

DEVELOPING THE HIGH-GRADE WORLD CLASS WINDFALL GOLD DEPOSIT IN QUÉBEC

January 2022

79

Au

Gold

196.967



Cautionary Statements



CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING INFORMATION

This presentation (the "Presentation") of Osisko Mining Inc. ("Osisko" or the "Corporation") contains "forward-looking information" within the meaning of the applicable Canadian securities legislation that is based on expectations, estimates, projections and interpretations as at the date of this Presentation. Any statement that involves predictions, expectations, interpretations, beliefs, plans, projections, objectives, assumptions, future events or performance (often, but not always, using phrases such as "expects", or "does not expect", "is expected", "interpreted", "management's view", "anticipates" or "does not anticipate", "plans", "budget", "scheduled", "forecasts", "estimates", "potential", "feasibility", "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 information and are intended to identify forward-looking information.

In this Presentation, forward-looking information pertaining to, among other things: estimates and assumptions underlying the MRE (2022) an the PEA; projected production; sensitivity analysis and cut-off grades; after-tax IRR; pre-tax IRR; after tax NPV; after-tax NPV; pre-tax NPV; life of mine estimates; after-tax free cash flows; AISC and break-even cost estimates; capex estimates; NPV/capex ratios; tpd milling operations at the Windfall mill; processing estimates; average recovery; projected gross revenue and taxes; job creation estimates; the profitability of Windfall; future drilling results; Osisko's ability to convert additional inferred resource ounces into measured and indicated categories; timing for production (if at all); mining and processing infrastructure; environmental assessment and closure plans matters; stakeholder engagement and relationships; the significance of exploration results disclosed in this Presentation; the viability of ramp-access to the underground deposit; the advancement of the ramp; Osisko's ability to convert additional high-grade mineral resources and other analysis relating to resource progression; the timing and ability of Osisko to publish a feasibility study on Windfall, including in Q4 2022 (or at all); the key assumptions, parameters and methods used to estimate the mineral resource estimate in the PEA and the Windfall MRE (2022); the Windfall gold deposit being one of the highest-grade resource-stage gold projects in world and having world-class scale; the prospects, if any, of the Windfall gold deposit; the timing and ability of Osisko, if at all, to publish the feasibility study; the amount and type of drilling to be completed and the timing to complete such drilling; the focus of the remaining infill drilling; the trend of grade increase; the Lynx zone remaining open to expansion to the East and down plunge; upgrading a inferred mineral resource to a measured mineral resource or indicated mineral resource category; future drilling at the Windfall gold deposit; the significance of historic exploration activities and results.

Such factors include, among others, 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 (infill) drilling; property and royalty interests in the Windfall gold deposit; key assumptions, parameters or methods used in the PEA and MRE (2022) becoming untrue or unachievable; the ability of the Corporation to obtain required approvals; the results of exploration activities; title deficiencies; risks relating to mining activities; the global economic climate; metal prices; dilution; environmental risks; and community and non-governmental actions.

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 (www.sedar.com) under Osisko's issuer profile. Readers are urged to read these materials and should not place undue reliance on any forward-looking statement and information contained in this Presentation.

Although the forward-looking statements contained in this Presentation is based upon what management believes, or believed at the time, to be reasonable assumptions, Osisko cannot assure shareholders and prospective purchasers of securities of the Corporation that actual results will be consistent with such forward-looking statements, as there may be other factors that cause results not to be as anticipated, estimated or intended, and neither Osisko nor any other person assumes responsibility for the accuracy and completeness of any such forward-looking statements. Osisko does not undertake, and assumes no obligation, to update or revise any such forward-looking statements contained herein to reflect new events or circumstances, except as may be required by law.

Unless otherwise noted, this Presentation has been prepared based on information available as of January 18, 2021.



Cautionary Statements



MINERAL RESOURCE ESTIMATE

This Presentation contains information regarding the updated mineral resource estimate ("MRE") for Osisko's 100% owned Windfall lake gold deposit, located in the Abitibi greenstone belt, Urban Township, Eeyou Istchee James Bay, Québec, as disclosed in the news release of Osisko dated January 10, 2022 (entitled "Osisko Delivers updated Windfall Mineral Resource Estimate"), a copy of which is available on SEDAR (www.sedar.com) under Osisko's issuer profile.

