### ALEXCO RESOURCE CORP

## Form SC 13G

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SCHEDULE 13G

Under the Securities Exchange Act of 1934

Alexco Resource Corporation

(Name of Issuer)

Common Shares

(Title of Class of Securities)

01535P106

(CUSIP Number)

February 28, 2010

(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- [ ]Rule 13d-1(b)
- [ X ]Rule 13d-1(c)
- [ ]Rule 13d-1(d)

CUSIP No. 01535P106

1. NAME OF REPORTING PERSON

I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)

Sprott Asset Management LP

- 2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*
- (a) [ ]
- (b) [X]

- 3. SEC USE ONLY
- 4. CITIZENSHIP OR PLACE OF ORGANIZATION

Ontario, Canada

NUMBER OF 5. SOLE VOTING POWER

SHARES

0

BENEFICIALLY 6. SHARED VOTING POWER

OWNED BY 4,753,050

EACH 7. SOLE DISPOSITIVE POWER

REPORTING (

PERSON 8. SHARED DISPOSITIVE POWER

WITH 4,753,050

9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

4,753,050

10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*

[\_]

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

9.0%

12. TYPE OF REPORTING PERSON\*

ΙA

### Item 1.

- (a) Name of Issuer: Alexco Resource Corporation
- (b) Address of Issuer's Principal Executive Offices: 1150-200 Granville Street, Vancouver, BC V6C 1S4

#### Item 2.

- (a) Name of Person Filing: Sprott Asset Management LP
- (b) Address of Principal Business Office: Suite 2700, South Tower, Royal Bank Plaza, Toronto, ON M5J 2J1
- (c) Citizenship: Canada
- (d) Title of Class of Securities: Common Shares
- (e) CUSIP Number: 01535P106
- Item 3. If this statement is filed pursuant to Rule 13d-1(b), or 13d-2(b), check whether the person filing is a:
  - (a) [ ] Broker or dealer registered under section 15 of the Act (15 U.S.C. 78o).
  - (b) [ ] Bank as defined in section 3(a)(6) of the Act (15 U.S.C. 78c).
  - (c) [ ] Insurance company as defined in section 3(a) (19) of the Act (15 U.S.C. 78c).
  - (d) [ ] Investment company registered under section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8).
  - (e) [ ] An investment adviser in accordance with ss. 240.13d-1 (b) (ii) (E).
  - (f) [ ] An employee benefit plan or endowment fund in accordance with ss. 240.13d-1(b)(1)(ii)(F).
  - (g) [ ] A parent holding company or control person in accordance with ss. 240.13d-1 (b) (1) (ii) (G).
  - (h) [ ] A savings association as defined in Section 3(b) of the

Federal Deposit Insurance Act (12 U.S.C. 1813).

- (i) [] A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3).
- (j) [ ] Group, in accordance with ss. 240.13d-1(b)(1)(ii)(J).

### Item 4. Ownership

- (a) Amount Beneficially Owned: 4,753,050
- (b) Percent of Class: 9.0%
- (c) Number of shares as to which such person has:
  - (i) Sole power to vote or to direct the vote: 0
  - (ii) Shared power to vote or to direct the vote: 4,753,050
  - (iii Sole power to dispose or to direct the disposition of: 0
  - (iv) Shared power to dispose or to direct the disposition of: 4,753,050
- Item 5. Ownership of Five Percent or Less of a Class:

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following. []

Item 6. Ownership of More than Five Percent on Behalf of Another Person:

N/A

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company:

N/A

Item 8. Identification and Classification of Members of the Group:

N/A

Item 9. Notice of Dissolution of Group:

N/A

### Item 10. Certification:

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

March 9, 2010 ------Date

SPROTT ASSET MANAGEMENT LP, by its General Partner, SPROTT ASSET MANAGEMENT GP INC.

Name: /s/ Steven Rostowsky
Title: Chief Financial Officer