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**A LEADING CANADIAN
GOLD EXPLORATION
AND DEVELOPMENT
COMPANY**

September 2019



CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING INFORMATION

This presentation (the "Presentation") contains "forward-looking information" and "forward-looking statements" (collectively, "forward-looking statements") within the meaning of the applicable Canadian securities legislation. All statements, other than statements of historical fact, are forward-looking statements and are based on expectations, estimates and projections as at the date of this Presentation. Any statement that involves discussions with respect to predictions, expectations, beliefs, plans, projections, objectives, assumptions, future events or performance (often but not always using phrases such as "expects", or "does not expect", "is expected", "anticipates" or "does not anticipate", "plans", "budget", "scheduled", "forecasts", "estimates", "believes" or "intends" or variations of such words and phrases or stating that certain actions, events or results "may" or "could", "would", "might" or "will" be taken to occur or be achieved) are not statements of historical fact and may be forward-looking statements.

In this Presentation, forward-looking statements relate, among other things, to the market capitalization of Osisko Mining Inc. ("Osisko"); the value of Osisko's cash and investments; the timing and ability of Osisko to release an updated resource estimate in respect of the Windfall/Lynx deposit in 2019 or H1 2020, if at all; the timing and ability of Osisko to release a feasibility study in respect of the Windfall/Lynx deposit in 2020, if at all; the timing and ability of Osisko to advance the exploration ramp at the Windfall/Lynx deposit; the bulk-sampling program at the Windfall Lake gold deposit, if at all; the prior success of the "Osisko Group" in creating strong shareholder value having any impact on the ability of Osisko to create value for shareholders of Osisko; the potential of the Windfall Lake gold deposit, if any; the proposed exploration activities at the Windfall Lake gold deposit; the target timelines in respect of the

Windfall Lake gold deposit and Osisko's ability to make advance the project quickly; planned drilling at the Windfall Lake gold deposit in January 2018; the major shareholders of Osisko going forward; Québec exploration tax credits; the feasibility of the proposed mill complex at Lebel-sur-Quévillon; the development of the ramp, if at all; the timing and success of exploration, development and metallurgical testing activities; the timing, extent and success of mining operations (if any), project development and related permitting; the results of exploration programs; the results of economic analyses (including the Windfall Lake PEA as defined below); the ability to expand mineral resources beyond current mineral resource estimates; opportunities for growth of mineral projects; estimates of gold prices; the ability to adapt to changes in gold prices; estimates of costs, estimates of planned exploration and development expenditures and estimates of mine development and construction. All forward-looking statements entail various risks and uncertainties that are based on current expectations and actual results may differ materially from those contained in such information.

These uncertainties and risks include, but are not limited to, risks relating to the ability of exploration activities (including drill results) to accurately predict mineralization; errors in management's geological modelling; the ability of Osisko to complete further exploration activities, including drilling; property interests in the Windfall Lake gold project; the ability of Osisko to obtain required approvals and complete transactions on terms announced; the results of exploration activities; risks relating to mining activities; fluctuations in spot and forward prices of gold, silver, base metals or certain other commodities; fluctuations in currency markets (such as the Canadian dollar to United States dollar exchange rate); change in international, national and local government,

legislation, taxation, controls, regulations and political or economic developments; risks and hazards associated with the business of mineral exploration, development and mining (including environmental hazards, industrial accidents, unusual or unexpected formations pressures, cave-ins and flooding); inability to obtain adequate insurance to cover risks and hazards; the presence of laws and regulations that may impose restrictions on mining; employee relations; relationships with and claims by local communities and indigenous populations; availability of increasing costs associated with mining inputs and labour; the speculative nature of mineral exploration and development (including the risks of obtaining necessary licenses, permits and approvals from government authorities); and title to properties. Risks and uncertainties about Osisko's business are more fully discussed in the disclosure materials filed with the securities regulatory authorities in Canada, which are available on SEDAR under the issuer profile of Osisko at www.sedar.com. Readers are urged to read these materials and should not place undue reliance on any forward-looking statement and information contained in this Presentation. Except as required by law, Osisko assume no obligation to update the forward-looking statements of beliefs, opinions, projections, or other factors, should they change, except as required by law. Unless otherwise noted, this Presentation has been prepared based on information available as of August 13th, 2019. References in this Presentation to Osisko include Osisko Mining Inc. and its subsidiaries.



CAUTIONARY STATEMENTS REGARDING TECHNICAL INFORMATION

MINERAL RESOURCES

This Presentation contains information regarding mineral resources estimated at the projects of the companies referenced herein. Mineral resources are not mineral reserves and do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, socio-political, marketing or other relevant issues. In particular, the quantity and grade of reported inferred mineral resources in the estimates referenced in this Presentation are uncertain in nature and there is insufficient exploration to define these inferred mineral resources as an indicated or measured mineral resource in all cases. It is uncertain in all cases whether further exploration will result in upgrading the inferred mineral resources to an indicated or measured mineral resource category.

For details regarding the key assumptions, parameters and methods used to estimate the mineral resources presented in respect of the Windfall Lake gold project, please see the *“Technical Report and Mineral Resource Estimate – Windfall Lake Project, Windfall Lake and Urban-Barry Properties”* dated June 12, 2018 with an effective date of May 14, 2018 (the **“Windfall Resource Estimate”**) filed on SEDAR under the issuer profile of Osisko at www.sedar.com. Information relating to the updated mineral resource estimate for Lynx is supported by the press release titled “Osisko releases Mineral Resource Update for Lynx” dated of November 27, 2018 with an effective date of November 27, 2018.

For details regarding the key assumptions, parameters and methods used to estimate the mineral resources presented in respect of the Osborne-Bell Deposit, Quévillon Property, please see the *“NI 43-101 Technical Report and Mineral Resource Estimate – Osborne-Bell Deposit, Quévillon Property”* dated April 23, 2018 with an effective date March 2, 2018, filed on SEDAR under the issuer profile of Osisko at www.sedar.com.

PRELIMINARY ECONOMIC ASSESSMENT

For details regarding the key assumptions, parameters and methods in the preliminary economic assessment of the Windfall Lake gold project (the **“Windfall Lake PEA”**), please see the technical report titled *“NI 43-101 Technical Report Preliminary Economic Assessment for the Windfall Project”* dated of August 1, 2018 with an effective date of July 12, 2018 prepared by BBA Inc., with contributions from InnvoExplo Inc., Golder Associates Ltd, WSP Canada Inc., and SNC-Lavalin Inc. filed on SEDAR under the issuer profile of Osisko at www.sedar.com.

The Windfall Lake PEA is preliminary in nature and includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the Windfall Lake PEA will be realized.

