

ROYAL BANK OF CANADA
 Form FWP
 February 02, 2018

Free Writing Prospectus
 (To the Prospectus dated January 8, 2016, the Prospectus Supplement dated January 8, 2016, and the Product Prospectus Supplement dated January 11, 2016)

Filed Pursuant to Rule 433
 Registration No. 333-208507
 February 2, 2018

\$
 Buffered Return Enhanced Notes due February 21, 2019
 Royal Bank of Canada Linked to the SPDR® S&P® Oil & Gas Exploration & Production ETF
 Senior Global Medium-Term Notes, Series G

General

The Notes are designed for investors who seek a return equal to 1.50 times the appreciation of the SPDR® S&P® Oil & Gas Exploration & Production ETF (the “Reference Asset”), up to a maximum return on the Notes at maturity. Investors should be willing to forgo interest and dividend payments and, if the price of the Reference Asset declines by more than 10%, be willing to lose some or all of their principal on a leveraged basis.

- Senior unsecured obligations of Royal Bank of Canada maturing February 21, 2019.^{(a) (b)}
- Minimum denominations of \$10,000 and integral multiples of \$1,000 in excess thereof.

The Notes are expected to price on or about February 2, 2018^(b) (the “pricing date”) and are expected to be issued on or about February 7, 2018^(b) (the “issue date”).

Key Terms Terms used in this free writing prospectus, but not defined herein, will have the meanings ascribed to them in the product prospectus supplement.

Issuer: Royal Bank of Canada

Reference Asset: SPDR® S&P® Oil & Gas Exploration & Production ETF (Bloomberg ticker symbol “XOP”)

Leverage Factor: 1.50

Maximum Return: 20.025% (\$1,200.25 per \$1,000 in principal amount)

If the Percentage Change is greater than 0%, you will receive a cash payment that provides you with a return equal to the Percentage Change multiplied by the Leverage Factor, subject to the Maximum Return on the Notes. Accordingly, if the Percentage Change is positive, your payment per \$1,000 in principal amount of the Notes will be calculated as follows, subject to the Maximum Return:

$\$1,000 + [\$1,000 \times (\text{Percentage Change} \times \text{Leverage Factor})]$

If the Percentage Change is less than or equal to 0% but greater than or equal to -10%, you will receive the principal amount of your Notes at maturity.

Payment at Maturity: If the Final Level is less than 90% of the Initial Level, you will lose 1.111% of the principal amount of your Notes for every 1% that the Final Level declines from the Initial Level by more than 10%. Accordingly, your payment per \$1,000 in principal amount of the Notes will be calculated as follows:

$\$1,000 + [(\$1,000 \times \text{Percentage Change} + \text{Buffer Percentage}) \times \text{Downside Multiplier}]$

If the Final Level is less than the Initial Level by more than 10%, you will lose 1.111% of the principal amount of your Notes for every 1% that the Percentage Change is less than 10%.

Any payment on the Notes, including any repayment of principal, is subject to the creditworthiness of the Issuer.

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Percentage Change: The performance of the Reference Asset from the Initial Level to the Final Level, calculated as follows:

$$\frac{\text{Final Level} - \text{Initial Level}}{\text{Initial Level}}$$

Buffer Percentage: 10%

Downside Multiplier: 100/90, which equals approximately 1.111.

Initial Level: The closing share price of the Reference Asset on the pricing date.

Final Level: The arithmetic average of the closing share price of the Reference Asset on each of the valuation dates.

Valuation Dates: February 11, 2019, February 12, 2019, February 13, 2019, February 14, 2019 and February 15, 2019 (the “final valuation date”^(a) ^(b))

Maturity Date: February 21, 2019^(a) ^(b)

Calculation Agent: RBC Capital Markets, LLC (“RBCCM”)

CUSIP/ISIN: 78013XFL7 / US78013XFL75

Estimated Value: The estimated initial value of the Notes as of the date of this document is \$981.95 per \$1,000 in principal amount, which is less than the price to public. The pricing supplement relating to the Notes will set forth our updated estimate of the initial value of the Notes as of the pricing date, which will not be more than \$20 less than this amount. The actual value of the Notes at any time will reflect many factors, cannot be predicted with accuracy, and may be less than this amount.

^(a) Subject to postponement if a market disruption event occurs, as described under “General Terms of the Notes—Market Disruption Events” in the product prospectus supplement.

^(b) Expected. In the event we make any change to the expected pricing date and issue date, the valuation dates and the maturity date will be changed so that the stated term of the Notes remains the same.

Investing in the Notes involves a number of risks. See “Additional Risk Factors Specific to the Notes” beginning on page PS-6 of the product prospectus supplement, “Risk Factors” beginning on page S-1 of the prospectus supplement and beginning on page 1 of the prospectus and “Selected Risk Considerations” beginning on page FWP-3 of this free writing prospectus.

The Notes will not be listed on any U.S. securities exchange or quotation system. Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined that this free writing prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The Notes will not constitute deposits insured by the Canada Deposit Insurance Corporation, the U.S. Federal Deposit Insurance Corporation or any other Canadian or U.S. government agency or instrumentality.

