

ROYAL BANK OF CANADA  
Form FWP  
January 18, 2018

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ISSUER FREE WRITING PROSPECTUS

Filed Pursuant to Rule 433

Registration Statement No. 333-208507

Dated January 18, 2018

Royal Bank of Canada Airbag Autocallable Yield Notes

\$• Notes Linked to the Common Stock of Apache Corporation due on or about January 25, 2019

\$• Notes Linked to the Common Stock of CenturyLink, Inc. due on or about January 25, 2019

Investment Description

Airbag Autocallable Yield Notes (the “Notes”) are unsecured and unsubordinated notes issued by Royal Bank of Canada linked to the performance of a specific company (the “Reference Stock”). The issue price of each Note will be \$1,000. Royal Bank of Canada will pay you a monthly coupon regardless of the performance of the Reference Stock. If the closing price of the Reference Stock on any quarterly Observation Date is greater than or equal to the initial underlying price, Royal Bank of Canada will automatically call the Notes and pay you the principal amount per Note plus the applicable coupon payment for that date and no further amounts will be owed to you. If the Notes are not automatically called, Royal Bank of Canada will pay you on the maturity date either the principal amount per Note or, if the closing price of the Reference Stock on the final valuation date is below the conversion price, Royal Bank of Canada will deliver to you a number of shares of the applicable Reference Stock equal to the principal amount per Note divided by the conversion price (the “share delivery amount”) for each of your Notes plus accrued and unpaid interest (subject to adjustments in the case of certain corporate events described in the product prospectus supplement no. ABYON-2 under “General Terms of the Notes — Anti-dilution Adjustments”).

Investing in the Notes involves significant risks. You may lose some or all of your principal amount. In exchange for receiving a coupon on the Notes, you are accepting the risk of receiving shares of the Reference Stock at maturity that are worth less than the principal amount of your Notes and the credit risk of Royal Bank of Canada for all payments under the Notes. Generally, the higher the coupon rate on a Note, the greater the risk of loss on that Note. The contingent repayment of principal only applies if you hold the Notes until maturity. Any payment on the Notes, including any repayment of principal, is subject to the creditworthiness of Royal Bank of Canada. If Royal Bank of Canada were to default on its payment obligations, you may not receive any amounts owed to you under the Notes and you could lose your entire investment. The Notes will not be listed on any securities exchange.

Features Key Dates<sup>1</sup>

Income — Regardless of the performance of the Reference Stock, Royal Bank of Canada will pay you a monthly coupon. In exchange for receiving the monthly coupon payment on the Notes, you are accepting the risk of receiving shares of the Reference Stock at maturity that are worth less than your principal amount and the credit risk of Royal Bank of Canada for all payments under the Notes.

Automatically Callable — If the closing price of the Reference Stock on any quarterly Observation Date is greater than or equal to the initial underlying price, we will automatically call the Notes and pay you the principal amount per Note plus the applicable coupon payment for that date and no further amounts will be owed to you. If the Notes are not called, you may have downside market exposure to the Reference Stock at maturity.

Contingent Repayment of Principal at Maturity — If the Notes are not previously called and the price of the Reference Stock does not close below the conversion price on the final valuation date, Royal Bank of Canada will pay you the principal amount at maturity, and you will not participate in any appreciation or depreciation in the value of the Reference Stock. If the price of the Reference Stock closes below the conversion price on the final valuation date, Royal Bank of Canada will deliver to you at maturity the share delivery amount for each of your Notes, which is expected to be worth less than your principal amount and may have no value at all. The contingent repayment of principal only applies if you hold the Notes until maturity. Any payment on the Notes, including any repayment of principal, is subject to the creditworthiness of Royal Bank of Canada.

Trade Date<sup>1</sup>

January 19, 2018

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Settlement Date<sup>1</sup> January 24, 2018  
 Observation Dates<sup>1 2</sup> Quarterly  
 Final Valuation Date<sup>2</sup> January 22, 2019  
 Maturity Date<sup>2</sup> January 25, 2019

<sup>1</sup> Expected. In the event that we make any change to the expected trade date and settlement date, the final valuation date and/or the maturity date will be changed so that the stated term of the Notes remains approximately the same.

<sup>2</sup> Subject to postponement in the event of a market disruption event and as described under “General Terms of the Notes — Payment at Maturity” in the accompanying product prospectus supplement no. ABYON-2.

**NOTICE TO INVESTORS: THE NOTES ARE SIGNIFICANTLY RISKIER THAN CONVENTIONAL DEBT INSTRUMENTS. THE ISSUER IS NOT NECESSARILY OBLIGATED TO REPAY THE FULL PRINCIPAL AMOUNT OF THE NOTES AT MATURITY, AND THE NOTES CAN HAVE THE FULL DOWNSIDE MARKET RISK OF THE REFERENCE STOCK. THIS MARKET RISK IS IN ADDITION TO THE CREDIT RISK INHERENT IN PURCHASING A DEBT OBLIGATION OF ROYAL BANK OF CANADA. YOU SHOULD NOT PURCHASE THE NOTES IF YOU DO NOT UNDERSTAND OR ARE NOT COMFORTABLE WITH THE SIGNIFICANT RISKS INVOLVED IN INVESTING IN THE NOTES.**

**YOU SHOULD CAREFULLY CONSIDER THE RISKS DESCRIBED UNDER “KEY RISKS” BEGINNING ON PAGE 6, THE RISKS DESCRIBED UNDER “RISK FACTORS” BEGINNING ON PAGE PS-4 OF THE PRODUCT PROSPECTUS SUPPLEMENT NO. ABYON-2 AND UNDER “RISK FACTORS” BEGINNING ON PAGE S-1 OF THE PROSPECTUS SUPPLEMENT BEFORE PURCHASING ANY NOTES. EVENTS RELATING TO ANY OF THOSE RISKS, OR OTHER RISKS AND UNCERTAINTIES, COULD ADVERSELY AFFECT THE MARKET VALUE OF, AND THE RETURN ON, YOUR NOTES. IF THE NOTES ARE NOT CALLED, YOU MAY LOSE SOME OR ALL OF YOUR INITIAL INVESTMENT.**

Notes Offerings

This free writing prospectus relates to two separate Airbag Autocallable Yield Notes we are offering. Each of the Notes is linked to the common equity securities of a different company, and each of the Notes has a different coupon rate, initial underlying price and conversion price, as specified in the table below. The coupon rate, initial underlying price and conversion price for each Note will be determined on the trade date. Each of the Notes will be issued in minimum denominations of \$1,000.00, and integral multiples of \$1,000.00 in excess thereof. Coupons will be paid monthly in arrears in 12 equal installments, subject to an earlier automatic call.

The performance of each Note will not depend on the performance of any other Note.

Reference Stock	Coupon Rate	Initial Underlying Price	Conversion Price	CUSIP	ISIN
Common Stock of Apache Corporation (APA)	8.15% to 9.15% per annum	•	85.00% of the initial underlying price	78013Q285US78013Q2856	
Common Stock of CenturyLink, Inc. (CTL)	10.70% to 11.70% per annum	•	70.00% of the initial underlying price	78013Q293US78013Q2930	

See “Additional Information About Royal Bank of Canada and the Notes” in this free writing prospectus. The Notes will have the terms specified in the prospectus dated January 8, 2016, the prospectus supplement dated January 8, 2016, product prospectus supplement no. ABYON-2 dated April 20, 2016 and this free writing prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the Notes or passed upon the accuracy or the adequacy of this free writing prospectus or the accompanying prospectus, prospectus supplement and product prospectus supplement no. ABYON-2. Any representation to the contrary is a criminal offense.