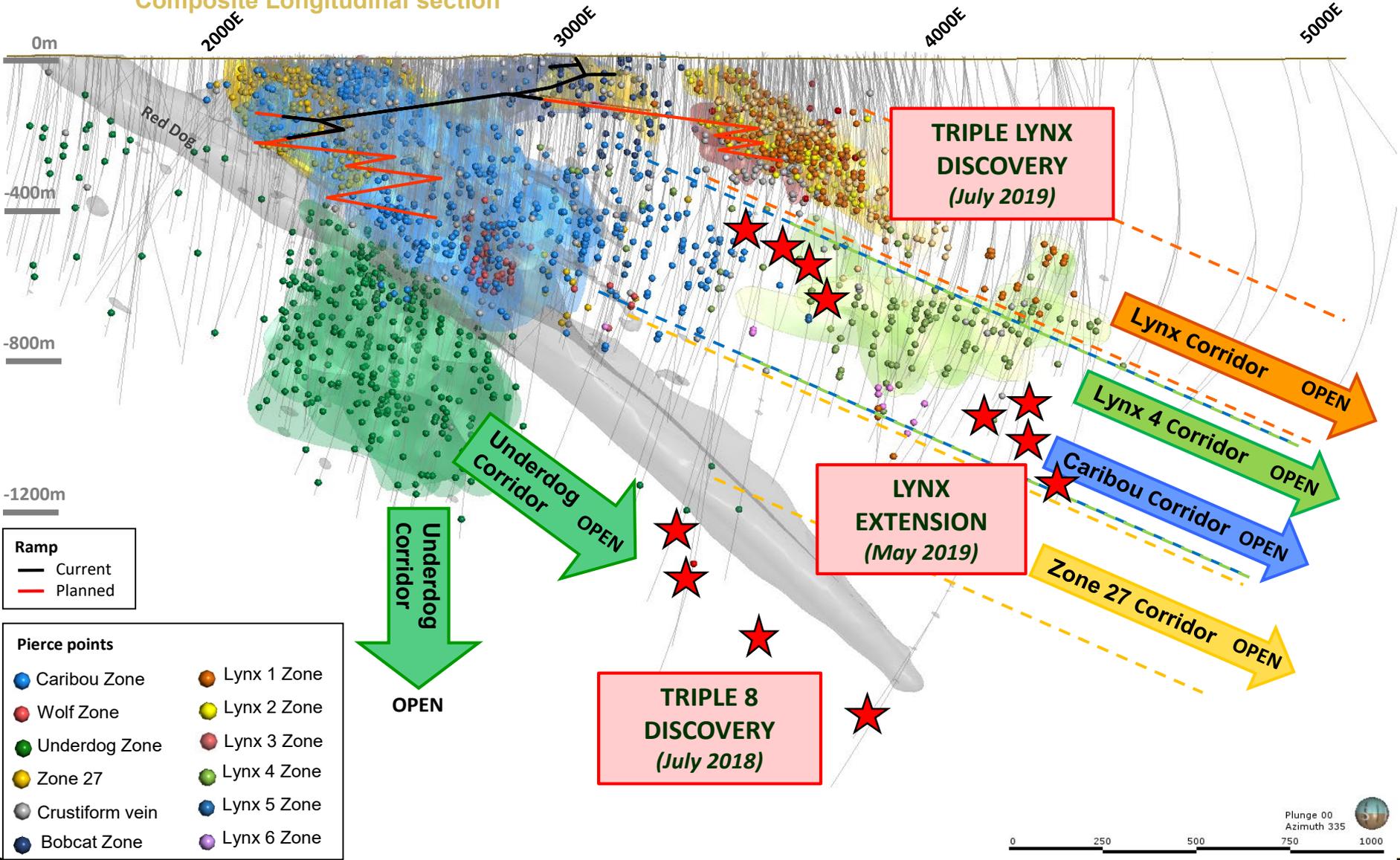
QUALIFIED PERSON

The scientific and technical information contained in this Presentation has been reviewed and approved by Robert Wares, P.Geo. and Executive Vice President Exploration and Resource Development of Osisko, a “qualified person” within the meaning of National Instrument 43-101 – *Standards for Disclosure of Mineral Projects*.



WINDFALL DEPOSIT AFTER +865,000 METRES OPEN DOWN PLUNGE AND GROWING

Composite Longitudinal section





NOVEMBER 2018 LYNX ZONE MINERAL RESOURCE

INCREASE IN GRADE – INCREASE IN TONNES – INCREASE IN OUNCES

Updated Indicated and Inferred vs. previous mineral resource estimate for Lynx (3.0 g/t Au cut-off)

Zone	Indicated			Inferred		
	Tonnes ⁽¹⁾	Grade (g/t)	Ounces Au ⁽¹⁾	Tonnes ⁽¹⁾	Grade (g/t)	Ounces Au ⁽¹⁾
Lynx – Nov 2018	1,746,000	8.13	456,000	2,005,000	9.70	625,000
Lynx – May 2018	1,254,000	7.51	303,000	2,257,000	7.48	543,000
Change	+492,000	+0.62	+153,000	-252,000	+2.22	+82,000

Note: (1) Values are rounded to nearest thousand which may cause apparent discrepancies.

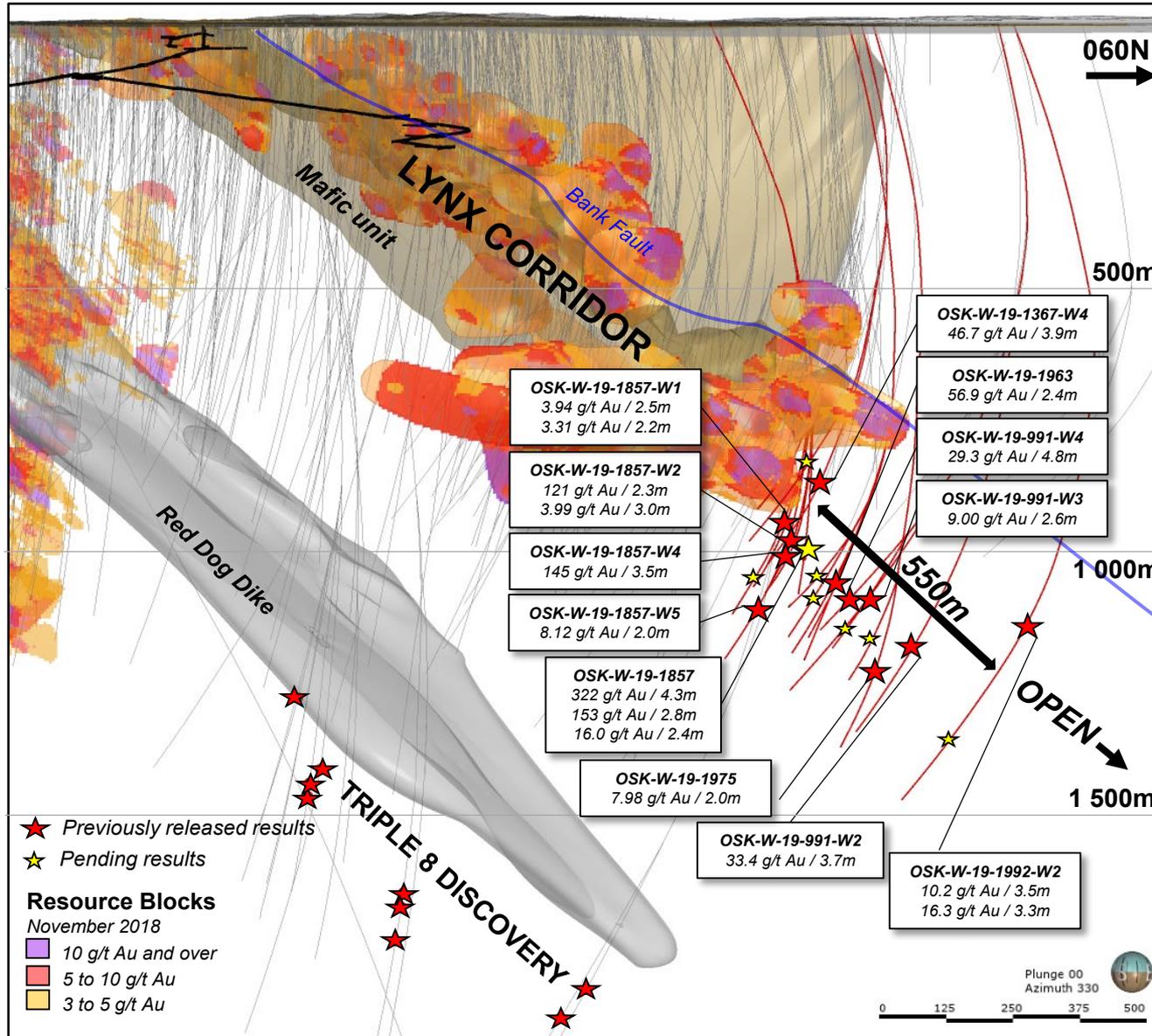
WINDFALL 2018 MINERAL RESOURCE ESTIMATE WITH LYNX UPDATE

Zone	Indicated			Inferred		
	Tonnes ⁽¹⁾	Grade (g/t)	Ounces Au ⁽¹⁾	Tonnes ⁽¹⁾	Grade (g/t)	Ounces Au ⁽¹⁾
Lynx	1,746,000	8.13	456,000	2,005,000	9.70	625,000
Zone 27	628,000	8.69	175,000	852,000	7.28	199,000
Caribou	318,000	7.12	73,000	2,767,000	5.80	516,000
Underdog	147,000	9.00	43,000	4,380,000	6.77	953,000
Other	34,000	6.58	7,000	348,000	6.37	71,000
Total	2,874,000	8.17	754,000	10,352,000	7.11	2,366,000

Note: (1) Values are rounded to nearest thousand which may cause apparent discrepancies.