	Price to Public ¹	Underwriting Commission ²	Proceeds to Royal Bank of Canada
Per Note \$1,000	\$10		\$990
Total	\$	\$	\$

Certain fiduciary accounts purchasing the Notes will pay a purchase price of \$990 per Note, and the placement agents will forgo any fees with respect to sales made to those accounts. The price to the public for all other purchases of the Notes is 100%.

JPMorgan Chase Bank, N.A., J.P. Morgan Securities LLC and their affiliates will act as placement agents for the Notes and will receive a fee from the Issuer that will not exceed \$10 per \$1,000 in principal amount of the Notes, but will forgo any fees for sales to certain fiduciary accounts.

RBC Capital Markets, LLC JPMorgan Chase Bank, N.A. J.P. Morgan Securities LLC
 Placement Agents

Royal Bank of Canada has filed a registration statement (including a product prospectus supplement, a prospectus supplement, and a prospectus) with the SEC for the offering to which this free writing prospectus relates. Before you invest, you should read those documents and the other documents relating to this offering that we have filed with the SEC for more complete information about us and this offering. You may obtain these documents without cost by visiting EDGAR on the SEC website at www.sec.gov. Alternatively, Royal Bank of Canada, any agent or any dealer participating in this offering will arrange to send you the product prospectus supplement, the prospectus supplement and the prospectus if you so request by calling toll-free at 1-877-688-2301.

You may revoke your offer to purchase the Notes at any time prior to the pricing as described on the cover of this free writing prospectus. We reserve the right to change the terms of, or reject any offer to purchase the Notes prior to their issuance. In the event of any changes to the terms of the Notes, we will notify you and you will be asked to accept such changes in connection with your purchase. You may also choose to reject such changes, in which case we may reject your offer to purchase.

ADDITIONAL TERMS OF THE NOTES

You should read this free writing prospectus together with the prospectus dated January 8, 2016, as supplemented by the prospectus supplement dated January 8, 2016 and the product prospectus supplement dated January 11, 2016 relating to our Senior Global Medium-Term Notes, Series G, of which these Notes are a part. Capitalized terms used but not defined in this free writing prospectus will have the meanings given to them in the product prospectus supplement. In the event of any conflict, this free writing prospectus will control. You should read this free writing prospectus carefully.

This free writing prospectus, together with the documents listed below, contains the terms of the Notes and supersedes all prior or contemporaneous oral statements as well as any other written materials including preliminary or indicative pricing terms, correspondence, trade ideas, structures for implementation, sample structures, brochures or other educational materials of ours. You should carefully consider, among other things, the matters set forth in “Risk Factors” in the prospectus supplement dated January 8, 2016 and “Additional Risk Factors Specific to the Notes” in the product prospectus supplement dated January 11, 2016, as the Notes involve risks not associated with conventional debt securities. We urge you to consult your investment, legal, tax, accounting and other advisors before you invest in the Notes. You may access these documents on the Securities and Exchange Commission (the “SEC”) website at www.sec.gov as follows (or if that address has changed, by reviewing our filings for the relevant date on the SEC website):

Prospectus dated January 8, 2016:

<http://www.sec.gov/Archives/edgar/data/1000275/000121465916008810/j18160424b3.htm>

Prospectus Supplement dated January 8, 2016:

<http://www.sec.gov/Archives/edgar/data/1000275/000121465916008811/p14150424b3.htm>

Product Prospectus Supplement ERN-ETF-1 dated January 11, 2016:

<https://www.sec.gov/Archives/edgar/data/1000275/000114036116047385/form424b5.htm>

Our Central Index Key, or CIK, on the SEC website is 1000275. As used in this free writing prospectus, “Royal Bank”, “we,” “us,” or “our” refers to Royal Bank of Canada.

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What Is the Total Return on the Notes at Maturity Assuming a Range of Performance for the Reference Asset?

The following table illustrates the hypothetical total return at maturity on the Notes. The “total return,” as used in this free writing prospectus, is the number, expressed as a percentage, that results from comparing the payment at maturity per \$1,000 in principal amount of the Notes to \$1,000. The hypothetical total returns and examples set forth below reflect the Leverage Factor of 1.50, the Downside Multiplier of 100/90, the Buffer Percentage of 10%, and the Maximum Return of 20.025%, and assume an Initial Level of \$100, and hypothetical Final Levels as set forth below. The actual Initial Level will be determined on the pricing date, and the actual Final Level will be determined based on the arithmetic average of the closing price of the Reference Asset on each of the valuation dates.

The hypothetical total returns and examples set forth below are for illustrative purposes only and may not be the actual total returns applicable to a purchaser of the Notes. The numbers appearing in the following table and examples have been rounded for ease of analysis. The examples below do not take into account any tax consequences from investing in the Notes.