Offering of the Notes	Fees and		Proceeds to	
	Price to Public	Commissions (1)	Us	
Notes Linked to the Common Stock of Apache Corporation (APA)	• \$1,000	• \$15	• \$985	
Notes Linked to the Common Stock of CenturyLink, Inc. (CTL)	• \$1,000	• \$15	• \$985	

<sup>(1)</sup> UBS Financial Services Inc., which we refer to as UBS, will receive a commission that will depend on market conditions on the trade date. In no event will the commission received by UBS exceed \$15.00 per \$1,000 principal amount of each Note. See “Supplemental Plan of Distribution (Conflicts of Interest)” on page 17 below. The initial estimated value of the Notes as of the date of this document is \$980.60 per \$1,000 in principal amount for the Notes linked to APA and \$978.18 per \$1,000 in principal amount for the Notes linked to CTL, each of which is less than the price to public. The pricing supplement relating to the Notes will set forth our estimate of the initial value of the Notes as of the trade date, which will not be more than \$20 less than these amounts. 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. We describe our determination of the initial estimated value under “Key Risks” beginning on page 6, and “Supplemental Plan of Distribution (Conflicts of Interest)” and “Structuring the Notes” on page 17 of this free writing prospectus. The Notes will not constitute deposits insured under the Canada Deposit Insurance Corporation Act or by the United States Federal Deposit Insurance Corporation or any other Canadian or United States government agency or instrumentality.

UBS Financial Services Inc. RBC Capital Markets, LLC

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### Additional Information About Royal Bank of Canada and the Notes

Royal Bank of Canada has filed a registration statement (including a prospectus) with the Securities and Exchange Commission, or SEC, for the offerings to which this free writing prospectus relates. Before you invest, you should read the prospectus in that registration statement and the other documents relating to these offerings that Royal Bank of Canada has filed with the SEC for more complete information about Royal Bank of Canada and these offerings. You may obtain these documents without cost by visiting EDGAR on the SEC website at [www.sec.gov](http://www.sec.gov). Alternatively, Royal Bank of Canada, any agent or any dealer participating in these offerings will arrange to send you the prospectus, the prospectus supplement, product prospectus supplement no. ABYON-2 and this free writing prospectus if you so request by calling toll-free 877-688-2301.

You may revoke your offer to purchase the Notes at any time prior to the time at which we accept such offer by notifying the applicable agent. 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.

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, relating to our Series G medium-term notes of which these Notes are a part, and the more detailed information contained in product prospectus supplement no. ABYON-2 dated April 20, 2016. This free writing prospectus, together with the documents listed below, contains the terms of the Notes and supersedes all other 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, fact sheets, brochures or other educational materials of ours. You should carefully consider, among other things, the matters set forth in “Risk Factors” in the accompanying product prospectus supplement no. ABYON-2, as the Notes involve risks not associated with conventional debt securities.

If the terms discussed in this free writing prospectus differ from those discussed in the product prospectus supplement no. ABYON-2, the prospectus supplement, or the prospectus, the terms discussed herein will control. Please note in particular that, several defined terms in the product prospectus supplement are replaced in this document with different terms:

..instead of “Initial Price” in the product prospectus supplement, the term “Initial Underlying Price” is used in this document, and

..instead of “Final Price” in the product prospectus supplement, the term “Final Underlying Price” is used in this document;

You may access these on the SEC website at [www.sec.gov](http://www.sec.gov) as follows (or if such address has changed, by reviewing our filing for the relevant date on the SEC website):

..Product prospectus supplement no. ABYON-2 dated April 20, 2016:

<https://www.sec.gov/Archives/edgar/data/1000275/000114036116061637/form424b5.htm>

..Prospectus supplement dated January 8, 2016:

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

..Prospectus dated January 8, 2016:

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

As used in this free writing prospectus, “we,” “us” or “our” refers to Royal Bank of Canada.

### Investor Suitability

The Notes may be suitable for you if, among other considerations:

.. You fully understand the risks inherent in an investment in the Notes, including the risk of loss of your entire initial investment.

.. You can tolerate a loss of all or a substantial portion of your investment and are willing to make an investment that may have the full downside market risk of an investment in the Reference Stock.

.. You are willing to accept the risks of investing in equities in general and in the applicable Reference Stock in particular.

You believe the final underlying price of the Reference Stock is not likely to be below the conversion price and, if it is, you can tolerate receiving shares of the Reference Stock at maturity worth less than your principal amount or that may have no value at all.

.. You understand and accept that you will not participate in any appreciation in the price of the Reference Stock and that your return on the Notes is limited to the coupons paid.

.. You are willing to forgo dividends or other benefits of owning shares of the Reference Stock.

.. You can tolerate fluctuations in the price of the Notes prior to maturity that may be similar to or exceed the downside price fluctuations of the Reference Stock.

You are willing and able to invest in a security that will be called on any Observation Date on which the closing price of the Reference Stock is greater than or equal to the initial underlying price, and you are otherwise able to hold the Notes to maturity.

You are willing to invest in Notes for which there may be little or no secondary market and you accept that the secondary market will depend in large part on the price, if any, at which RBC Capital Markets, LLC, which we refer to as "RBCCM," is willing to purchase the Notes.

You would be willing to invest in the Notes if the applicable coupon rate for each Note was set equal to the bottom of the range indicated on the cover of this free writing prospectus (the actual coupon rate for each Note will be determined on the trade date).

You are willing to assume the credit risk of Royal Bank of Canada for all payments under the Notes, and understand that if Royal Bank of Canada defaults on its obligations, you may not receive any amounts due to you, including any repayment of principal.

The Notes may not be suitable for you if, among other considerations:

.. You do not fully understand the risks inherent in an investment in the Notes, including the risk of loss of your entire initial investment.

.. You require an investment designed to provide a full return of principal at maturity.

.. You are unwilling to accept the risks of investing in equities in general or in the applicable Reference Stock in particular.

.. You are not willing to make an investment that may have the full downside market risk of an investment in the Reference Stock.

.. You believe that the final underlying price of the Reference Stock is likely to be below the conversion price, which could result in a total loss of your initial investment.

.. You cannot tolerate receiving shares of the Reference Stock at maturity worth less than your principal amount or that may have no value at all.

.. You seek an investment that participates in the appreciation in the price of the Reference Stock or that has unlimited return potential.

.. You want to receive dividends or other distributions paid on the Reference Stock.

.. You cannot tolerate fluctuations in the price of the Notes prior to maturity that may be similar to or exceed the downside price fluctuations of the Reference Stock.

You would not be willing to invest in the Notes if the applicable coupon rate for each Note was set equal to the bottom of the range indicated on the cover of this free writing prospectus (the actual coupon rate for each Note will be determined on the trade date).

.. You seek an investment for which there will be an active secondary market.

.. You are unable or unwilling to invest in a security that will be called on any Observation Date on which the closing

price of the Reference Stock is greater than or equal to the initial underlying price, or you are otherwise unable or unwilling to hold the Notes to maturity.

.. You are not willing to assume the credit risk of Royal Bank of Canada for all payments under the Notes, including any repayment of principal.

The suitability considerations identified above are not exhaustive. Whether or not the Notes are a suitable investment for you will depend on your individual circumstances, and you should reach an investment decision only after you and your investment, legal, tax, accounting, and other advisers have carefully considered the suitability of an investment in the Notes in light of your particular circumstances. You should also review carefully the “Key Risks” beginning on page 6 of this free writing prospectus and “Risk Factors” in the accompanying product prospectus supplement no. ABYON-2 for risks related to an investment in the Notes. For more information on the Reference Stocks, see “Information About the Reference Stocks” in this free writing prospectus.

