"Diatomaceous deposits in Argentina", By I.R. Cordini, 1965

Source: Cordini, Isaías Rafael, 1965. Los Depósitos Diatomiferos de Argentina. 104p. Buenos Aires, Secretaría de Estado de Industria y Minería. Instituto Nacional de Geología y Minería.

https://repositorio.segemar.gov.ar/handle/308849217/3190

Translation: Sites in Río Negro (pages 18-22 of the report), Paso Flores

Location: Río Negro Province, Pilcalniyeu Department, on the Limay River, 6 km southwest of Paso Flores; very close to the confluence of the Currú Leufú and the Limay (see the diagram in Fig. 2).

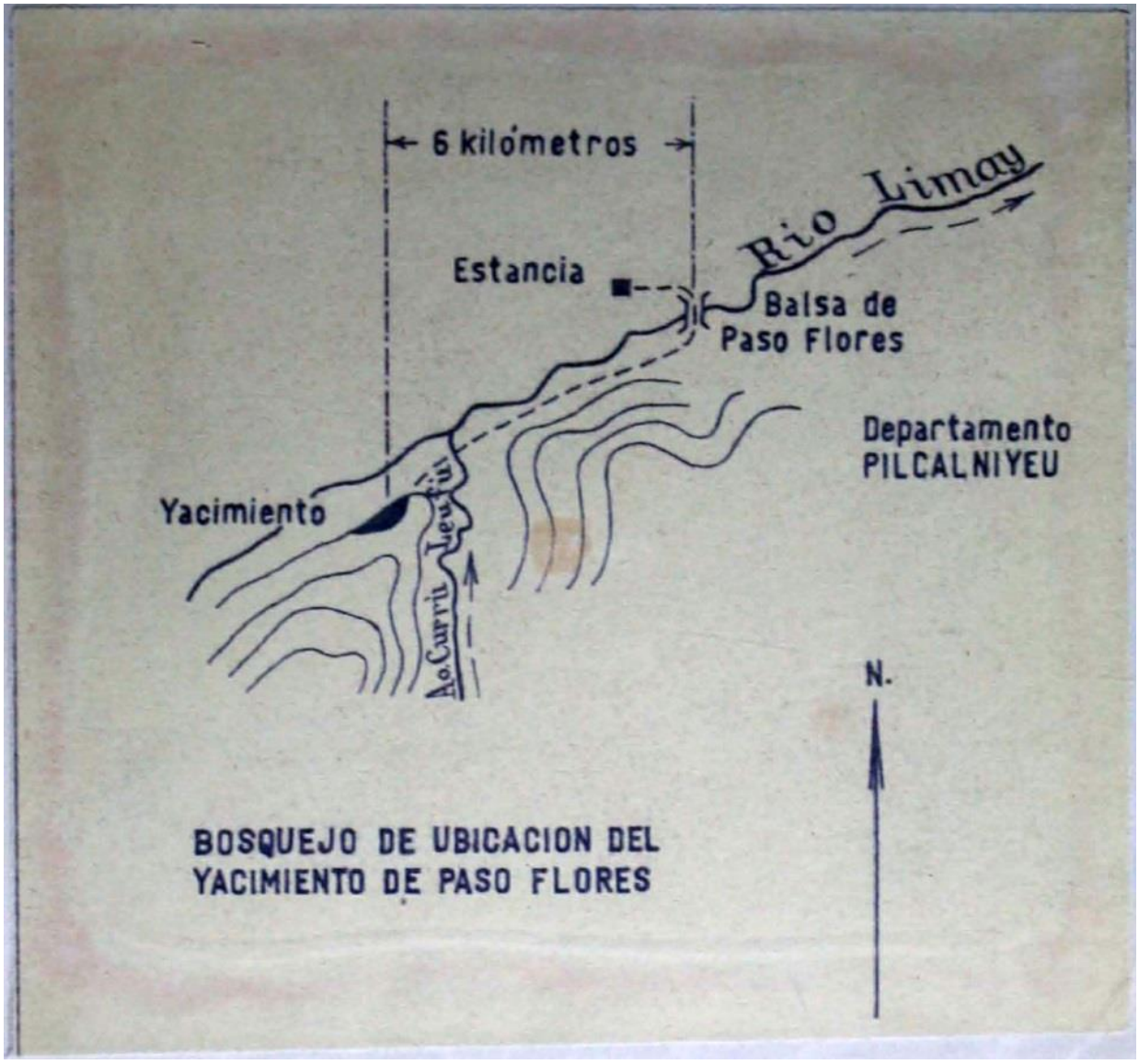

Fig 2. Location sketch of the Paso Flores deposit.