Final Level	Percentage Change	Payment at Maturity	Total Return on the Notes
\$170.00	70.00%	\$1,200.25	20.025%
\$150.00	60.00%	\$1,200.25	20.025%
\$140.00	40.00%	\$1,200.25	20.025%
\$130.00	30.00%	\$1,200.25	20.025%
\$120.00	20.00%	\$1,200.25	20.025%
\$113.35	13.35%	\$1,200.25	20.025%
\$110.00	10.00%	\$1,150.00	15.000%
\$105.00	5.00%	\$1,075.00	7.500%
\$100.00	0.00%	\$1,000.00	0.00%
\$98.00	-2.00%	\$1,000.00	0.000%
\$95.00	-5.00%	\$1,000.00	0.000%
\$90.00	-10.00%	\$1,000.00	0.000%
\$80.00	-20.00%	\$888.89	-11.111%
\$70.00	-30.00%	\$777.78	-22.222%
\$60.00	-40.00%	\$666.67	-33.333%
\$50.00	-50.00%	\$555.56	-44.444%
\$40.00	-60.00%	\$444.44	-55.556%
\$30.00	-70.00%	\$333.33	-66.667%
\$20.00	-80.00%	\$222.22	-77.778%
\$10.00	-90.00%	\$111.11	-88.889%
\$0.00	-100.00%	\$0.00	-100.000%

Hypothetical Examples of Amounts Payable at Maturity

The following examples illustrate how the payments set forth in the table above are calculated.

Example 1: The price of the Reference Asset increases from an Initial Level of \$100 to a Final Level of \$120, resulting in a Percentage Change of 20.00%.

Because the Percentage Change of 20.00% multiplied by the Leverage Factor exceeds the Maximum Return of 20.025%, the investor receives a payment at maturity of \$1,200.25 per \$1,000 in principal amount of the Notes, which is the maximum payment on the Notes.

Example 2: The price of the Reference Asset increases from an Initial Level of \$100 to a Final Level of \$105, resulting in a Percentage Change of 5.00%.

Because the Percentage Change, when multiplied by the Leverage Factor, does not exceed the Maximum Return, the investor will receive a payment at maturity of \$1,075 per \$1,000 in principal amount of the Notes.

$$\$1,000 + [\$1,000 \times (5.00\% \times 1.50)] = \$1,075$$

Example 3: The price of the Reference Asset decreases from an Initial Level of \$100 to a Final Level of \$95, resulting in a Percentage Change of -5.00%.

Because the Percentage Change is negative but greater than -10%, the investor will receive a payment at maturity of \$1,000.00 per \$1,000 in principal amount of the Notes.

FWP-2

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Example 4: The price of the Reference Asset decreases from an Initial Level of \$100 to a Final Level of \$50, resulting in a Percentage Change of -50.00%.

Because the Percentage Change is less than -10%, the investor will receive a payment at maturity of \$555.56 per \$1,000 in principal amount of the Notes, calculated as follows:

$$\$1,000 + [\$1,000 \times (-50.00\% + 10\%) \times (1.111)] = \$555.56$$

FWP-3

Selected Purchase Considerations

Appreciation Potential— The Notes provide the opportunity to enhance equity returns by multiplying a positive Percentage Change by the Leverage Factor, up to the maximum return of 20.025%.

Limited Protection Against Loss— Payment at maturity of the principal amount of the Notes is not protected against a decline in the Final Level, as compared to the Initial Level, of up to 10%. If the Final Level is less than the Initial Level by more than 10%, you will lose an amount equal to 1.111% of the principal amount of your Notes for every 1% that the Percentage Change is less than 10%. Because the Notes are our senior unsecured obligations, payment of any amount at maturity is subject to our ability to pay our obligations as they become due and is not guaranteed by any third party. For a description of the risks with respect to our credit, see “Selected Risk Considerations—Credit of Issuer” in this free writing prospectus.

Selected Risk Considerations

An investment in the Notes involves significant risks. Investing in the Notes is not equivalent to investing directly in the Reference Asset. These risks are explained in more detail in the section “Additional Risk Factors Specific to the Notes,” beginning on page PS-6 of the product prospectus supplement. In addition to the risks described in the prospectus supplement and the product prospectus supplement, you should consider the following:

Principal at Risk — Investors in the Notes could lose all or a substantial portion of their principal amount if there is a decline in the price of the Reference Asset. You will lose 1.111% of the principal amount of your Notes for each 1% that the Final Level is less than the Initial Level by more than 10%.

The Notes Do Not Pay Interest and Your Return May Be Lower than the Return on a Conventional Debt Security of Comparable Maturity — There will be no periodic interest payments on the Notes as there would be on a conventional fixed-rate or floating-rate debt security having the same maturity. The return that you will receive on the Notes, which could be negative, may be less than the return you could earn on other investments. Even if your return is positive, your return may be less than the return you would earn if you bought one of our conventional senior interest bearing debt securities.

Your Potential Payment at Maturity Is Limited — The Notes will provide less opportunity to participate in the appreciation of the Reference Asset than an investment in a security linked to the Reference Asset providing full participation in the appreciation, because your return at maturity will not exceed the Maximum Return. Accordingly, your return on the Notes may be less than your return would be if you made an investment in a security directly linked to the positive performance of the Reference Asset.