LYNX EXTENSION

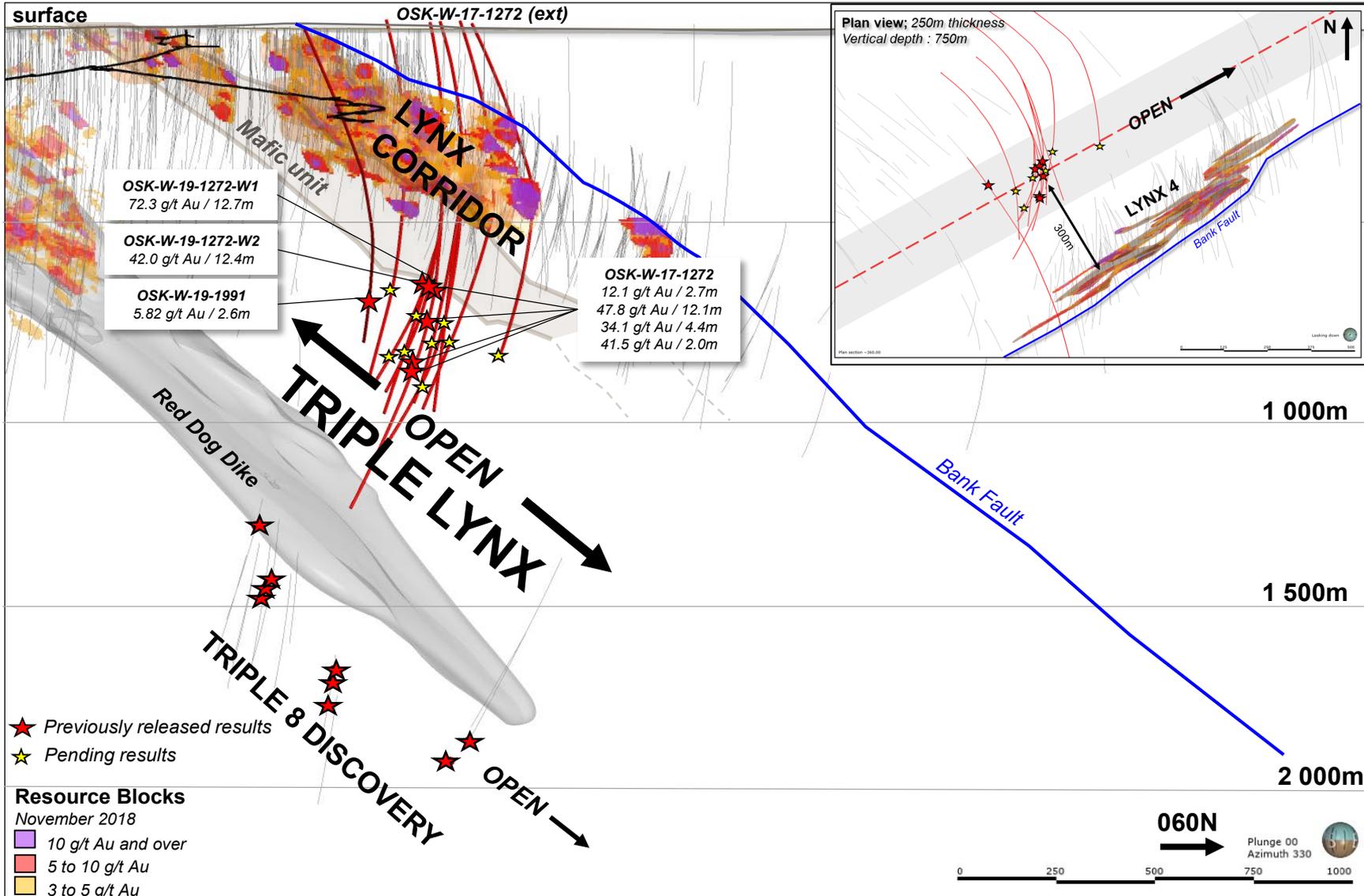
Longitudinal Section





TRIPLE LYNX DISCOVERY

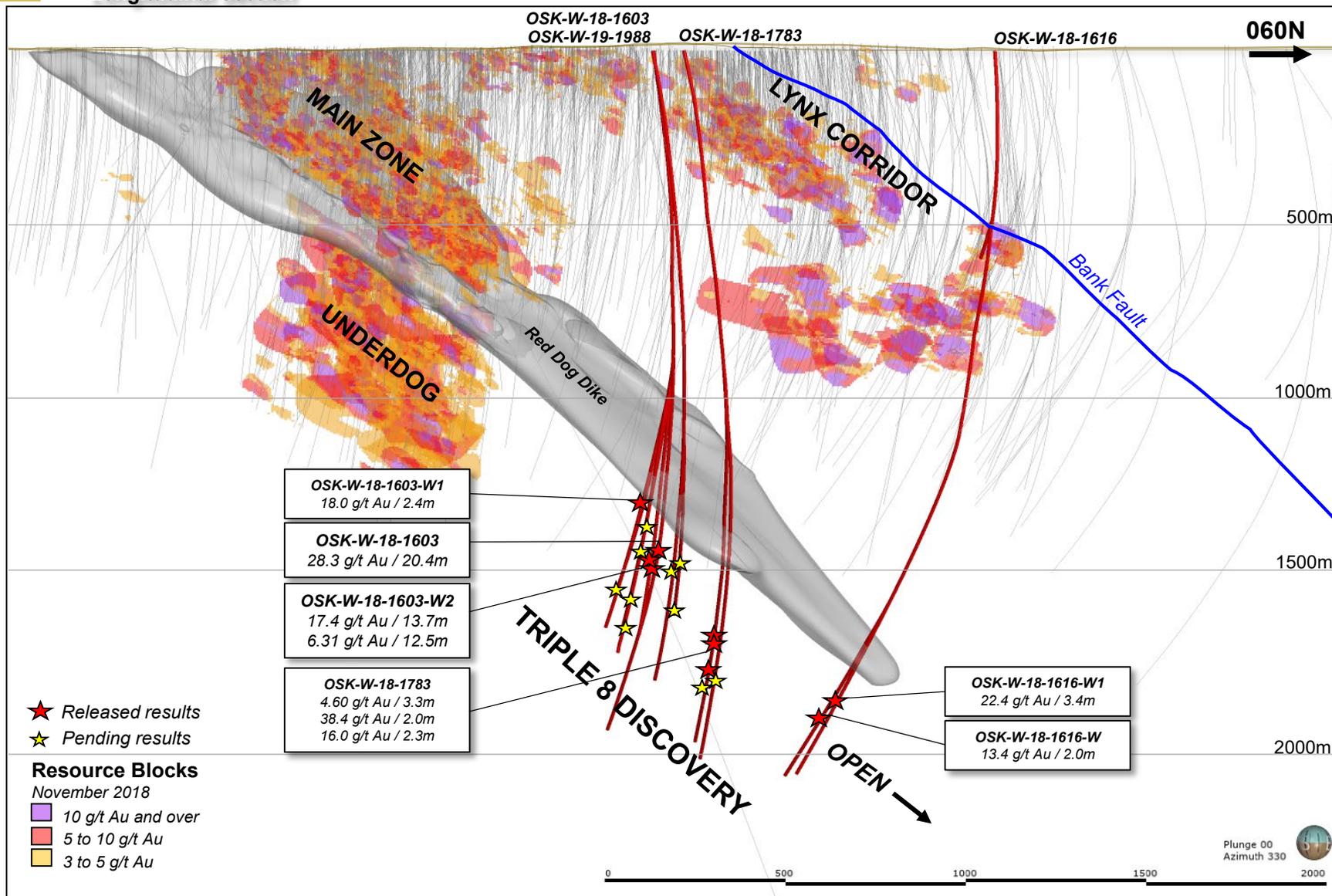
Longitudinal Section 200m thickness





TRIPLE 8 DISCOVERY

Longitudinal Section

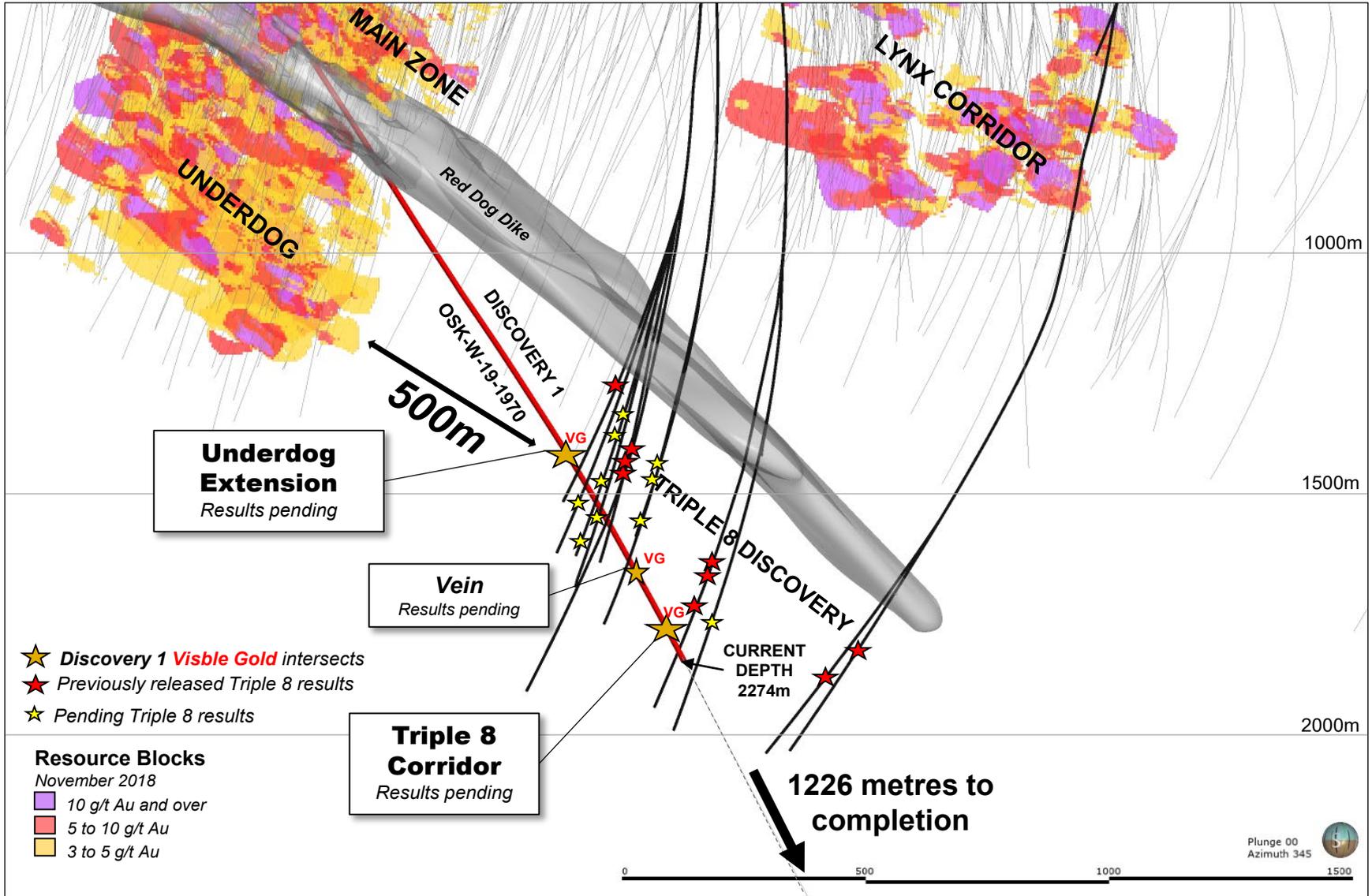




DISCOVERY 1

Longitudinal Section

