
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

**SCHEDULE 13D/A
(Amendment No. 5)**

Under the Securities Exchange Act of 1934

MPLX LP

(Name of Issuer)

**Common Units Representing Limited Partner Interests
(Title of Class of Securities)**

**55336V100
(CUSIP Number)**

**Molly R. Benson
Vice President, Corporate Secretary and Chief Compliance Officer
Marathon Petroleum Corporation
539 South Main Street
Findlay, Ohio 45840
(419) 422-2121**

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

**March 1, 2017
(Date of Event which Requires Filing of this Statement)**

If the filing person has previously filed a statement on Schedule 13G to report the acquisition which is subject of this Schedule 13D, and is filing this statement because of Rule 13d-1(e), 13d-1(f) or 13d-1(g), check the following box.

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule 13d-7(b) for other parties to whom copies are to be sent.

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 (the "Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

CUSIP No.: 55336V100

1.	Name of Reporting Person: Marathon Petroleum Corporation
2.	Check the Appropriate Box if a Member of Group (See Instructions): (a) <input type="checkbox"/> (b) <input type="checkbox"/>
3.	SEC Use Only:
4.	Source of Funds: OO
5.	Check if Disclosure of Legal Proceedings is Required Pursuant to <u>Items 2(d)</u> or <u>2(e)</u> :
6.	Citizenship or Place of Organization: Delaware
Number of Shares Beneficially Owned By Each Reporting Person With:	7. Sole Voting Power: —
	8. Shared Voting Power: 99,579,689 ⁽¹⁾
	9. Sole Dispositive Power: —
	10. Shared Dispositive Power: 99,579,689 ⁽¹⁾
11.	Aggregate Amount Beneficially Owned by Each Reporting Person: 99,579,689 ⁽¹⁾
12.	Check if the Aggregate Amount in Row (11) Excludes Certain Shares:
13.	Percent of Class Represented By Amount In Row (11): 26.9% ⁽²⁾
14.	Type of Reporting Person: CO

- MPLX Logistics Holdings LLC (“MPLX Logistics”) beneficially owns 63,195,426 common units representing limited partner interests (“MPLX Common Units”) in the Issuer. MPLX Holdings Inc. (“MPLX Holdings”) beneficially owns 27,186,363 MPLX Common Units in the Issuer. MPLX GP LLC (“MPLX GP”) beneficially owns 9,197,900 MPLX Common Units in the Issuer. MPC Investment LLC (“MPC Investment”) owns all of the membership interests in MPLX Logistics and MPLX GP and all of the shares of stock of MPLX Holdings. Marathon Petroleum Corporation (“MPC”) owns all of the membership interests in MPC Investment. Accordingly, MPC and MPC Investment both may be deemed to indirectly beneficially own the MPLX Common Units directly held by MPLX Logistics, MPLX Holdings and MPLX GP.
- Based upon 370,218,037 MPLX Common Units issued and outstanding as of March 1, 2017, as reported by the Issuer to the Reporting Persons.

1.	Name of Reporting Person: MPC Investment LLC
2.	Check the Appropriate Box if a Member of Group (See Instructions): (a) <input type="checkbox"/> (b) <input type="checkbox"/>
3.	SEC Use Only:
4.	Source of Funds: OO
5.	Check if Disclosure of Legal Proceedings is Required Pursuant to <u>Items 2(d)</u> or <u>2(e)</u> :
6.	Citizenship or Place of Organization: Delaware
Number of Shares Beneficially Owned By Each Reporting Person With:	7. Sole Voting Power: —
	8. Shared Voting Power: 99,579,689 ⁽¹⁾
	9. Sole Dispositive Power: —
	10. Shared Dispositive Power: 99,579,689 ⁽¹⁾
11.	Aggregate Amount Beneficially Owned by Each Reporting Person: 99,579,689 ⁽¹⁾
12.	Check if the Aggregate Amount in Row (11) Excludes Certain Shares:
13.	Percent of Class Represented By Amount In Row (11): 26.9% ⁽²⁾
14.	Type of Reporting Person: OO

