit, investigations and other processes required to prepare an independent technical report on Fertimar's project, including an estimate of the extractable lithothamnion.

- On May 9, 2018 and May 10, 2018, Mr. Keith (GrowMax's President and CEO) and Mr. Wiggins (GrowMax's Chief Financial Officer) completed site visits to the project.

- On May 17 and 18, 2018, Don Hains, P.Geo., President of Hains Engineering, visited the project.

- On May 23, 2018, Mr. Keith and Mr. Wiggins provided a presentation to the Board of their preliminary views on the Acquisition.

- On May 23, 2018, the term sheet and potential deal rationale for the Acquisition were presented to the Board. Management was given the go ahead to negotiate a transaction and to carry out detailed due diligence.

- On or about May 28, 2018, PricewaterhouseCoopers Auditores Independentes, Brazil was engaged to audit the financial statements of Fertimar.

- On or about May 30, 2018, the Brazilian law firm Lobo de Rizzo Advogados was engaged.

- On June 12, 2018, the Board and management met with the PrimaSea Shareholders in Vancouver. The meeting included detailed market analysis and value discussions.

- On June 25, 2018, management presented an economic analysis and initial due diligence report to the Board. Preliminary views on deal metrics and economic analysis were presented by Bordeaux Capital.

- During the week of July 1, 2018 to July 8, 2018, a further site visit was done by Mr. Wiggins for detailed financial review.

- Mr. Hains completed his work and provided a draft of the Hains Engineering technical report in late July of 2018. The draft technical report was duly provided to the TSXV for review but, after consulting with staff of the British Columbia Securities Commission, the TSXV advised on July 27, 2018 that they did not believe that lithothamnion was a substance covered by the definition of "mineral project" in NI 43-101. As a result, the draft technical report could not be publicly filed.

- The draft technical report had been commissioned so that GrowMax could comply with the requirements of NI 43-101 and also as part of the due diligence evaluations of the proposed acquisition by GrowMax's management and directors, and GrowMax's financial advisor. Although (given the views of the TSXV and the British Columbia Securities Commission) the draft technical report was not required for regulatory purposes (since NI 43-101 did not apply), the draft technical report was still considered relevant for evaluation purposes.

- On August 9, 2018, the draft SPA, due diligence report and draft Hains Engineering technical report were discussed by the Board. Bordeaux Capital provided a presentation of their views on the Acquisition.

- On August 11, 2018, the Board approved the Acquisition (subject to final settlement of the SPA) and a loan to Fertimar for C$1.8 million (further discussed below at the "Interim Funding" section).

- Prior to GrowMax entering into the SPA, GrowMax and its financial advisor were provided a final report, which was still titled as a technical report, which included an estimate of the extractable lithothamnion at Fertimar's project. That estimate was the same as the estimate of extractable lithothamnion in the Expert's Report.

- On August 20, 2018, the parties finalized and executed the SPA. It was GrowMax's wish to disclose in its press release announcing the Acquisition whatever information with respect to the technical report the TSXV and the Investment Industry Regulatory Organization of Canada ("IIROC") would allow. Although Fertimar's project is an extraction project, the TSXV and IIROC did not want GrowMax to disclose that the technical report had been obtained or the estimate of extractable lithothamnion included in it. The TSXV's and IIROC's position was based on concerns that readers might assume that the technical report had been reviewed by the regulatory authorities under NI 43-101.

- As a result, GrowMax's press release announcing the Acquisition was only issued and disseminated on August 28, 2018, and neither the press release nor the Information Circular referred to the technical report or the estimate of extractable lithothamnion, but rather only disclosed that Fertimar was already economically extracting lithothamnion and commercially producing and selling its products, and that applying only current cost and product prices currently being received GrowMax believed that there is significant extractable lithothamnion which would allow for a significant life of project.

- As reflected above, GrowMax was actively considering and negotiating the proposed acquisition in May and June of this year. GrowMax delayed calling its annual meeting of the Shareholders to the end of September, the latest timing permitted, in order to be able to include the proposed acquisition as an item of special business and to avoid having to hold two Shareholder meetings in close succession. The filing and mailing of the Information Circular and related materials at the time reflected the latest timing for doing so without the requirement to start the entire meeting process again (selecting a new record date, etc.) and therefore not being able to hold the Meeting until November.

- On August 23, 2018, GrowMax determined that the Ontario Securities Commission (the "**OSC**") was its principal regulator. In the days immediately preceding GrowMax filing the Information Circular and mailing it to Shareholders, GrowMax's counsel had discussions with staff of the OSC ("**OSC Staff**"). OSC Staff confirmed that NI 43-101 did not apply to a lithothamnion project. The report was not a technical report for purposes of NI 43-101 and could not be filed as such.

- OSC Staff discussed with GrowMax's counsel that, in their view, an expert report was required to support certain of the disclosure in the Information Circular. GrowMax viewed the filing of an expert's report as desirable and worked with Hains Engineering to finalize

the Expert's Report. Those efforts have resulted in the filing of the Expert's Report, related consent and this Supplement.

- In light of OSC Staff's view of the need for the Expert's Report and other disclosure to support informed voting decisions and to comply with applicable securities law requirements, OSC Staff requested that GrowMax delay the filing and mailing of the Information Circular until the Expert's Report was settled and filed. GrowMax elected to proceed with filing and mailing of the Information Circular because it did not wish to delay the Meeting until November as described above. In addition, GrowMax committed to BullRun and Malhi to hold the Meeting on the established date after communicating a number of times with BullRun through their counsel regarding the validity of the requisition, which GrowMax did not recognize to be valid.

- On August 27, 2018, the Information Circular was approved by the GrowMax board and mailed to its Shareholders on August 28, 2018.

- On September 11, 2018, the final version of the Expert's Report was circulated to the board of GrowMax and Bordeaux Capital. Upon reception of the Expert's Report, Bordeaux Capital confirmed its fairness opinion and the board of GrowMax reaffirmed its recommendation that the Acquisition is in the best interest of the Shareholders and approved this Supplement.

Reconfirmation of Fairness Opinion

Bordeaux Capital has reviewed the Expert's Report (which, as noted above, includes the same estimate of extractable lithothamnion as was included in the technical report previously provided) and confirmed that no change is needed in the Bordeaux Opinion.

Reconfirmation of Recommendation of the Board of Directors

The Board has reviewed the Expert's Report and reconfirmed their unanimous determination that the proposed acquisition is in the best interests of the Corporation.

SUMMARY OF EXPERT'S REPORT

Introduction

The following is a summary of the Expert's Report. The full Expert's Report can be viewed at GrowMax's profile on SEDAR.

Brief Summary

- Volume and tonnage: the estimated tonnage available for extraction is 7.1 million tonnes. This estimate is based on a density of 1.2 tonnes/cubic metre, an extractable area of approximately 300 ha, a material thickness averaging approximately 1.2 m, and lithothamnion recovery factors ranging from 50% to 80%, dependent on the particular tenement.

- Available data: the Expert's Report is based on review and analysis of exploration data obtained by Fertimar in 2004/2005, including

- Bathymetry by sonar depth sounding;
- Reflection seismic surveys (96 line-km);
- Clamshell dredge sampling of seafloor sediment and analysis of composition and grain size; and
- Jet Probe drilling, 12 holes.

- Data verification: Hains Engineering has reviewed the data for completeness, accuracy and reasonableness and made such investigations as to satisfy himself that the historic data can be relied upon. Hains Engineering has undertaken independent but limited sampling of recovered raw material and processed material to confirm the chemical composition of the lithothamnion. However, Hains Engineering was unable to obtain independent samples of raw material from the sea floor as the vessel was in port.

- Expert's opinion on Fertimar data: Hains Engineering is of the opinion that the information provided by Fertimar is of very high quality, reliable and accurate having regard for all factors considered by Hains Engineering in the data review and that the data can be relied upon in developing reasonable estimates of extractable lithothamnion.

Reliance on Other Experts

The information, conclusions, opinions, and estimates contained in the Expert's Report are based on

- Information available to Hains Engineering at the time of preparation of the Expert's Report, and

- Assumptions, conditions, and qualifications as set forth in the Expert's Report.

For the purposes of the Expert's Report, Hains Engineering has relied on property ownership
information provided by Fertimar. Hains Engineering has verified exploration and extraction rights and tenement boundary data on the DNPM website but has not otherwise researched property title or mineral rights for the Fertimar tenements and expresses no opinion as to the ownership status of the properties.

Extraction and Processing Properties

Location

Fertimar's lithothamnion assets are held as five tenements located southwest and south of Salvador, Bahia, Brazil The company owns a 9.5 ha parcel of land located at Candeias, approximately 40 km north of Salvador on which is located a processing plant and offices. There is sufficient land available to accommodate the currently planned expansion in production, and land located immediately adjacent is available for purchase should requirements extend beyond those currently forecast.

Property Tenure

Fertimar holds its extraction rights as five tenements, each comprising approximately 1,000 ha. The tenements are separated into a northern and southern zone. The tenements are

fully registered with the DNPM as mining concessions (portaria de lavra) and Fertimar holds operating permits issued by the IBAMA (Licença de Instalação No. 566/2008 and Licença de Operação No. 1192/2013) over four of the tenements allowing for commercial production. The tenement approvals are valid for the life of the project provided all annual royalties are paid and required environmental and production reports are filed. Fertimar is in the process of applying for environmental approvals and an operating licence for the fifth tenement (870.351/2009).

The tenements are licensed for production under approvals received from IBAMA. The approvals are subject to filing of quarterly and annual environmental reports. All reports are current. The IBAMA approvals are due for renewal by 6 October 2019. Operating permits from IBAMA are renewable on 5 year terms provided all required reports have been filed.

Lithothamion production is subject to a 2% gross revenue royalty (CFEM) due the municipality of Candeias. There are no other royalties, back-in rights, payments or other encumbrances associated with the tenements or extraction activities.

Process Plant

Fertimar owns 9,500 m2 of industrial land (Cadastral registration number 6091) at Candeais, Bahia on which are located a raw material stockpile area, finished product warehouse, office space and the process plant. The municipal address of the plant site is Via Candeais, s/n Km 6 CIA Norte, Distrito Industrial de Candeias, Candeias, Bahia.

The current capacity of the process plant is approximately 24,000 tonnes per annum. There is sufficient room at the site to considerably expand the production capacity of the existing process plant and to expand the overall operation. The plant is serviced by line power, a natural gas line and municipal water and sewer services.

The process plant is currently equipped with an Alhstrom 3t/hr roller mill with air classifier, Eirich mixer and granulating disk, hammer mill, screening equipment, bag house and associated product silos and packaging lines for 25 kg sacs, 500 kg big bags and 1,000 kg big bags. Plans have been developed to add a second roller mill with 12 t/hr capacity to meet increased product demand. The current process plant building has sufficient room to handle the additional equipment required.

There is sufficient room at the current plant site to accommodate planned production to 120,000 tonnes per annum raw lithothamnion feed material and another expansion to 240,000 tonnes per annum raw feed. Expansion beyond 240,000 tonnes per annum raw feed processing can be accommodated by purchase of immediately adjacent land.

Accessibility, Climate, Local Resources, Infrastructure And Physiography

Accessibility

The permitted extraction is defined by the five concesssão de lavra (mining concessions) issued by the DNPM in 2012. These areas are located offshore southeast of Salvador, Bahia in the marine region facing the south coast of Itaparica Island, municipality of Vera Cruz (North Block) and south of Salvador in the marine region facing the coastal stretch between the mouth of the Jequiriça River and Ponta do Garcez (Southern Block). The areas are in shallow water (<~30 m deep). The tenements are located approximately 25 nautical miles from the port of

Aratu (one of the ports used by the dredge vessel) and approximately 5 nautical miles offshore. Travel time to the extraction area from the Port of Aratu is approximately 6 hours.

The process plant is located in Candeais, an industrial area north of Salvador and approximately 29 km from the port of Aratu. Candeias is the location of a number of fertilizer distribution centres, including facilities operated by Mosaic and SQM, two major international fertilizer manufacturers and distributors located on either side of the Fertimar plant.

Access to the Fertimar plant from Salvador is via BR 324 to BA 093 and BA522. These are all significant regional or local highways in excellent condition. Salvador is the capital of Bahia state and is serviced by major international and national airlines and an extensive road network to the rest of the country. The port of Salvador is one of the major ports in Brazil and there are number of significant special purpose dock facilities located in the Baie de Todos Santos (Bay of All Saints) and Baie de Aratu providing bulk and liquid cargo services.

Climate

Salvador is located at 130S on the Atlantic coast of Brazil. It has a tropical climate with very little seasonal change. Average summer temperatures are approximately 280C and average winter temperatures approximately 260C. Rainfall is frequent throughout the year and occurs almost daily as showers and thunderstorms. Occasional hurricanes may strike the coast,

Seas off of Salvador are typically moderate, with wave heights in the extraction areas typically less than 2 m. Significant wave action may accompany seasonal storms.

Local Resources

Salvador is the capital of Bahia State and is the largest city in north-eastern Brazil. Significant local resources are available in the area, including major manufacturing operations, abundant labour and professional services, hospitals, airports, universities, etc. Salvador is one of the most important ports in Brazil and is a major centre for chemical and petrochemical manufacture and fertilizer manufacture/distribution operations. Ship repair services are readily available.

Infrastructure

Significant infrastructure is available in the Salvador area, including several ports providing bulk and container services, major highways, international airports, universities, etc. At the plant site, available services include natural gas supply, municipal water, electrical line power and other services. The plant site is located adjacent to a significant local and regional road network connecting the plant to port and dock facilities in the Salvador area.

The project has access to at least three port facilities, one a private dock (Gerdau Port) at Aratu, and two general purpose docks at Salvador, CODEBA and Tecon. The availability of three dock facilities provides flexibility to Fertimar in selecting the most appropriate unloading site to optimize ship time and local logistics costs. Dock facilities for berthage of the dredge vessel when not in operation and for general maintenance purposes are available at Aratu Marina.

Sea Bottom

The project is a marine dredging operation. The sea bottom in the extraction area is typically very gently sloping, 1:100, with small, low amplitude sand waves typically 20 cm to 30 cm in height and exhibiting long periodicity. There are no significant submarine canyons and the extraction areas exclude areas of active coral reefs.

The sediment is composed of lithothamnion, gravels, sand, mollusk and bivalve shells, dead corals and other biodetritic material. The typical sediment thickness ranges from approximately 1 m to approximately 4 m, and averages approximately 1.5 m – 2m.

Extraction Area

Introduction

The project area is located offshore and southeast of Salvador, Bahia. The project is divided in two areas: the Northern Block and the Southern Block. The Northern Block is situated on the edge of a shallow platform about 5-9 km wide and between 10-20 m deep. This shallow platform is most likely supported by sedimentary rocks of the Recôncavo Basin, which is corroborated by a seismic survey. The seismic survey showed that in this platform the acoustic base is very close to the surface and even outcrops, and the sedimentary cover is thin or even non-existent. The increase of slope in the SE direction is accompanied by an increase in the thickness of the sedimentary package and by a greater regularity of the submarine relief.

The Southern Block is situated at the head of the Salvador Canyon and presents a thicker sediment cover, which is reflected directly in the bottom bathymetry that is softer, except for its northeast, with the presence of a high bottom. This high background coincides with a small projection south of the 10 and 20 meter isobaths of the Brazilian Navy nautical chart, which seems to indicate the southern limit of the shallow platform mentioned above.

