

**Field Studies of Borehole Gamma-Ray Spectrometer Methods
for Mineral Exploration: A Selected Bibliography**

Frank E. Senftle

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

Introduction

Those initiating a program to construct a borehole gamma-ray spectrometer for mineral exploration, benefit from knowing the previous work and, in particular, the work done relative to a particular element of interest. As an aid, a selected bibliography has been compiled. In general, the bibliography is limited to those papers dealing with spectral methods as applied to field studies. However, some papers describing laboratory borehole models and measurements are pertinent and have been included.

The papers are listed in chronologically in Table II. Table I is an index according to element. The appropriate reference numbers are shown for a given year. For example, Table I shows that a paper published on boron in 1975 has an identification number 11. The reference to the paper is in Table II under 1975, number 11.

Thorium, uranium, and potassium are generally measured together by passive gamma-ray spectrometry and, therefore, papers on these elements are indexed under a single entry. At the end of Table I, several sections have been added to include papers on instruments, coal, marine applications, and general papers that are not concerned with a specific element.

This bibliography is not exhaustive but is sufficiently complete to yield a working background for those interested in this new geophysical exploration method.

TABLE I

Index to Table II according to element showing
pertinent reference number for the year shown

Boron	1975; 11 1976; 19	Silicon	1961; 1 1968; 1 1969; 6 1970; 6, 11 1971; 1, 9, 17 1972; 27, 29, 31 1974; 9, 15 1975; 8 1976; 2, 3, 14, 19 1977; 11, 12, 14
Carbon	1971; 8 1974; 15 1976; 14		
Oxygen	1968; 8 1972; 28 1974; 5, 15 1976; 14		
Fluorine	1964; 1 1966; 2 1968; 7, 9, 10 1969; 4, 6, 11 1970; 9 1971; 9 1972; 8, 9, 15, 16 29 1973; 1 1976; 18 1977; 6 1979; 6	Phosphorus	1969; 6 1970; 9 1971; 9 1972; 15 1976; 18 1978; 1
		Sulfur	1974; 9 1976; 10 1977; 4, 13, 14
		Chlorine	1959; 1 1961; 3, 4 1970; 6 1972; 3
Sodium	1969; 5 1972; 3, 17 1977; 3	Calcium	1969; 6, 7 1972; 2 1974; 9, 15 1976; 10, 14, 19
Magnesium	1976; 19		
Aluminum	1961; 1 1962; 3, 4 1964; 4 1968; 1 1969; 5, 6 1970; 6, 11 1971; 1, 9, 15 1972; 17, 18, 20, 22, 27, 28, 29, 31 1973; 16 1975; 1, 2 1976; 2, 3, 4, 9, 17, 19 1977; 11 1979; 2	Chromium	1969; 1 1972; 25
		Manganese	1959; 2 1967; 6 1969; 1, 5 1972; 11, 17, 28, 29 1974; 7 1975; 1, 2 1976; 19

TABLE I

Index to Table II according to element showing
pertinent reference number for the year shown

Iron	1960;	4	Tungsten	1967;	2
	1962;	1		1968;	9
	1965;	1		1971;	7
	1966;	1, 4		1973;	7, 8, 9, 22
	1969;	1		1975;	6
	1972;	25		1979;	4, 6
	1974;	9	Gold	1967;	7
	1975;	8		1976;	6
	1976;	1, 2, 3, 19		1978;	5
	1977;	7, 12, 14, 15			
Cobalt	1972;	4	Mercury	1968;	6
Nickel	1969;	8		1972;	10, 24
	1971;	15		1973;	6, 15
	1972;	4, 19, 23, 25		1975;	10
		26	Thorium, Uranium, and Potassium	1957;	2
	1974;	17		1967;	1
	1975;	8, 9		1970;	1
	1977;	3, 12, 14, 15		1971;	1, 5, 11, 14
	1979;	4		1972;	12, 15, 18, 20
Copper	1959;	2		1973;	12
	1964;	2, 3		1974;	2, 3, 8, 11
	1965;	5, 6			17
	1966;	5		1976;	1, 11, 16, 17
	1967;	5, 8, 9, 10		1977;	3, 17
	1968;	3		1978;	1, 2, 3, 5
	1969;	8		1979;	6
	1971;	6, 9, 17	Coal	1962;	2
	1972;	4, 13, 14, 17,		1965;	2, 3
		19		1968;	3
	1973;	17		1973;	3
	1974;	1, 3, 17		1974;	2
	1975;	1, 2, 3, 9		1976;	14
	1977;	9, 12, 14, 15		1977;	14
	1979;	4		1978;	8
				1979;	2
Silver	1967;	4			
	1970;	8			
	1972;	17			
Barium	1972;	17			

TABLE I

Index to Table II according to element showing
pertinent reference number for the year shown

Marine	1960;	6	General (cont'd)	1969;	3, 5, 9, 13
	1965;	4		1970;	4, 5, 6, 7, 10, 13
	1969;	10, 12		1971;	3, 8, 16, 17, 18
	1970;	2, 12		1972;	6, 7, 17, 21, 22, 23, 29, 30
	1971;	2, 13		1973;	3, 4, 11, 18, 22
	1972;	4, 5, 11, 22		1974;	3, 4, 6, 10, 14, 16
	1973;	2, 10, 13, 20, 21, 22		1975;	5, 7, 9
	1974;	7, 8, 11		1976;	13, 19
	1976;	8, 15, 20		1977;	2, 5, 8, 13, 15, 16
	1977;	10, 19		1978;	9
	1978;	7		1979;	3
				1980;	1, 2
Instruments	1955;	1			
	1963;	2			
	1967;	1			
	1968;	2			
	1969;	2			
	1970;	3			
	1971;	4, 10			
	1972;	1, 5, 12, 22, 23			
	1973;	5, 14, 19, 20, 21			
	1974;	12, 13			
	1975;	4			
	1976;	5, 7, 11, 12, 20, 21			
	1977;	1, 10, 18, 19			
	1978;	2, 4, 9			
	1979;	1, 3, 5			
General	1941;	1			
	1955;	1			
	1956;	1			
	1957;	1, 3, 4			
	1958;	1			
	1959;	3			
	1960;	1, 2, 3, 4, 7			
	1961;	2, 5, 6, 8			
	1963;	1			
	1966;	3, 6, 7, 8			
	1967;	3			
	1968;	4, 5			

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