- MPLX Logistics Holdings LLC (“MPLX Logistics”) beneficially owns 63,195,426 common units representing limited partner interests (“MPLX Common Units”) in the Issuer. MPLX Holdings Inc. (“MPLX Holdings”) beneficially owns 27,186,363 MPLX Common Units in the Issuer. MPLX GP LLC (“MPLX GP”) beneficially owns 9,197,900 MPLX Common Units in the Issuer. MPC Investment LLC (“MPC Investment”) owns all of the membership interests in MPLX Logistics and MPLX GP and all of the shares of stock of MPLX Holdings. Marathon Petroleum Corporation (“MPC”) owns all of the membership interests in MPC Investment. Accordingly, MPC and MPC Investment both may be deemed to indirectly beneficially own the MPLX Common Units directly held by MPLX Logistics, MPLX Holdings and MPLX GP.
- Based upon 370,218,037 MPLX Common Units issued and outstanding as of March 1, 2017, as reported by the Issuer to the Reporting Persons.

CUSIP No.: 55336V100

1.	Name of Reporting Person: MPLX Logistics Holdings LLC	
2.	Check the Appropriate Box if a Member of Group (See Instructions): (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3.	SEC Use Only:	
4.	Source of Funds: OO	
5.	Check if Disclosure of Legal Proceedings is Required Pursuant to <u>Items 2(d)</u> or <u>2(e)</u> :	
6.	Citizenship or Place of Organization: Delaware	
Number of Shares Beneficially Owned By Each Reporting Person With:	7.	Sole Voting Power: —
	8.	Shared Voting Power: 63,195,426
	9.	Sole Dispositive Power: —
	10.	Shared Dispositive Power: 63,195,426
11.	Aggregate Amount Beneficially Owned by Each Reporting Person: 63,195,426	
12.	Check if the Aggregate Amount in Row (11) Excludes Certain Shares:	
13.	Percent of Class Represented By Amount In Row (11): 17.1% ⁽¹⁾	
14.	Type of Reporting Person: OO	

1. Based upon 370,218,037 MPLX Common Units issued and outstanding as of March 1, 2017, as reported by the Issuer to the Reporting Persons.

CUSIP No.: 55336V100

1.	Name of Reporting Person: MPLX Holdings Inc.	
2.	Check the Appropriate Box if a Member of Group (See Instructions): (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3.	SEC Use Only:	
4.	Source of Funds: OO	
5.	Check if Disclosure of Legal Proceedings is Required Pursuant to <u>Items 2(d)</u> or <u>2(e)</u> :	
6.	Citizenship or Place of Organization: Delaware	
Number of Shares Beneficially Owned By Each Reporting Person With:	7.	Sole Voting Power: —
	8.	Shared Voting Power: 27,186,363
	9.	Sole Dispositive Power: —
	10.	Shared Dispositive Power: 27,186,363
11.	Aggregate Amount Beneficially Owned by Each Reporting Person: 27,186,363	
12.	Check if the Aggregate Amount in Row (11) Excludes Certain Shares:	
13.	Percent of Class Represented By Amount In Row (11): 7.3% ⁽¹⁾	
14.	Type of Reporting Person: OO	

1. Based upon 370,218,037 MPLX Common Units issued and outstanding as of March 1, 2017, as reported by the Issuer to the Reporting Persons.

CUSIP No.: 55336V100

1.	Name of Reporting Person: MPLX GP LLC	
2.	Check the Appropriate Box if a Member of Group (See Instructions): (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3.	SEC Use Only:	
4.	Source of Funds: OO	
5.	Check if Disclosure of Legal Proceedings is Required Pursuant to <u>Items 2(d)</u> or <u>2(e)</u> :	
6.	Citizenship or Place of Organization: Delaware	
Number of Shares Beneficially Owned By Each Reporting Person With:	7.	Sole Voting Power: —
	8.	Shared Voting Power: 9,197,900 ⁽¹⁾
	9.	Sole Dispositive Power: —
	10.	Shared Dispositive Power: 9,197,900 ⁽¹⁾
11.	Aggregate Amount Beneficially Owned by Each Reporting Person: ⁽¹⁾ 9,197,900 ⁽¹⁾	
12.	Check if the Aggregate Amount in Row (11) Excludes Certain Shares:	
13.	Percent of Class Represented By Amount In Row (11): 2.5% ⁽²⁾	
14.	Type of Reporting Person: OO	

1. The Reporting Person, sole general partner of the Issuer, also owns 7,636,916 general partner units representing a two percent general partner interest in the Issuer, as well as incentive distribution rights in the Issuer, entitling the Reporting Person to receive increasing percentages of quarterly distributions in excess of specified amounts.