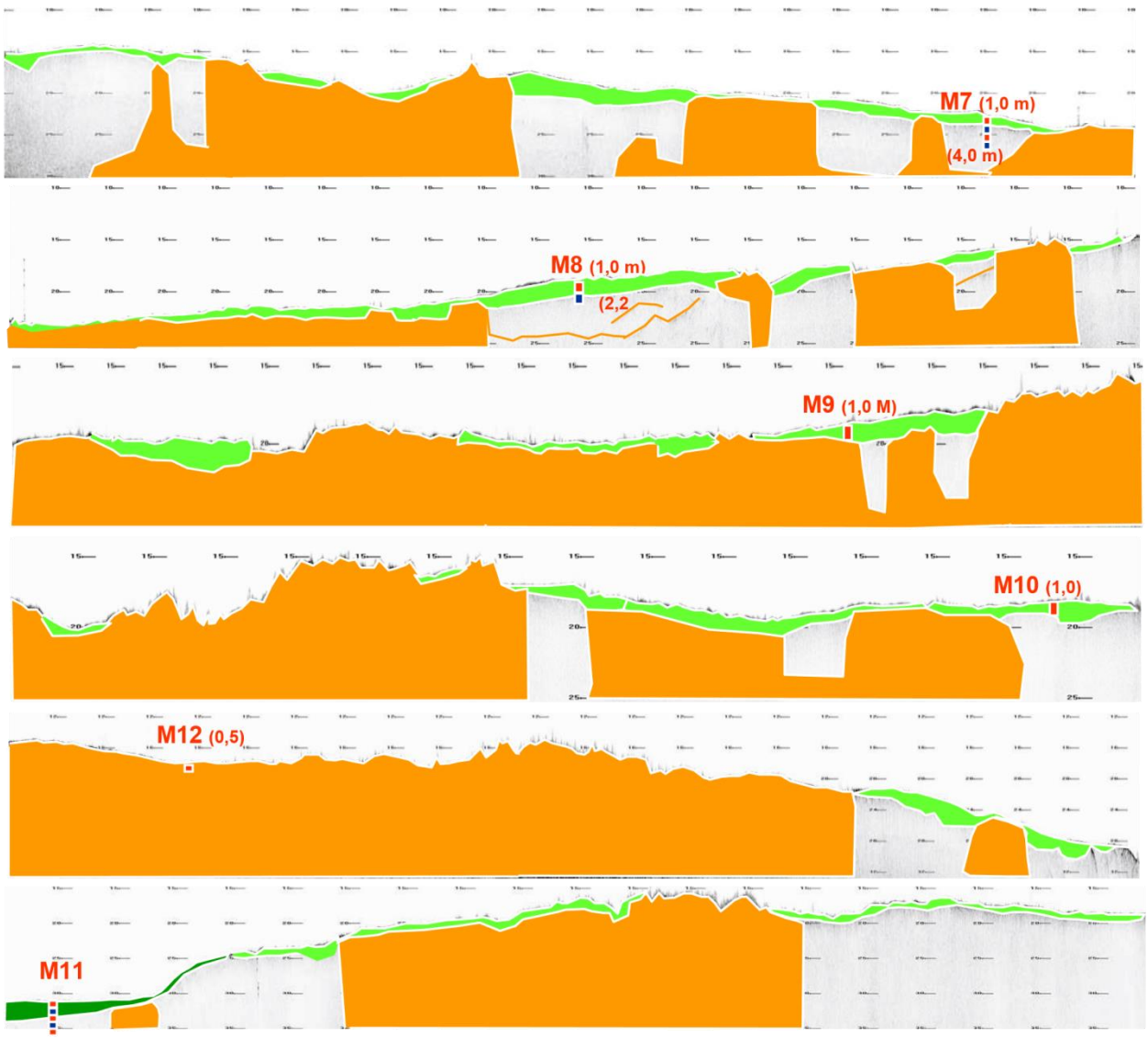
Bathymetry

Bathymetric survey data from the 2004/05 exploration work undertaken by Fertimar indicate that the northern block of tenements is a submerged reef with a high NE-SW orientation and bordered on the NW side by a narrow channel. The water depth is between approximately 20 m and 30 m in the area. Profiles across the tenements show an undulating surface ranging from approximately 20 m to 25 m depth which falls off to more than 30 m moving in a general west to east direction and a more steeply dipping bottom profile moving in a NW to SE direction. The southern block is located in shallower water, typically 12 m to about 14 m deep. The bottom represents a more subdued profile with a very gentle slope moving from the NW to the SE. There is a distinct topographic rise in the east with the depth decreasing to approximately 10 m and becoming more undulating which represents the southern extension of the NE-SW trending reef found in the northern block.

Sediment Thickness

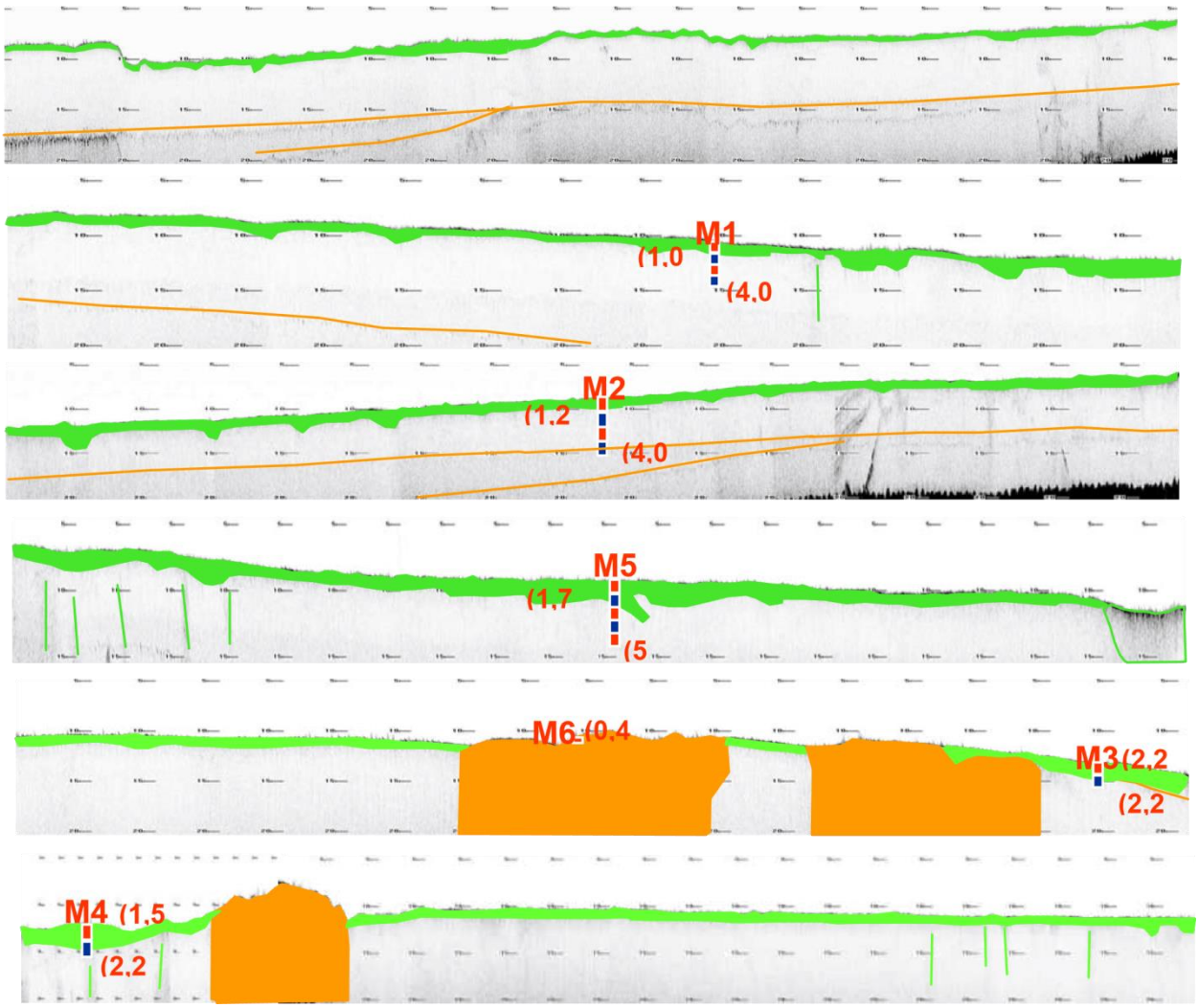
Acoustic seismic profiling was undertaken in 2004/05 by Fertimar to discriminate between the underlying consolidated bottom and the overlying sediments and thus determine the thickness of the sediment package. When combined with the results of the Jet-Probe drilling, a reasonable understanding of the thickness and distribution of sediments and the most prospective areas for lithothamnion deposition can be established. The figures below illustrate

examples of seismic profiles in the northern and southern blocks. Note that the seismic profile lines extend over several kilometres; thus the vertical profile shown in the figures is highly exaggerated.



Examples of seismic profiles interpreted from the north block showing the unconsolidated (green) surface layer, the zones with consolidated crust domain (brown) and the executed jet-probe drill holes

Source: Fertimar, (2005)



Examples of seismic profiles interpreted from the southern block showing the unconsolidated (green) surface layer, areas with consolidated crust domain (brown) and executed jet-probe drill holes

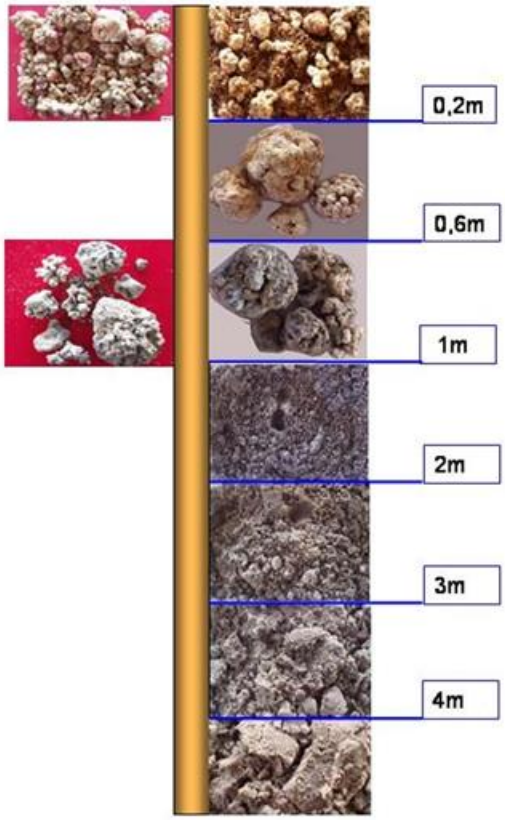
Source: Fertimar (2005)

The total thickness of the sediment deposits in the tenement area was shown from the 2004/05 exploration data to vary from 0.6 to 11 m in the Southern Block and from 0 to 4 m in the Northern Block. The sediments are composed of a mixture of biodetrites (mainly lithothamnion) and siliclasts (mainly quartz) with the granulometry of the material ranging from gravel to fine sand, with mud to a lesser extent. This finding of a higher sedimentation in the Southern Block, when compared with the northernmost block, is corroborated by the bathymetry that shows a more variable relief near Itaparica in the north with a higher consolidated background presence. While in the Southern Block, the relief of the platform is flatter and closer to the mouth of the Jequiriça River, where the Salvadorian Canyon begins, an important source of sediment supply to the local platform still today.

The biodetritic sediments are preferentially concentrated by wave and current action in the most superficial portion of the platform at the top of the uncontaminated sedimentary layer, in the gravel fraction. As discussed previously, the interpretation of the seismic profiles, shown

in the figures above, indicates a particular texture for this gravel top zone, which, in most of the profiles, shows an intermediate gray, wrinkled and discontinuous appearance, resident on a homogeneous mass of light gray coloration. The thickness of this layer of gravel according to the seismic profiles varies from 0 to 3 m.

The Jet-Probe drill holes completed under Fertimar's 2004/05 exploration program detected that the thickness of the layer of biodetritic gravel varied between 0.5 m to 2.2 m, with an average of 1m. The drill core shows that as the sediment profile deepens, the sand fraction and quartz content increases, thus decreasing the proportion of calcareous biodetrites (figure below). Due to this fact, it is considered that the upper layer, with a thickness of up to 1 m, is the most attractive for development.



Example of a Jet-Probe drill hole (M1) showing granulometry decreasing with depth.

Source: Fertimar (2005)

The lithothamnion horizon extends over several kilometers in most seismic profiles. Based on the data available, the thickness of the sediments in the surveyed areas can be summarized as follows:

- Thickness of the total sedimentary layer revealed by seismic in all areas: up to 11 m;
- Thickness of the lithothamnion layer revealed by seismic over the whole area: 0 to 3.0m; and

- Thickness of the lithothamnion layer revealed at sample points: 0.5 to 2.2 m; average of 1 m.

Sediment Composition

Analysis of the 2004/05 dredge and Jet-Probe sediment samples, described more fully below under “Sample Preparation, Analysis and Security”, indicates limestone and quartz are the two main components in both the coarse gravel and sand fractions. In both cases foraminifera and fragments of halimeda algae are found. Overall, the sample material is composed of about 70% biodetrites and 30% quartz. Within the organic fraction, the limestone represents about 70% halimeda, 15% foraminifera, 7% mollusks and 8% others. Within the gravel fraction, the concentration of biodetrites increases to about 85-90%, with quartz falling to 10-15%. In the remaining sand fraction the composition is approximately 60% biodetrites and 40% quartz.

When the sediment composition is examined by depth, it is noted that quartz increases considerably with depth. Up to 1m depth, the average concentration of quartz is around 30%; between 1m and 2m depth the value increases to approximately 50%; between 2m and 3 m, to 70% and, from 3m depth quartz typically accounts for more than 80% in volume fraction terms.

Sediment Geochemistry

Geochemical analysis of samples, primarily on the gravel fraction, indicated the following:

- the gravel fraction consists primarily of various biodetrites (mainly branched form lithothamnion) and rhodoliths with an average composition of 42% CaO, 5% MgO and 7% SiO2;
- CaO ranges from 31.55% to 47%, with most samples assaying >40% CaO
- MgO assays are relatively uniform, typically about 5%;
- the CaO/MgO ratio is typically 8:1;
- SiO2 in the gravel fraction ranges from 1.8% to 32.4%, with an average of approximately 7% SiO2;
- Al2O3 is very low, ranging from 0.32% to 2.1% and averaging 0.8%;
- over 25 micronutrients are typically present, with F, As, B, Ba, Cr, Cu, K, Li, Mn, Na, P, Sr, V, Y, Zn, Cl, S , Ti, etc. in quantities considered to be assimilable by plants and organisms.

The chemical composition of the rhodoliths (lithothamnion) is close to the average of the deposit as a whole. The typical pure rhodolith assay shows the following mean values:

CaO = 40.6%
MgO = 5.1%
SiO2 = 7.8%

Nature of Deposit

The deposit is formed of bioclastic sediments comprising lithothamnion and other biological materials and sands and gravels. Lithothamnion sp. is a genus of unattached fragile thalloid calcareous red algae. It comprises 103 known species and is also known by a number of common names such as maërl. Lithothamnion has a variable form but it commonly occurs as highly branched nodules forming a three-dimensional lattice, or in a crustose form, the latter being common in waters offshore Bahia, Brazil. It is very similar to and often confused with Phymatolithon calcareum, which is an attached algae, and which is often found together with lithothamnion. Scientifically, the genus lithothamnion belongs to the Rhodophyta division of the class Florideophyceae and order Corallinales within the Hapalidaceae family and subfamily Meloesiodeae (https://en.wikipedia.org/wiki/Lithothamnion).

