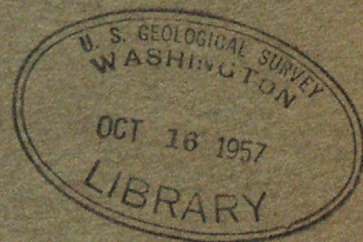


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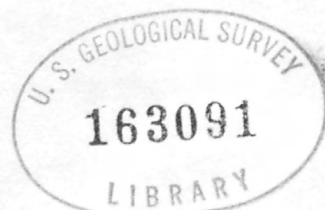
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SPECTROGRAPHIC ANALYSES OF LATERITIC SOIL

FROM THE MAYAGUEZ AREA, PUERTO RICO

COMPILED BY WATSON H. ^{monroe} MONROE, 1907-



U. S. Geological Survey
OPEN FILE REPORT

This report is preliminary and has
not been edited or reviewed for
conformity with Geological Survey
standards or nomenclature.

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Press release July 20, 1956

Spectrographic analyses of lateritic soil from the
Mayaguez area, Puerto Rico

Compiled by Watson H. Monroe

Forty-one samples of lateritic soil from the Mayaguez area in the western part of Puerto Rico were analyzed in 1955 by quantitative spectrographic methods for nickel and cobalt. Most of the samples were taken with a hand auger by James P. Owens and Robert B. Guillou in October 1954.

Nine auger holes were bored at the locations shown on the accompanying maps of the Mayaguez and Rosario quadrangles. All the holes were started in the lateritic clay mapped by soil scientists as the Nipe clay. Some of the holes were bored through the laterite into the underlying serpentine rock, but most stopped in the laterite. At a few of the locations samples were taken also from the sides of the road cuts above the auger holes; these samples are indicated in the table by a footnote.

Quantitative spectrographic analyses were made for nickel and cobalt on 41 samples. The analyses were made by Harry Bastron of the Geological Survey. The analyses follow:

Hole number	Depth (feet)	Ni (percent)	Co (percent)
1	13	0.13	0.0087
1	16	0.44	0.060
1	18.5	0.52	0.12
1	19.5	0.28	0.004
1	21	0.21	0.0095
2	6	0.80	0.084
2	8	0.56	0.16
2	11	0.56	0.10
2	12.5	0.75	0.073

<u>Hole number</u>	<u>Depth (feet)</u>	<u>Ni (percent)</u>	<u>Co (percent)</u>
3	9 <u>a/</u>	0.27	0.020
3	7 <u>a/</u>	0.23	0.012
3	3 <u>a/</u>	0.50	0.20
3	0	1.02	0.10
4	3 <u>a/</u>	0.17	0.002
4	16	0.58	0.089
4	18.5	0.65	0.10
4	20	1.01	0.14
4	23.5	0.99	0.074
5	0	0.27	0.026
5	8	0.25	0.030
5	16	0.43	0.041
5	20	0.57	0.068
5	28	0.19	0.020
5	30	0.17	0.009
6	5 <u>a/</u>	0.25	0.024
6	13	0.65	0.20
6	16	0.28	0.030
6	18	0.35	0.062
7	5 <u>a/</u>	0.076	0.002
7	16	0.17	0.13
7	18.5	0.18	0.11
7	19	0.43	0.082
9	6 <u>a/</u>	0.17	0.008
9	1 <u>a/</u>	0.25	0.005
9	3	0.54	0.14
9	4	1.65	0.09
10	12 <u>a/</u>	0.80	0.22
10	10 <u>a/</u>	0.55	0.14
10	6 <u>a/</u>	0.55	0.11
10	4	1.13	0.056
10	5	0.94	0.066

a/ Sampled from side of road cut above auger hole; figure shows height in feet above road surface.

Semiquantitative spectrographic analyses for other elements were made by Mr. Bastron for four of the samples. In the following report, X indicates a percentage value somewhere between 1 and 9 in the decimal place indicated.

<u>Hole No.</u>	<u>Depth (feet)</u>	<u>Cu</u>	<u>Mo</u>	<u>Zn</u>	<u>Mn</u>	<u>Co</u>	<u>Ni</u>
1	21	0.0X	0	0.0X	0.0X	0.0X	0.X
4	23.5	.0X	.00X	.X	.X	.X	X.
5	30	.0X	.00X	.0X	.0X	.0X	.X
9	4	.0X	0	.X	.X	.X	X.

<u>Hole No.</u>	<u>Depth (feet)</u>	<u>Fe</u>	<u>Al</u>	<u>Ga</u>	<u>Cr</u>	<u>V</u>	<u>Sc</u>
1	21	< 10	M	.00X	.X	.00X	.00X
4	23.5	M	M	.00X	.X	.0X	.00X
5	30	M	M	.00X	.X	.0X	.00X
9	4	M	< 10	.00X	.X	.0X	.00X

<u>Hole No.</u>	<u>Depth (feet)</u>	<u>X</u>	<u>Ti</u>	<u>Zr</u>	<u>Mg</u>	<u>Ca</u>	<u>Ba</u>
1	21	0	.X	.0X	.X	.00X	.00X
4	23.5	.00X	.0X	.00X	.X	.00X	0
5	30	0	.X	.0X	.0X	.00X	.00X
9	4	.0X	.0X	.00X	M	.0X	0

Note: 0 in unit column means element not detected.

M means major constituents - above 10%.

Looked for but not found: Ag, Au, Hg, Rh, Pd, Ir, Pt, W, Re, Ge,
Sn, Pb, As, Sb, Bi, Te, Cd, Tl, In, Yb,
La, Th, Nb, Ta, U, Be, Sr, Li, P, B.

UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey
Washington 25, D. C.

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GEOLOGIC MAPS AND REPORTS RELEASED FOR PUBLIC INSPECTION

The Geological Survey is releasing in open files the following maps and reports on the geology of various parts of the United States. Copies are available for consultation at the Geological Survey Libraries, Room 1033, General Services Administration Building, Washington, D. C., Denver Federal Center, Denver, Colo., and Menlo Park, Calif., and other places as listed.

1. Spectrographic analyses of laterite from the Mayaguez area, Puerto Rico, by W. H. Monroe, 3 p., 2 illus.

On file at the Library of the Industrial Laboratory of the Economic Development Administration, Avenida Franklin D. Roosevelt at Calle Soldado Rafael Lamar, Roosevelt, Puerto Rico.

2. Seismic surveys of Maynard Ordnance Test Station, Maynard, Mass., by D. F. Barnes, 8 p., 1 map, 14 travelttime curves and profiles.

On file at the Geological Survey Offices, Room 1, 270 Dartmouth St., Boston, Mass., and 230 Old Country Road, Mineola, Long Island, N. Y.

3. Geochemical study of soil contamination in the Coeur d'Alene district, Shoshone County, Idaho, by F. C. Canney, 2 illus.

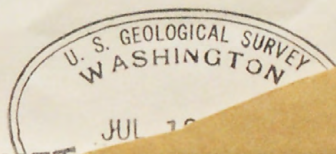
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