500m Extension of Underdog and New Intercept in Triple 8



- ★ Discovery 1 Visible Gold intersects
- ★ Previously released Triple 8 results
- ★ Pending Triple 8 results

Resource Blocks

November 2018

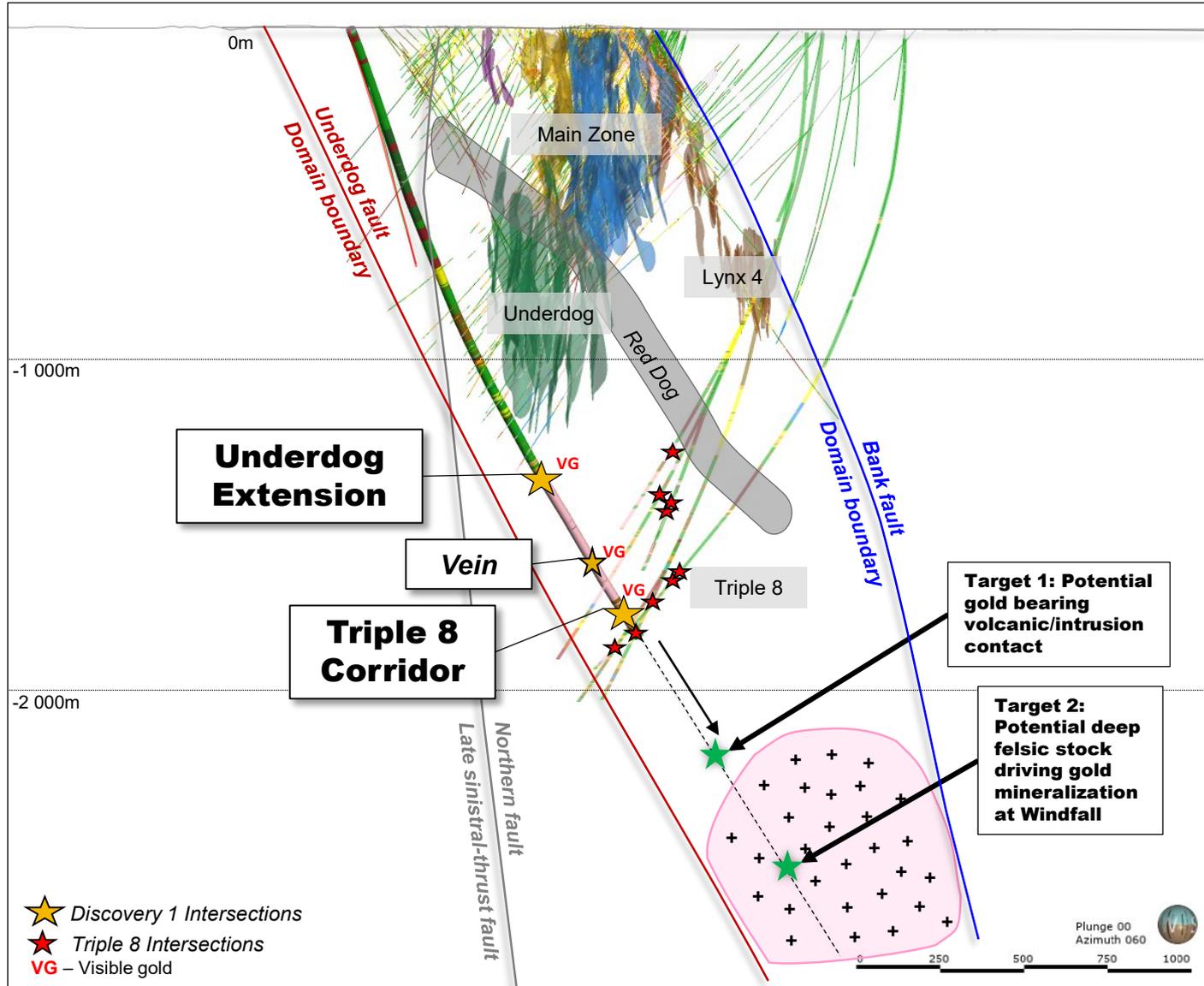
- 10 g/t Au and over
- 5 to 10 g/t Au
- 3 to 5 g/t Au