This particular kind of coralline red algae, present calcium carbonate impregnated (i.e. calcified) cell walls. Crustose coralline red algae are completely calcified encrusting organisms that either adhere tightly to hard substratum or remain unattached to the seafloor. Rhodoliths, (including maërl) can be defined as calcareous nodules composed of more than 50% of coralline red algal material and consisting of one to several coralline species growing together. They may cover extensive areas of the seafloor, forming large beds, often associated with high marine biodiversity.

Rhodoliths may be composed entirely of encrusting coralline algae or may have a core of non-coralline material (e.g. a shell, piece of dead coral or a pebble), in addition to encrustations by other calcified organisms. They are distributed world-wide from tropical to polar regions, and from the intertidal zone to depths of at least 268 m. Rhodolith beds represent one of the largest carbonate depositional environments in the world, which makes them an important component in the global biogeochemical cycle and hence in the atmospheric CO2 balance (van den Heijden and Kamenos, 2015).

Individual plants may reach 4 - 5 cm across and are bright pink in colour when alive but white when dead. The figure below illustrates typical live lithothamnion coralliades nodules. Lithothamnion is typically found at less than 20 m depth (~ maximum depth 30 m) on sand, mud or gravel substrata in areas that are protected from strong wave action but have moderate to high water flow. Key identifying features are:

- Unattached, un-jointed coralline algae.
- Bright pink in colour when live, grey white when dead.
- Often complex lattice with branches typically less than 1 mm in diameter.
- Very brittle.
- Branches covered in low mounds.
- Surface slightly glossy.

Source: https://www.marlin.ac.uk/species/details/1284

Lithothamnion Coralliodes

Growth rates of maerl species range between tenths of a millimetre to more than three millimetre per annum, depending on location, with the fastest growth rates in more southern zones such as Brazil. Studies suggest that the growth rates of the three most abundant species of maerl in Europe (Phymatolithon calcareum, Lithothamnion glaciale and Lithothamnion corallioides) ranged between 0.5 to 1.5 mm per tip per year under a wide range of field and laboratory conditions (Potin, 1990).

Long-lived maerl thalli and their dead remains build upon underlying sediments to produce deposits with a three-dimensional structure that is intermediate in character between hard and soft grounds. Thicker maerl beds occur in areas of water movement (wave or current based) while sheltered beds tend to be thinner with more epiphytes. The associated community varies with the underlying and surrounding sediment type, water movement, depth of bed and salinity.

Maerl beds are highly variable and range from a thin layer of living maerl on top of a thick deposit of dead maerl to a layer of live maerl on silty or variable substratum, to a deposit of completely dead maerl or maerl debris of variable thickness. Live maerl beds vary in the depth and proportion of 'live maerl' present. In areas subject to wave action, they may form wave ripples or mega-ripples.

In Brazil, rhodolith beds extend over almost the entire continental shelf from Maranhão state ($0^0$50'S) to Santa Catarina state ($27^0$17'S). They predominate within the mesophatic zone (~ 30 – 50 m depth) along the continental shelf, on the tops of seamounts and around oceanic islands. The mesophatic coralline ecosystems represent extensions of shallower ecosystems (Horta et al. 2016).

Rhodoliths represent heavily calcified organisms, depositing calcium carbonate in the form of high Mg-calcite, a mineral that attains up to ~90% of the dry weight of these species and ensures good preservation in the fossil record. It has been estimated that the Brazilian

continental shelf carbonate stock holds 2 x 10^{11} tonnes of $CaCO_3$. Among the rhodolith beds along the Brazilian coast, the Abrolhos shelf boasts the world's largest expansion of rhodoliths in the Atlantic, with a mean relative cover of rhodoliths around 69.1% (±1.7%) and a mean density of 211 ± 20 nodules per square metre (Horta et al., 2016). These authors estimated a mean $CaCO_3$ production rate of about 0.025 Gt/year for the Abrolhos shelf, containing approximately 5% of the $CaCO_3$ inventory of all the world's carbonate banks.

In addition to its importance in the global carbon cycle, the reported amount of limestone has also called the attention of multinational companies interested in the large-scale exploitation of these deposits for agronomic purposes. In addition to the use of rhodolith beds as a source of $CaCO_3$, other potential economic uses include exploiting their associated biodiversity as a source of bioactive compounds in the pharmacology, agriculture and nutraceutical industries.

Activities to Define Potential

Introduction

There are no records of prior evaluation in the tenement areas held by Fertimar. Activities undertaken by Fertimar to define the potential of the tenements started in 2004 and extended over several years. Bathymetry, reflection seismic, dredge and jet-Probe sampling and analysis activity was undertaken in 2004/05. Very extensive environmental impact studies were also undertaken in this time period and for several years subsequent.

The primary exploration activities included bathymetric and reflection seismic surveys to define the profile of the seabed and the thickness of the sediment layers, dredge sampling on a defined grid to obtain sediment samples and define the composition, texture and chemical analysis of the sediments, diving and filming activity to both assist in definition of the nature of the sediments and to obtain data related to pelagic and benthic flora and fauna, and associated environmental study activity related to beaches and shorelines, oceanographic conditions (pH, temperature, salinity, turbidity, currents) and other aspects in support of the environmental permitting process. Total evaluation activity (including as discussed below under "Drilling") was as follows:

- 504 line-km of bathymetry survey
- 96 line-km of reflection seismic survey
- 20 hours of diving and underwater filming
- 221 dredge samples
- 27 m of JetProbe drilling with 63 samples
- 173 samples for textural analysis
- 76 samples for textural and compositional analysis
- 109 samples for chemical analysis

It is noted that some dredge and Jet-Probe samples were subject to multiple analyses and thus not all dredge and drill samples were analyzed for all parameters. Analytical procedures are described more fully in Section 11 of this report.

Bathymetry Survey

The bathymetry survey was undertaken in 2004/2005 using an Ocean Data Corporation Bathy 500 MF echo sounder operating at 200 kHz frequency with centimetre resolution. Positional control was obtained using an Omnistar Inc. DGPS unit with metric resolution. Data

coverage included tenement areas in the North Block region which were eventually relinquished.

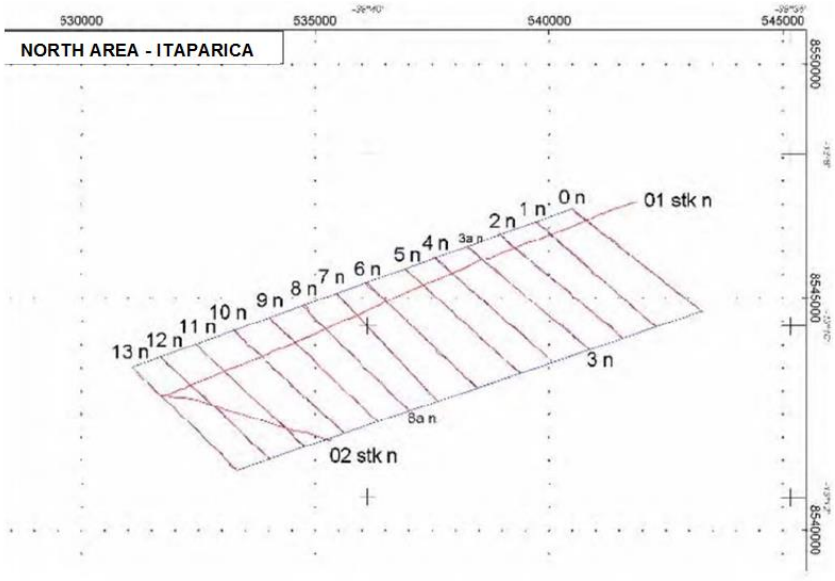
The bathymetry survey was undertaken in two phases: (1) an initial program undertaken in conjunction with the reflective seismic survey at 1 km line spacing, and (2) a second phase at 250 m line spacing with a N-S orientation and a SE-NW (north area) or SW-NE (south area) survey at 100 m line spacing over the most promising areas (figure below). Bathymetry data was corrected for tidal variation based on tidal readings taken from marker locations on shore. Bathymetric data were digitally recorded and processed using Geosoft Oasis-Montaj software. In addition, data were output in hard copy format. The results of the bathymetry survey are illustrated in figure below and show that the project areas are situated at depths between approximately 20m and 30m (North Block) and 12m – 20m (South Block).

Reflection Seismic Survey

Reflection seismic surveys were undertaken in 2004/2005 and were used to profile the thickness of the sediments overlying the consolidated sea floor. Reflection seismic can be used in this application due to the significant differences in the reflected P waves between the unconsolidated and semi-consolidated sediments and the underlying rock.

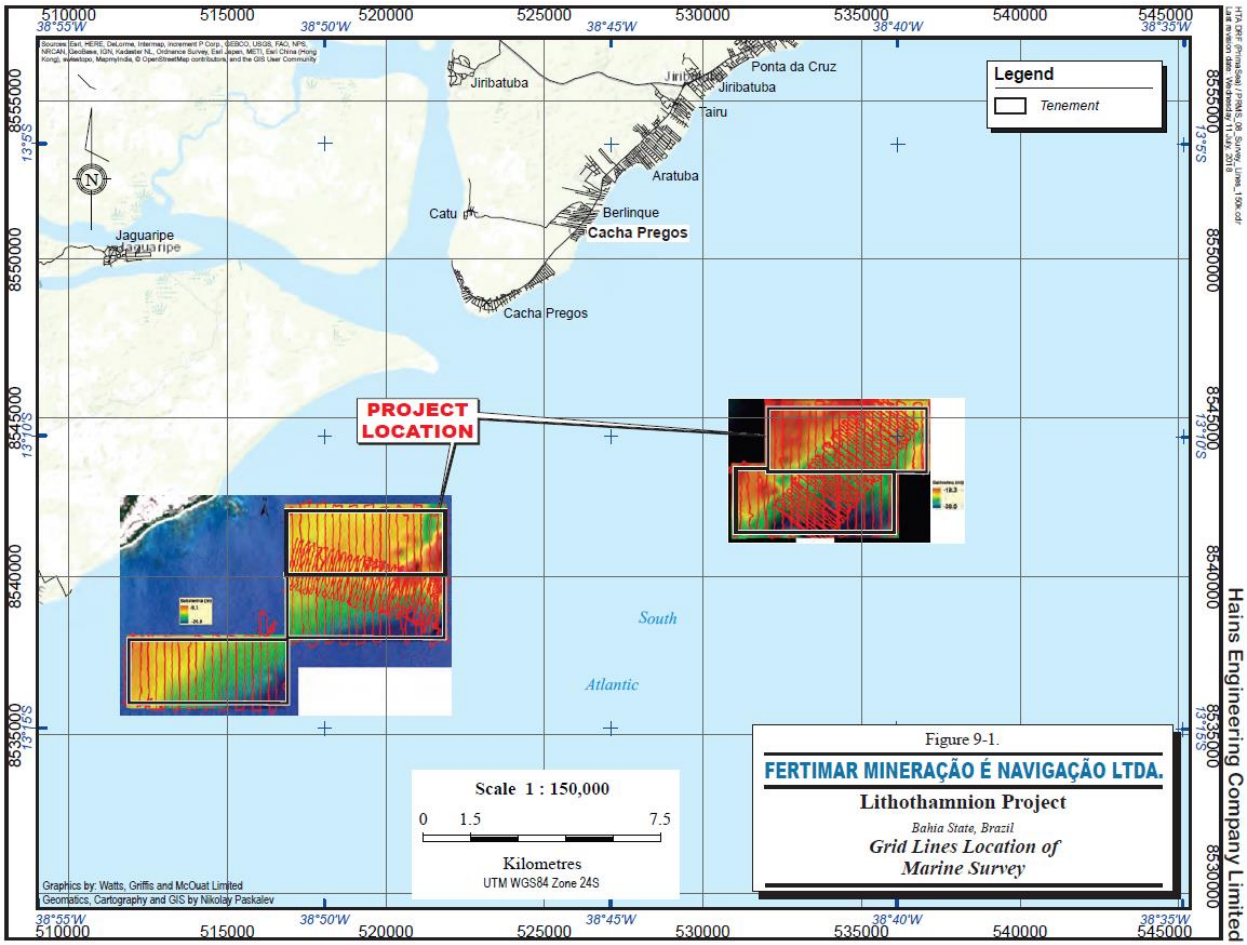
The reflection seismic survey was undertaken by a specialist geophysical company (Husky Duck Equipments and Services Ltda) using an Edgetech Inc. Geostar high resolution shallow seismic system operating at frequencies of 2 – 16 kHz and a resolution of 6 cm. Positional accuracy was controlled by an Omnistar Inc. DGPS unit with metric resolution. Line spacing was 1km. Seismic data were processed using the Edge Tech application in Discovery software and interpreted using Geosoft Sea-Floor software, with data filtering and correction to remove vessel pitching and rolling effects. All data was consolidated with the bathymetric data for depth correction, digitized and isopach maps, sections, and profiles indicating sediment thickness, sediment surface and underlying rock contours and other data prepared.

Figures below entitled Bathymetric Survey and Bathymetric Survey Results illustrate the seismic profile coverage for the North and South Blocks.