The key assumptions, parameters and methods used in the mineral resource estimate disclosed in this Presentation, certain of which are described in this Presentation, will be available in the mineral resource estimation technical report (with an effective date of October 20, 2021) within 45 days after January 10, 2022 in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101"), on SEDAR (www.sedar.com) under Osisko's issuer profile.

CAUTIONARY STATEMENT REGARDING MINERAL RESOURCE ESTIMATES

This Presentation uses the terms measured, indicated and inferred mineral resources as a relative measure of the level of confidence in the resource estimate. Readers are cautioned that mineral resources are not mineral reserves and that the economic viability of resources that are not mineral reserves has not been demonstrated. The mineral resource estimate disclosed in this Presentation may be materially affected by geology, environmental, permitting, legal, title, socio-political, marketing or other relevant issues. It cannot be assumed that all or any part of an inferred mineral resource will ever be upgraded to an indicated or measured mineral resource category, however, it is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration. The mineral resource estimate is classified in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum's "CIM Definition Standards on Mineral Resources and Mineral Reserves" incorporated by reference into NI 43-101. Under NI 43-101, estimates of inferred mineral resources may not form the basis of feasibility or pre-feasibility studies or economic studies except for preliminary economic assessments. Readers are cautioned not to assume that further work on the stated resources will lead to mineral reserves that can be mined economically.