2. Based upon 370,218,037 MPLX Common Units issued and outstanding as of March 1, 2017, as reported by the Issuer to the Reporting Persons.

Explanatory Note: This Amendment No. 5 (this “Amendment”) filed by Marathon Petroleum Corporation (“MPC”), MPC Investment LLC (“MPC Investment”), MPLX Logistics Holdings LLC (“MPLX Logistics”), MPLX GP LLC (“MPLX GP”) and MPLX Holdings Inc. (“MPLX Holdings”) amends and supplements the statement on Schedule 13D concerning the common units representing limited partner interests (“MPLX Common Units”) in MPLX LP (the “Issuer”) filed on December 3, 2014 and as amended on December 12, 2014, August 19, 2015, December 7, 2015 and April 4, 2016 (the “Schedule 13D”). The Schedule 13D is not modified except as specifically provided herein. Any terms capitalized but not defined herein shall have the same meaning as defined in the Schedule 13D.

Item 1. Security and Issuer

No changes to this Item.

Item 2. Identity and Background

Item 2 of the Schedule 13D is hereby supplemented as follows:

The information required by subparagraphs (a), (b), (c) and (f) of this Item with respect to the directors and executive officers of the Reporting Persons is set forth on Schedule I attached hereto and is incorporated herein by reference.

Item 3. Source and Amount of Funds or Other Consideration

Item 3 of the Schedule 13D is hereby supplemented as follows:

On March 1, 2017, the Issuer entered into a Membership Interests Contributions Agreement (the “Contributions Agreement”) with MPLX GP, MPLX Logistics, MPLX Holdings and MPC Investment. Pursuant to the Contributions Agreement, MPC Investment agreed to contribute the outstanding membership interests in Hardin Street Transportation LLC, Woodhaven Cavern LLC and MPLX Terminals LLC through a series of intercompany contributions to the Partnership for approximately \$1.511 billion in cash and equity consideration valued at approximately \$504 million (the “Transaction”).

In connection with the closing of the Transaction on March 1, 2017, the Partnership issued (i) 9,197,900 MPLX Common Units to MPLX GP, (ii) 2,630,427 MPLX Common Units to MPLX Logistics and (iii) 1,132,049 Common Units to MPLX Holdings. The Partnership also issued 264,497 general partner units to MPLX GP in order to maintain its two percent general partner interest in the Partnership.

The foregoing description of the Contributions Agreement is not complete and is qualified in its entirety by reference to the full text of the Contributions Agreement, which is filed as Exhibit 99.1 hereto, and incorporated herein by reference.

Item 4. Purpose of Transaction

Item 4 of the Schedule 13D is hereby supplemented as follows:

The purpose of the acquisition of the MPLX Common Units and the general partner units that were the subject of the Contributions Agreement is for general investment purposes.

Depending on the factors discussed herein, the Reporting Persons may, from time to time, acquire, retain or sell all or a portion of the MPLX Common Units in the open market or in privately negotiated transactions. Any actions the Reporting Persons might undertake will be dependent upon the Reporting Persons’ review of numerous factors, including, among other things, the price levels of the MPLX Common Units; general market and economic conditions; ongoing evaluation of the Issuer’s business, financial condition, operations and prospects; the relative attractiveness of alternative business and investment opportunities; and other future developments.

Except as set forth above, the Reporting Persons and Related Persons have no present plans or proposals that would result in or

relate to any of the transactions described in subparagraphs (a) through (j) of Item 4 of Schedule 13D.