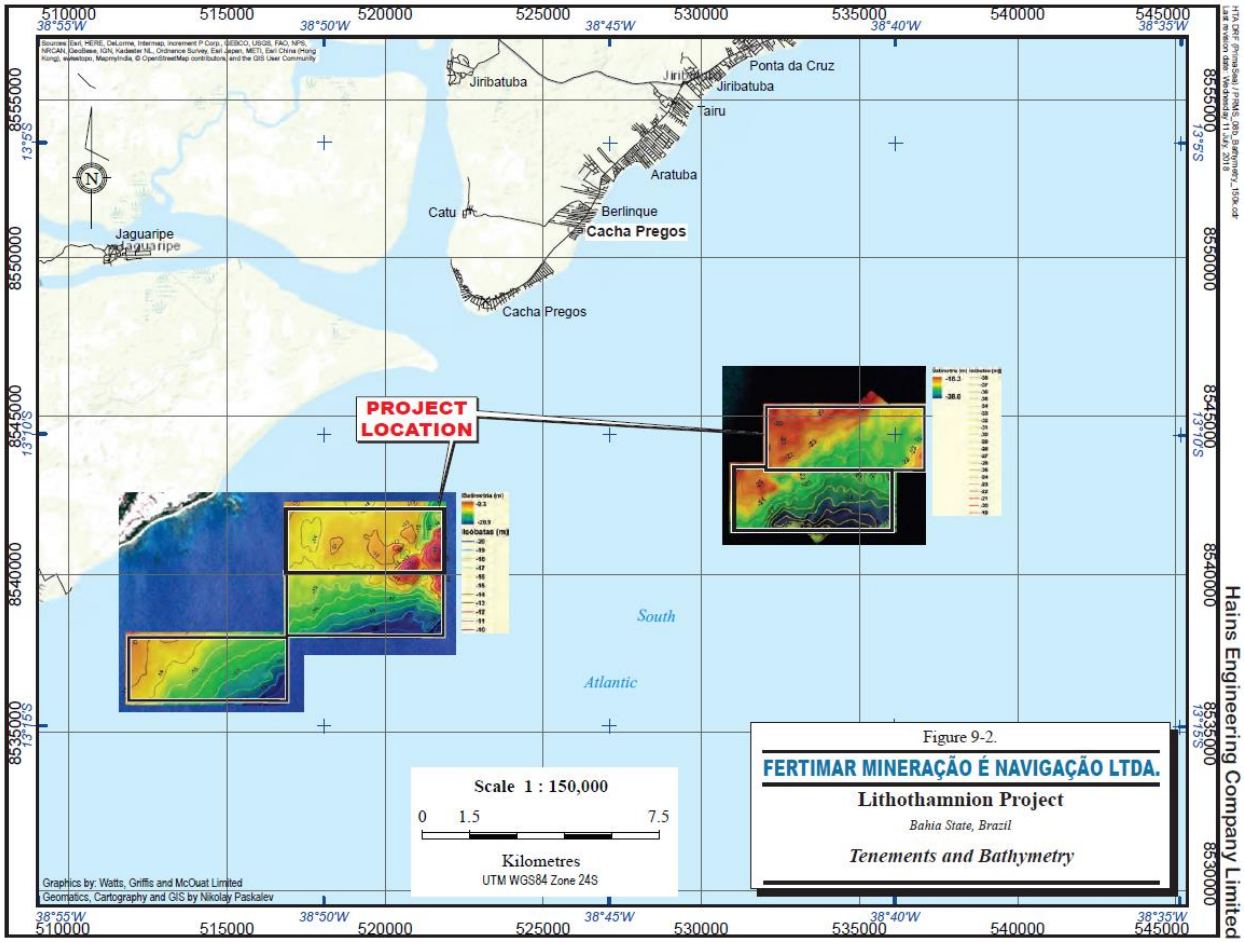


SEISMIC PROFILE LINES ACROSS NORTH BLOCK EXPLORATION AREA

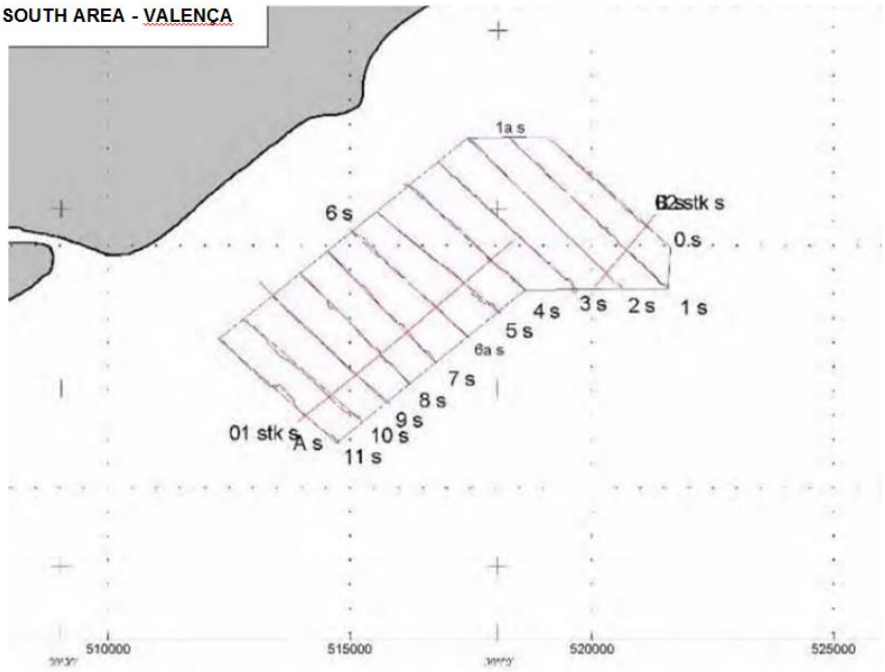
Source: Fertimar (2005)



Bathymetric Survey entitled "Grid Lines Location of Marine Survey"



Bathymetric Survey Results entitled "Tenements and Bathymetry"



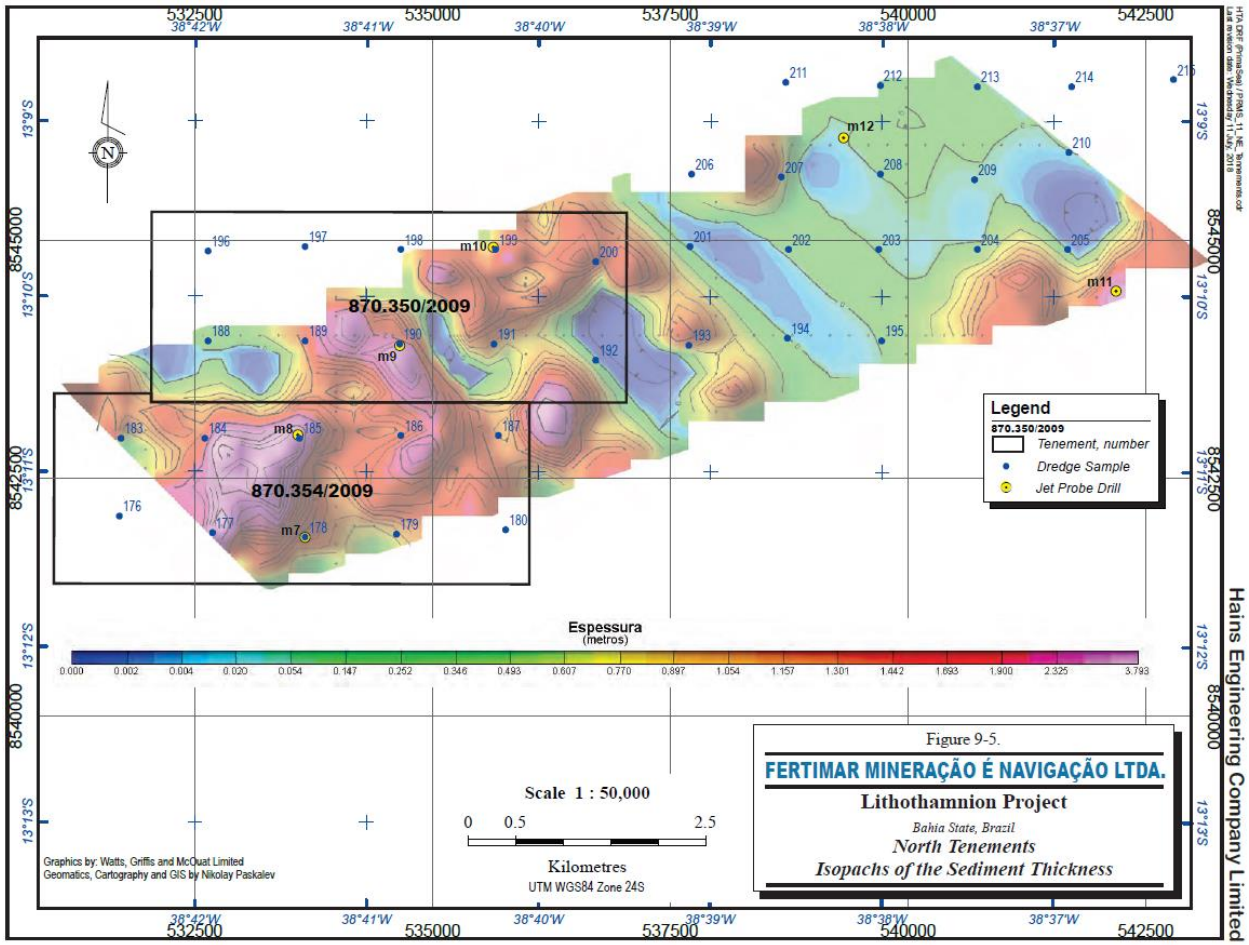
SEISMIC PROFILE LINES ACROSS SOUTH BLOCK EXPLORATION AREA

Source: Fertimar (2005)

Four surfaces were defined by the seismic survey: an upper horizon defining the loose surface sediment and representing the rhodolith beds, a somewhat more consolidated horizon representing ancient rhodolith beds and compacted sands and gravels and corals, a third horizon representing the sea floor and composed of consolidated material, and the basement rock.

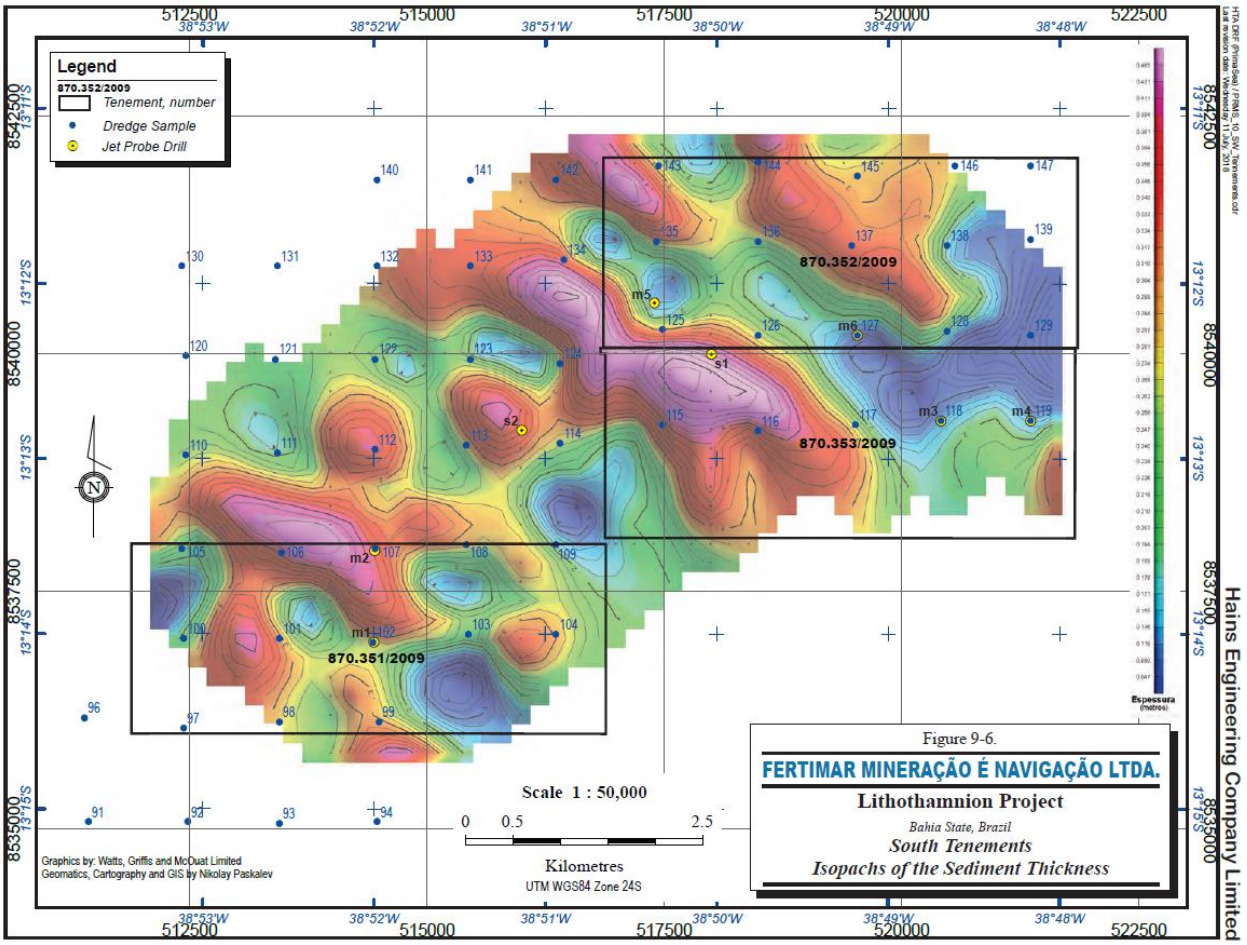
Isopachs of the sediment thickness as determined from the seismic data for the North Block and the South Block are illustrated in the figures below. As can be observed, the seismic data indicate sediment thicknesses from approximately 0.5 m to 4.5 m in the North Block, with the thickest areas located in the southwest quadrant; and sediment thicknesses up to 11 m in the South Block, with a distinct SW-NE trend.

SEDIMENT ISOPACH MAP – NORTH BLOCK



Note: Isopach thickness shown in figures above and below refers to total thickness of unconsolidated upper layer, not only lithothamnion. Lithothamnion thickness ranges from 0 m to a maximum of approximately 3 m across surveyed area with typical values of 1 m to 1.5 m of thickness.

SEDIMENT ISOPACH MAP – SOUTH BLOCK



Dredge Sampling

Dredge sampling was undertaken using a Van-Vee clam shell dredge (figure below) launched from a boat equipped with an echo sounder at previously determined points stored in the GPS. Sampling was on an approximate 1 km x 1 km grid across the tenements in the North and South Blocks as well as areas further south.

DREDGE SAMPLING

Source: Fertimar (2005)

Due to the type of sampler used and/or the nature of the sediments, some sample points returned very little or no sample material. In total there were 250 sample points, of which 25 returned no sample and two locations returned very little sample material. Samples were analyzed for textural composition, granulometry and chemical analysis.

Drilling

Evaluation drilling was undertaken in 2004/2005 using a “Jet-Probe” drill. This type of drill consists of a long metal tube of approximately 4.0 m length in which high pressure water is injected through an outer jacket and sample material recovered through an annulus. The end unit is attached to a hose of variable length. The other end of the hose is connected to a suction pump that generates pressure inside the tube. This pressure causes the unconsolidated sediment to rise through a PVC pipe that lines the iron pipe and is then collected by the operator. The tube and the hose are marked so that the depth can be observed and control of the process can be maintained. In essence, the operation of the Jet-Probe is similar to a reverse circulation drill.

12 Jet-Probe holes were completed to a maximum depth of approximately 4 m for a total of 27 m and 63 samples. The locations of the Jet-Probe drill holes are noted in the table below and the figure below. Typically, Jet-Probe holes were drilled on a 2 km x 2 km spacing and to the extent possible along seismic lines.

Sediment samples were collected according to the markings on the Jet-Probe (0.2 m, 1.0 m, 2.0 m to the maximum depth of penetration reached in each survey), or when there were sudden changes in lithology. All drill core was logged and photographed by sample interval.

