

SPIRE Corp  
Form S-8  
August 13, 2012

As filed with the Securities and Exchange Commission on August 13, 2012

Registration No. 333-\_\_\_\_\_

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM S-8  
REGISTRATION STATEMENT UNDER  
THE SECURITIES ACT OF 1933

Spire Corporation  
(Exact Name of Registrant as Specified in Its Charter)  
MASSACHUSETTS  
(State or Other Jurisdiction of Incorporation  
or Organization)

04-2457335  
(I.R.S Employer  
Identification No.)

One Patriots Park, Bedford, Massachusetts  
(Address of Principal Executive Officers)

01730-2396  
(Zip Code)

SPIRE CORPORATION 2007 STOCK EQUITY  
(Full Title of the Plan)

Roger G. Little  
Chairman of the Board, Chief Executive Officer and President  
Spire Corporation  
One Patriots Park  
Bedford, Massachusetts 01730-2396  
(Name and Address of Agent for Service)

(781) 275-6000  
(Telephone Number, Including Area Code, of Agent For Service)

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer  Accelerated filer

Non-accelerated filer  Smaller reporting company   
(Do not check if a smaller reporting company)

CALCULATION OF REGISTRATION FEE

Title of securities to be registered	Amount to be registered	Proposed maximum offering price per share	Proposed maximum aggregate offering price	Amount of registration fee
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Common Stock, \$0.01 par value per share	750,000 Shares	\$0.56 (1)	\$420,000 (1)	\$48.14
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Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(h) of the Securities Act of 1933, as amended. The price per share and aggregate offering price are calculated on the basis of the (1) average of the high and low sale prices of the Registrant's Common Stock on the Nasdaq Capital Market on August 8, 2012 (\$0.56), in accordance with Rule 457(c) under the Securities Act of 1933, as amended.

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REGISTRATION OF ADDITIONAL SECURITIES  
PURSUANT TO GENERAL INSTRUCTION E

This Registration Statement is being filed to register an additional 750,000 shares of the Common Stock of Spire Corporation (the "Registrant") that may be issued under the Spire Corporation 2007 Stock Compensation Plan. Pursuant to General Instruction E of Form S-8, the Registrant hereby incorporates by reference the contents of the Registrant's Registration Statement on Form S-8 (No. 333-143517) as previously filed with the Securities and Exchange Commission on June 5, 2007, except for Items 3 and 8 which are being updated by this Registration Statement.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents filed with the Commission are incorporated by reference in this Registration Statement:

- (a) The Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2011 filed with the Commission on March 15, 2012;
- (b) All other reports filed pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), since December 31, 2011; and
- (c) The description of the Registrant's Common Stock contained in the Registrant's Registration Statement on Form 8-A, including any amendments or reports filed for the purpose of updating that description.

In addition, all documents filed by the Registrant pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, after the date hereof and prior to the filing of a post-effective amendment which indicates that all securities offered herein have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference herein and to be part hereof from the date of filing such documents. Any statement contained herein or in a document incorporated by reference or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that such statement is modified or superseded by any other subsequently filed document which is incorporated or is deemed to be incorporated by reference herein. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

Item 8. Exhibits.

The Exhibit Index immediately preceding the exhibits is incorporated herein by reference.

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Bedford, Massachusetts, on August 13, 2012.

## SPIRE CORPORATION

By: /s/ Roger G. Little  
 Roger G. Little  
 Chief Executive Officer and President

## POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS that each individual whose signature appears below constitutes and appoints each of Roger G. Little and Robert S. Lieberman as such person's true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for such person in such person's name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement (or any Registration Statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933), and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission, granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that any said attorney-in-fact and agent, or any substitute or substitutes of any of them, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Roger G. Little Roger G. Little	Chairman of the Board, Chief Executive Officer and President (Principal Executive Officer)	August 13, 2012
/s/ Robert S. Lieberman Robert S. Lieberman	Chief Financial Officer and Treasurer (Principal Financial Officer and Principal Accounting Officer)	August 13, 2012
/s/ Udo Henseler Udo Henseler	Director	August 13, 2012
/s/ David R. Lipinski David R. Lipinski	Director	August 13, 2012
/s/ Mark C. Little Mark C. Little	Director	August 13, 2012
/s/ Michael J. Magliochetti Michael J. Magliochetti	Director	August 13, 2012
/s/ Guy L. Mayer	Director	August 13, 2012

Guy L. Mayer

/s/ Roger W. Redmond  
Roger W. Redmond

Director

August 13, 2012

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EXHIBIT INDEX

Number	Description
4.1	Spire Corporation 2007 Stock Compensation Plan, as amended, incorporated by reference to Appendix A of the Registrant's Schedule 14A Proxy Statement dated April 10, 2012.
5.1	Opinion of Greenberg Traurig, LLP, counsel to the Registrant.
23.1	Consent of Greenberg Traurig, LLP (included in Exhibit 5.1).
23.2	Consent of McGladrey, LLP
24.1	Power of attorney (included on the signature page to this Registration Statement).