Item 5. Interest in Securities of the Issuer

Item 5 of the Schedule 13D is hereby amended and supplemented as follows:

(a) Items 11 and 13 of each Cover Page state the aggregate number and percentage of MPLX Common Units beneficially owned by the applicable Reporting Persons. After giving effect to the MPLX Common Units issued in connection with the Transaction, MPLX Logistics beneficially owns 63,195,426 MPLX Common Units, MPLX Holdings beneficially owns 27,186,363 MPLX Common Units and MPLX GP beneficially owns 9,197,900 MPLX Common Units, representing in the aggregate, approximately 26.9% of the MPLX Common Units issued and outstanding, based upon 370,218,037 MPLX Common Units issued and outstanding as of March 1, 2017, as reported by the Issuer to the Reporting Persons. MPC Investment owns all of the membership interests in MPLX Logistics and MPLX GP and all of the shares of stock of MPLX Holdings. MPC owns all of the membership interests in MPC Investment. Accordingly, MPC and MPC Investment both may be deemed to indirectly beneficially own the MPLX Common Units directly held by MPLX Logistics, MPLX Holdings and MPLX GP. The members of the board of directors of MPC are listed on Schedule I to this Amendment. No individual member of the board of directors of MPC is deemed to hold any beneficial ownership in the MPLX Common Units held by MPLX Logistics, MPLX Holdings or MPLX GP.

(b) The information provided in Item 5(a) of this Amendment and in Items 7 through 11 of the cover pages is incorporated herein by reference.

(c) Except as set forth herein, MPLX Logistics, MPLX Holdings and MPLX GP have not effected any transactions in the MPLX Common Units within the past 60 days. None of MPC, MPC Investment nor any person listed on Schedule I has effected any transactions in the MPLX Common Units within the past 60 days except as set forth in Schedule I.

(d) None of MPC, MPC Investment, MPLX GP, MPLX Holdings nor MPLX Logistics has any knowledge of any other person having the right to receive or the power to direct the receipt of distributions from, or the proceeds from the sale of, the MPLX Common Units held in the name of MPLX Logistics, MPLX Holdings or MPLX GP and reported herein.

(e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer.

Item 6 of the Schedule 13D is hereby supplemented as follows:

Item 3 above summarizes certain provisions of the Contributions Agreement, which is filed as Exhibit 99.1 hereto, and is incorporated herein by reference.

Item 7. Material to be Filed as Exhibits.

The following document is filed as an exhibit.

Exhibit

<u>No.</u>	<u>Description</u>
99.1	Membership Interests Contributions Agreement, dated March 1, 2017, between MPLX LP, MPLX Logistics Holdings LLC, MPLX GP LLC, MPLX Holdings Inc. and MPC Investment LLC (Incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K of MPLX LP, filed on March 2, 2017)

Schedule I

Information regarding each director and executive officer of Marathon Petroleum Corporation is set forth below. The business address for each director and executive officer is c/o Marathon Petroleum Corporation, 539 South Main Street, Findlay, Ohio, United States.

Marathon Petroleum Corporation

Name, Title	Principal Occupation	Citizenship	Transactions in Last 60 Days
<i>Directors</i>			
Abdulaziz F. Alkhayyal	Retired Senior Vice President, Industrial Relations Saudi Aramco	Saudi Arabia	109,126 ²
Evan Bayh	Senior Advisor, Apollo Global Management Partner, McGuireWoods LLP	U.S.	128,902 ²
Charles E. Bunch	Retired Chairman of the Board PPG Industries, Inc.	U.S.	115,921 ²
David A. Daberko	Retired Chairman of the Board National City Corporation	U.S.	859,864 ²
Steven A. Davis	Former Chairman and Chief Executive Officer Bob Evans Farms, Inc.	U.S.	10,125,072 ^{2,5}
Gary R. Heminger	Chairman, President and Chief Executive Officer Marathon Petroleum Corporation	U.S.	21,630 ^{1,3,4}
Donna A. James	Managing Director Lardon & Associates, LLC	U.S.	128,903 ²
James E. Rohr	Retired Chairman and Chief Executive Officer The PNC Financial Services Group, Inc.	U.S.	125,073 ²
Frank M. Semple	Retired Chairman, President and Chief Executive Officer MarkWest Energy Partners, L.P.	U.S.	743,623 ²
John W. Snow	Non-Executive Chairman of the Board Cerberus Capital Management, L.P.	U.S.	128,902 ²
J. Michael Stice	Dean, Mewbourne College of Earth & Energy University of Oklahoma	U.S.	—
John P. Surma	Retired Chairman and Chief Executive Officer United States Steel Corporation	U.S.	859,864 ²
<i>Executive Officers</i>			
Gary R. Heminger	President and Chief Executive Officer	U.S.	21,630 ^{1,3,4}
Raymond L. Brooks	Senior Vice President, Refining	U.S.	2,001 ^{3,4}
Suzanne Gagle	Vice President and General Counsel	U.S.	2,834 ^{3,4}
Timothy T. Griffith	Senior Vice President and Chief Financial Officer	U.S.	5,016 ^{1,3,4}
Thomas Kaczynski	Vice President, Finance and Treasurer	U.S.	1,197 ^{3,4}
Thomas M. Kelley	Senior Vice President, Marketing	U.S.	882 ^{1,3,4}
Anthony R. Kenney	President, Speedway LLC	U.S.	2,031 ^{1,3,4}
Rodney P. Nichols	Executive Vice President, Human Resources and Administrative Services	U.S.	1,680 ^{1,3,4}
Randy S. Nickerson	Executive Vice President, Corporate Strategy	U.S.	(12,114) ^{4,6}
C. Michael Palmer	Senior Vice President, Supply, Distribution and Planning	U.S.	2,242 ^{1,3,4}
John J. Quaid	Vice President and Controller	U.S.	1,580 ^{3,4}