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Indicative Terms of the Notes<sup>1</sup>

Issuer:	Royal Bank of Canada
Principal Amount per Note:	\$1,000 per Note
Term: <sup>2</sup>	Approximately 12 months, if not previously called
Reference Stocks:	The common equity securities of a specific company, as set forth on the cover page of this free writing prospectus.
Closing Price:	On any trading day, the last reported sale price of the Reference Stock on the principal national securities exchange on which it is listed for trading, as determined by the calculation agent.
Initial Underlying Price:	With respect to each Note, the closing price of the applicable Reference Stock on the trade date.
Final Underlying Price:	The closing price of the applicable Reference Stock on the final valuation date.
Coupon Payment:	The coupon payments will be made in 12 equal installments regardless of the performance of the Reference Stock, unless the Notes were earlier called. The coupon rate per annum is expected to be between (i) 8.15% and 9.15% for the Notes linked to the common stock of Apache Corporation and (ii) 10.70% and 11.70% for the Notes linked to the common stock of CenturyLink, Inc. The actual coupon rate per annum for each of the Notes will be determined on the trade date.
1 <sup>st</sup> through 12 <sup>th</sup> Installment (if not earlier called)	For Notes linked to the common stock of Apache Corporation: between 0.6792 and 0.7625% For Notes linked to the common stock of CenturyLink, Inc.: between 0.8917% and 0.9750% The actual installment amount for each of the Notes will be based on the coupon rate per annum and set on the trade date.
Coupon Payment Dates:	Coupons will be paid in arrears in 12 equal monthly installments on the Coupon Payment Dates listed below, unless previously called. February 22, 2018, March 21, 2018, April 23, 2018, May 23, 2018, June 21, 2018, July 23, 2018, August 22, 2018, September 21, 2018, October 23, 2018, November 21, 2018, December 21, 2018 and January 25, 2019.
Automatic Call Provision:	The Notes will be automatically called if the closing price of the Reference Stock on any quarterly Observation Date is greater than or equal to the initial underlying price. If the Notes are called, Royal Bank of Canada will pay you on the corresponding Coupon Payment Date (which will be the "Call

<sup>1</sup> Terms used in this free writing prospectus, but not defined herein, shall have the meanings ascribed to them in the product prospectus supplement.

<sup>2</sup> In the event we make any change to the expected trade date and settlement date, the final valuation date and/or the maturity date will be changed to ensure that the stated term of the Notes remains approximately the same.

Settlement Date”) a cash payment per Note equal to the principal amount per Note plus the applicable coupon payment otherwise due on that day. No further amounts will be owed to you under the Notes.

Observation Dates: April 19, 2018, July 19, 2018, October 19, 2018 and January 22, 2019 (the final valuation date).

Call Settlement: Two business days following the relevant Observation Date, except that the Call Settlement Date for the final valuation date will be the Maturity Date. Each Call Settlement Date will occur on a Coupon

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Dates:	Payment Date for the Notes. Ø If the Notes are not automatically called prior to maturity, and the final underlying price of the applicable Reference Stock is not below the conversion price on the final valuation date, we will pay you at maturity an amount in cash equal to \$1,000 for each \$1,000 principal amount of the Notes, plus accrued and unpaid interest.
Payment at Maturity:	Ø If the Notes are not automatically called prior to maturity, and the final underlying price of the applicable Reference Stock is below the conversion price on the final valuation date, we will deliver to you at maturity a number of shares of the applicable Reference Stock equal to the share delivery amount (subject to adjustments) for each Note you own plus accrued and unpaid interest. The share delivery amount is expected to be worth less than the principal amount and may have a value equal to \$0.
Share Delivery Amount: <sup>3</sup>	A number of shares of the applicable Reference Stock per \$1,000 principal amount Note equal to \$1,000 divided by the applicable conversion price, as determined on the trade date. The share delivery amount is subject to adjustment upon the occurrence of certain corporate events affecting the Reference Stock. See “General Terms of the Notes — Anti-dilution Adjustments” in product prospectus supplement no. ABYON-2.
Conversion Price:	A percentage of the initial underlying price of the Reference Stock, as specified on the cover page of this free writing prospectus(as may be adjusted in the case of certain adjustment events as described under “General Terms of the Notes — Anti-dilution Adjustments” in the product prospectus supplement).

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<sup>3</sup>If you receive the share delivery amount at maturity, we will pay cash in lieu of delivering any fractional shares in an amount equal to that fraction multiplied by the closing price of the Reference Stock on the final valuation date.



Investment Timeline

Trade Date: The closing price of the applicable Reference Stock (initial underlying price) is observed, the applicable conversion price and share delivery amount are determined and the applicable coupon rate is set.

Monthly (including at Maturity): Royal Bank of Canada pays the applicable coupon payments.

Quarterly: The Notes will be automatically called if the closing price of the applicable Reference Stock on any Observation Date is greater than or equal to the initial underlying price. If the Notes are called, Royal Bank of Canada will pay you on the applicable Call Settlement Date a cash payment per Note equal to the principal amount of the Notes plus the applicable coupon payment otherwise due on that day and no further amounts will be due to you under the Notes.

Maturity Date: If the Notes have not been previously called, the final underlying price is determined as of the final valuation date.  
If the final underlying price of the applicable Reference Stock is not below the conversion price on the final valuation date, we will pay you an amount in cash equal to \$1,000 for each \$1,000 principal amount of the Notes plus the final coupon.  
If the final underlying price of the applicable Reference Stock is below the conversion price on the final valuation date, we will deliver to you a number of shares of the applicable Reference Stock equal to the share delivery amount for each Note you own, plus the final coupon.

INVESTING IN THE NOTES INVOLVES SIGNIFICANT RISKS. YOU MAY LOSE SOME OR ALL OF YOUR PRINCIPAL AMOUNT AS YOU MAY RECEIVE SHARES AT MATURITY THAT ARE WORTH LESS THAN YOUR PRINCIPAL AMOUNT OR HAVE NO VALUE AT ALL. ANY PAYMENT ON THE NOTES, INCLUDING ANY REPAYMENT OF PRINCIPAL, IS SUBJECT TO THE CREDITWORTHINESS OF ROYAL BANK OF CANADA. IF ROYAL BANK OF CANADA WERE TO DEFAULT ON ITS PAYMENT OBLIGATIONS, YOU MAY NOT RECEIVE ANY AMOUNTS OWED TO YOU UNDER THE NOTES AND YOU COULD LOSE YOUR ENTIRE INVESTMENT.

## Key Risks

An investment in the Notes involves significant risks. Investing in the Notes is not equivalent to investing directly in the Reference Stock. These risks are explained in more detail in the “Risk Factors” section of the accompanying product prospectus supplement no. ABYON-2. We also urge you to consult your investment, legal, tax, accounting and other advisors before investing in the Notes.

### Risks Relating to the Notes Generally

**Your Investment in the Notes May Result in a Loss –** The Notes differ from ordinary debt securities in that Royal Bank of Canada will not necessarily pay the full principal amount of the Notes at maturity. At maturity, if the Notes have not been previously called, Royal Bank of Canada will only pay you the principal amount of your Notes if the final underlying price of the Reference Stock is greater than or equal to the conversion price. If the final underlying price of the Reference Stock is below the conversion price, Royal Bank of Canada will deliver to you a number of shares of the applicable Reference Stock equal to the share delivery amount for each Note you then own. Therefore, if the Notes are not automatically called and the final underlying price of the Reference Stock is below the conversion price, the value of the share delivery amount will decline by a proportionately higher percentage for each additional percentage the Reference Stock declines below the conversion price. For example, if the conversion price is 80% of the initial underlying price and the final underlying price is less than the conversion price, you will lose 1.25% of your \$1,000 principal amount Note at maturity for each additional 1% that the final underlying price is less than the conversion price, as measured from the initial underlying price. If you receive shares of the applicable Reference Stock at maturity, you will be exposed to any further decrease in the price of the Reference Stock from the final valuation date to the maturity date, and the value of those shares is expected to be less than the principal amount of the Notes or may have no value at all.

