

MINERALS OF GUYANA

CARBONATES

GLOBAL INVESTOR OUTLOOK

The ores of carbonates are mainly found in rocks such as limestone, chalk and dolomite. The mine end-product of carbonates for industrial use vary, and may include end-products such as calcined dolomite, quicklime, slaked lime and hydraulic lime (Apodaca, 2022). The global market for quicklime is expected to reach about USD 9.8 billion by 2029, with a compound annual growth rate of 4.2% (Data Bridge Market Research, 2021). The top exporters of quicklime in 2020 were France (USD 107M), Germany (USD 95.7M), Zambia (USD 71.9M), Belgium (USD 59.6M) and Malaysia (USD 57.5M), while the major importers were Democratic Republic of Congo (USD 98.9M), Netherlands (USD 88M), United States (USD 50.4M), Finland (USD 49.9M) and Germany (USD 49.9M) (OEC, 2022).

LITERATURE REVIEW

Outlined below is a summary of the notable exploratory findings for carbonates, particularly limestone and lime-mud, in Guyana:

Soil-limestone was found at Tabatinga Creek, near Aishalton, Manari, along the bank of the Takutu River and near St. Ignatius. Generally, it was noted that the CaCO_3 content of the samples analyzed were between 50-60% (Dublin, 1972).

Follow-up works were done by Dublin (1973) for the reconnaissance done in the previous year. At Tabatinga Creek, twenty-six (26) holes were drilled, with a drill spacing of 200-600 ft., and yielded a figure of 70,000 tons of lime mud with lime content ranging between 33% and 5%. The average thickness of lime-mud encountered was between 13 ft. and 19 ft. The main deposit was confined to an area 600 ft. by 400 ft. At Sunnyside, 2,000,000 tons of lime mud (with 8-11% lime content) was computed, with five (5) holes put down to an average drill depth of 50 ft, spaced 600 ft. apart to test the continuity of the occurrence. Calcareous materials were found over a distance of 1500 ft. At San Jose, twenty-three (23) holes were drilled at 500 ft. intervals, estimating 10,000 tons of lime mud (with lime content of 18.78% to less than 5%). The average thickness of the deposit was 6 ft., in an area with dimensions 200 ft. by 200 ft. It was concluded that the lime-mud was unsuitable for use in the cement industry, but may be used as a soil conditioner in the Rupununi area.



Petrography works were conducted by Crawford (2007) for the Guyana Geology and Mines Commission (GGMC) on a limestone sample in the Tabatinga Creek area, concluding that the origin of the limestone in the area is not clear, with the possibility of it being derived from a non-marine environment or a 'caliche' deposit. Carbonate rock occurrences near the Linden-Soesdyke Highway were visited, where the presence of marl (limey shale) at depth intervals of 2-2.5 ft. were identified, underlying the white sands in the Aruni Backdam, Soesdyke area (Kantharaja & Pickett, 2006). No other known works were conducted in this area.

Presently, there is no known active exploration nor mining efforts ongoing for carbonates in Guyana.

LOGISTICS

The Tabatinga Creek, San Jose and Sunnyside soil-limestone occurrence can be accessed from Georgetown both by vehicle and aircraft. The Tabatinga Creek occurrence is located within in the Lethem area, and can be accessed via vehicle hire (bus, pick-up or truck) from Georgetown to Lethem. Additionally, there are passenger flights to Lethem available a few times a week from the Eugene F. Correia International Airport, Ogle. Travelling around Lethem is possible by car, bus or pick-up. The occurrences at San Jose and Sunnyside can be accessed from Lethem by road, as they are only several kilometers to the north and south respectively.