Resources for exploitation. None. The area is sparsely populated, and timber is very scarce. There is a ranch at Paso Flores—on the opposite bank of the Limay—that can provide temporary accommodation. There is no bridge over the Currú Leufú; it must be forded on horseback.

Description of the site. It is a lens-shaped deposit containing freshwater diatoms, currently partially destroyed by rainfall erosion. It is situated against the southern slope of the Limay river valley, and it is highly probable that the river also played a role in the destruction of the lens.

The Paso Flores deposit lies upon the Rionegrense sandstone unit and is, in turn, overlain by a thin layer of the same material—albeit somewhat more cemented—ranging in thickness from 0.50 to 1 meter. Above this lies 15 meters of overburden consisting of glaciofluvial cobbles and sands.

Fig. 3. View of the Paso Flores site from the bank of the Limay River.

Extraction would pose a problem because neither the diatomite nor the overburden possesses sufficient structural integrity to allow for tunnelling or the excavation of galleries. It would be necessary to use timbering—bringing in the posts and planks from Bariloche, the most accessible source of supply—making the extraction process very costly.

On the other hand, the visible size of the deposit would not justify such expenses.

Although the exploratory cuts did not span the entire width of the lens, they made it possible to estimate that width at around 20 meters. This would yield approximately 1,800 m³ of raw material, which—in its raw state (sun-dried)—would weigh 2,600 tons.

Description of the diatomite. White in color and hard; it crumbles with difficulty under finger pressure. It grinds very easily in a hammer mill. Upon air-drying, it cracks significantly.

Under the microscope, it appears to be composed primarily of *Melosira* frustules ranging from 22 to 24 microns in diameter (Fig. 4).