**The Coupon Rate Per Annum Payable on the Notes Will Reflect in Part the Volatility of the Reference Stock, and May Not Be Sufficient to Compensate You for the Risk of Loss at Maturity –** “Volatility” refers to the frequency and magnitude of changes in the price of the Reference Stock. The greater the volatility of the Reference Stock, the more likely it is that the price of that stock could close below its conversion price on the final valuation date, which would result in the loss of some or all of your principal. This risk will generally be reflected in a higher coupon rate per annum payable on the Notes than the interest rate payable on our conventional debt securities with a comparable term and/or a lower conversion price than on otherwise comparable securities. Therefore a relatively higher coupon rate may indicate an increased risk of loss. Further, a relatively lower conversion price may not necessarily indicate that the Notes have a greater likelihood of a return of principal at maturity. However, while the coupon rate per annum and the conversion price are set on the trade date, the Reference Stocks’ volatility can change significantly over the term of the Notes, and may increase. The price of the Reference Stock could fall sharply as of the final valuation date, which could result in a significant loss of principal.

**The Contingent Repayment of Principal Applies Only at Maturity –** If the Notes are not automatically called, you should be willing to hold your Notes to maturity. If you are able to sell your Notes prior to maturity in the secondary market, if any, you may have to do so at a loss relative to your initial investment, even if the price of the Reference Stock is above the conversion price.

**Reinvestment Risk –** If your Notes are automatically called prior to the Maturity Date, no further payments will be owed to you under the Notes. Therefore, because the Notes could be called as early as the first Observation Date, the holding period over which you would receive the relevant coupon rate as specified on the cover page, could be as little as three months. There is no guarantee that you would be able to reinvest the proceeds from an investment in the Notes at a comparable return for a similar level of risk in the event the Notes are automatically called prior to the Maturity Date.

**An Investment in the Notes Is Subject to the Credit Risk of Royal Bank of Canada –** The Notes are unsubordinated, unsecured debt obligations of Royal Bank of Canada, and are not, either directly or indirectly, an obligation of any third party. Any payments to be made on the Notes, including payments in respect of an automatic call, coupon payments and any repayment of principal provided at maturity, depends on the ability of Royal Bank of Canada to satisfy its obligations as they come due. As a result, the actual and perceived creditworthiness of Royal Bank of Canada may affect the market value of the Notes and, in the event Royal Bank of Canada were to default on its obligations, you may not receive any amounts owed to you under the terms of the Notes and you could lose your

entire investment.

.. Holders of the Notes Should Not Expect to Participate in any Appreciation of the Reference Stock, and Your Potential Return on the Notes is Expected to Be Limited to the Coupon Payments Paid on the Notes – Despite being exposed to the risk of a decline in the price of the Reference Stock, you should not expect to participate in any appreciation in the price of the applicable Reference Stock. Any positive return on the Notes is expected to be limited to the coupon rate per annum. Accordingly, if the Notes are called prior to maturity, you will not participate in any of the Reference Stocks' appreciation and your return will be limited to the principal amount plus the Coupons paid up to and including the Call Settlement Date. Similarly, if the Notes are not called prior to the final valuation date and the final underlying price is greater than the initial underlying price, your return on the Notes at maturity may be less than your return on a direct investment in the Reference Stock or on a similar security that allows you to participate in the appreciation of the price of the Reference Stock. In contrast, if the final underlying price is less than the conversion price, you will be exposed to the decline of the Reference Stock and we will deliver to you at maturity for each Note you own shares of the Reference Stock which are expected to be worth less than the principal amount as of the maturity date, in which case you may lose your entire investment. As a result, any positive return on the Notes is expected to be limited to the coupon rate per annum. In addition, if the Notes have not been previously called and if the price of the applicable Reference Stock is less than its initial underlying price, as the maturity date approaches and the remaining number of Observation Dates decreases, the Notes are less likely to be automatically called, as there will be a shorter period of time remaining for the price of that Reference Stock to increase to its initial underlying price.

.. An Investment in the Notes Is Subject to Single Stock Risk – The price of the Reference Stock can rise or fall sharply due to factors specific to that Reference Stock and its issuer, such as stock price volatility, earnings, financial conditions, corporate, industry and regulatory developments, management changes and decisions and other events, as well as general market factors, such as general stock market volatility and levels, interest rates and economic and political conditions. You, as an investor in the Notes, should make your own investigation into the respective Reference Stock issuer and the Reference Stock for your Notes. For additional information about each Reference Stock and their respective issuers, please see "Information about the Reference Stocks" in this free writing prospectus and the respective Reference Stock issuer's SEC filings referred to in those sections. We urge you to review financial and other information filed periodically by the applicable Reference Stock issuer with the SEC.

.. Owning the Notes Is Not the Same as Owning the Reference Stock – The return on your Notes may not reflect the return you would realize if you actually owned the Reference Stock. For instance, you will not receive or be entitled to receive any dividend payments or other distributions over the term of the Notes. As an owner of the Notes, you will not have voting rights or any other rights that holders of the Reference Stock may have. Further, the Reference Stock may appreciate over the term of the Notes and you will not participate in any such appreciation, which could be significant, even though you may be exposed to the decline of the Reference Stock at maturity.

.. There Is No Affiliation Between the Respective Reference Stock Issuers and Us, UBS and Our Respective Affiliates, and We Are Not Responsible for Any Disclosure by Those Issuers - We, UBS and our respective affiliates are not affiliated with any Reference Stock issuer. However, we, UBS and our respective affiliates may currently, or from time to time in the future engage in business with a Reference Stock issuer. Nevertheless, neither we nor our affiliates assume any responsibilities for the accuracy or the completeness of any information about the Reference Stocks and the

Reference Stock issuers. You, as an investor in the Notes, should make your own investigation into the Reference Stock and the Reference Stock issuer for your Notes. The Reference Stock issuers are not involved in this offering and have no obligation of any sort with respect to your Notes. The Reference Stock issuers have no obligation to take your interests into consideration for any reason, including when taking any corporate actions that might affect the value of your Notes.

**There Can Be No Assurance that the Investment View Implicit in the Notes Will Be Successful** – It is impossible to predict whether and the extent to which the price of any Reference Stock will rise or fall. The closing price of each Reference Stock will be influenced by complex and interrelated political, economic, financial and other factors that affect that Reference Stock. You should be willing to accept the downside risks of owning equities in general and the applicable Reference Stock in particular, and the risk of losing some or all of your initial investment.

**The Initial Estimated Value of the Notes Will Be Less than the Price to the Public** – The initial estimated value for each of the Notes that is set forth on the cover page of this document, and that will be set forth in the final pricing supplement for each of the Notes, which will be less than the public offering price you pay for the Notes, does not represent a minimum price at which we, RBCCM or any of our other 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 initial estimated value. This is due to, among other things, changes in the price of the applicable Reference Stock, the borrowing rate we pay to issue securities of this kind, and the inclusion in the price to public of the underwriting discount, and our estimated profit 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 the price to public, as any such sale price would not be expected to include the underwriting discount and our estimated profit and the costs relating to our hedging of the Notes. In addition, any price at which you may sell the Notes is likely to reflect customary bid-ask spreads for similar trades. In addition to bid-ask spreads, the value of the Notes determined for any secondary market price is expected to be based on a secondary market rate rather than the internal borrowing rate used to price the Notes and determine the initial estimated value. As a result, the secondary price will be less than if the internal borrowing rate was used. The Notes are not designed to be short-term trading instruments. Accordingly, you should be able and willing to hold your Notes to maturity.

**Our Initial Estimated Value of the Notes Is an Estimate Only, Calculated as of the Time the Terms of the Notes Are Set** – The initial estimated value of each of the Notes is based on the value of our obligation to make the payments on the Notes, together with the mid-market value of the derivative embedded in the terms of the Notes. See “Structuring the Notes” below. Our estimate is based on a variety of assumptions, including our credit spreads, expectations as to dividends, interest rates and volatility, and the expected term of the Notes. These assumptions are based on certain forecasts about future events, which may prove to be incorrect. Other entities may value the Notes or similar securities at a price that is significantly different than we do.