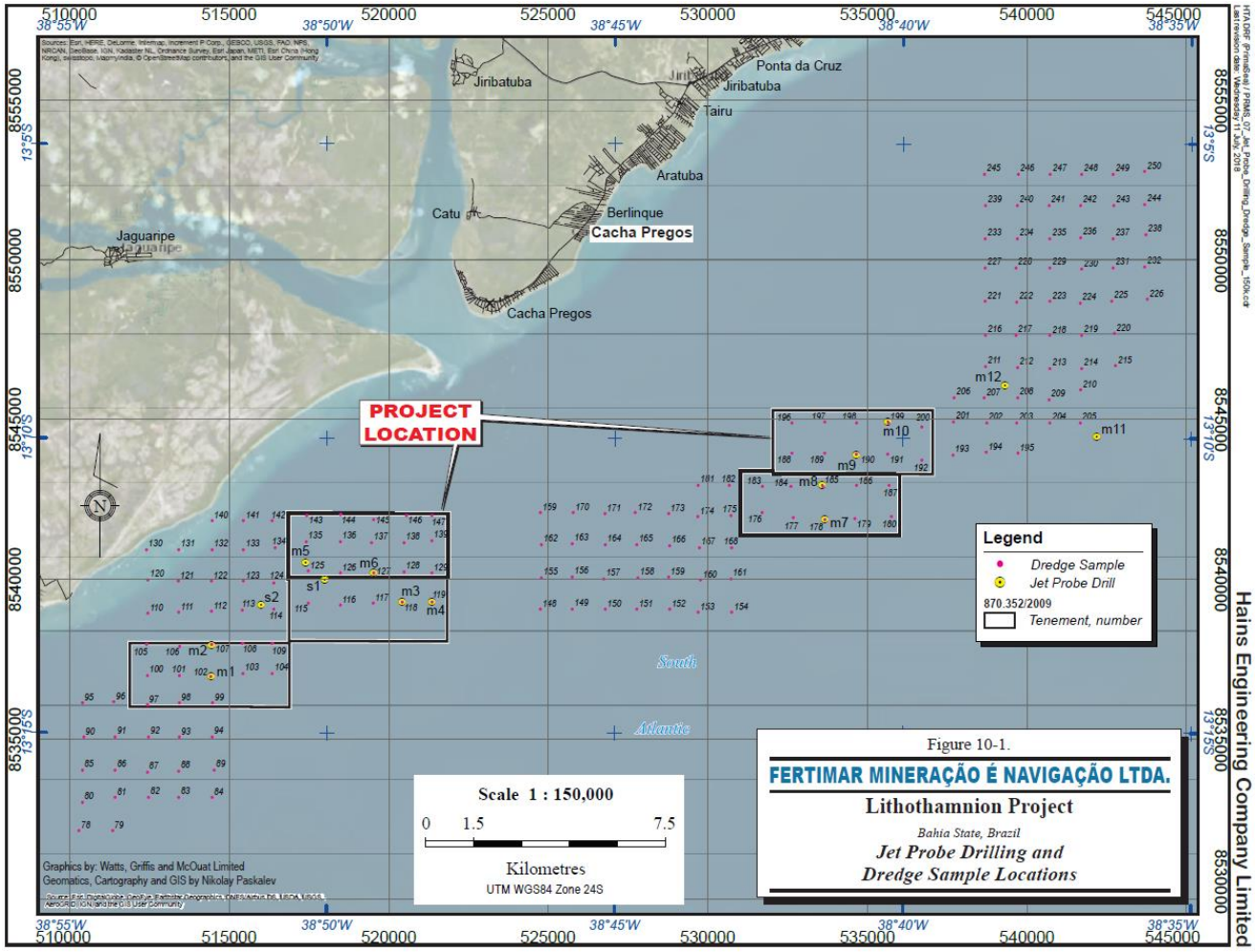
The samples collected in these surveys were sent for granulometric analysis and quantitative determination of the composition, where 3 constituents were analyzed: quartz, fragments of coral algae, and other biodetritic fragments. The gravel fraction of these samples was also analyzed chemically at Lakefield Geosol Laboratórios Ltda. in Belo Horizonte.

TABLE: JET PROBE DRILL COORDINATES

Jet Probe	SAD 69 datum

Sample No.	Easting	Northing
s1	518000	8540000
s2	516000	8539200
m1	514444	8536966
m2	514454	8537934
m3	520419	8539294
m4	521363	8539294
m5	517400	8540538
m6	519539	8540196
m7	533666	8541876
m8	533587	8542954
m9	534661	8543892
m10	535641	8544924
m11	542193	8544464
m12	539326	8546076

Jet Probe Drill Locations



The drill logs and analytical results indicate the upper 1m – 1.5m interval across all of the sampled area show consistent thicknesses of lithothamnion and other biodetritic material. The consistency of the sample results, combined with the seismic results supports the conclusion that lithothamnion material is present and evenly distributed across the whole of the sampled area to depths of at least 1m – 1.5m.

Sample Preparation, Analyses And Security Sample Preparation

Sample Preparation

Sample preparation involved the following activities:

- Recording of sample location, sample number, date collected, depth of sample in sample log book and transfer of data to Excel database,
- Weighing and photographing of samples,
- Quartering the samples and dry sieving by size fraction: (gravel, >0.2 cm), sand (0.2 – 0.0016 cm) and mud (<0.0016 cm) and % distribution,

- Binocular examination of 300 grains of each size fraction for compositional determination, classified as quartz, rhodolites, coral algae, bivalves and miscellaneous bioclasts, with photography,
- Detailed textural descriptions for 48 samples, and 16 stratigraphic column descriptions of these samples,
- Logging and photographing of Jet-Probe samples by sample interval,
- Chemical analysis of 64 samples >2 mm based on their macroscopic, textural and compositional characterization.

Sample Analysis

The textural and compositional analysis was undertaken at the laboratories of the Federal University of Bahia under the direction of Prof. José Maria Landim Dominguez and the Federal University of Rio de Janeiro under the direction of Prof. Marcelo Sperle Dias.

Examples of the textural and compositional analytical data collected are provided in the figures below. Complete summaries of the compositional and textural analyses for the dredge samples are provided in Appendices 3 and 4 to the Expert's Report.

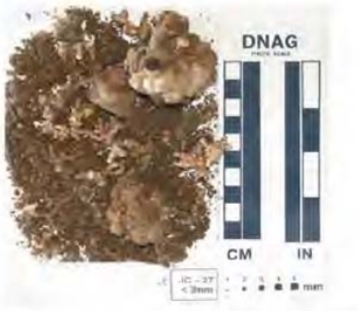
RECURSOS NATURAIS
GEOPROCESSAMENTO E AVALIAÇÃO DE RECURSOS NATURAIS LTDA

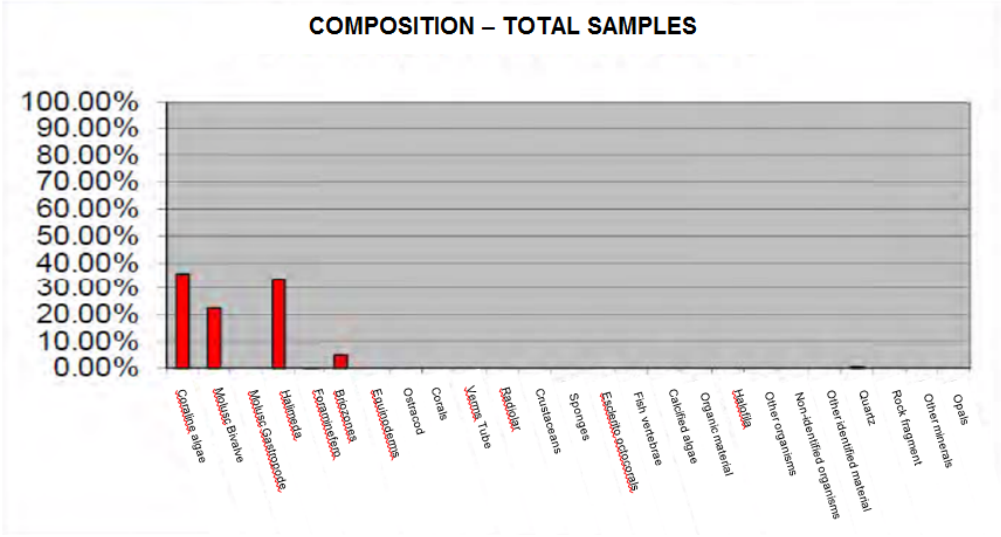
SEDIMENT COMPOSITION (% OF MAIN ELEMENTS)

SAMPLE: 27

COMPONENTES	SAMPLE TOTAL	GRAVEL	SAND
Coraline algae	35.87%	36.25%	48.98%
Molusc Bivalve	22.30%	23.75%	8.16%
Molusc Gastropode	0.00%	0.00%	0.00%
Halimeda	33.79%	35.00%	30.61%
Foraminifero	0.05%	0.00%	1.02%
Briozones	4.97%	5.00%	0.00%
Equinoderms	0.00%	0.00%	0.00%
Ostracod	0.00%	0.00%	0.00%
Corals	0.00%	0.00%	0.00%
Verms Tube	0.00%	0.00%	0.00%
Radiolar	0.00%	0.00%	0.00%
Crustaceans	0.00%	0.00%	0.00%
Sponges	0.00%	0.00%	0.00%
Esclerito octocorals	0.00%	0.00%	0.00%
Fish vertebrae	0.00%	0.00%	0.00%
Calcified algae	0.00%	0.00%	0.00%
Organic material	0.00%	0.00%	0.00%
Halofila	0.00%	0.00%	0.00%
Other organisms	0.00%	0.00%	0.00%
Non-identified organisms	0.00%	0.00%	0.00%
Other unidentified material	0.00%	0.00%	0.00%
Quartz	0.56%	0.00%	11.22%
Rock fragment	0.00%	0.00%	0.00%
Other minerals	0.00%	0.00%	0.00%
Opals	0.00%	0.00%	0.00%
TOTAL	97.54%	100.00%	100.00%

	AMF
Opacos	0
Biodetritic	0
Siliclastics	0
TOTAL	0



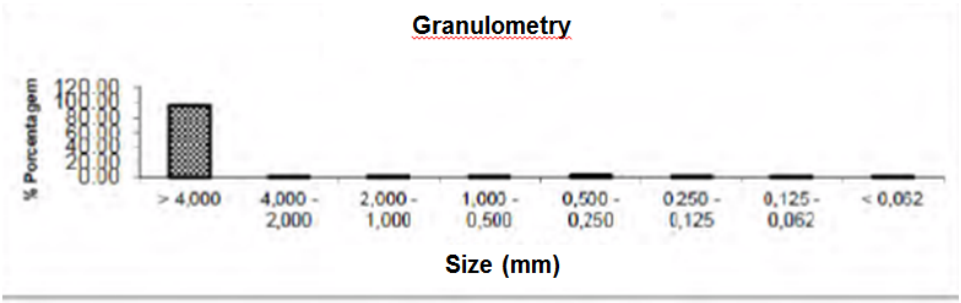


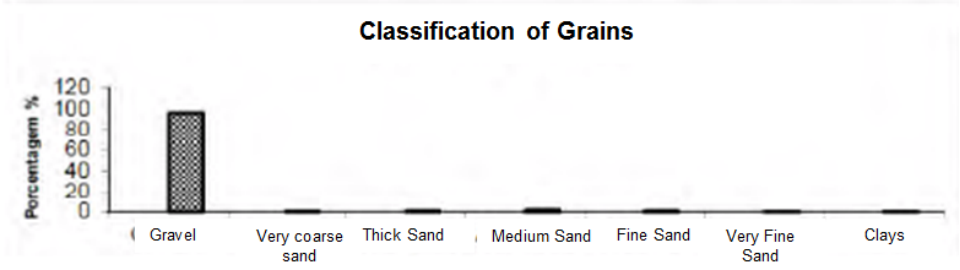
EXAMPLE OF COMPOSITIONAL ANALYSIS OF SAMPLE

Source: Fertimar (2005)

RECURSOS NATURAIS
GEOPROCESSAMENTO E AVALIAÇÃO DE RECURSOS NATURAIS LTDA

Place:				Sample #: 46		
Area:				Depth:		
Time:				W. Sample (g): 46.56		
Analyst: Carlos						
Requested by: FERTIMAR Industrial Ltda				Data: Marco / 2004		
GRANULAMETRIC DISTRIBUTION OF 2 PH						
phi	mm	Gross Weight	Dry Weight	Retained Material	% Retained	% Accumulated
>(-2,00)	>4,000	59.80	15.40	44.40	95.36	95.36
-1.00	4,000 – 2,000	15.50	15.40	0.10	0.21	95.58
0.00	2,000 – 1,000	15.73	15.40	0.33	0.71	96.28
1.00	1,000 – 0,500	15.81	15.40	0.41	0.88	97.16
2.00	0,500 – 0,250	16.16	15.40	0.76	1.63	98.80
3.00	0,250 – 0,125	15.78	15.40	0.38	0.82	99.61
4.00	0,125 – 0,062	15.53	15.40	0.13	0.28	99.89
<4,00	<0,062	15.45	15.40	0.05	0.11	100.00
SIZE CLASSIFICATION						
Classes		Gross Weight	Dry Weight	Retained Material	% Retained	% Accumulated
Gravel		75.30	30.80	44.50	95.58	95.58
Very coarse sand		15.73	15.40	0.33	0.71	96.28
Thick sand		15.81	15.40	0.41	0.88	97.16
Medium sand		16.16	15.40	0.76	1.63	98.80
Fine sand		15.78	15.40	0.38	0.82	99.61
Very fine sand		15.53	15.40	0.13	0.28	99.89
Clays		15.45	15.40	0.05	0.11	100.00



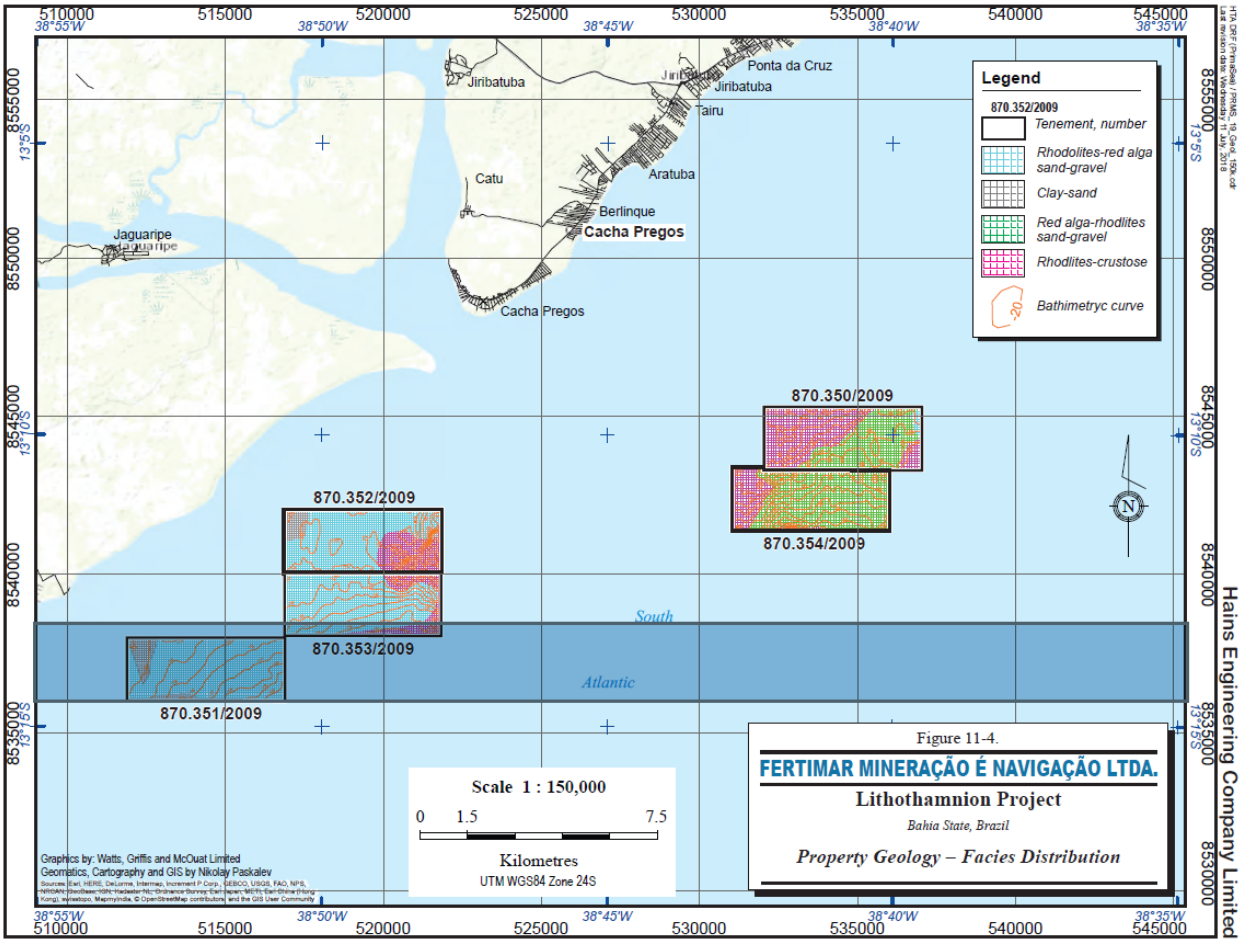


EXAMPLE OF TEXTURAL ANALYSIS OF SAMPLE

Source: Fertimar (2005)

The compositional and textural analysis data were plotted against the bathymetric and seismic data to develop isopachs of material composition and texture versus depth and position

within the tenements. The figure below illustrates the distribution of the sediment by compositional type.