Payments on the Notes Are Subject to Our Credit Risk, and Changes in Our Credit Ratings Are Expected to Affect the Market Value of the Notes — The Notes are our senior unsecured debt securities. As a result, your receipt of the amount due on the maturity date is dependent upon our ability to repay our obligations at that time. This will be the case even if the price of the Reference Asset increases after the pricing date. No assurance can be given as to what our financial condition will be at the maturity of the Notes.

There May Not Be an Active Trading Market for the Notes—Sales in the Secondary Market May Result in Significant Losses — There may be little or no secondary market for the Notes. The Notes will not be listed on any securities exchange. RBCCM and our other affiliates may make a market for the Notes; however, they are not required to do so. RBCCM or any other affiliate of ours may stop any market-making activities at any time. Even if a secondary market for the Notes develops, it may not provide significant liquidity or trade at prices advantageous to you. We expect that transaction costs in any secondary market would be high. As a result, the difference between bid and asked prices for your Notes in any secondary market could be substantial.

You Will Not Have Any Rights to the Securities Included in the Reference Asset — As a holder of the Notes, you will not have voting rights, rights to receive cash dividends or other distributions or any other

rights that holders of the Reference Asset or the securities included in the Reference Asset would have. The Final Level will not reflect any dividends paid on the securities included in the Reference Asset.

Many Economic and Market Factors Will Impact the Value of the Notes — In addition to the share price of the Reference Asset on any day, the value of the Notes will be affected by a number of economic and market factors that may either offset or magnify each other, including:

- the expected volatility of the Reference Asset;
- the time to maturity of the Notes;
- the dividend rate on the securities included in the Reference Asset;
- interest and yield rates in the market generally;
- a variety of economic, financial, political, regulatory or judicial events; and
- our creditworthiness, including actual or anticipated downgrades in our credit ratings.

The Estimated Initial Value of the Notes Will Be Less than the Price to the Public — The estimated initial value that will be set forth in the final pricing supplement for the Notes does not represent a minimum price at which we, RBCCM or any of our affiliates would be willing to purchase the Notes in any secondary market (if any exists) at any time. If you attempt to sell the Notes prior to maturity, their market value may be lower than the price you paid for them and the estimated initial value. This is due to, among other things, changes in the share price of the Reference Asset, the borrowing rate we pay to issue securities of this kind, and the inclusion in the price to the public of the underwriting discount and the costs relating to our hedging of the Notes. These factors, together with various credit, market and economic factors over the term of the Notes, are expected to reduce the price at which you may be able to sell the Notes in any secondary market and will affect the value of the Notes in complex and unpredictable ways. Assuming no change in market conditions or any other relevant factors, the price, if any, at which you may be able to sell your Notes prior to maturity may be less than your original purchase price. The Notes are not designed to be short-term trading instruments. Accordingly, you should be able and willing to hold your Notes to maturity.

The Estimated Initial Value of the Notes That We Will Provide in the Final Pricing Supplement Will Be an Estimate Only, Calculated as of the Pricing Date — The value of the Notes at any time after the pricing date will vary based on many factors, including changes in market conditions, and cannot be predicted with accuracy. As a result, the actual value you would receive if you sold the Notes in any secondary market, if any, should be expected to differ materially from the estimated initial value of your Notes.

Market Disruption Events or Unavailability of the Share Price of the Reference Asset and Adjustments — The payment at maturity, the valuation dates and the Reference Asset are subject to adjustment as described in the product prospectus supplement. For a description of what constitutes a market disruption event as well as the consequences of that market disruption event and the unavailability of the share price of the Reference Asset on a valuation date, see “General Terms of the Notes— Unavailability of the Level of the Reference Asset on a Valuation Date” and “—Market Disruption Events” in the product prospectus supplement.

Changes that Affect the Underlying Index Will Affect the Market Value of the Notes and the Amount You Will Receive at Maturity — The policies of the sponsor of the of the Underlying Index (the “Index Sponsor”), concerning the calculation of the Underlying Index, additions, deletions or substitutions of the components of the Underlying Index and the manner in which changes affecting those components, such as stock dividends, reorganizations or mergers, may be reflected in the Underlying Index and, therefore, could affect the share price of the Reference Asset, the amount payable on the Notes at maturity, and the market value of the Notes prior to maturity. The amount payable on the Notes and their market value could also be affected if the Index Sponsor changes these policies, for example, by changing the manner in which it calculates the Underlying Index, or if the sponsor discontinues or suspends the calculation or publication of the Underlying Index.

Adjustments to the Reference Asset Could Adversely Affect the Notes — SSgA Funds Management, Inc. (“SSFM”), as the investment adviser of the Reference Asset, is responsible for calculating and

FWP-5

maintaining the Reference Asset. SSFM can add, delete or substitute the stocks comprising the Reference Asset. SSFM may make other methodological changes that could change the share price of the Reference Asset at any time. If one or more of these events occurs, the calculation of the amount payable at maturity may be adjusted to reflect such event or events. Consequently, any of these actions could adversely affect the amount payable at maturity and/or the market value of the Notes.