The value of the Notes at any time after the trade 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 initial estimated value of your Notes and the amount that may be paid at maturity.

**Lack of Liquidity** – The Notes will not be listed on any securities exchange. RBCCM intends to offer to purchase the Notes in the secondary market, but is not required to do so. Even if there is a secondary market, it may not provide enough liquidity to allow you to trade or sell the Notes easily. Because other dealers are not likely to make a secondary market for the Notes, the price at which you may be able to trade your Notes is likely to depend on the price, if any, at which RBCCM is willing to buy the Notes.

**Potential Conflicts** – We and our affiliates play a variety of roles in connection with the issuance of the Notes, including hedging our obligations under the Notes. In performing these duties, the economic interests of the calculation agent and other affiliates of ours are potentially adverse to your interests as an investor in the Notes.

**Potentially Inconsistent Research, Opinions or Recommendations by RBCCM, UBS or Their Respective Affiliates** – RBCCM, UBS or their respective affiliates may publish research, express opinions or provide recommendations as to

the Reference Stock that are inconsistent with investing in or holding the Notes, and which may be revised at any time. Any such research, opinions or recommendations could affect the value of the Reference Stock, and therefore the market value of the Notes.

..Uncertain Tax Treatment – Significant aspects of the tax treatment of an investment in the Notes are uncertain. You should consult your tax adviser about your tax situation.

Potential Royal Bank of Canada and UBS Impact on Price – Trading or other transactions by Royal Bank of Canada, ..UBS and our respective affiliates in the Reference Stock, or in futures, options, exchange-traded funds or other derivative products on the Reference Stock may adversely affect the market value of the Reference Stock, the closing price of the Reference Stock, and, therefore, the market value of the Notes.

The Terms of the Notes at Issuance and Their Market Value Prior to Maturity Will Be Influenced by Many Unpredictable Factors – Many economic and market factors will influence the terms of the Notes at issuance and their value prior to maturity. These factors are similar in some ways to those that could affect the value of a combination of instruments that might be used to replicate the payments on the Notes, including a combination of a bond with one or more options or other derivative instruments. For the market value of the Notes, we expect that, generally, the price of the applicable Reference Stock on any day will affect the value of the Notes more than any other single factor. However, you should not expect the value of the Notes in the secondary market to vary in proportion to changes in the price of the Reference Stock. The value of the Notes will be affected by a number of other factors that may either offset or magnify each other, including:

the actual and expected volatility of the price of the Reference Stock;

the time remaining to maturity of the Notes;

the dividend rate on the Reference Stock;

.. interest and yield rates in the market generally;

a variety of economic, financial, political, regulatory or judicial events;

..the occurrence of certain events relating to the Reference Stock that may or may not require an adjustment to the terms of the Notes; and

our creditworthiness, including actual or anticipated downgrades in our credit ratings.

Some or all of these factors will influence the terms of the Notes at issuance as well as the price you will receive if you choose to sell the Notes prior to maturity. The impact of any of the factors set forth above may enhance or offset some or all of any change resulting from another factor or factors. You

may have to sell the Notes at a substantial discount from the principal amount if the price of the applicable Reference Stock is at, below or not sufficiently above, its respective conversion price.

The Anti-Dilution Protection for the Reference Stock Is Limited – The calculation agent will make adjustments to the initial underlying price and the conversion price for certain events affecting the shares of the Reference Stock.

However, the calculation agent will not be required to make an adjustment in response to all events that could affect the Reference Stock. If an event occurs that does not require the calculation agent to make an adjustment, the value of the Notes may be materially and adversely affected.

Hypothetical Examples

Hypothetical terms only. Actual terms may vary. See the cover page for actual offering terms.

The following examples are hypothetical and provided for illustrative purposes only. They do not purport to be representative of every possible scenario concerning increases or decreases in the price of any Reference Stock relative to its initial underlying price. Royal Bank of Canada cannot predict the final underlying price of any Reference Stock. You should not take these examples as an indication or assurance of the expected performance of any Reference Stock. The numbers appearing in the examples and tables below have been rounded for ease of analysis. The following examples and tables illustrate the Payment at Maturity or upon an automatic call per Note on a hypothetical offering of the Notes, based on the following hypothetical assumptions (actual terms for the Notes will be set on the trade date):

Principal Amount:	\$1,000
Term:	Approximately 12 months
Observation Dates	Quarterly
Hypothetical initial underlying price of the Reference Stock*:	\$10.00 per share
Hypothetical conversion price*:	\$9.00 (which is 90.00% of the hypothetical initial underlying price)
Hypothetical share delivery amount*:	111.1111 shares per Note (\$1,000 / conversion price of \$9.00)
Hypothetical coupon rate per annum**:	6.00% (\$5.00 per month)

Hypothetical dividend yield on the Reference Stock\*\*\*: 1.50% over the term of the Notes (1.50% per annum)

\* May not be the actual coupon rate per annum, initial underlying price, conversion price or share delivery amount applicable to the Notes. The actual coupon rate per annum, initial underlying price, conversion price and share delivery amount for each of the Notes will be determined on the trade date.

\*\* Coupon payments will be paid in arrears in equal monthly installments during the term of the Notes unless earlier called.

\*\*\* Hypothetical dividend yield holders of the Reference Stock might receive over the term of the Notes. Holders of the Notes will not be entitled to any dividend payments made on the Reference Stock.

Scenario #1: The Notes are called on the first Observation Date.

Since the Notes are called on the first Observation Date, Royal Bank of Canada will pay you on the applicable Call Settlement Date a cash payment of \$1,005.00 per Note, reflecting the principal amount per Note plus the applicable coupon payment. Taking into account the coupon payments of \$10.00 paid in respect of the prior Coupon Payment Dates, Royal Bank of Canada will have paid you a total of \$1,015.00 per Note, representing a 1.50% return on the Notes. No further amounts will be owed to you under the Notes.

Payment upon automatic call:	\$1,000.00
<u>Coupons:</u>	<u>\$15.00 (\$5.00 x 3 = \$15.00)</u>
Total:	\$1,015.00
Total Return on the Notes:	1.50%

Scenario #2: The Notes are called on the third Observation Date.

Since the Notes are called on the third Observation Date, Royal Bank of Canada will pay you on the applicable Call Settlement Date a cash payment of \$1,005.00 per Note, reflecting the principal amount per Note plus the applicable coupon payment. Taking into account the coupon payments of \$40.00 paid in respect of the prior Coupon Payment Dates, Royal Bank of Canada will have paid you a total of \$1,045.00 per Note, representing a 4.50% return on the Notes. No further amounts will be owed to you under the Notes.

Payment upon automatic call:	\$1,000.00
<u>Coupons:</u>	<u>\$45.00 (\$5.00 x 9 = \$45.00)</u>
Total:	\$1,045.00
Total Return on the Notes:	4.50%

Scenario #3: The Notes are not previously automatically called and the final underlying price of the Reference Stock

is not below the hypothetical conversion price of \$9.00.

Since the final underlying price of the Reference Stock is not below the hypothetical conversion price of \$9.00, Royal Bank of Canada will pay you at maturity a cash payment equal to the principal amount of the Notes. This investment would outperform an investment in the Reference Stock if the price appreciation of the Reference Stock (plus dividends, if any) is less than 6.00% per annum.

If the closing price of the Reference Stock on the final valuation date is \$13.00 (an increase of 30%)

Payment at Maturity:	\$1,000.00
<u>Coupons:</u>	<u>\$60.00 (\$5.00 x 12 = \$60.00)</u>
Total:	\$1,060.00
Total Return on the Notes:	6.00%

In this example, the total return on the Notes is 6.00%, while the total return on the Reference Stock is a gain of 31.50% (including dividends).