COMPOSITIONAL MAP

Chemical analysis of the samples collected in 2004/2005 was undertaken at SGS Geosol in Belo Horizonte. SGSGeosol is an ISO 17025 certified laboratory and is independent of Fertimar.

Sample preparation and analytical methods used for chemical analysis were:

Sample Prep: dry, crush to <2 mm, split to 250 gm, pulverize to -150 mesh
Chemical analysis:

FeO by titration
F by ion specific electrode
Li, Ni, Pb by multiacid digestion and atomic absorption finish
Ba, Cl, S by XRF, pressed pellet
SiO2, Fe2O3, MgO, CaO, TiO2, Na2O, K2O, MnO by XRF, fused bead
Other elements by aqua regia digestion, ICP finish
Blanks and Standards: internal; SGS Geosol material

The duplicate assay results showed excellent correlation.

The sample data was combined to develop summary tables of sample characteristics for the total sample and by sample size fraction.

Sample Security

The available data indicate sample security was adequate for the purposes required. The available detailed field reports indicate samples were labelled, photographed and bagged at the time of collection and all data was properly recorded.

Adequacy of Sample Preparation, Analysis and Security

The author is of the opinion that sample preparation, analysis and security was appropriate and adequate for the type of sample material and the purposes of the sample analysis and reporting.

Data Verification

Data verification undertaken by the author included the following activities:

1. Review of the assay data base against PDF copies of assay certificates from 2004;
2. Collection of two grab samples from ship cargo, one from the ship's hold and the other from material dumped at the grizzly at the process plant;
3. Collection of a grab sample of freshly milled material at the process plant; and
4. Collection of finished product samples.

The extensive and detailed sampling records were interrogated by the following methods:

1. Detailed review of the very extensive reports related to the initial exploration activities and current extraction activities. These reports are extremely comprehensive and detailed and provide highly detailed information on exploration methods, detailed descriptions and photographs of all samples, detailed analysis of data and supporting data for bathymetry. In particular, the drill logs and sample logs and data analysis accompanying the sample data are extremely comprehensive and provide an excellent support base.

2. Extensive discussions with the environmental consultant to Fertimar. This person was also responsible for the initial exploration work undertaken by Fertimar, including supervision of sampling and monitoring of the external analysis of the samples related to textural, compositional and size analysis of all the samples and underwater filming of the exploration work and the exploration area.

3. Viewing of underwater filming of the original exploration work and underwater films of the current extraction activity.

4. Independent collection and analysis of grab samples of freshly dredged lithothamnion material. Independent analysis of samples of finished product and comparison of the sample results with reported assay values. The number of independent samples is considered to be reasonable given the nature and location of the source material.

5. Detailed discussions with the Fertimar operations manager respecting all aspects of the operation in terms of ship operations, logistics, processing and markets.

Due to the location of the lithothamnion deposit and the timing of the site visit, collection of independent samples while the vessel was at sea was not possible. The author's independent inspection of fresh cargo and visual observations of the nature of the freshly dredged material are comparable to the photographic record of historical sample material and the independent analysis of the chemical composition of fresh lithothamnion material is comparable to the reported analysis of lithothamnion in the original exploration reports and in Fertimar's product literature.

Independent sample materials collected by the author were analyzed at SGS Mineral Services in Canada using x-ray fluorescence (XRF) fused bead techniques for major elements and sieve analysis for particle size distribution. SGS Mineral Services is independent of Fertimar and is certified to ISO 17025 standards for chemical assays. Assays for the finished product samples were compared to the guaranteed analyses for the products. The results are detailed in the table below.

No discrepancies were noted in the sample assay data base. The results of the analyses of the crude material and the finished products were in general agreement with the reported values.

In the opinion of the author, the quality and amount of historical data is excellent. There is a very high degree of data traceability for each sample in terms of sample location, date collected, and sample analysis in original records, final drill and sample logs, sample assay reports, and photographic records. The raw sample location data plots exactly as reported in the historical exploration reports. The drill logs and sample assay data reports are comprehensive and are backed by excellent photographic records of each sample. The ability to review original underwater film records of sampling activity and the nature and disposition of lithothamnion on the sea floor provides a very high degree of confidence in the sample data. The author's personal discussions with persons directly responsible for the original exploration and current operations also add substantially to the confidence in the data. Overall, the author is extremely confident that the data are robust and valid and that the data verification procedures used are most suitable in the circumstance.

The author is satisfied that the sample and assay data base is suitable for use in an estimate of extractable lithothamnion.

DUE DILIGENCE SAMPLE ANALYSIS RESULTS

Sample Description	Sample Number	Analyte (wt%)												Screen Fraction (%)		
		SiO_2	Al_2O_3	Fe_2O_3	MgO	CaO	Na_2O	K_2O	TiO_2	P_2O_5	MnO	Cr_2O_3	V_2O_5	+100 mesh	+200 mesh	-200 mesh
Grab Lithothamnion Sample, ship	18553	4.04	0.40	0.49	4.87	45.3	0.42	0.06	0.04	0.10	<0.01	<0.01	<0.01	Not analysed		
Grab Lithothamnion sample, plant	18554	7.12	0.43	0.51	4.96	43.4	0.50	0.09	0.03	0.10	<0.01	<0.01	<0.01	Not analysed		
Grab lithothamnion sample, ground	18555	5.15	0.49	0.58	5.01	44.1	0.48	0.10	0.02	0.11	0.02	<0.01	<0.01	Not analysed		
Raw Lithothamnion sample, packaged	18556	2.42	0.36	0.37	5.64	44.8	0.60	0.06	0.02	0.08	0.01	<0.01	<0.01	Not analysed		
Certified Assay		n.a.	n.a.	n.a.	3.32	44.7	n.a.	n.a.	n.a.	0.0096	n.a.	n.a.	n.a.	Not analysed		
Primaz S sample	18557	10.2	0.30	0.49	5.02	42.1	0.36	0.07	0.03	0.09	0.02	<0.01	<0.01	Not analysed		
Primaz S Certified Assay		n.a.	n.a.	n.a.	3.32	44.77	n.a.	n.a.	n.a.	0.0096	n.a.	n.a.	n.a.	Not analysed		
Ground Standard Product	18558	6.26	0.44	0.52	5.02	43.7	0.55	0.10	0.02	0.10	0.01	<0.01	<0.01	Not analysed		
Certified Assay		n.a.	n.a.	n.a.	3.32	44.77		0.0		0.0096	n.a.	n.a.	n.a.	Not analysed		
Lothar sample	18559	4.83	0.49	0.55	5.07	44.4	0.47	0.09	0.02	0.10	0.02	n.a.	n.a.	Not analysed		
Lothar Certified Assay		n.a.	n.a.	n.a.	3.32 min	44.77 – 47.57	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	Not analysed		
Phosprime Tract sample	18561	3.51	2.65	6.91	3.84	24.3	0.78	0.09	0.38	17.8	0.70	<0.01	0.03	Not analysed		
Phosprime Tract Certified assay		n.a.	n.a.	n.a.	3.32 min	20.99 min	n.a.	0.0	n.a.	18.0	n.a.	n.a.	n.a.	Not analysed		
Phosprime Release sample	18562	4.50	2.37	5.86	10.3	30.9	0.44	0.11	0.36	11.5	0.57	<0.01	0.03	Not analysed		

Phosprime Release Certified Assay		n.a.	n.a.	n.a.	6.63 min	25.18 min	n.a.	n.a.	n.a.	17.0	n.a.	n.a.	n.a.	Not analysed		
Primaz Turbo Sample	18560	5.05	0.40	0.53	5.12	44.3	0.51	0.08	0.02	0.12	<0.01	<0.01	<0.01	78.64	9.36	12.00
Primaz Turbo Certified Assay		n.a.	n.a.	n.a.	3.32 min	44.77 min	n.a.	n.a.	n.a.	0.0096	n.a.	n.a.	n.a.	99.9% passing 10 mesh 66.3% passing 50 mesh		
Primaz Granulated sample	18563	16.8	1.66	1.70	6.64	31.8	0.56	0.54	0.11	1.34	0.05	0.03	<0.01			
Primaz Granulated Certified Assay																

Lithothamnion Estimate

Introduction

Extractable lithothamnion has been estimated based on the 2004/05 Fertimar sampling results and the density of sampling. The criteria used for definition were as follows:

- Chemical analysis: content of CaO, MgO and SiO2 were used to define the quality of the deposits for the various applications,
- Recovery: based on recovery of two main types of materials from the upper sediment zone, 1) a coarse gravel fraction with high carbonate content (CaO and MgO) and a sand fraction with a silica-carbonate co0mposition,
- Thickness: determined by direct probe (Jet-Probe drilling) and seismic reflection survey. The drill logs and analytical results indicate the upper 1m – 1.5 m interval across all of the sampled area show consistent thickness of lithothamnion and other biodetritic material, and
- Facies type: determined from the sample facies analysis by sample location.

Estimate Methodology

The areas within each tenement represented by the various facies types from the sampling were mapped against the bathymetric data and sediment thickness data derived from the seismic data and locations of the sampling points. Areas were mapped as sand-clay dominant, rhodolite-red algae zones dominated by sand & gravel and rhodolite crustose zones.

Those areas considered as containing extractable lithothamnion were defined by the following criteria:

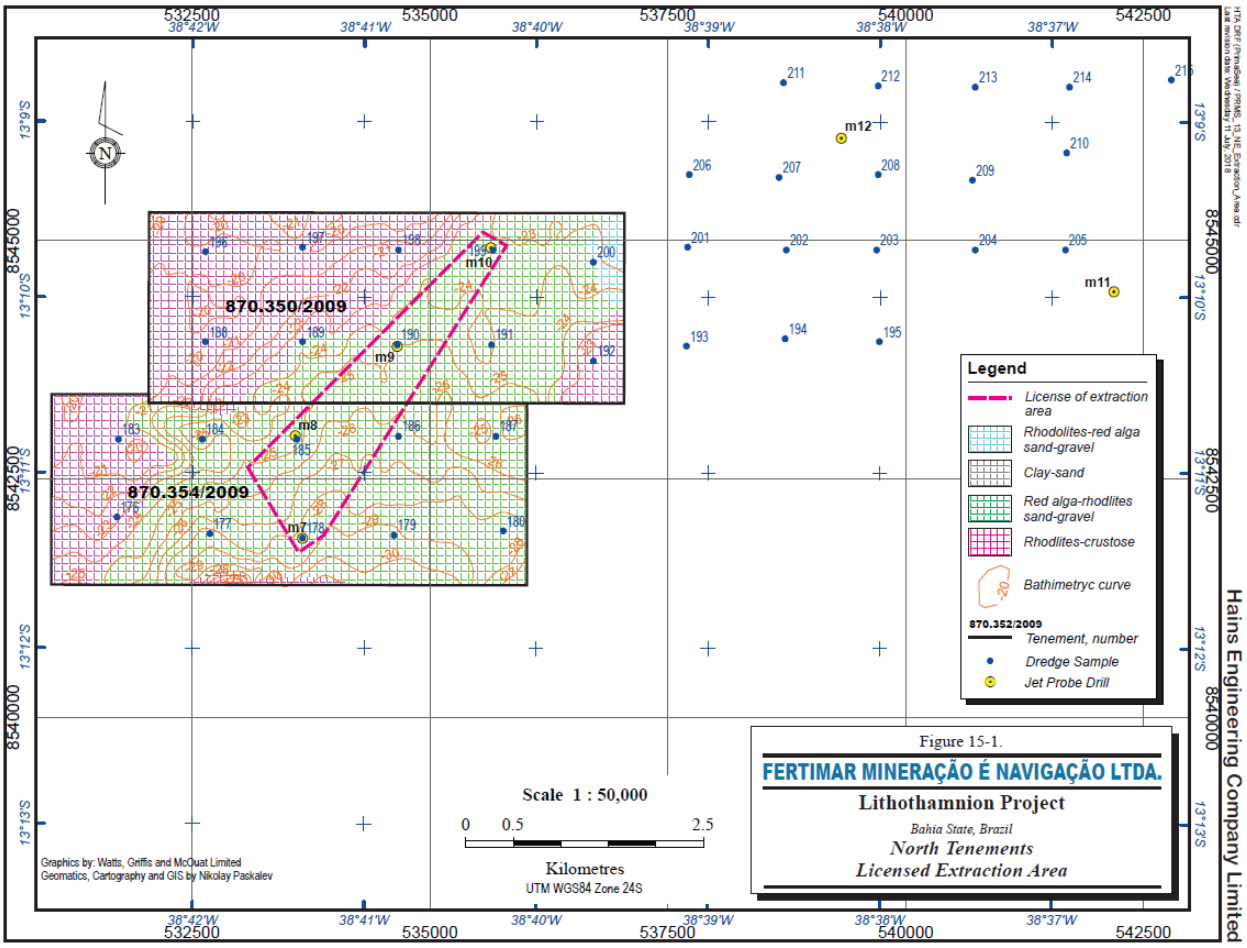
- Minimum two Jet-Probe drill locations on seismic profile lines and dedge samples on 1 km x 1 km spacing on seismic lines with bathymetry spacing of 100 m, plus filming of the area; and,

- Dredge sampling with seismic profiling and bathymetry data on 250 m line spacing.

Dredge recovery factors were estimated based on the sample granulometry distribution within each tenement extraction area. A density of 1.2 t/m3 was used to estimate tonnages by area based on the thickness of the area for each facies zone.