We Have No Affiliation with the Index Sponsor and Will Not Be Responsible for Any Actions Taken by the Index Sponsor — The Index Sponsor is not an affiliate of ours and will not be involved in the offering of the Notes in any way. Consequently, we have no control over the actions of the Index Sponsor, including any actions of the type that would require the calculation agent to adjust the payment to you at maturity. The Index Sponsor has no obligation of any sort with respect to the Notes. Thus, the Index Sponsor has no obligation to take your interests into consideration for any reason, including in taking any actions that might affect the value of the Notes. None of our proceeds from the issuance of the Notes will be delivered to the Index Sponsor.

We and Our Affiliates Do Not Have Any Affiliation with SSFM and Are Not Responsible for its Public Disclosure of Information — We and our affiliates are not affiliated with the investment adviser in any way and have no ability to control or predict its actions, including any errors in or discontinuance of disclosure regarding its methods or policies relating to the Reference Asset. SSFM is not involved in the offering of the Notes in any way and has no obligation to consider your interests as an owner of the Notes in taking any actions relating to the Reference Asset that might affect the value of the Notes. Neither we nor any of our affiliates has independently verified the adequacy or accuracy of the information about SSFM or the Reference Asset contained in any public disclosure of information. You, as an investor in the Notes, should make your own investigation into the Reference Asset.

The Correlation Between the Performance of the Reference Asset and the Performance of the Underlying Index May Be Imperfect — The performance of the Reference Asset is linked principally to the performance of the Underlying Index. However, because of the potential discrepancies identified in more detail in the product prospectus supplement, the return on the Reference Asset may correlate imperfectly with the return on the Underlying Index. Additionally, the performance of the Reference Asset may reflect transaction costs and fees that are not included in the calculation of the Underlying Index.

The Reference Asset Is Subject to Management Risks — The Reference Asset is subject to management risk, which is the risk that SSFM's investment strategy, the implementation of which is subject to a number of constraints, may not produce the intended results.

Our Business Activities May Create Conflicts of Interest — We and our affiliates expect to engage in trading activities related to the Reference Asset or securities held by the Reference Asset that are not for the account of holders of the Notes or on their behalf. These trading activities may present a conflict between the holders' interests in the Notes and the interests we and our affiliates will have in their proprietary accounts, in facilitating transactions, including options and other derivatives transactions, for their customers and in accounts under their management. These trading activities, if they influence the prices of the Reference Asset, could be adverse to the interests of the holders of the Notes. We and one or more of our affiliates may, at present or in the future, engage in business with the issuers of securities held by the Reference Asset, including making loans to or providing advisory services. These services could include investment banking and merger and acquisition advisory services. These activities may present a conflict between our or one or more of our affiliates' obligations and your interests as a holder of the Notes. Moreover, we and our affiliates may have published, and in the future expect to publish, research reports with respect to the Reference Asset. This research is modified from time to time without notice and may express opinions or provide recommendations that are inconsistent with purchasing or holding the Notes. Any of these activities may affect the price of the Reference Asset, and, therefore, the market value of the Notes.

Additionally, we or our affiliates may serve as issuer, agent or underwriter for additional issuances of securities with returns linked or related to changes in the level the Reference Asset or the Underlying Index. By introducing

competing products into the marketplace in this manner, we could adversely affect the value of the Notes.

FWP-6

We may hedge our obligations under the Notes through certain affiliates, who would expect to make a profit on such hedge. We or our affiliates may adjust these hedges by, among other things, purchasing or selling those assets at any time, including around the time of the valuation dates, which could have an impact on the return of the Notes. Because hedging our obligations entails risk and may be influenced by market forces beyond our or our affiliates' control, such hedging may result in a profit that is more or less than expected, or it may result in a loss.

An Investment in the Notes Is Subject to Risks Associated with the Oil and Gas Exploration and Production Sector —All of the stocks held by the Reference Asset are issued by companies in the oil and gas exploration and production sector. As a result, the stocks that will determine the performance of the Reference Asset are concentrated in one sector. Although an investment in the Notes will not give holders any ownership or other direct interests in the stocks held by the Reference Asset, the return on the Notes will be subject to certain risks associated with a direct equity investment in companies in the oil and gas exploration and production sector.

In addition, the stocks of companies in the oil and gas sector are subject to swift price fluctuations. The issuers of the stocks held by the Reference Asset develop and produce, among other things, crude oil and natural gas, and provide, among other things, drilling services and other services related to oil and gas production and distribution. Stock prices for these types of companies are affected by supply and demand both for their specific product or service and for oil and gas products in general. The price of oil and gas, exploration and production spending, government regulation, world events and economic conditions will likewise affect the performance of these companies. Correspondingly, the stocks of companies in this sector are subject to swift price fluctuations caused by events relating to international politics, energy conservation, the success of exploration projects and tax and other governmental regulatory policies. Weak demand for the companies' products or services or for oil and gas products and services in general, as well as negative developments in these other areas, would adversely impact the prices of the stocks held by the Reference Asset, the market price of the Reference Asset, and the value of the Notes.

The Anti-dilution Adjustments That the Calculation Agent Is Required to Make Do Not Cover Every Event That Could Affect the Reference Asset — RBCCM, as calculation agent, will adjust the amount payable at maturity for certain events affecting the Reference Asset. However, the calculation agent will not make an adjustment for every event that could affect the Reference Asset. If an event occurs that does not require the calculation agent to adjust the amount payable at maturity, the market price of the Notes may be materially and adversely affected.