If the closing price of the Reference Stock on the final valuation date is \$9.50 (a decline of 5%)

Payment at Maturity:	\$1,000.00
<u>Coupons:</u>	<u>\$60.00 (\$5.00 x 12 = \$60.00)</u>
Total:	\$1,060.00
Total Return on the Notes:	6.00%

In this example, the total return on the Notes is 6.00%, while the total return on the Reference Stock is a loss of 3.50% (including dividends).



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Scenario #4: The Notes are not automatically called and the final underlying price of the Reference Stock is below the hypothetical conversion price of \$9.00.

Since the Notes have not been called and the final underlying price of the Reference Stock is below the hypothetical conversion price of \$9.00, Royal Bank of Canada will deliver to you at maturity the number of shares of the Reference Stock equal to the share delivery amount for every \$1,000 principal amount of the Notes you hold and will pay cash at the final underlying price for any fractional shares included in the share delivery amount. The value of shares received at maturity and the total return on the Notes at that time depends on the closing price of the Reference Stock on the maturity date, and could result in the loss of some or all of your principal.

If the closing price of the Reference Stock on the maturity date is \$4.00 (a decline of 60%)

Value of shares received:	\$444.44 (111.1111 shares x \$4.00)
<u>Coupons:</u>	<u>\$60.00 (\$5.00 x 12 = \$60.00)</u>
Total:	\$504.44
Total Return on the Notes:	-49.56%

In this example, the total return on the Notes is a loss of 49.56%, while the total return on the Reference Stock is a loss of 58.50% (including dividends)

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Hypothetical Return Table at Maturity

The table below is based on the following assumptions\*

Principal Amount:	\$1,000
Term:	Approximately 12 months
Observation Dates:	Quarterly
Hypothetical initial underlying price of the Reference Stock*:	\$10.00 per share
Hypothetical conversion price*:	\$9.00 (which is 90.00% of the hypothetical initial underlying price)
Hypothetical share delivery amount*:	111.1111 shares per Note (\$1,000 / conversion price of \$9.00)
Hypothetical coupon rate per annum**:	6.00% (\$5.00 per month)

Hypothetical dividend yield on the Reference Stock\*\*\*: 1.50% over the term of the Notes (1.50% per annum)

\* May not be the actual coupon rate per annum, initial underlying price, conversion price or share delivery amount applicable to the Notes. The actual coupon rate per annum, initial underlying price, conversion price and share delivery amount for each of the Notes will be determined on the trade date.

\*\* Coupon payments will be paid in arrears in equal monthly installments during the term of the Notes unless earlier called.

\*\*\* Hypothetical dividend yield holders of the Reference Stock might receive over the term of the Notes. Holders of the Notes will not be entitled to any dividend payments made on the Reference Stock.

<u>Reference Stock</u>	Total Return on the Reference Stock at Maturity <sup>(4)</sup>	<u>Conversion Event Does Not Occur<sup>(1)</sup> and There Was No Prior Automatic Call</u>		<u>Conversion Event Occurs<sup>(2)</sup> and There Was No Prior Automatic Call</u>			
		Payment at Maturity + Coupon Payments <sup>(5)</sup>	Total Return on the Notes at Maturity <sup>(6)</sup>	Value of the Share Delivery Amount <sup>(7)</sup>	Payment at Maturity + Coupon Payments <sup>(8)</sup>	Total Return on the Notes at Maturity <sup>(6)</sup>	
\$15.00	50.00%	51.50%	\$1,060.00	6.00%	n/a	n/a	n/a
\$14.50	45.00%	46.50%	\$1,060.00	6.00%	n/a	n/a	n/a
\$14.00	40.00%	41.50%	\$1,060.00	6.00%	n/a	n/a	n/a
\$13.50	35.00%	36.50%	\$1,060.00	6.00%	n/a	n/a	n/a
\$12.50	25.00%	26.50%	\$1,060.00	6.00%	n/a	n/a	n/a
\$12.00	20.00%	21.50%	\$1,060.00	6.00%	n/a	n/a	n/a
\$11.50	15.00%	16.50%	\$1,060.00	6.00%	n/a	n/a	n/a
\$11.00	10.00%	11.50%	\$1,060.00	6.00%	n/a	n/a	n/a
\$10.50	5.00%	6.50%	\$1,060.00	6.00%	n/a	n/a	n/a
\$10.00	0.00%	1.50%	\$1,060.00	6.00%	n/a	n/a	n/a
\$9.80	-2.00%	-0.50%	\$1,060.00	6.00%	n/a	n/a	n/a
\$9.50	-5.00%	-3.50%	\$1,060.00	6.00%	n/a	n/a	n/a
\$9.00	-10.00%	-8.50%	\$1,060.00	6.00%	n/a	n/a	n/a
\$8.50	-15.00%	-13.50%	n/a	n/a	\$944.44	\$1,004.44	0.44%
\$8.00	-20.00%	-18.50%	n/a	n/a	\$888.89	\$948.89	-5.11%
\$7.50	-25.00%	-23.50%	n/a	n/a	\$833.33	\$893.33	-10.67%
\$7.00	-30.00%	-28.50%	n/a	n/a	\$777.78	\$837.78	-16.22%
\$6.50	-35.00%	-33.50%	n/a	n/a	\$722.22	\$782.22	-21.78%
\$6.00	-40.00%	-38.50%	n/a	n/a	\$666.67	\$726.67	-27.33%
\$5.50	-45.00%	-43.50%	n/a	n/a	\$611.11	\$671.11	-32.89%
\$5.00	-50.00%	-48.50%	n/a	n/a	\$555.56	\$615.56	-38.44%

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\$4.50	-55.00%	-53.50%	n/a	n/a	\$500.00	\$560.00	-44.00%
\$4.00	-60.00%	-58.50%	n/a	n/a	\$444.44	\$504.44	-49.56%
\$3.50	-65.00%	-63.50%	n/a	n/a	\$388.89	\$448.89	-55.11%
\$3.00	-70.00%	-68.50%	n/a	n/a	\$333.33	\$393.33	-60.67%

- (1) A conversion event does not occur if the final underlying price of the Reference Stock is not below the conversion price.
- (2) A conversion event occurs if the final underlying price of the Reference Stock is below the conversion price.
- (3) The final underlying price is shown as of the final valuation date, if the final underlying price of the Reference Stock is not below the conversion price. However, if the final underlying price of the Reference Stock is below the conversion price, the final underlying price is shown as of the final valuation date and the maturity date. The final underlying price range is provided for illustrative purposes only. The actual stock price return may be below -70.00%, and you therefore may lose up to 100% of your initial investment.
- (4) The total return at maturity on the Reference Stock assumes a dividend yield on the Reference Stock of 1.50% over the term of the Notes.
- (5) Payment consists of the principal amount plus the coupon payments received during the term of the Notes.
- (6) The total return at maturity on the Notes includes coupon payments received during the term of the Notes.
- (7) The value of the share delivery amount consists of the total shares included in the share delivery amount multiplied by the closing price of the Reference Stock on the maturity date. If you receive the share delivery amount at maturity, we will pay cash in lieu of delivering any fractional shares in an amount equal to that fraction multiplied by the closing price of the Reference Stock on the final valuation date.
- (8) The actual value of the payment consists of the market value of a number of shares of the Reference Stock equal to the share delivery amount, valued and delivered as of the maturity date with fractional shares paid in cash at the final underlying price, plus the coupon payments received during the term of the Notes.

What Are the Tax Consequences of the Notes?