Triple 8 Corridor
Results pending



DISCOVERY 1

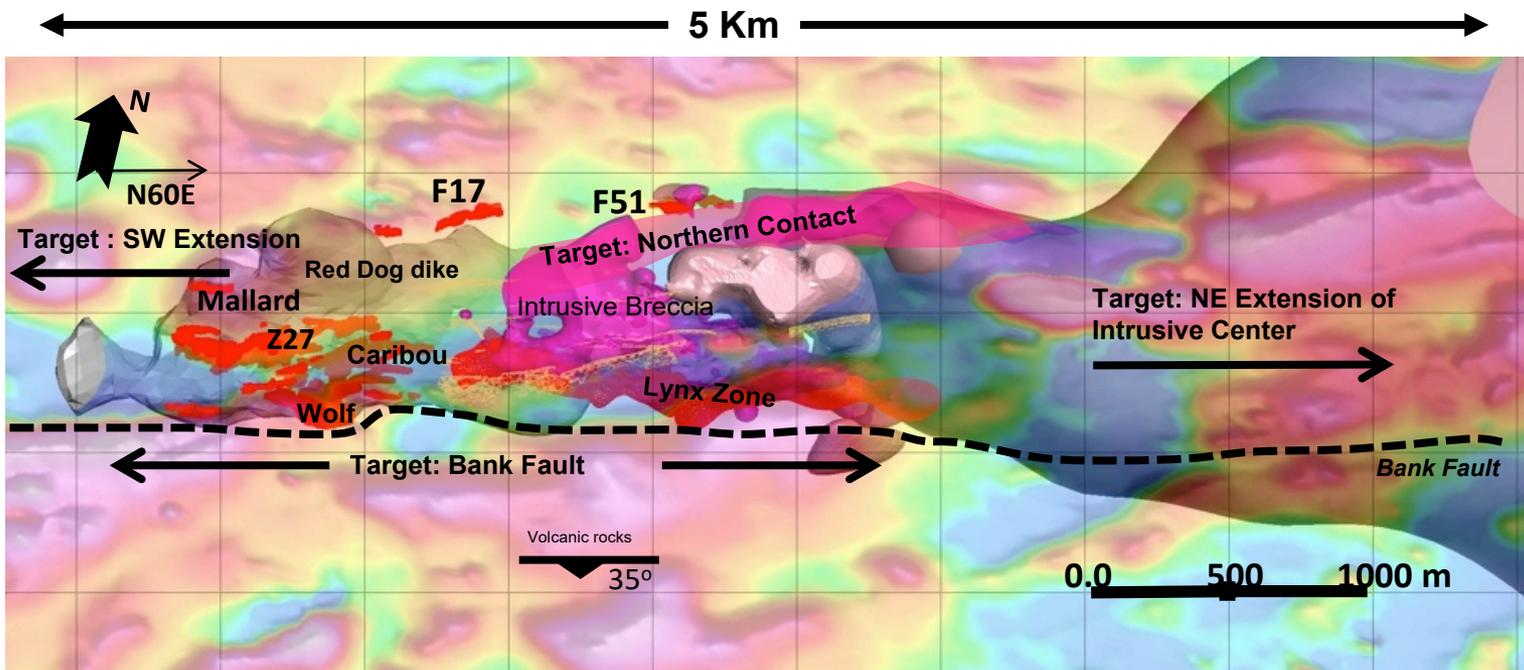
Section 3100 E 700m thickness





WINDFALL AND LYNX DEPOSITS INTRUSIVE RELATED MINERALIZATION

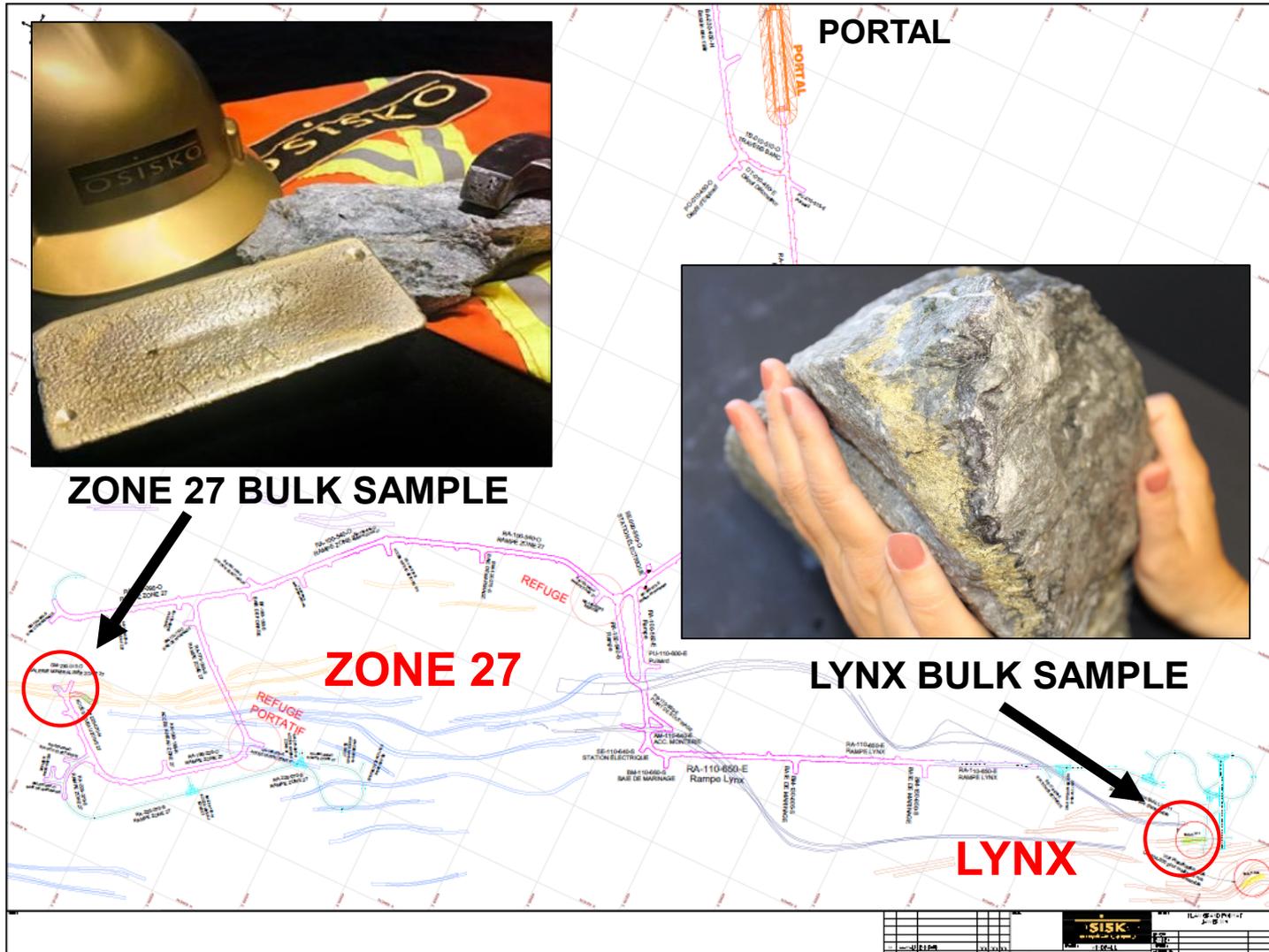
- New zones discovered in 2019: Windfall North, Lynx Extension, Triple Lynx
- Still areas within the known deposit with no drilling to date
- Down plunge mineralized zones remain open to depth, subject of ongoing drilling
- Northern intrusive contact largely unexplored