FWP-7

SPDR® S&P® Oil & Gas Exploration & Production ETF

Information provided to or filed with the SEC by the Reference Asset under the Securities Act of 1934, as amended, and the Investment Company Act of 1940, as amended, can be located through the SEC's website at <http://www.sec.gov>. In addition, information may be obtained from other sources including, but not limited to, press releases, newspaper articles and other publicly disseminated documents. We have not participated in the preparation of, or verified, such publicly available information. None of the forgoing documents or filings are incorporated by reference in, and should not be considered part of, this document.

The following information regarding the Reference Asset is derived from publicly available information.

We have not independently verified the accuracy or completeness of reports filed by the Reference Asset with the SEC, information published relating to it on its website or in any other format, information about them obtained from any other source or the information provided below.

The Reference Asset is an investment portfolio maintained and managed by SSgA Funds Management, Inc. ("SSFM"). SSFM is the investment advisor to separate investment portfolios, including the Reference Asset. The Notes are not sponsored, endorsed, sold or promoted by the investment adviser. The investment adviser makes no representations or warranties to the owners of the Notes or any member of the public regarding the advisability of investing in the Notes. The investment adviser has no obligation or liability in connection with the operation, marketing, trading or sale of the Notes.

The XOP seeks to provide investment results that correspond generally to the price and yield performance, before fees and expenses, of the S&P® Oil & Gas Exploration & Production Select Industry® Index (the "underlying index"). The underlying index represents the oil and gas exploration and production sub-industry portion of the S&P Total Market Index, which measures the performance of the U.S. equity market. The XOP is composed of companies that are in the oil and gas sector exploration and production. The XOP trades on the NYSE Arca under the ticker symbol "XOP." The inception date of the Fund is June 19, 2006. Prior to January 8, 2007, the Fund was known as the SPDR® Oil & Gas Exploration & Production ETF.

The XOP utilizes a "replication" investment approach in attempting to track the performance of the underlying index. The XOP typically invests in substantially all of the securities which comprise the underlying index in approximately the same proportions as the underlying index. The XOP will normally invest at least 80% of its total assets in the common stocks that comprise the underlying index.

S&P® Oil & Gas Exploration & Production Select Industry® Index

We have derived all information contained in this document regarding the underlying index, including, without limitation, its make-up, method of calculation and changes in its components, from publicly available information. Such information reflects the policies of, and is subject to change by, Standard & Poor's ("S&P").

The underlying index is an equal-weighted index that is designed to measure the performance of the oil and gas exploration and production sub-industry portion of the S&P Total Market Index ("TMI"). The S&P TMI includes all U.S. common equities listed on the New York Stock Exchange ("NYSE") (including NYSE Arca), the NYSE American, the Nasdaq Global Select Market, and the Nasdaq Capital Market. Each of the component stocks in the underlying index is a constituent company within the oil and gas exploration and production sub-industry portion of the S&P TMI.

To be eligible for inclusion in the underlying index, companies must be in the S&P TMI and must be included in the relevant Global Industry Classification Standard (GICS) sub-industry. The GICS was developed to establish a global standard for categorizing companies into sectors and industries. In addition to the above, companies must satisfy one of the two following combined size and liquidity criteria:

- float-adjusted market capitalization above US\$500 million and float-adjusted liquidity ratio above 90%; or
- float-adjusted market capitalization above US\$400 million and float-adjusted liquidity ratio above 150%.

All U.S. companies satisfying these requirements are included in the underlying index. The total number of companies in the underlying index should be at least 35. If there are fewer than 35 stocks, stocks from a supplementary list of highly correlated sub-industries that meet the market capitalization and liquidity thresholds above are included in order of their float-adjusted market capitalization to reach 35 constituents. Minimum market

FWP-8

capitalization requirements may be relaxed to ensure there are at least 22 companies in the underlying index as of each rebalancing effective date.

Eligibility factors include:

Market Capitalization: Float-adjusted market capitalization should be at least US\$400 million for inclusion in the underlying index. Existing index components must have a float-adjusted market capitalization of US\$300 million to remain in the underlying index at each rebalancing.

Liquidity: The liquidity measurement used is a liquidity ratio, defined as dollar value traded over the previous 12-months divided by the float-adjusted market capitalization as of the underlying index rebalancing reference date. Stocks having a float-adjusted market capitalization above US\$500 million must have a liquidity ratio greater than 90% to be eligible for addition to the underlying index. Stocks having a float-adjusted market capitalization between US\$400 and US\$500 million must have a liquidity ratio greater than 150% to be eligible for addition to the underlying index. Existing index constituents must have a liquidity ratio greater than 50% to remain in the underlying index at the quarterly rebalancing. The length of time to evaluate liquidity is reduced to the available trading period for IPOs or spin-offs that do not have 12 months of trading history.

Takeover Restrictions: At the discretion of S&P, constituents with shareholder ownership restrictions defined in company bylaws may be deemed ineligible for inclusion in the underlying index. Ownership restrictions preventing entities from replicating the index weight of a company may be excluded from the eligible universe or removed from the underlying index.