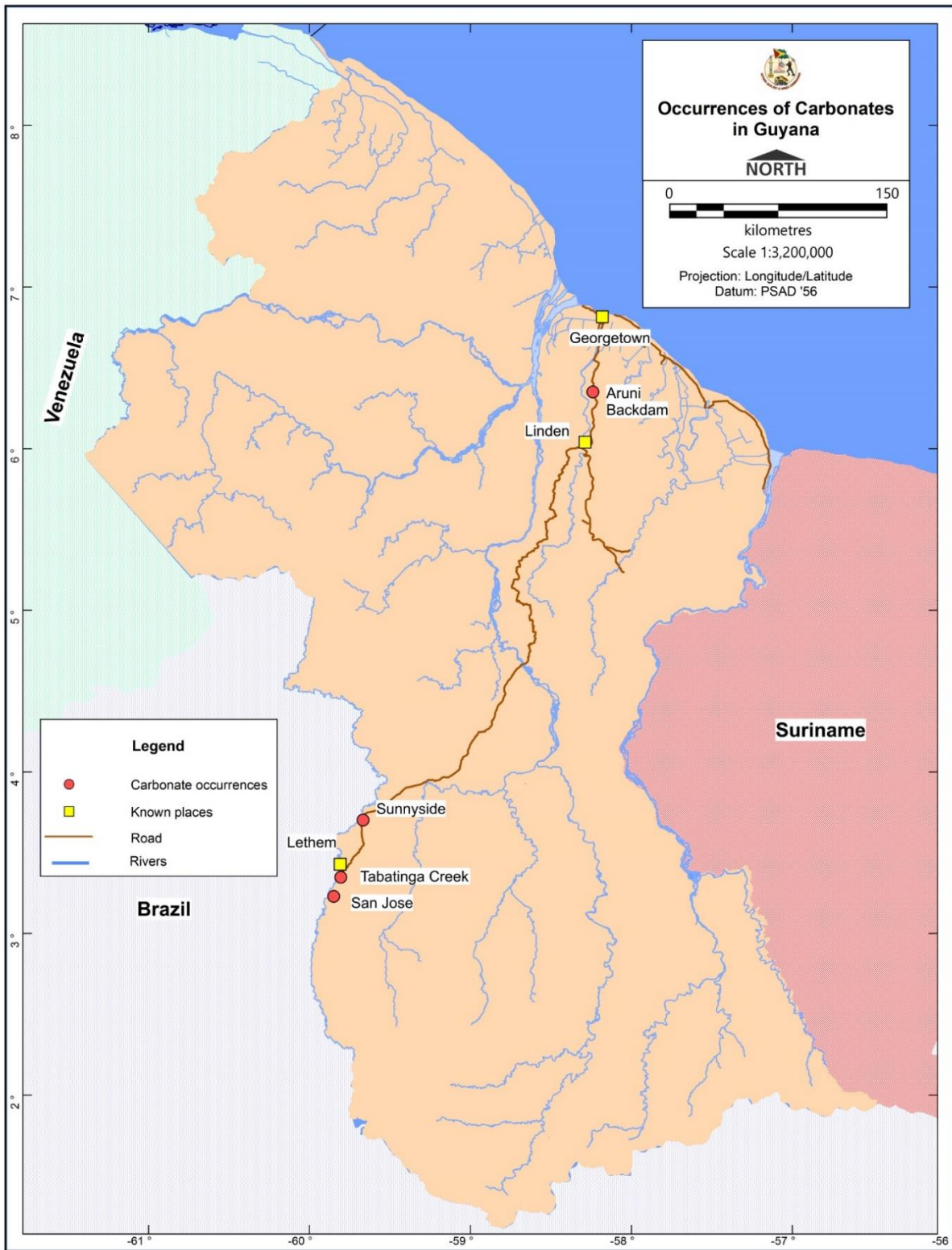
Lethem is the main commercial hub in the Rupununi area, where the Tabatinga Creek, Sunnyside and San Jose lime-mud occurrences are based. In Lethem, there is access to mobile network coverage, internet, water supply, hotels and guest houses, a commercial bank, grocery and hardware stores, fuel and food suppliers. Mobile network coverage is absent in Sunnyside or San Jose, thus the use of satellite phones must be considered to establish regular communication. Otherwise, there must be travel to either Lethem or Annai area from Sunnyside to receive mobile network coverage, or Aishalton or Lethem area from San Jose. Given Lethem's hinterland location, prices are generally more inflated compared to prices on the coast.

SCOPE AND POTENTIAL

The presence of carbonates in commercially extractable quantities has never been identified in Guyana. Little exploration efforts have been directed towards this type of resource countrywide, and past targets that have been identified and followed-up have not shown any promising results. It follows that if any exploration work be considered, there must be



preparations to start from the grassroots phase of exploration. An estimated reserve of two million tons of lime mud at Sunnyside.



REFERENCES

- Apodaca, L. E. (2022, January). *USGS*. Retrieved from Lime:
<https://pubs.usgs.gov/periodicals/mcs2022/mcs2022-lime.pdf>
- Crawford, F. (2007). *Petrography of the Outcropping Limestone & Depth to the Lower Pirara Massive Salt in the Tabatinga Creek, Lethem, Guyana*.
- Data Bridge Market Research . (2021, December). *Global Quicklime Market-Industry and Forecast to 2029*. Retrieved from Data Bridge Market Research:
<https://www.databridgemarketresearch.com/reports/global-quicklime-market>
- Dublin, D. A. (1972). *A Report on the Rupununi Limestone (Calcrete) Reconnaissance*. Unpublished.
- Dublin, D. A. (1973). *Lime-Mud Investigations, North Savannas* . Unpublished.
- Kantharaja, D. C., & Pickett, K. (2006). *Visit to Carbonate Rock/Limey Shale/Marl Near Linden Highway*. Unpublished.
- Observatory of Economic Complexity. (2022). *Quicklime*. Retrieved from Observatory of Economic Complexity: <https://oec.world/en/profile/hs/quicklime>





Guyana Geology and Mines Commission

Mr. Newell Dennison

Commissioner

Upper Brickdam, G/town, Guyana, S.A.

Fax: (592) 227-0084

Tel: (592) 225-2862

Tel: (592) 225-2865

Tel: (592) 225-2867

Tel: (592) 225-6691

Tel: (592) 225-1342



Ministry of Natural Resources

Hon. Vickram Bharrat M.P.

Minister

96 Duke St., G/town, Guyana, S.A.

Tel: (592) 231-2510