Surface Projection of the N60E - 35° NE plunging intrusive center



ZONE 27 AND LYNX BULK SAMPLE LOCATIONS





ZONE 27 BULK SAMPLE RECONCILED RESULTS

OSISKO WINDFALL ZONE 27 BULK SAMPLE RETURNS 8.53 g/t Au 5,500 Tonne Sample 26% Higher Grade than Resource Model

- **Average grade of 8.53 g/t Au** for the bulk sample is **26% higher than predicted** in the 12.5 metre infill drilling block model
- The sample contained **1,508 ounces Au** and **1,450 ounces Ag**
- **Average Au recovery of 93.7%** was achieved using the contract mill
- **34.5% of the gold was recovered** in the **gravity concentrate**

Tonnes (dry)	Head Grade		Contained Ounces		Gravity Concentrate		Flotation Concentrate		Overall Recovery		Recovered Ounces	
	Au (g/t)	Ag (g/t)	Au	Ag	tonnes (dry)	Au Rec (%)	tonnes (dry)	Au Rec (%)	Au Rec (%)	Ag Rec (%)	Au	Ag
5,500	8.53	8.20	1,508	1,450	11.6	34.5	398.1	59.2	93.7	93.4	1,413	1,355

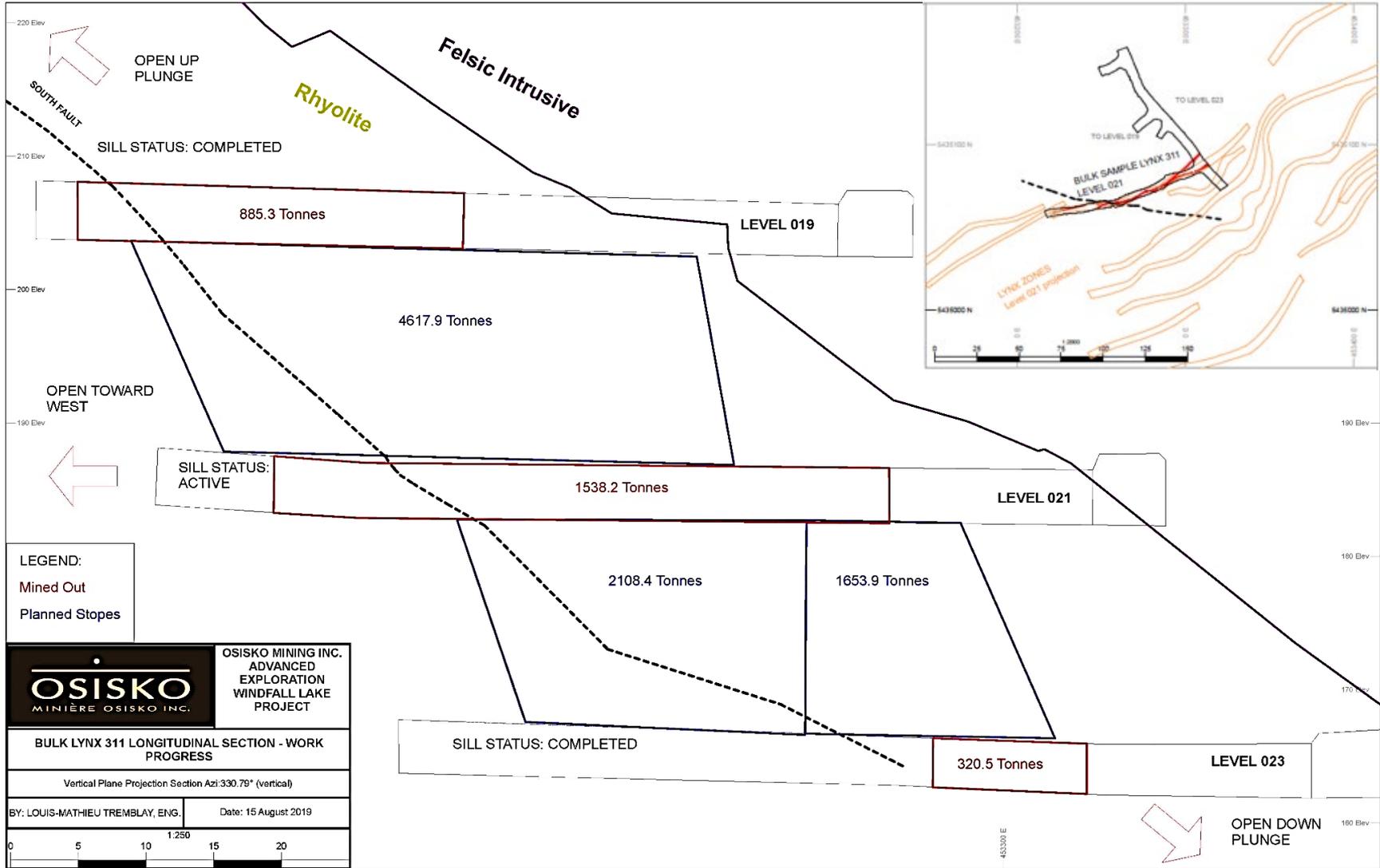
Mill feed tonnages used in the sample processing reconciliation were provided by Northern Sun. Daily composite samples collected during the processing of the bulk sample were assayed by external independent laboratories. Bulk sample results were reconciled by an external independent consultant using Bilmat.

