

YPF SOCIEDAD ANONIMA
Form 6-K
May 11, 2011

FORM 6-K
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Report of Foreign Issuer

Pursuant to Rule 13a-16 or 15d-16 of
the Securities Exchange Act of 1934

For the month of May, 2011

Commission File Number: 001-12102

YPF Sociedad Anónima
(Exact name of registrant as specified in its charter)

Macacha Güemes 515
C1106BKK Buenos Aires, Argentina
(Address of principal executive office)

Indicate by check mark whether the registrant files or will file
annual reports under cover of Form 20-F or Form 40-F:

Form 20-F Form 40-F

Indicate by check mark if the registrant is submitting the Form 6-K
in paper as permitted by Regulation S-T Rule 101(b)(1):

Yes No

Indicate by check mark if the registrant is submitting the Form 6-K
in paper as permitted by Regulation S-T Rule 101(b)(7):

Yes No

Indicate by check mark whether by furnishing the information
contained in this Form, the Registrant is also thereby furnishing the information to the Commission
pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934:

Yes No

YPF Sociedad Anónima

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TRANSLATION

City of Buenos Aires, May 10, 2011

To the
Buenos Aires Stock Exchange

Re: New non conventional
crude oil resources discovery
coming from Shale oil
formations in the Neuquina
basin

The purpose of this letter is to comply with the requirements of Chapter VII, Article 23 of the Regulations of the Buenos Aires Stock Exchange.

We hereby inform you that under the Exploration and Production Development Program 2010/2014 we have drilled 6 vertical exploration wells which appraised an area of 330 km² (81,500 acres) in the Vaca Muerta formation, in the northern area of Loma La Lata, Neuquén province, and which results showed initial flows ranging from 200 to 560 barrels of oil equivalent per day (boe/d – average during the first 30 days of production in each respective well), which together with seismic and geological studies carried out, allows YPF to estimate technically recoverable resources¹ of 150 million boe in this area. As of the date hereof, no proved reserves have been recognized for the related projects and may be recognized as such only once the applicable regulations and requirements for recording proved reserves are met.

In light of these results, YPF will begin a pilot development in an area of 25 Km² (6,180 acres) and the appraisal of another 200 km² (49,400 acres). We estimate that about 17 new wells will be drilled and 14 existing wells will be fractured during the rest of the year, which is supposed to involve an estimated total investment of approximately US\$270 million, with US\$100 million already invested.

This is the beginning of the first large development of oil coming from a non-conventional formation of Shale oil outside North America.

Please find attached the technical report regarding the new discovery prepared by YPF Exploration and Production department.

1 Although we believe shale oil fields in Neuquén are promising, until further work is completed, there remains significant risk that these discoveries will not lead to material proved reserves.

Yours faithfully,

Guillermo Reda
Market Relations

YPF confirms the discovery of important resources of Shale Oil in the Neuquina basin

- The exploratory activity carried out by YPF appraised an area of 330 km² (81,500 acres) in the Vaca Muerta formation, in the northern area of Loma La Lata, with thickness averages of 250 meters (820 feet), able to produce oil of high quality (42° API) from this non-conventional formation.
- The result of the first vertical wells showed initial flows ranging from 200 to 560 barrels of oil equivalent per day (boe/d – average during the first 30 days of production in each respective well), which together with seismic and geological studies carried out, allows YPF to estimate technically recoverable resources of 150 million boe in this area. In light of these results, YPF will begin a pilot development in an area of 25 Km² (6,180 acres) and the appraisal of another 200 km² (49,400 acres). We estimate that about 17 new wells will be drilled and 14 existing wells will be fractured during the rest of the year, which is supposed to involve an estimated total investment of approximately U\$S270 million, with U\$S100 million already invested.
- The Vaca Muerta formation is a source rock of approximately 30,000 km² (7,400,000 acres) in the Neuquina basin, which thickness ranges between 50 and 400 meters (160 to 1300 feet).
- YPF, after having proven the productivity of the Vaca Muerta formation, of oil as much as gas, in the location Loma La Lata, will continue with the exploration of the formation in the rest of the Neuquina basin with an activity of 13 additional wells in 2011.
- This is the beginning of the first large development of oil coming from a non conventional formation of Shale oil outside North America.

As a result of an exploration and appraisal program in the Vaca Muerta formation in the area of Loma La Lata (See picture 1), YPF has demonstrated the existence of technically recoverable resources of oil, gas and condensate in an extensive area within the Neuquina basin.

Picture 1: Location of the finding (Loma La Lata- Neuquina basin)

The result of the activity in five vertical wells to date is the appraisal of an area covering 330 km² (81,500 acres) in the Vaca Muerta formation in the northern area of Loma La Lata (See picture 2). The activity carried out has assessed the capacity to produce oil from this non-conventional formation. The quality of the crude oil is 42° API, similar to the oil coming from conventional sources.

The first vertical wells show initial flows ranging from 200 to 560 barrels of oil equivalent per day (boe/d - average during the first 30 days of production in each respective well). These production levels are reached with natural flow and pressures over 1000 PSI, and restricted exit holes. These flows compare highly favorably against similar fields in the United States and Canada, so far the only countries reporting important production from resources of this kind (See picture 3).

Picture 2: Initial flows and defined, developed areas

During the current year we will start the development of 25 Km² (6,180 acres) - Zone I - and the delineation of another 200 km² (49,400 acres)- Zone II, III and IV - in the north of Loma La Lata- Sierra Barrosa block (Neuquén province). We estimate that about 17 new wells will be drilled and 14 existing wells will be fractured during the rest of the year, to reach a total investment of approximately U\$S 270 million, out of which U\$S 100 million have already been invested. Depending on the data obtained, a decision will be made as to whether the development of Zone I will be carried out through vertical or horizontal wells.

There lies an additional opportunity to drilling at Vaca Muerta and that is from the development of resources at the Quintuco formation. During the drilling of wells down to Vaca Muerta objectives important productions were met at Quintuco formation, well LLL No.X-1 having an outstanding initial production of 4093 boe/d (See Picture 2). In Argentina there have not been similar values for more than a decade, this well's production is equivalent to the current average production of 100 wells in the country.

Driven by this discovery, exploration of the Vaca Muerta formation will continue in the remaining part of the Neuquina basin with an estimated activity of 13 wells in 2011. The search is centered on determining productivity at Vaca Muerta in all the blocks where YPF holds interests (more than 12,000 km², -3,000,000 acres -), where this formation shows suitable conditions to be productive.

Currently YPF operates 6 rigs working in exploratory wells and appraisal or pre development of the basin.

Picture 3: Vaca Muerta, Bakken and Eagle Ford

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SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

YPF Sociedad Anónima

Date: May 11, 2011

By:

Name:

Title:

/s/ Guillermo Reda

Guillermo Reda

Chief Financial Officer