Estimate

Fertimar holds a Licença de Operação (Operating Licence) No. 1192/2013 permitting extraction in tenements 870.350/2009 and 870.354/2009 in the North Block and tenements 870.352/2009 and 870.353/2009 in the South Block. The licensed extraction area within these tenements is restricted to the coordinates noted in the table below and illustrated in the figures below.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38°42'W
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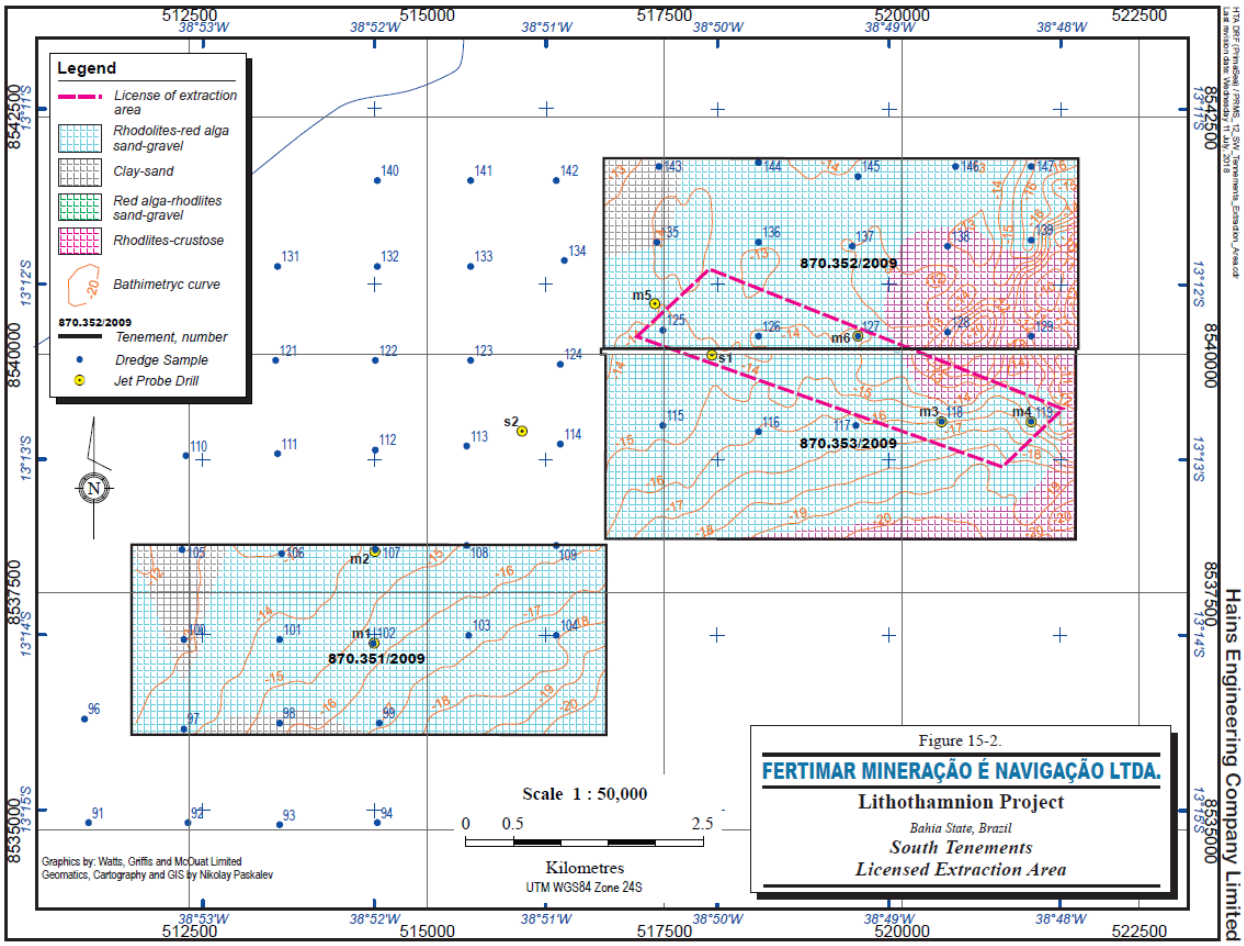
38°40'W
38°39'W
38°38'W
38°37'W
13°9'S
13°10'S
13°11'S
13°12'S
13°13'S
8545000
8542500
8540000
870.350/2009
870.354/2009
m7
m8
m9
m10
m11
m12
Legend
License of extraction area
Rhodolites-red alga sand-gravel
Clay-sand
Red alga-rhodlites sand-gravel
Rhodlites-crustose
Bathimetryc curve
870.352/2009
Tenement, number
Dredge Sample
Jet Probe Drill
Scale 1 : 50,000
0 0.5 2.5
Kilometres
UTM WGS84 Zone 24S
Graphics by: Watts, Griffis and McQuat Limited
Geomatics, Cartography and GIS by Nikolay Paskalev
Figure 15-1.
FERTIMAR MINERAÇÃO E NAVIGAÇÃO LTDA.
Lithothamnion Project
Bahia State, Brazil
North Tenements
Licensed Extraction Area
Hains Engineering Company Limited


Legend
License of extraction area
Rhodolites-red alga sand-gravel
Clay-sand
Red alga-rhodlites sand-gravel
Rhodolites-crustose
Bathimetryc curve
870.352/2009
Tenement, number
Dredge Sample
Jet Probe Drill
870.352/2009
870.353/2009
870.351/2009
Scale 1 : 50,000
0 0.5 2.5
Kilometres
UTM WGS84 Zone 24S
Graphics by: Watts, Griffis and McOuat Limited
Geomatics, Cartography and GIS by Nikolay Paskalev
Figure 15-2.
FERTIMAR MINERAÇÃO E NAVEGAÇÃO LTDA.
Lithothamnion Project
Bahia State, Brazil
South Tenements
Licensed Extraction Area
Hains Engineering Company Limited

LICENSED EXTRACTION AREA
Fertimar Project, Bahia, Brazil
(SAD 69 datum)

Block	Tenements	Zone	Easting	Northing	Area (ha)
North	870.350/2009 870.354/2009	24L	533090	8542620	254.44
			535560	8545090	
			535809	8544950	
			533890	8541910	
			533623	8541730	
South	870.352/2009 870.353/2009	24L	517975	8540990	369.39
			521696	8539430	
			521060	8538820	
			517211	8540190	

It is noted that within each license extraction zone there exist exclusion areas requiring a 300 m setback from fishing areas and coral reefs. The impact of these exclusion areas on the overall area available for extraction is not significant in the North Block, representing approximately 3.4% of the area. In the South Block, the exclusion area is somewhat larger, accounting for approximately 15.2% of the area. Additional areas with each extraction block were also excluded where the number of sample data points was limited.

The following table details the estimate of available extractable lithothamnion.

ESTIMATE OF EXTRACTABLE3 LITHOTHAMNION
Fertimar Lithothamnion Project
September 9, 2018

Sector	North Block		South Block		Total
Tenement	870.350/2009	870.354/2009	870.352/2009	870.353/2009	
Area[1] ('000 m^2)[1]	2,167		3,132		5,300
Average thickness (m)	1.0		1.2		
Density (t/m^3)	1.2		1.2		
Tonnes ('000)[2]	2,600		4,500		7,100

1) after reduction for exclusion zones other set-backs
2) data are rounded and after deduction of approximately 18.5 kt production as of May, 2018
3) after application of dredge recovery factors of 70% for tenement 870.350, 60% for tenement 870.354, 80% for tenement 870.352 and 50% for tenement 870.353 based on granulometric analysis

Applying current costs and product prices currently being received, the estimate of extractable lithothamnion is a total of 7,1 million tonnes, of which 2,6 million tonnes of the estimated tonnage relates to the North Block and 4,5 million tonnes relates to the South Block.

The current licensed annual extraction limit is 120,000 tonnes, indicating the available resource is sufficient for many decades of production at the maximum permitted extraction rate.

Opportunities for expansion of the licensed production area to incorporate additional potential lithothamnion and substantially increase production are available, subject to filing and approval of the required environmental impact reports.

Extraction and Recovery Methods

Dredging Operations

Extraction is undertaken using a company-owned 350 m3/hr suction dredge, the Litho One. The dredged material is discharged over a screen, with the undersize material (<2 mm) returned to the sea. Oversize material is fed to a side-mounted conveyor belt fitted with a travelling discharge unit to evenly fill the hold. Drainage water is pumped to the sea. The ship can hold approximately 500 tonnes of raw material.

Current annual dredging capacity is estimated at approximately 25,000 tonnes based on 300 operating days per year, a six day voyage cycle time and 500 tonnes cargo per voyage. Fertimar has plans to lease a larger vessel in 2019 which would enable an increase in annual production to approximately 100,000 tonnes when combined with the capacity of the existing vessel. Expansion of dredging operations beyond the currently licensed limit of 120,000 tonnes per annum would require purchase or lease of additional or substantially larger vessels.

At port, raw material is recovered from the hold using a clam shell bucket grab system and discharged to a hopper for conveying to a stockpile. Stockpiled material is recovered by front end loader to trucks and hauled to the processing plant.

There are several port options available to Fertimar. Currently, the company makes use of two public docks in the port area at Salvador and one private dock facility at Aratu. The choice of port is governed by dock space availability, and the logistical requirements for bulk storage and trucking time to the process plant, as well as overall logistics costs. Gerdau Port, the private facility at Aratu, offers the lowest logistics costs but may not always be available when required. The dock facilities at Salvador are more expensive but also offer more flexibility in terms of space availability. The Aratu marina provides low cost berthage for general ship maintenance requirements.

The tables below provide data on distances and travel time from port to the operational areas and on current logistics costs associated with dockage, unloading and transport costs to the process plant.

TABLE OF DISTANCES

From	To	Road (Km)	Sea (Nautical Miles)[1]
Gerdau Port	Aratu Marina	8.0	5.4
Gerdau Port	Fertimar Plant	29.0	
Tecon Port	Aratu Marina	30.5	14.8
Tecon Port	Fertimar Plant	39.9	
Aratu Marina	Fertimar Plant	22.9	

Aratu Marina	Deposit North		27.8
Tecon Port	Deposit North		15.8
Gerdau Port	Deposit North		23.2

1) 1 nautical mile = 1.85 km
Source: Fertimar

TABLE: LITHO ONE UNLOAD COSTS

Load	500	ton		US Exchange	3.74	19/05/2018

Gerdau Port

process	supplier	cost (R$)	unit
Port	TMG Gerdau	R$ 25.00	/ton
Port Agent	Intermaritima	R$ 15,000.00	/operation
Logistics	Dgranel	R$ 19.30	/ton
Marine Agent	Starship	R$ 900.00	/operation
Unload Time		6.00	hrs

Port	R$	28,400.00		
Logistics	R$	9,650.00	US dollars	Cost/t (R$/t)
TOTAL	**R$**	**38,050.00**	**$ 10,173.80**	**R$ 76.10**

Salvador Port CODEBA

process	supplier	cost (R$)	unit	
Port	Vetor/Codeba	R$ 14.00	/ton	May vary if there is a time lapse
Port Agent	Intermaritima	R$ 21,500.00	/operation	Fixed - with no extra costs
Logistics	Dgranel	R$ 24.00	/ton	
Marine Agent	Starship	R$ 900.00	/operation	
Crane rental	Ibéria	R$ 500.00	/hrs	160ton Crane
Crane Mobilization	Ibéria	R$ 2,600.00	/operation	
Unload Time		18.00	hrs	

Port	R$	41,000.00		
Logistics	R$	12,000.00	US dollars	Cost/t (R$/t)
TOTAL	**R$**	**53,000.00**	**$ 14,171.12**	**R$ 106.00**

Tecon Port - Salvador

process	supplier	cost (R$)	unit
Port/Port agent	Tecon	R$ 65.40	/ton
Marine Agent	Starship	R$ 900.00	/operation
Logistics	Dgranel	R$ 24.00	/ton
Unload time		R$ 7.00	hrs

Port	R$	33,600.00		
Logistics	R$	12,000.00	US dollars	Cost/t (R$/t)
TOTAL	**R$**	**45,600.00**	**$ 12,192.51**	**R$ 91.20**

Processing Operations

At the process plant the raw material is dumped on an open pad and recovered by front end loader. Material passes over a fixed 60 mm x 60 mm grizzly and is conveyed to a 3 t/hr Ahlstrom roller mill equipped with dryer and an air classifier. Oversize material is recovered as poultry grit. Ground material is conveyed to product silos for packaging in 25 kg. sacks, 500 kg big bags or 1,000 kg big bags, or transferred to a silo for further processing, where the ground lithothamnion is mixed with other ingredients in an Eirich mixer and granulated in an Eirich granulator. Granulated product is dried in a rotary dyer, screened to size, with the oversize milled in a hammer mill in closed circuit. Product is then conveyed to silos for packaging in 25 kg bags or big bags.

The plant capacity is currently 3.5 t/hr for primary milling and 12 t/hr for mixing, granulation and milling. Assuming 330 days/yr operation and 90% plant availability, the primary milling capacity is approximately 25,000 tonnes per annum. The process plant has been designed to accommodate a larger roller mill with a capacity of 12 t/hr that could operate in parallel with the smaller mill, increasing the annual primary milling capacity to approximately 110,000 tonnes. There is sufficient natural gas available to provide fuel for dryers for both mills and the granulator dryer.

Project Infrastructure

Infrastructure for the Fertimar project involves port facilities providing for dockage, offloading, stockpiling, road transport, raw material stockpiling at the process plant and necessary process plant utilities and warehouse space. Fertimar relies on commercial services and facilities for dockage, cargo unloading and stockpiling and raw material loading and shipment to its process plant. Within the Salvador area there are several commercial dock facilities and logistics providers with the required equipment.

Fertimar currently uses one of three port sites; the choice dependent on space availability at the time of ship arrival, unloading time, stockpile space availability, cost and other factors. The current primary port is the Gerdau dock at Aratu, with the main secondary port being the Tecon dock in Salvador. The third port is the Codeba dock in Salvador, which is also the most expensive option. Other dock facilities are also available in the Salvador area in close proximity to the Fertimar process plant.

Commercial truck services are used to haul raw material to the process plant. The regional road network from any of the available ports to the Fertimar plant is well developed and there are no issues with the road network.

The process plant occupies a surface area of approximately 9,000 m2, with a significant area for raw material storage. The process plant building has sufficient space to accommodate the necessary equipment for expansion to 120,000 tpa capacity and there is sufficient land immediately adjacent to the process plant that can be acquired if additional expansion is required. The plant site is serviced by a natural gas line, electrical line power and municipal water and sewage. The process plant is located in an industrial area with significant fertilizer storage and distribution facilities owned by major international companies located on either side of the Fertimar facility.

The current capacity of the dredge used by Fertimar is approximately 500 tonnes. Based on 50 voyages per year, the capacity is approximately 25,000 tonnes, which approximately matches the current process plant capacity. As production increases, Fertimar will require a larger ship. Fertimar is in negotiation with various ship owners to charter a larger vessel of approximately 1,600 tonnes capacity. Assuming a 6 day cycle time for each voyage, the larger vessel would enable an increase in dredging capacity to approximately a combined 105,000 tonnes capacity, somewhat below the currently licenced limit of 120,000 tonnes per annum.

Environmental Studies, Permitting, and Social or Community Impact

Environmental Studies

Fertimar is required to file comprehensive quarterly and annual reports on its extraction activities. These reports cover all aspects of the dredging operations and the impact of dredging operations on marine life and conditions within the tenement areas. The required environmental reports are undertaken by independent biologists and other ocean environment specialists under contract to Fertimar. The reports are filed with IBAMA, the Bahia State regulatory agency and the DNPM. To date, there have been no known issues with respect to the quality of the reports and the data provided. There are no known outstanding environmental issues related to Fertimar's operations.