Infill Resource Block Model Predictions vs. Actual Processed

Predicted Block Model (12.5m Infill Spacing)			Actual Processed Material		
Tonnes	Au g/t	Au Ounces	Tonnes	Au g/t	Au Ounces
5,512	6.76	1,198	5,500	8.53	1,508



LYNX BULK SAMPLE IN PROGRESS



LEGEND:
 Mined Out
 Planned Stopes

		OSISKO MINING INC. ADVANCED EXPLORATION WINDFALL LAKE PROJECT
BULK LYNX 311 LONGITUDINAL SECTION - WORK PROGRESS		
Vertical Plane Projection Section Azi:330.79° (vertical)		
BY: LOUIS-MATHIEU TREMBLAY, ENG.	Date: 15 August 2019	



JULY 2018 PRELIMINARY ECONOMIC ASSESSMENT



Base Case: *Gold price US\$1,300/oz*, Silver price US\$17.00/oz, Exchange rate C\$1.00 = US\$0.78, 5% discount rate

IRR after taxes and mining duties **32.7%**

NPV after taxes and mining duties **C\$413.2 million**

Pre-Production Construction costs (*including C\$51.8 M contingency*) **C\$397.3 million**

Peak-year payable production **248,000 oz (year 1)**

Average LOM payable production **218,000 oz**

Net gold payable recovery **92.4%**

Average diluted gold grade **6.7 g/t Au**

Life of mine (LOM) **8.1 years**

Total mineralized material mined **8,914,000 tonnes**

Contained gold in mined resource **1,915,000 oz**

Payable gold LOM **1,769,000 oz**

Payable silver LOM **557,000 oz**

All-in Sustaining Costs net of by-product credits and royalties over LOM **US\$704.00/oz**

Estimated All-in cost (CAPEX plus OPEX) **US\$879.00/oz**

Total unit operating cost **C\$126.47/ tonne milled**

Gross revenue **C\$2.96 billion**

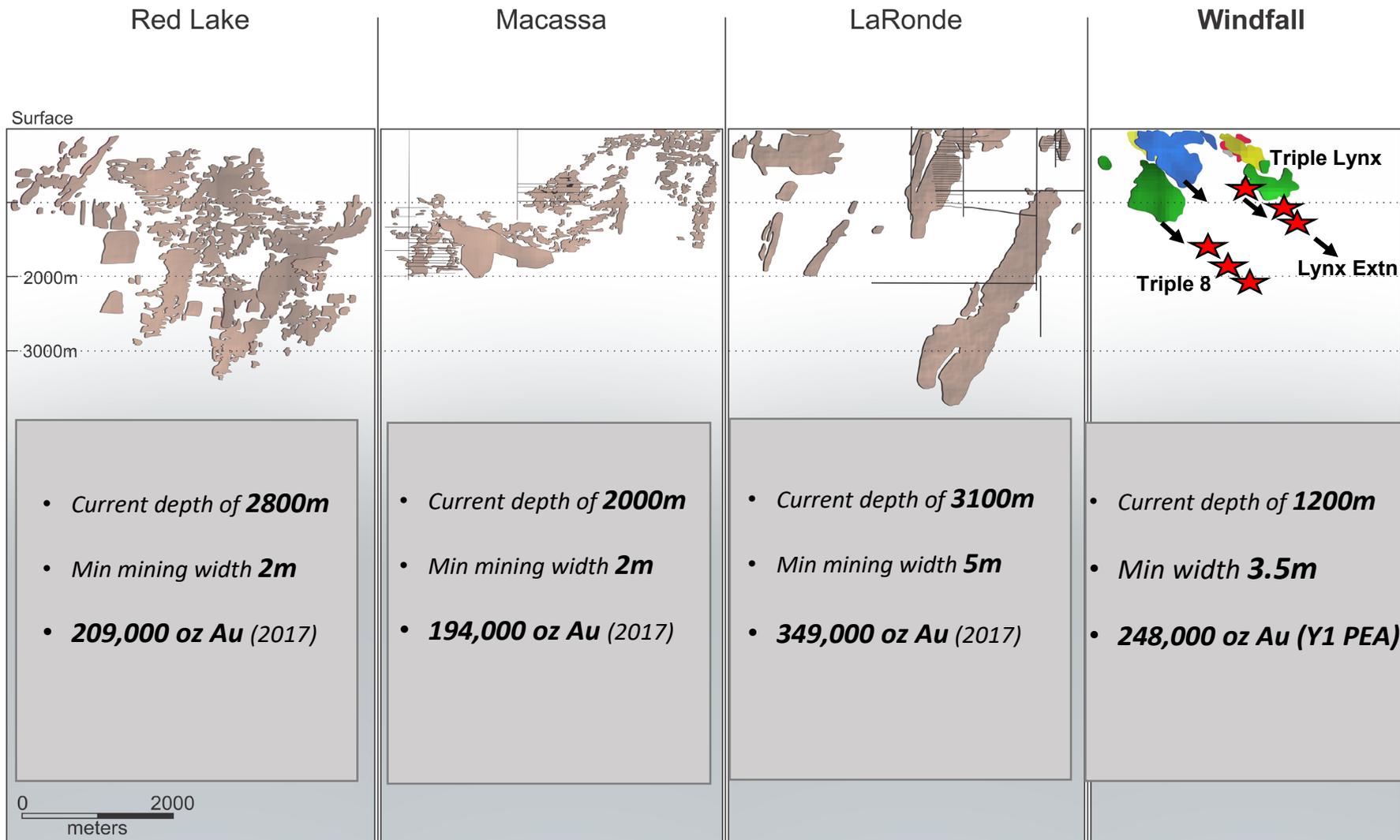
Operating cash flow **C\$1.12 billion**

Mine start-up/Full production **Q2 2022/Q3 2022**



Major Canadian Archean Gold Deposits – Vertical Extent

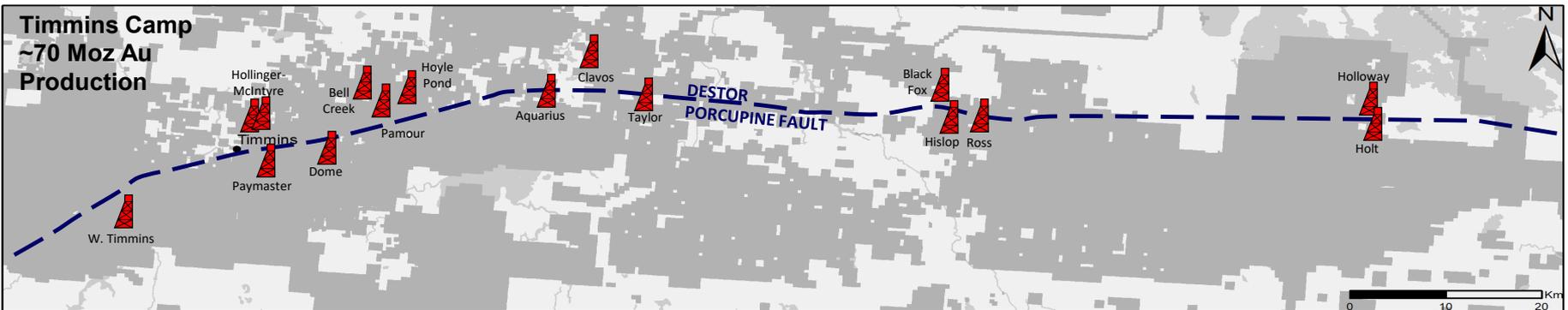
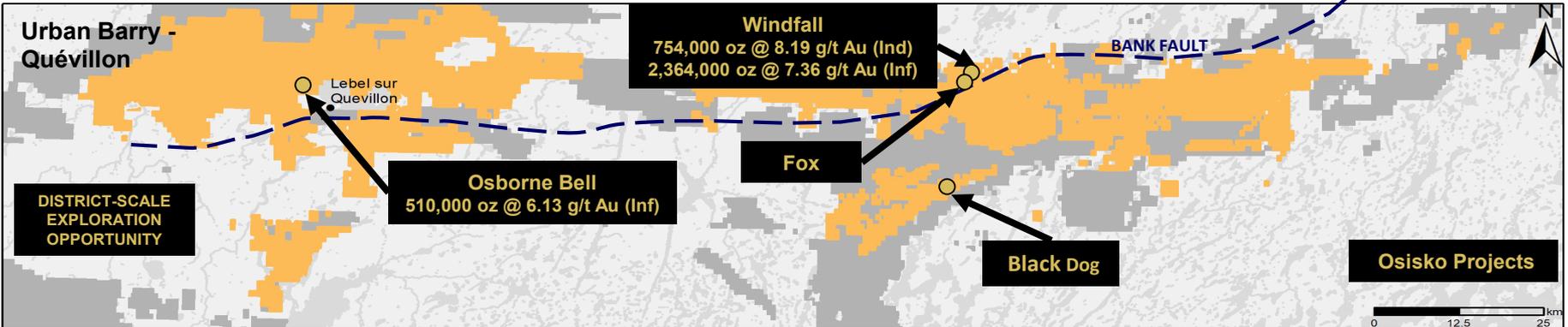
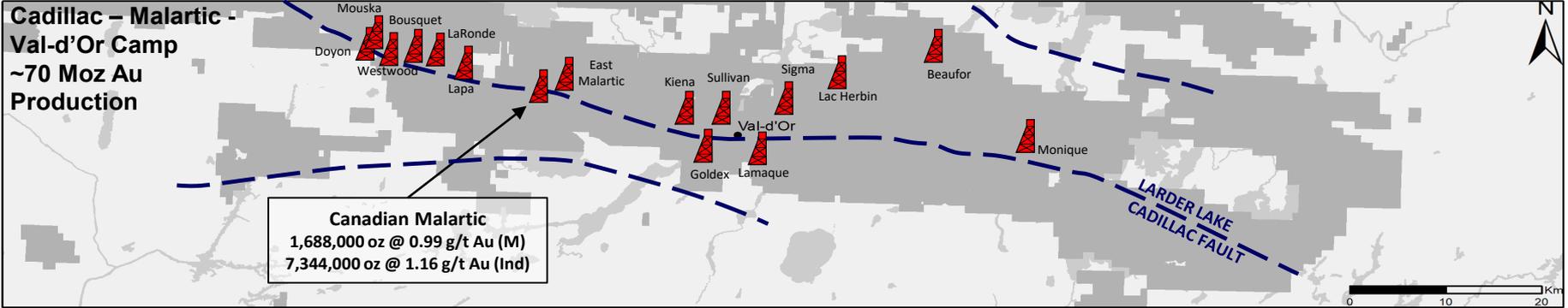
Windfall Remains Open Down Plunge - Strong Potential to Grow