U.S. Federal Income Tax Consequences

Set forth below, together with the discussion of U.S. federal income tax in the accompanying product prospectus supplement, prospectus supplement and prospectus, is a summary of the material U.S. federal income tax consequences relating to an investment in the Notes. The following summary is not complete and is qualified in its entirety by the discussion under the section entitled “Supplemental Discussion of U.S. Federal Income Tax Consequences” in the accompanying product prospectus supplement, the section entitled “Certain Income Tax Consequences” in the accompanying prospectus supplement and the section entitled “Tax Consequences” in the accompanying prospectus, which you should carefully review prior to investing in the Notes.

In the opinion of our counsel, Morrison & Foerster LLP, it would generally be reasonable to treat the Notes for U.S. federal income tax purposes as an investment unit consisting of (i) a non-contingent debt instrument issued by us to you (the “Debt Portion”) and (ii) a put option with respect to the Reference Stock written by you and purchased by us (the “Put Option”).

Debt Portion — Amounts treated as interest on the Debt Portion would be included in income in accordance with your regular method of accounting for interest for U.S. federal income tax purposes.

Put Option — Amounts treated as payment for the Put Option would generally be deferred and accounted for upon sale or maturity of the Notes. At maturity, the amounts treated as payment for the Put Option (i) would likely result in short-term capital gain if you were to receive a cash payment of the full principal amount of your Notes, (ii) would reduce the U.S. federal income tax basis of the shares of Reference Stock you receive if we were to exchange your Notes for shares of the Reference Stock, or (iii) would reduce the amount you are treated as paying us upon settlement of the Put Option if you were to receive a cash payment of less than the full principal amount of your Notes.

With respect to coupon payments you receive, we intend to treat such payments as consisting of interest on the debt component and a payment with respect to the put option as follows:

Reference Stock	Coupon Rate per Annum (to be determined on the trade date)	Interest on Debt Component per Annum	Put Option Component per Annum
Apache Corporation (APA)	8.15% to 9.15%	• %	• %
CenturyLink, Inc. (CTL)	10.70% to 11.70%	• %	• %

There is no judicial or administrative authority discussing how the Notes should be treated for U.S. federal income tax purposes. Therefore, other treatments would also be reasonable and the Internal Revenue Service might assert that treatment other than that described above is more appropriate, in which case the timing and character of any income or loss on the Notes could be significantly and adversely affected. In addition, the Internal Revenue Service has released a notice that may affect the taxation of holders of “prepaid forward contracts” and similar instruments. According to the notice, the Internal Revenue Service and the U.S. Treasury Department are actively considering whether the holder of such instruments should be required to accrue ordinary income on a current basis. While it is not clear whether the Notes would be viewed as similar to such instruments, it is possible that any future guidance could materially and adversely affect the tax consequences of an investment in the Notes, possibly with retroactive effect.

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

Stock 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 Stock 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.

Individual holders that own “specified foreign financial assets” may be required to include certain information with respect to such assets with their U.S. federal income tax return. You are urged to consult your own tax advisor regarding such requirements with respect to the Notes. You should consult your tax advisor concerning the U.S. federal income tax and other tax consequences of your investment in the Notes in your particular circumstances, including the application of state, local or other tax laws and the possible effects of changes in federal or other tax laws.

Please see the discussion under the section entitled “Supplemental Discussion of U.S. Federal Income Tax Consequences” in the accompanying product prospectus supplement for a further discussion of the U.S. federal income tax consequences of an investment in the Notes.

#### Canadian Federal Income Tax Consequences

For a discussion of the material Canadian federal income tax consequences relating to an investment in the Notes, please see the section entitled “Supplemental Discussion of Canadian Federal Income Tax Consequences” in the accompanying product prospectus supplement, together with the section entitled “Tax Consequences” in the accompanying prospectus, which you should carefully review prior to investing in the Notes.

## Information About the Reference Stocks

Included on the following pages is a brief description of the issuers of each of the respective Reference Stocks. This information has been obtained from publicly available sources. Set forth below are tables that provide the quarterly high and low and period-end closing prices for each of the Reference Stocks. We obtained the closing price information set forth below from the Bloomberg Professional® service (“Bloomberg”) without independent verification. You should not take the historical prices of the Reference Stocks as an indication of future performance. Each of the Reference Stocks is registered under the Securities Exchange Act of 1934, as amended (the “Exchange Act”). Companies with securities registered under the Exchange Act are required to file financial and other information specified by the SEC periodically. Information filed by the respective Reference Stock issuers with the SEC can be reviewed electronically through a website maintained by the SEC. The address of the SEC’s website is [www.sec.gov](http://www.sec.gov). Information filed with the SEC by the respective Reference Stock issuers under the Exchange Act can be located by reference to its SEC Central Index Key (“CIK”) number provided below. In addition, information filed with the SEC can be inspected and copied at the Public Reference Section of the SEC, 100 F Street, N.E., Room 1580, Washington, D.C. 20549. Copies of this material can also be obtained from the Public Reference Section, at prescribed rates. Information from outside sources is not incorporated by reference in, and should not be considered part of, this free writing prospectus or any accompanying prospectus or prospectus supplement. We have not independently verified the accuracy or completeness of the information contained in outside sources.

## Apache Corporation

According to publicly available information, Apache Corporation is an independent energy company. The company explores for, develops, and produces natural gas, crude oil, and natural gas liquids.

Information filed by the company with the SEC under the Exchange Act can be located by reference to its SEC CIK number: 6769. The company’s common stock is listed on the New York Stock Exchange (“NYSE”) under the ticker symbol “APA.”

## Historical Information

The following table sets forth the quarterly high, low and period-end closing prices for this Reference Stock, based on daily closing prices, as reported by Bloomberg L.P. The historical performance of this Reference Stock should not be taken as an indication of its future performance during the term of the Notes. We cannot give you assurance that the performance of the Reference Stock will result in the return of any of your initial investment.

Quarter Begin	Quarter End	Quarterly Closing High	Quarterly Closing Low	Quarterly Period-End Close
1/02/2013	3/28/2013	\$85.38	\$72.73	\$77.16
4/01/2013	6/28/2013	\$87.12	\$68.84	\$83.83
7/01/2013	9/30/2013	\$88.93	\$75.37	\$85.14
10/01/2013	12/31/2013	\$94.42	\$85.28	\$85.94
1/02/2014	3/31/2014	\$87.90	\$78.02	\$82.95
4/01/2014	6/30/2014	\$101.60	\$82.09	\$100.62
7/01/2014	9/30/2014	\$103.48	\$93.31	\$93.87
10/01/2014	12/31/2014	\$91.05	\$55.20	\$62.67
1/02/2015	3/31/2015	\$68.37	\$58.46	\$60.33
4/01/2015	6/30/2015	\$71.40	\$56.54	\$57.63
7/01/2015	9/30/2015	\$56.78	\$36.20	\$39.16
10/01/2015	12/31/2015	\$53.94	\$39.72	\$44.47
1/04/2016	3/31/2016	\$51.02	\$34.38	\$48.81
4/01/2016	6/30/2016	\$58.29	\$46.82	\$55.67
7/01/2016	9/30/2016	\$63.87	\$48.78	\$63.87
10/03/2016	12/30/2016	\$67.35	\$55.52	\$63.47
1/03/2017	3/31/2017	\$63.78	\$49.41	\$51.39
4/03/2017	6/30/2017	\$53.99	\$45.63	\$47.93
7/03/2017	9/29/2017	\$50.22	\$38.37	\$45.80
10/02/2017	12/29/2017	\$45.85	\$39.42	\$42.22

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1/02/2018	1/16/2018*	\$47.16	\$43.99	\$46.27
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\* This free writing prospectus includes information for the first calendar quarter of 2018 for the period from January 1, 2018 through January 16, 2018. Accordingly, the “Quarterly Closing High,” “Quarterly Closing Low” and “Quarterly Period-End Close” data indicated are for this shortened period only and do not reflect complete data for the first calendar quarter of 2018.