John S. Swearingen	Senior Vice President, Transportation and Logistics	U.S.	5,840 ^{1,3,4}
Donald C. Templin	Executive Vice President	U.S.	26,469 ^{1,3,4}

- (1) Includes MPLX Common Units issued on February 1, 2017 in settlement of performance units. The performance units were granted pursuant to the MPLX LP 2012 Incentive Compensation Plan and settled 25% in MPLX Common Units and 75% in cash. The number of MPLX Common Units issued to each applicable executive officer on February 1, 2017 in settlement of performance units is as follows: G. Heminger, 1,737; T. Griffith, 92; T. Kelley, 81; A. Kenney, 156; R. Nichols, 122; C. M. Palmer, 232; J. Swearingen, 60 and D. Templin, 455.
- (2) Includes phantom units granted on January 3, 2017 and on February 14, 2017, pursuant to the MPLX LP 2012 Incentive Compensation Plan and credited within a deferred account. Phantom units settle in the form of MPLX Common Units upon departure from the MPC Board of Directors.
- (3) Gives effect to MPLX Common Units withheld for tax purposes upon the vesting of phantom units on March 1, 2017. For tax withholding purposes the value of the MPLX Common Units withheld was deemed to be equal to the closing price of \$37.87 of the Common Units on March 1, 2017. The number of MPLX Common Units withheld on March 1, 2017, in connection with the vesting of phantom units, by each applicable executive officer is as follows: G. Heminger, 11,670; R. Brooks, 301; S. Gagle, 323; T. Griffith, 1,652; T. Kaczynski, 250; T. Kelley, 515; A. Kenney, 1,019; R. Nichols, 744; C. M. Palmer, 1,344; J. Quaid, 262; J. Swearingen, 796 and D. Templin, 5,549.
- (4) Includes phantom units granted on March 1, 2017 pursuant to the MPLX LP 2012 Incentive Compensation Plan. Phantom units settle in the form of MPLX Common Units upon vesting. The number of phantom units granted on March 1, 2017 is as follows: G. Heminger, 31,563; R. Brooks, 2,302; S. Gagle, 3,157; T. Griffith, 6,576; T. Kaczynski, 1,447; T. Kelley, 1,316; A. Kenney, 2,894; R. Nichols, 2,302; R. Nickerson, 17,886; C. M. Palmer, 3,354; J. Quaid, 1,842; J. Swearingen, 6,576 and D. Templin, 31,563.
- (5) Includes 10,000 MPLX Common Units purchased on the open market on February 8, 2017 at a weighted average price of \$38.32 per common unit.
- (6) Gives effect to 15,000 MPLX Common Units sold on the open market on January 17, 2017 at a weighted average price of \$36.082 and 15,000 MPLX Common Units sold on the open market on February 15, 2017 at a weighted average price of \$38.6062. Both sales were effected pursuant to a Rule 10b5-1 trading plan adopted August 15, 2016.