AN EMERGING MINING DISTRICT

District-Scale: Over 2,700 km² Property Position



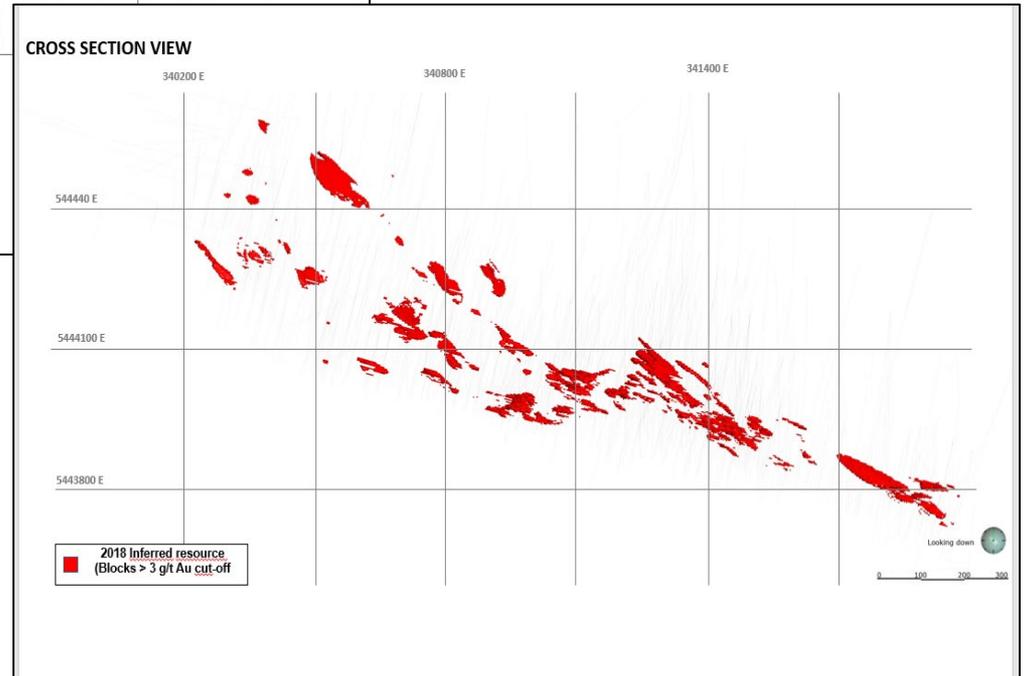
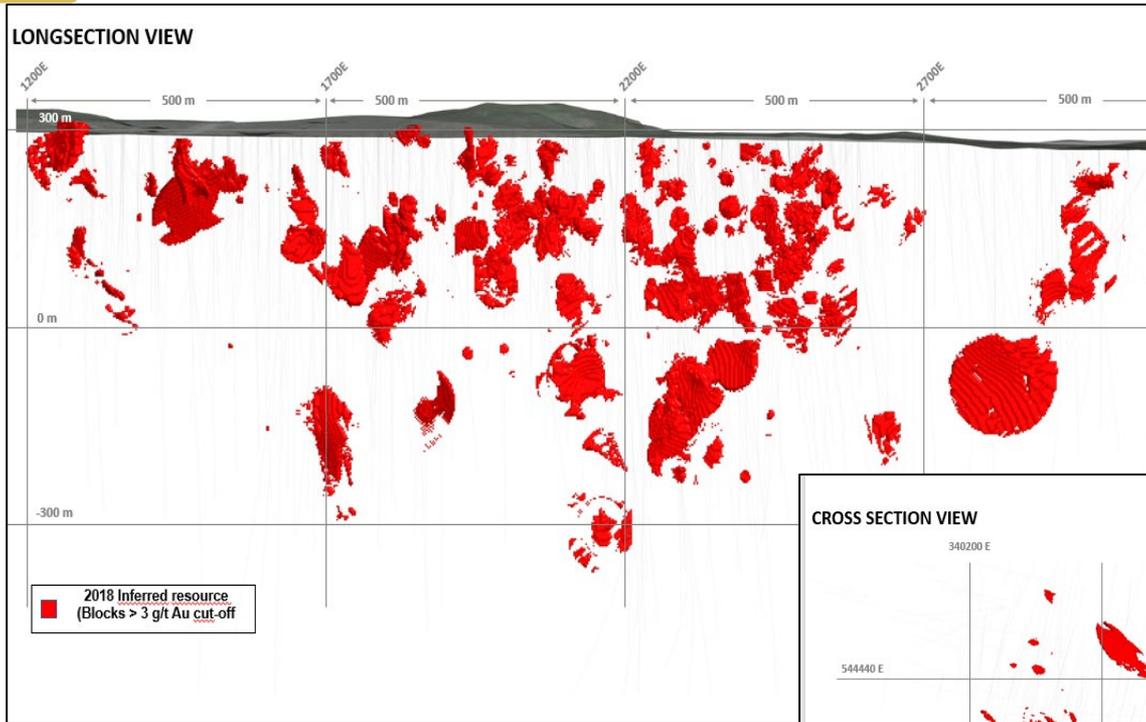


SUMMARY AND CATALYSTS

- **Well financed: approx. \$250M in fully diluted cash and equities**
- **Full focus on Windfall and the Windfall District**
- **23 drills on site - Windfall deposit remains open down plunge**
- **Positive resource update from Lynx, positive bulk results Zone 27**
- **Ramp and Lynx Zone bulk sample work in progress**
- **Excellent discovery potential on 2,700 km² property**
- **Osborne Bell, Fox and regional exploration are active**
- **Upcoming catalysts: infill and expansion drill results, Lynx bulk sample results, down plunge exploration, Windfall resource update on completion of current infill drill program**
- **Feasibility 2020**



OSBORNE BELL DEPOSIT





FOX DISCOVERY CORRIDOR