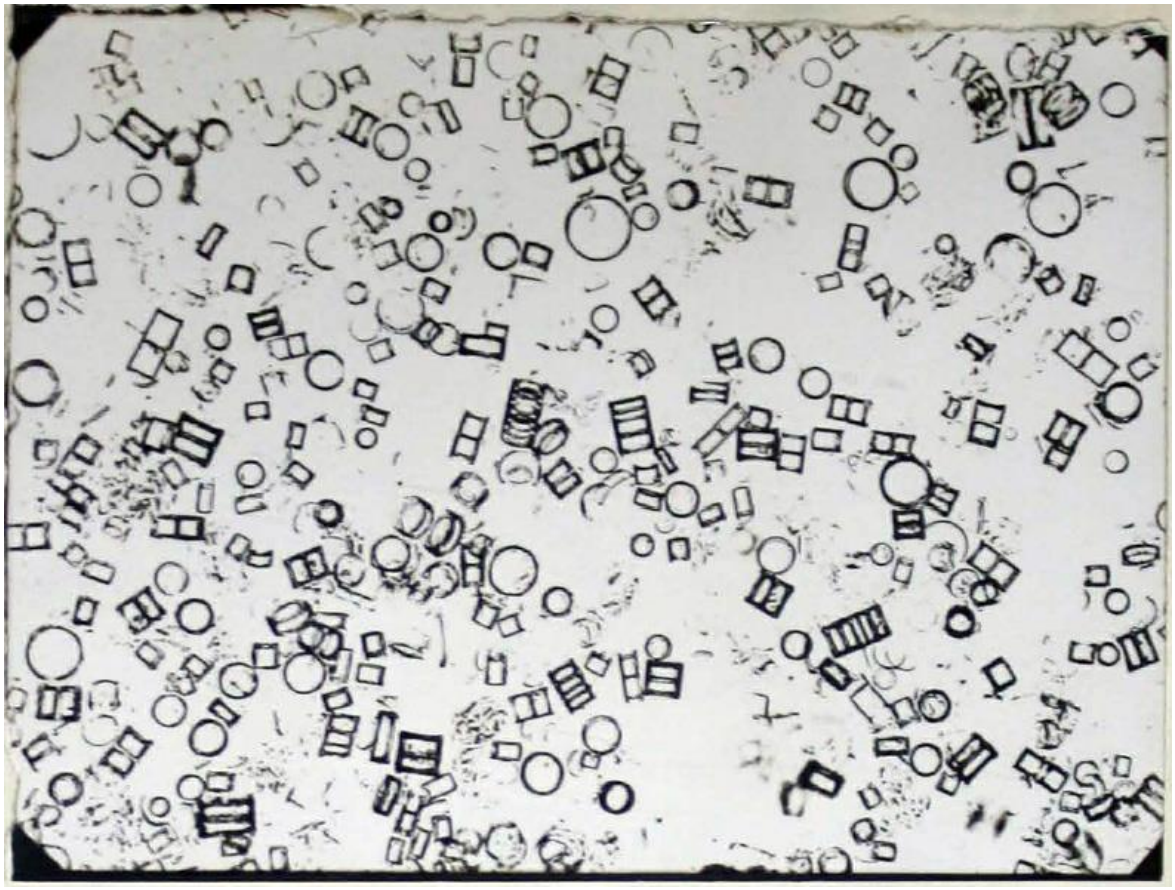

Fig. 4. Microscopic appearance of the Paso Flores diatomite after removal of the grit. *Melosira* predominates. x 300.

It contains many siliceous grains, largely around 0.059 mm in diameter. Upon grinding the diatomite, these can be easily separated from it by means of cycloning [presumably this vortexing?].

Particle size distribution

	Size in mm	Wt %
Useful diatomite material	0.022-0.024	78.6
Useless material		
Silica sand grit	0.017	1.2
Silica sand grit	0.012	1.0
Silica sand grit	0.076	4.0
Fines (crushed diatomite and sand)	0.059	15.0

Chemical aspects. When exposed to the air for 10 days, the mineral retains moisture ranging from 6.89% to 13.25%. Upon calcination at 1,000°C, it turns a pale pink color and loses between 13.7% and 17.0% of its weight.

It is common for diatomites from Argentina, like those from northern Chile, to contain soluble salts—predominantly sodium chloride and sodium sulfate; due to this characteristic, water-soluble impurities are often quantified separately in many analyses.

Two samples were used for the analysis of Paso Flores: the first consisted of selected material that appeared purer due to its whiter color, while the second was representative of the deposit's general material.

Paso Flores diatomite, hand-selected for its whiter color.

Sample colour	Pure white
Color after calcination at 1000°C	Light pink
Moisture at 110°C	6.98%
Red-hot loss	12.88%
Silicon SiO_2	73.40%
Iron and Aluminium $Fe_2O_3Al_2O_3$	9.83%
Lime (Calcium) CaO	1.07%
Magnesium MgO	1.54%
Sulfates SO_4	0.46%

Paso Flores Diatomite – Run-of-mine material

Water-soluble fraction, calculated on dry matter at 110°C	0.735%
This section contains:	
Sodium chloride NaCl	0.173%
Sodium sulfate Na_2SO_4	0.374%
Colloidal Silica SiO_2	0.064%
Lost and unwanted	0.124%

Analysis of dry matter at 110°C

Organic matter	0.142%
Silicon SiO_2	86.423%
Iron Fe_2O_3	3.849%
Aluminium Al_2O_3	5.491%
Lime (Calcium) CaO	1.550%
Magnesium MgO	1.948%
Sodium chloride NaCl	0.173%
Sulfates SO_4	0.211%
Total	99.787%

Moisture at 110°C…..13.250%

JC Notes, 04/07/26:

Translation done manually. Typing from the original PDF of the report into Word, then copying into Google translate (Spanish to English). Some 'best guesses' where the text had been cut off during the original scanning. Seems to read ok though, so I don't think there are any major errors.

No mention of the age of the deposit in the report. The Rionegrense sandstone (or Río Negro Formation) of Patagonia, Argentina, dates to the Late Miocene to Early Pliocene epochs. Isotopic and radioisotope (K-Ar) dating of interbedded volcanic tuffs in the upper parts of the formation indicates an age of roughly 9.4 to 6 million years old. Therefore the diatomite would presumably be this age or younger, as it sits on top of this.

Genus *Melosira*. Species not mentioned in the report. Probably now be called *Aulacoseira* of some type. No mention of species of other diatoms present. Can't tell species of *Melosira*/*Aulacorseira* from the photo. I would estimate the ones of the slide I have are typically 15-30µm diameter (mainly 22-24 µm reported here).