Should Fertimar desire to expand its scope of operation beyond the currently licensed extraction area, comprehensive environmental impact reports will be required to be filed covering the expanded areas.

Project Permitting

The Fertimar project is fully permitted for a current production limit of 120,000 tonnes per annum dredge material. All required extraction and processing permits are in place and in good standing. Expansion beyond the current production limit will require filing of additional environmental reports and approvals to obtain the necessary permits. No substantive issues which would prevent Fertimar from receiving the required approvals are known at the present time.

Social or Community Requirements

Fertimar's extraction permits require operational setbacks from designated fishing areas and protected zones such as active coral reefs. The affected areas are noted on Fertimar's operating permits and are recorded in the ship's GPS positioning system and digital marine charts. To date, no issues have been noted with respect to meeting the required operational setbacks.

Project Closure Requirements

There are no project closure requirements associated with Fertimar's marine operations. Once an area has been dredged, it is left to naturally regenerate. Fertimar holds sufficient area in its tenements that movement from one operational area to another is not an issue and no obstacles to continued extraction are known.

The Fertimar processing plant is located in an active industrial area. The plant site has sufficient room for expansion. No hazardous wastes are generated during the Fertimar

processing operations and plant closure, if required, is considered to be subject to the normal requirements for industrial plant demolition, i.e. removal of all standing equipment and leveling of structures to grade.

Risks

There is a degree of uncertainty attributable to the estimation of extractable lithothamnion. Until lithothamnion is actually extracted and processed, the quantity must be considered as estimates only.

Adverse changes in market prices of PrimaSea's products, increased production costs, reduced recovery rates, short-term operating factors, royalties, taxes, fees and other factors may ultimately result in a reduction of extractable lithothamnion.

The project is subject to the normal commercial risks associated with any extraction project with respect to production volumes, product prices and production costs. Variations in product prices have the most significant impact on the financial viability of the project. The project is less sensitive to negative variations in production volumes or production costs.

The economic extraction risk is considered to be low. The exploration work to define the economic extraction potential has been extensive and thorough and the extractable lithothamnion is considered to be well defined. The extractable lithothamnion contained within the tenements and within the licensed extraction areas are considerable and would permit extraction activities to continue for many decades at the currently licensed limits.

Recommendation

The author recommends that Fertimar undertake the required environmental and other studies necessary to expand the current permitted extraction areas within the tenements to adjacent areas to enable phased expansion to a maximum production limit of 500,000 tonnes per annum.

The estimated budget for this work is R$ 2.0 million (2018 values). The work should be undertaken in the period 2021 through 2023 in support of a possible production increase.

No other recommendations are made at this time.

ADDITIONAL MATERIAL INFORMATION AND ASSUMPTIONS

A detailed capital expenditure ("**CAPEX**") schedule is included below, detailing the factors considered to increase production capacity to 120,000 tonnes per year.

The need for additional equipment, and consequently CAPEX per year, are driven by projected sales volumes as detailed in the table below. Note that total volume of sales can be greater than lithothamnion extracted due to production of blended products incorporating other ingredients.

From 2018 to 2022, CAPEX is expected to be in total R$ 43.4 million, which is equivalent to US$ 10.6 million at current R$:US$ exchange rate, or about 1/3 of GrowMax's Q2'18 cash position.

The major CAPEX item (the acquisition of the adjacent land for plant expansion) accounts for 44.7% of total CAPEX in the period and is scheduled to be disbursed in 2021.

Additional equipment for the period includes:

- 1 Roller Mill of 64,800 tpy capacity;
- 1 Hammer Mill of 60,000 tpy capacity; and
- 1 25kg packaging machine of 70,000 tpy capacity.

Other CAPEX also include:

- Docking, maintenance and extraction improvement of Litho One;
- Factory improvement & expansion;
- License expansion process (from 120,000 to 240,000ton/year);
- Land for new factory;
- Maintenance; and
- Granulating system setup.

Volumes (tonnes)			Current	2018	2019	2020	2021	2022	2023	2024	2025	2026
Total Litho Processed (tonnes)				22,408	38,403	50,540	62,383	75,720	85,868	97,715	109,706	119,235
Total Sales Volume (tonnes)				26,515	46,005	61,975	76,450	92,420	104,400	118,880	133,494	145,703
Capacity per Equipment (tonne)												
Roller mill				19,808	33,283	44,184	54,836	66,982	75,969	86,625	97,263	105,395
Granulator				6,850	12,500	17,600	21,200	24,800	27,400	31,000	34,850	38,700
Hammer mill				1,966	3,366	4,967	6,569	24,800	9,772	11,373	12,777	14,192
Mixer				5,320	9,750	14,600	17,950	21,300	23,650	27,000	30,345	33,770
25kg Packing machine				15,888	27,570	37,140	45,810	55,380	62,550	71,220	79,970	87,278
500kg/1000kg Packing machine				10,592	18,380	24,760	30,580	36,920	41,700	47,480	53,313	58,185
CAPEX												
Total (R$ thousands)			-	(6,330)	(6,006)	(3,039)	(22,217)	(5,808)	(11,502)	(4,479)	(5,140)	(17,128)
	Capex (R$ in thousands)											
Roller mill	*New mill (ton/year)*	64,800	-	(3,105)	1	-	-	-	(3,789)	-	-	-
	Current capacity (ton/year)		21,600	86,400	86,400	86,400	86,400	86,400	151,200	151,200	151,200	151,200
	Capex (R$ in thousands)											(11,364)
Granulator	*New granulator capacity (ton/year)*	60,000	-	-	-	-	-	-	-	-	-	1
	Current capacity (ton/year)		42,000	42,000	42,000	42,000	42,000	42,000	42,000	42,000	42,000	102,000
	Capex (R$ in thousands)				(756)							
Hammer mill	*new hammer mill capacity (ton/year)*	60,000	-	-	1	-	-	-	-	-	-	-
	Current capacity (ton/year)		33,600	33,600	93,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600
	Capex (R$ in thousands)								(758)			
Mixer	*New mixer (ton/year)*	36,000	-	-	-	-	-	-	1	-	-	-
	Current capacity (ton/year)		26,800	26,800	26,800	26,800	26,800	26,800	62,800	62,800	62,800	62,800
	Capex (R$ in thousands)				(216)							
25kg Packing machine	*new machine (ton/year)*	70,000	-	-	1	-	-	-	-	-	-	-
	Current capacity (ton/year)		28,000	28,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000
	Capex (R$ in thousands)								(82)			
500kg/1000kg packing machine	*New machine(ton/year)*	82,000	-	-	-	-	-	-	1	-	-	-
	Current capacity (ton/year)		46,000	46,000	46,000	46,000	46,000	46,000	128,000	128,000	128,000	128,000
Extraction improvement - current ship	***Capex (R$ in thousands)***		-	(1,000)	-	-	-	-	-	-	-	-
Docking	***Capex (R$ in thousands)***		-	-	(2,500)	-	-	-	(3,008)	-	-	-
Factory improvement & expansion	***Capex (R$ in thousands)***		-	(500)	(750)	(750)	-	-	-	-	-	-
			-	-	-	-	-	1	-	-	-	-
License Expansion (120,000 to 240,000ton/year)	***Capex (R$ in thousands)***							(2,440)				
	License in force	120,000	120,000	120,000	120,000	120,000	120,000	240,000	240,000	240,000	240,000	240,000
Land (new factory)	*Capex (R$ in thousands)*		-	-	-	-	1	-	-	-	-	-
	Capex (R$ in thousands)						(19,429)					
Maintenance	***Capex (R$ in thousands)***			(1,225)	(1,785)	(2,289)	(2,788)	(3,367)	(3,866)	(4,479)	(5,140)	(5,763)
Granulating system setup	***Capex (R$ in thousands)***			(500)								

Vessel Capacity

Fertimar owns and operates a suction dredge with a current capacity of approximately 500 tonnes per voyage to recover the material from its licensed tenements. A second, larger dredge is planned to be put in operation in 2019. The second dredge will be leased on a fully crewed and serviced basis and therefore it is not an item on CAPEX but an operating expense item.

Fertimar has been engaged in discussions pertaining to the second vessel with three companies in Brazil, which have vessels with capacities ranging from 1,200 to 2,500 tons per

trip. In parallel, meetings have been held with the Brazilian Institute of Environment and Natural Resources aiming to align the steps for the outsourced vessel clearance, which Fertimar has been informed should be straightforward.

Markets

Animal Feed

Brazil is one of the world's major producers and exporters of meat, with an estimated annual head of 34 million cattle, 36 million swine, 6.3 billion poultry and 5.5 million horses. The animal feed market is estimated at C$ 18 billion market, consuming about 68 million tonnes of animal nutrition feed. Animal nutrition is the major cost component of the livestock industry.

As per the table below, Fertimar estimates a potential annual market of 981,000 tonnes for Lothar. At peak 33,000 tonnes of sales to the animal feed industry, initial target market-share will be of only 3.4% in 2024. Therefore, management believes that the market size is well beyond annual permitted extraction and planned production capacity rates.

LOTHAR - TOTAL ADDRESSABLE MARKET			POTENTIAL SALES	
ANIMAL	NUMBER OF HEADS/YEAR	POTENTIAL VOLUME (1000 tons/year) (5)	MARKET SHARE (%)	VOLUME (1000 tons)
POULTRY				
MEAT (1)	6,25 billion	250	1	2,5
EGG	100 million	36	10	3,6
SWINE (2)	36 million	43	4	1,7
CATTLE				
DAIRY CATTLE	21,7 million	469	4	18
BEEF CATTLE (PASTURE) (3)	8,0 million	29	3	1
BEEF CATTLE (CONFINE)	4,0 million	58	5	3
EQUINE	5,5 million	40	3	1,2
OTHERS (4)		56	3	1,7
TOTAL		**981**		**33,3**

Source: Sindirações; CEPEA ESALQ, EMBRAPA; planted area/year information provided by CONAB (Companhia Nacional de Abastecimento

(1) Life cycle of 40 days/head
(2) Life cycle of 120 days
(3) 4% of total cattle in Brazil
(4) cats/dog/fish/shrimp
(5) Based on DOSE (g/head/day)

Fertilizer

According to ANDA (Associação Nacional para Difusão de Adubos), Brazil consumed 34 million tonnes of fertilizers in 2017. Brazil is the 4th largest global fertilizer consumer and imports approximately 75% of its fertilizer needs. Brazil shows the highest growth rate of fertilizer consumption in the world and is the world's top exporter of agricultural products and livestock.

Fertilizer consumption (Mt of nutrients)

Country	1992	2002	2012	2013	CAGR (1992 – 2013)	Total (1992 - 2013)
China	28.7	40.3	52.6	52.7	2,9%	83,6%
India	12.2	16.1	25.5	24.5	3,4%	100,8%
USA	19.0	19.4	20.7	20.1	0,3%	5,8%
Brazil	3.5	7.6	12.6	13.4	6,6%	282,9%
World	**125**	**143**	**179**	**181**	**1,8%**	**44,8%**

Source: IFA, Jan/2016

As per the table below, Fertimar estimates a potential annual market of 3,514,000 tonnes for Primaz. At peak 68,000 tonnes of sales to the plant nutrient industry, initial target market share will be of only 2.0% share in 2024. Therefore, management believes that the market size is well beyond annual permitted extraction and planned production capacity rates.

PRIMAZ – TOTAL ADDRESSABLE MARKET (1)			POTENTIAL SALES	
CROP	PLANTED AREA/YEAR (thousands hectare)	POTENTIAL VOLUME/YEAR (1000 tons) (1)	MARKET SHARE (%)	VOLUME (1000 tons)
EXTENSIVE CROPS				
SOYBEAN	35.091	1.755	0,8	14
CORN	16.607	830	0,7	5,8
COFFEE	1.907	572	4,5	25,7
INTENSIVE CROPS				
POTATO	129	39	8,0	3,1
TOMATO	64	32	13,0	4,2
ONION/GARLIC	70	21	13,0	2,7
ORANGE	670	201	2,0	4,0
GRAPE	77	23	13,0	3,0
MANGO	62	31	13,0	4,0
APPLE	34	10	10,0	1
TOTAL	**54.700**	**3.514**		**67,7**

(1) Based on DOSE (KG/HECTARE)
Source: planted area/year information provided by CONAB (Companhia Nacional de Abastecimento)

ADDITIONAL RISK FACTORS

Lithothamnion estimates and scalability

The estimate of extractable lithothamnion and expectations with respect to production levels and scalability are based on certain assumptions, including the following:

- the costs of sea voyages and production will remain fixed, which allows for scalability proportional to the increase in collection and production of lithothamnion, as well as future access to a revised license allowing higher levels of extraction; and

- currency exchange costs' fluctuations of certain items required for production **(**such as fuel**)** which are quoted in U.S. Dollars.

Offshore extraction involves significant risks

The business of offshore *lithothamnion* extraction is subject to a variety of risks such as accidents, extreme marine and weather conditions, natural disasters, environmental hazards, the discharge of toxic chemicals and other hazards. Such occurrences, against which GrowMax cannot, or may elect not to, insure, may result in damage to or destruction of extraction

equipment and infrastructure, injuries and loss of life, environmental damage, delayed production, increased production costs and possible legal liability to third parties, any or all of which may have a material adverse effect on GrowMax's financial position. The extraction and processing systems and the vessels to be used in sea projects are to be at sea year-round, and weather conditions will inevitably have an effect on operations. Technical problems may affect the operations of sea projects which may adversely affect profitability.

Sea conditions

There is a risk that adverse weather and sea conditions may affect Fertimar's *lithothamnion* extraction activities by reducing the time available for productive extraction, or increasing the operating and capital costs to a level that a project may not be economic. Weather, storms, cyclones, tsunamis and sea conditions may also damage or destroy equipment, or contribute to injury or loss of life.

Vessel and equipment availability

Vessel's and equipment's acquisition and maintenance costs are subject to changing market forces. While Fertimar is building relationships with its major suppliers for the construction and delivery of specialized equipment and a vessel to increase its current production, Fertimar may nevertheless need to compete for the availability of suitable vessels and equipment. There is a risk that vessels may be under long-term charter and suitable vessels may not be available to Fertimar in a timely manner or at all.

Maritime piracy

Maritime piracy involving criminal acts of violence, detention, or depredation may be directed on the high seas against a vessel owned by Fertimar, or a vessel carrying Fertimar's cargo.

INTERIM FUNDING

On September 3, 2018 GrowMax and Fertimar entered into a loan agreement for C$1.8 million to further improve sales efforts and assist funding of maintenance and CAPEX of Fertimar's assets and operations until closing of the Acquisition. The loan is payable in three equal instalments starting 181 days after closing of the Acquisition or, in the event that the Acquisition does not close, 181 days after receiving notice from GrowMax requesting payment. The interest rate of the loan is 100% of the CDI (Certificado de Depósito Interbancário, a Brazilian interbank deposit rate). The loan is personally guaranteed by Mr. Eduardo Marinho Christoph (major controlling shareholder of PrimaSea), who also provided GrowMax with a promissory note in the amount of the loan.

EXPERT

The scientific and technical information appearing in this Supplement, including estimates of extractable lithothamnion, was derived from the Expert's Report. As of the date of this Supplement, Hains Engineering beneficially owns none of the outstanding Common Shares.