



(51) International Patent Classification:
G01V 5/10 (2006.01)

(21) International Application Number:
PCT/US2012/039295

(22) International Filing Date:
24 May 2012 (24.05.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/489,287 24 May 2011 (24.05.2011) US

(71) Applicant (for CA only): **SCHLUMBERGER CANADA LIMITED** [CA/CA]; 525-3rd Avenue Southwest, Calgary, Alberta T2P-0G4 (CA).

(71) Applicant (for FR only): **SERVICES PETROLIERS SCHLUMBERGER** [FR/FR]; 42 rue Saint Dominique, F-75007 Paris (FR).

(71) Applicant (for GB, JP, NL only): **SCHLUMBERGER HOLDINGS LIMITED** [GB/GB]; P.O. Box 71, Craigmuir Chambers, Road Town, Tortola, Virgin Islands, British GB 1110 (GB).

(71) Applicant (for AL, AM, AU, AZ, BF, BG, BJ, BY, CF, CG, CI, CM, CO, CZ, DE, DK, GA, GN, GQ, GR, GW, HU, ID, IE, IL, IT, KG, KP, KR, KZ, LT, MD, ML, MR, MX, MY, NE, NO, NZ, OM, PL, QA, RO, RU, SI, SK, SN, TD, TG, TH, TJ, TM, TN, TR, TT, UZ, ZA only): **SCHLUMBERGER TECHNOLOGY B.V.** [NL/NL]; Parkstraat 83-89m, NL-2514 JG The Hague (NL).

(71) Applicant (for all designated States except AU, CA, CO, CZ, DE, DK, FR, GB, GR, HU, ID, IE, IL, IT, KR, LT, MX, MY, NL, NO, NZ, OM, PL, QA, RO, SI, TN, TR, TT, US, UZ, ZA): **PRAD RESEARCH AND DEVELOPMENT LIMITED** [GB/GB]; P.O. Box 71, Craigmuir Chambers, Road Town, Tortola, Virgin Island, British GB 1110 (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GRAU, Jim A.** [US/US]; 130 Pokanoket Lane, Marshfield, Massachusetts

[Continued on next page]

(54) Title: ENVIRONMENTAL CORRECTIONS IN NUCLEAR SPECTROSCOPY USING VARIABLE ELEMENT RATIO

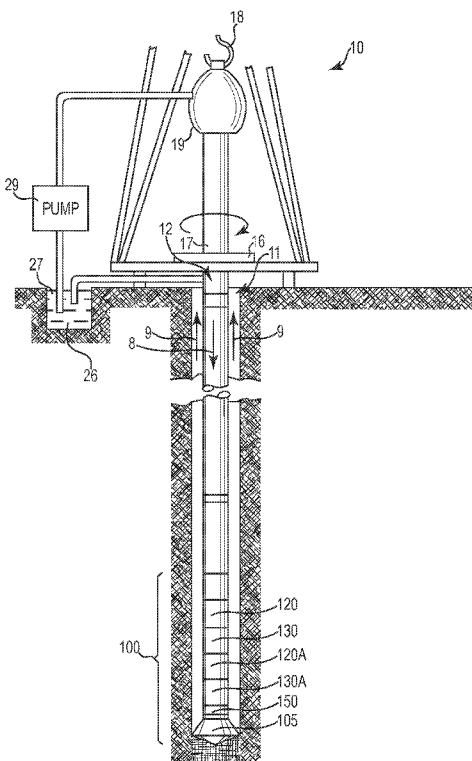


Fig. 1

(57) Abstract: A method for estimating an aspect of a formation using a nuclear spectroscopy tool includes placing a nuclear spectroscopy tool into a borehole and emitting neutrons such that some of the neutrons generate gamma rays from a formation adjacent the nuclear spectroscopy tool and some of the neutrons generate gamma rays from elements within the nuclear spectroscopy tool. An energy spectrum of gamma rays induced by the emitted neutrons can be detected. The energy spectrum includes a background having a plurality of measured spectral components. A background ratio between at least one spectral component of the background and another measured spectral component can be determined or estimated in accordance with environmental measurements. The detected gamma ray spectra can be analyzed using a combination of standard spectra and subtracting at least one spectral component of the background in accordance with the background ratio.

WO 2012/162473 A3



02050 (US). **MILES, Jeffrey** [US/US]; 17 Baker Road, Arlington, Massachusetts 02474 (US). **BERHEIDE, Markus** [DE/US]; 16 Pilgrim Road, Medford, Massachusetts 02155 (US).

(74) **Agents:** **CHI, Stephanie** et al.; 10001 Richmond, Room 4720, Houston, Texas 77042 (US).

(81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) **Date of publication of the international search report:**

7 February 2013

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/039295

A. CLASSIFICATION OF SUBJECT MATTER
INV. G01V5/10
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
G01V

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data, INSPEC, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 661 701 A (GRAU JAMES A [US]) 28 April 1987 (1987-04-28) column 3, line 65 - column 4, line 64 column 5, line 32 - line 38 column 6, line 30 - column 8, line 60; figures column 11, line 38 - column 12, line 27 -----	1,18,19
A	US 5 440 118 A (ROSCOE BRADLEY A [US]) 8 August 1995 (1995-08-08) page 4, line 23 - line 25 column 6, line 36 - line 44 column 10, line 8 - line 42; figures -----	1,18,19
A	WO 2010/118147 A1 (HALLIBURTON ENERGY SERV INC [US]; SUPARMAN FNU [US]) 14 October 2010 (2010-10-14) paragraph [0035] - paragraph [0040]; figures -----	1,18,19

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"&" document member of the same patent family

Date of the actual completion of the international search 20 November 2012	Date of mailing of the international search report 27/11/2012
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Eberle, Katja
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2012/039295

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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