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The graph below illustrates the performance of this Reference Stock from January 16, 2008 to January 16, 2018, assuming an initial underlying price of \$46.27, which was its closing price on January 16, 2018. The green line represents a hypothetical conversion price equal to 85.00% of the hypothetical initial underlying price (the actual initial underlying price and conversion price will be determined on the trade date).

n conversion price = 85.00% of the initial underlying price

**HISTORIC PERFORMANCE IS NOT AN INDICATION OF FUTURE PERFORMANCE.**

Source: Bloomberg L.P. We have not independently verified the accuracy or completeness of the information obtained from Bloomberg Financial Markets.



## CenturyLink, Inc.

According to publicly available information, CenturyLink, Inc. provides communications services, including voice, local and long-distance, network access, private line including special access, public access, broadband, data, managed hosting including cloud hosting, colocation, wireless and video services.

Information filed by the company with the SEC under the Exchange Act can be located by reference to its SEC CIK number: 18926. The company's common stock is listed on the NYSE under the ticker symbol "CTL."

## Historical Information

The following table sets forth the quarterly high, low and period-end closing prices for this Reference Stock, based on daily closing prices, as reported by Bloomberg L.P. The historical performance of this Reference Stock should not be taken as an indication of its future performance during the term of the Notes. We cannot give you assurance that the performance of the Reference Stock will result in the return of any of your initial investment.

Quarter Begin	Quarter End	Quarterly Closing High	Quarterly Closing Low	Quarterly Period-End Close
1/02/2013	3/28/2013	\$41.76	\$32.27	\$35.13
4/01/2013	6/28/2013	\$37.89	\$33.99	\$35.35
7/01/2013	9/30/2013	\$36.39	\$31.38	\$31.38
10/01/2013	12/31/2013	\$33.89	\$30.30	\$31.85
1/02/2014	3/31/2014	\$32.84	\$28.09	\$32.84
4/01/2014	6/30/2014	\$38.18	\$33.08	\$36.20
7/01/2014	9/30/2014	\$41.47	\$35.94	\$40.89
10/01/2014	12/31/2014	\$41.81	\$37.58	\$39.58
1/02/2015	3/31/2015	\$40.52	\$34.06	\$34.55
4/01/2015	6/30/2015	\$36.78	\$29.38	\$29.38
7/01/2015	9/30/2015	\$30.94	\$24.61	\$25.12
10/01/2015	12/31/2015	\$28.81	\$24.38	\$25.16
1/04/2016	3/31/2016	\$32.17	\$22.24	\$31.96
4/01/2016	6/30/2016	\$32.80	\$26.63	\$29.01
7/01/2016	9/30/2016	\$31.44	\$26.75	\$27.43
10/03/2016	12/30/2016	\$31.00	\$23.00	\$23.78
1/03/2017	3/31/2017	\$26.06	\$22.45	\$23.57
4/03/2017	6/30/2017	\$27.31	\$23.60	\$23.88
7/03/2017	9/29/2017	\$23.97	\$18.32	\$18.90
10/02/2017	12/29/2017	\$20.35	\$13.62	\$16.68
1/02/2018	1/16/2018*	\$17.48	\$16.54	\$17.34

\* This free writing prospectus includes information for the first calendar quarter of 2018 for the period from January 1, 2018 through January 16, 2018. Accordingly, the "Quarterly Closing High," "Quarterly Closing Low" and "Quarterly Period-End Close" data indicated are for this shortened period only and do not reflect complete data for the first calendar quarter of 2018.

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The graph below illustrates the performance of this Reference Stock from January 16, 2008 to January 16, 2018, assuming an initial underlying price of \$17.34, which was its closing price on January 16, 2018. The green line represents a hypothetical conversion price equal to 70.00% of the hypothetical initial underlying price (the actual initial underlying price and conversion price will be determined on the trade date).

n conversion price = 70.00% of the initial underlying price

**HISTORIC PERFORMANCE IS NOT AN INDICATION OF FUTURE PERFORMANCE.**

Source: Bloomberg L.P. We have not independently verified the accuracy or completeness of the information obtained from Bloomberg Financial Markets.

Supplemental Plan of Distribution (Conflicts of Interest)

We have agreed to indemnify UBS Financial Services Inc. and RBCCM against liabilities under the Securities Act of 1933, as amended, or to contribute payments that UBS Financial Services Inc. and RBCCM may be required to make relating to these liabilities as described in the prospectus supplement and the prospectus. We will agree that UBS Financial Services Inc. may sell all or a part of the Notes that it will purchase from us to investors at the price to public or to its affiliates at the price indicated on the cover of the pricing supplement, the document that will be filed under Rule 424(b)(2) containing the final pricing terms of the Notes.

Subject to regulatory constraints and market conditions, RBCCM intends to offer to purchase the Notes in the secondary market, but it is not required to do so.

We or our affiliates may enter into swap agreements or related hedge transactions with one of our other affiliates or unaffiliated counterparties in connection with the sale of the Notes and RBCCM and/or an affiliate may earn additional income as a result of payments pursuant to the swap or related hedge transactions. See “Use of Proceeds and Hedging” on page PS-15 of the accompanying product prospectus supplement no. ABYON-2.

We expect to deliver the Notes on a date that is greater than two business days following the trade date. Under Rule 15c6-1 of the Exchange Act, 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 more than two business days prior to the original issue date will be required to specify alternative settlement arrangements to prevent a failed settlement.

The value of the Notes shown on your account statement may 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. If so specified in the pricing supplement related to the Notes, for a period of approximately six months after the issue date of the Notes, the value of the Notes that may be shown on your account statement may be higher than RBCCM’s estimated value of the Notes at that time. This is because the estimated value of the Notes will not include the underwriting discount and our hedging costs and profits; however, the value of the Notes shown on your account statement during that period may be a higher amount, potentially reflecting the addition of the underwriting discount and our estimated costs and profits from hedging the Notes. Any such excess is expected to decrease over time until the end of this period. After this period, if RBCCM repurchases your Notes, it expects to do so at prices that reflect their estimated value. This period may be reduced at RBCCM’s discretion based on a variety of factors, including but not limited to, the amount of the Notes that we repurchase and our negotiated arrangements from time to time with UBS.

For additional information as to the relationship between us and RBCCM, please see the section “Plan of Distribution—Conflicts of Interest” in the prospectus dated January 8, 2016.

No Prospectus (as defined in Directive 2003/71/EC (as amended, the “Prospectus Directive”)) will be prepared in connection with these Securities. Accordingly, these Securities 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.

### Structuring the Notes

The Notes are our debt securities, the return on which is linked to the performance of the applicable Reference Stock. 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. Using this relatively lower implied borrowing rate rather than the secondary market rate is a factor that is likely to result in a higher initial estimated value of the Notes at the time their terms are set than if the secondary market rate was used. Unlike the estimated value included on the cover of this document or in the final pricing supplement relating to the Notes, any value of the Notes determined for purposes of a secondary market transaction may be based on a different borrowing rate, which may result in a lower value for the Notes than if our initial internal borrowing rate were used.

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 applicable Reference Stock, and the tenor of the Notes. The economic terms of the Notes and their initial estimated value depend in part on the terms of these hedging arrangements.

The lower implied borrowing rate is a factor that reduces the economic terms of the Notes to you. The initial offering price of each of the Notes also reflects the underwriting commission and our estimated hedging costs. These factors result in the initial estimated value for each of the Notes on the trade date being less than their public offering price. See “Key Risks—The Initial Estimated Value of the Notes Will Be Less than the Price to the Public” above.

### Terms Incorporated in Master Note

The terms appearing above under the caption “Indicative Terms of the Notes” and the provisions in the accompanying product prospectus supplement no. ABYON-2 dated April 20, 2016 under the caption “General Terms of the Notes,” are incorporated into the master note issued to DTC, the registered holder of the Notes.