Turnover: S&P believes turnover in index membership should be avoided when possible. At times, a company may appear to temporarily violate one or more of the addition criteria. However, the addition criteria are for addition to the underlying index, not for continued membership. As a result, an index constituent that appears to violate the criteria for addition to the underlying index will not be deleted unless ongoing conditions warrant a change in the composition of the underlying index.

Historical Information

The following graph sets forth the historical performance of the Reference Asset based on the daily closing share prices from January 1, 2011 through January 31, 2018. In addition, below the graph is a table setting forth the high, low and period-end closing prices of the Reference Asset for the period from January 1, 2011 to January 31, 2018. We obtained the Reference Asset closing share prices below from Bloomberg L.P. We have not independently verified the accuracy or completeness of the information obtained from Bloomberg L.P. The historical share prices of the Reference Asset should not be taken as an indication of future performance, and no assurance can be given as to the Final Level. We cannot give you assurance that the performance of the Reference Asset will result in the return of any of your initial investment.

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

FWP-9

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Below is a table setting forth the intra-day high, intra-day low and period-end closing prices of the Reference Asset. The information provided in the table is for the period from January 1, 2011 through February 1, 2018.

Period-Start Date	Period-End Date	High Closing Price of the Reference Asset (\$)	Low Closing Price of the Reference Asset (\$)	Period-End Closing Price of the Reference Asset (\$)
1/1/2011	3/31/2011	65.04	52.25	64.50
4/1/2011	6/30/2011	65.76	53.97	58.78
7/1/2011	9/30/2011	65.58	42.80	42.80
10/1/2011	12/31/2011	57.67	37.68	52.69
1/1/2012	3/31/2012	61.81	52.25	56.91
4/1/2012	6/30/2012	58.29	44.24	50.40
7/1/2012	9/30/2012	59.79	47.94	55.69
10/1/2012	12/31/2012	57.47	50.05	54.07
1/1/2013	3/31/2013	62.66	54.38	60.49
4/1/2013	6/30/2013	63.30	54.05	58.18
7/1/2013	9/30/2013	66.80	58.29	65.89
10/1/2013	12/31/2013	73.74	64.27	68.53
1/1/2014	3/31/2014	72.35	63.68	71.83
4/1/2014	6/30/2014	84.04	70.72	82.28
7/1/2014	9/30/2014	82.67	68.26	68.83
10/1/2014	12/31/2014	69.68	42.04	47.86
1/1/2015	3/31/2015	54.20	41.63	51.66
4/1/2015	6/30/2015	56.18	46.21	46.66
7/1/2015	9/30/2015	46.80	31.65	32.84
10/1/2015	12/31/2015	40.82	28.31	30.22
1/1/2016	3/31/2016	31.68	22.07	30.35
4/1/2016	6/30/2016	38.27	29.02	34.81
7/1/2016	9/30/2016	39.26	32.22	38.46
10/1/2016	12/30/2016	44.97	34.14	41.42
1/1/2017	3/30/2017	42.67	34.56	37.44
4/1/2017	6/30/2017	38.64	29.90	31.92
7/1/2017	9/30/2017	34.69	28.97	34.09
10/1/2017	12/29/2017	37.82	31.67	37.18
1/1/2018	2/1/2018	40.19	36.58	37.09

FWP-10

Supplemental Plan of Distribution

JPMorgan Chase Bank, N.A., J.P. Morgan Securities LLC and its affiliates will act as placement agents for the Notes and will receive a fee from the Issuer that will not exceed \$10 per \$1,000 in principal amount of the Notes, but will forgo any fees for sales to certain fiduciary accounts.

We expect that delivery of the Notes will be made against payment for the Notes on or about February 7, 2018 which is the third business day following the pricing date (this settlement cycle being referred to as “T+3”). Under Rule 15c6-1 of the Securities Exchange Act of 1934, trades in the secondary market generally are required to settle in two business days, unless the parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to trade the Notes on any date prior to two business days before delivery will be required, by virtue of the fact that the Notes will settle in three business days (T+3), to specify alternative settlement arrangements to prevent a failed settlement. In addition, RBCCM or another of its affiliates or agents may use this document in market-making transactions after the initial sale of the Notes, but is under no obligation to do so and may discontinue any market-making activities at any time without notice.

The value of the Notes shown on your account statement will be based on RBCCM’s estimate of the value of the Notes if RBCCM or another of our affiliates were to make a market in the Notes (which it is not obligated to do). That estimate will be based upon the price that RBCCM may pay for the Notes in light of then prevailing market conditions, our creditworthiness and transaction costs. For a period of approximately six months after the issue date of the Notes, the price shown on your account statement may initially be higher than RBCCM’s estimated value of the Notes. This is because the estimated value of the Notes will reflect the reduction of the underwriting discount and our hedging costs and profits; however, the value of the Notes shown on your account statement during that period is expected to be a higher amount, reflecting the amortization of RBCCM’s underwriting discount and our estimated profit from hedging the Notes. After this period, if RBCCM repurchases your Notes, it expects to do so at prices that reflect its estimated value.

The Notes are our debt securities, the return on which is linked to the performance of the Reference Asset. As is the case for all of our debt securities, including our structured notes, the economic terms of the Notes reflect our actual or perceived creditworthiness at the time of pricing. In addition, because structured notes result in increased operational, funding and liability management costs to us, we typically borrow the funds under these Notes at a rate that is more favorable to us than the rate that we might pay for a conventional fixed or floating rate debt security of comparable maturity. This relatively lower implied borrowing rate, which is reflected in the economic terms of the Notes, along with the fees and expenses associated with structured notes, typically reduces the estimated initial value of the Notes at the time the terms of the Notes are set.

In order to satisfy our payment obligations under the Notes, we may choose to enter into certain hedging arrangements (which may include call options, put options or other derivatives) on the issue date with RBCCM or one of our other subsidiaries. The terms of these hedging arrangements take into account a number of factors, including our creditworthiness, interest rate movements, the volatility of the Reference Asset, and the tenor of the Notes. The economic terms of the Notes depend in part on the terms of these hedging arrangements.

The lower implied borrowing rate, the underwriting commission and the hedging-related costs relating to the Notes reduce the economic terms of the Notes to you and result in the estimated initial value for the Notes (estimated at the time the terms of the Notes are set) being less than their public offering price. See “Selected Risk Considerations—The Estimated Initial Value of the Notes Will Be Less than the Price to the Public” above.

No Prospectus (as defined in Directive 2003/71/EC (as amended, the “Prospectus Directive”)) will be prepared in connection with these Notes. Accordingly, these Notes may not be offered to the public in any member state of the European Economic Area (the “EEA”), and any purchaser of these Notes who subsequently sells any of these Notes in any EEA member state must do so only in accordance with the requirements of the Prospectus Directive, as implemented in that member state.

The Notes are not intended to be offered, sold or otherwise made available to, and should not be offered, sold or otherwise made available to, any retail investor in the EEA. For these purposes, the expression “offer” includes the communication in any form and by any means of sufficient information on the terms of the offer and the Notes to be offered so as to enable an investor to decide to purchase or subscribe the Notes, and a “retail investor” means a person who is one (or more) of: (a) a retail client, as defined in point (11) of Article 4(1) of Directive 2014/65/EU

(as amended, “MiFID II”); or (b) a customer, within the meaning of Insurance Distribution Directive 2016/97/EU, as amended, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (c) not a qualified investor as defined in the Prospectus Directive. Consequently, no key information document required by Regulation (EU) No 1286/2014 (as amended, the “PRIIPs Regulation”) for offering or selling the Notes or otherwise making them available to retail investors in the EEA has been prepared, and therefore, offering or selling the Notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

U.S. Federal Tax Consequences

The following disclosure supplements, and to the extent inconsistent, supersedes, the discussion in the product prospectus supplement dated January 11, 2016 under “Supplemental Discussion of U.S. Federal Income Tax Consequences.”

In the opinion of our counsel, Morrison & Foerster LLP, it would generally be reasonable to treat a Note with terms described herein as a pre-paid cash-settled derivative contract in respect of the Reference Asset for U.S. federal income tax purposes, and the terms of the Notes require a holder and us (in the absence of a change in law or an administrative or judicial ruling to the contrary) to treat the Notes for all tax purposes in accordance with such characterization. However, the U.S. federal income tax consequences of your investment in the Notes are uncertain and the Internal Revenue Service could assert that the Notes should be taxed in a manner that is different from that described in the preceding sentence.

Under Section 871(m) of the Code, a “dividend equivalent” payment is treated as a dividend from sources within the United States. Such payments generally would be subject to a 30% U.S. withholding tax if paid to a non-U.S. holder. Under U.S. Treasury Department regulations, payments (including deemed payments) with respect to equity-linked instruments (“ELIs”) that are “specified ELIs” may be treated as dividend equivalents if such specified ELIs reference an interest in an “underlying security,” which is generally any interest in an entity taxable as a corporation for U.S. federal income tax purposes if a payment with respect to such interest could give rise to a U.S. source dividend. However, the IRS has issued guidance that states that the U.S. Treasury Department and the IRS intend to amend the effective dates of the U.S. Treasury Department regulations to provide that withholding on dividend equivalent payments will not apply to specified ELIs that are not delta-one instruments and that are issued before January 1, 2019. Based on our determination that the Notes are not delta-one instruments, non-U.S. holders should not be subject to withholding on dividend equivalent payments, if any, under the Notes. However, it is possible that the Notes could be treated as deemed reissued for U.S. federal income tax purposes upon the occurrence of certain events affecting the Reference Asset or the Notes, and following such occurrence the Notes could be treated as subject to withholding on dividend equivalent payments. Non-U.S. holders that enter, or have entered, into other transactions in respect of the Reference Asset or the Notes should consult their tax advisors as to the application of the dividend equivalent withholding tax in the context of the Notes and their other transactions. If any payments are treated as dividend equivalents subject to withholding, we (or the applicable withholding agent) would be entitled to withhold taxes without being required to pay any additional amounts with respect to amounts so withheld.