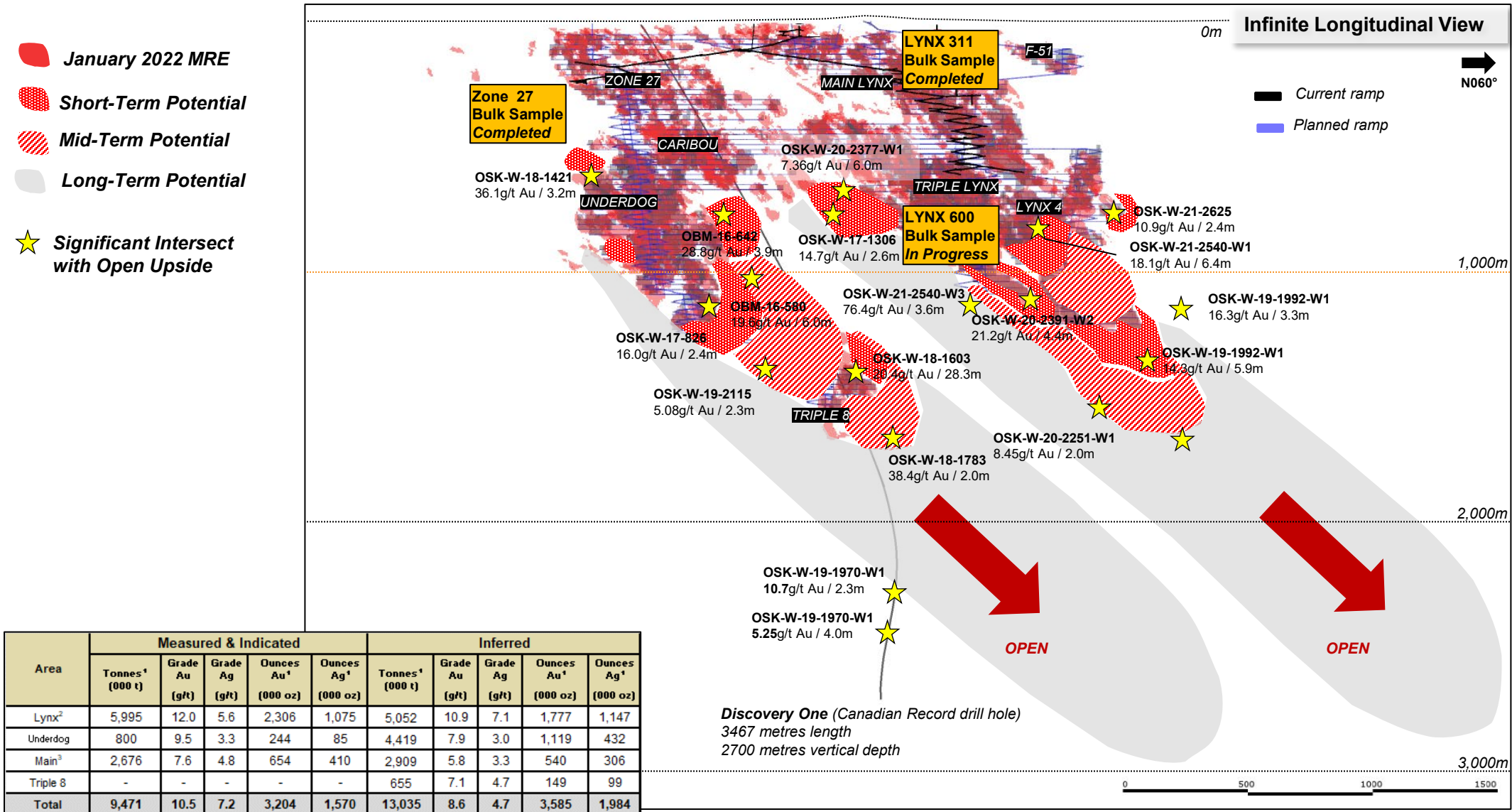
QUALIFIED PERSON

The MRE (2022), with an effective date of October 20, 2021 was (i) prepared by Judith St-Laurent, P.Geo (OGQ #1023), B.Sc., Director of Resources Evaluation at Osisko, and (ii) reviewed and approved by Pierre-Luc Richard, P.Geo.(OGQ#1119), each of whom is a "qualified person" within the meaning of NI 43-101. Mr. Richard is an employee of BBA Inc. and is considered to be "independent" of Osisko for purposes of section 1.5 of NI 43-101. The scientific and technical content in Presentation has been reviewed and approved by Mr. Mathieu Savard, P.Geo (OGQ #510), President of Osisko, who is a "qualified person" within the meaning of NI 43-101.

The preliminary economic assessment on Windfall of April 2021 (the "PEA") described in this Presentation, which has been superseded by the MRE (2022), was prepared for Osisko and reviewed and approved by BBA Inc. and other industry consultants, with each being a "qualified person" under NI 43-101, including the following who are independent for the purposes of NI 43-101: Nicolas St-Onge, P.Eng. (A2GC), Colin Hardie, P.Eng., Martin Houde, P.Eng., Pierre-Luc Richard, P. Geo., Charlotte Athurion, P. Geo. (BBA), Patrick Langlais, P.Eng. (Entech Mining), Yves Boulianne, P. Eng., Michel Mailloux, P. Eng. (Golder), Eric Poirier, P. Eng., Isabelle Larouche, P.Eng., Simon Latulippe, P.Eng. (WSP), and Marie-Claude Dion St-Pierre, P. Eng. (GCM Consultants).



Windfall January 2022 MRE and Upside Potential



Notes: ¹ Values are rounded to nearest thousand which may cause apparent discrepancies. ² Lynx area includes: Lynx Main, Lynx HW, Lynx SW, Lynx 4 and Triple Lynx. ³ Main area includes: Zone 27, Caribou 1&2, Caribou Extension, Bobcat, Mallard, Windfall Nord, and F-Zones. See Windfall Gold Deposit Mineral Resource Estimate.

Windfall Gold Deposit Mineral Resource Estimate Sensitivity

Cut-off (g/t Gold)	Measured + Indicated					Inferred				
	Tonnes (000 t)	Gold (g/t)	Ag (g/t)	Gold (000 oz)	Ag (000 oz)	Tonnes (000 t)	Gold (g/t)	Ag (g/t)	Gold (000 oz)	Ag (000 oz)
5.00	6,904	12.9	6.0	2,859	1,336	8,568	10.8	6.0	2,986	1,648
4.50	7,635	12.1	5.7	2,971	1,406	9,709	10.1	5.6	3,160	1,734
4.00	8,472	11.3	5.4	3,084	1,483	11,241	9.3	5.1	3,369	1,849
3.50	9,472	10.5	5.2	3,204	1,570	13,035	8.6	4.7	3,585	1,984
3.00	10,680	9.7	4.8	3,330	1,662	15,282	7.8	4.3	3,819	2,132
2.50	12,127	8.9	4.5	3,456	1,766	18,554	6.9	3.9	4,108	2,327

Notes: ¹ The MRE uses a cut-off grade of 3.5 g/t Au.

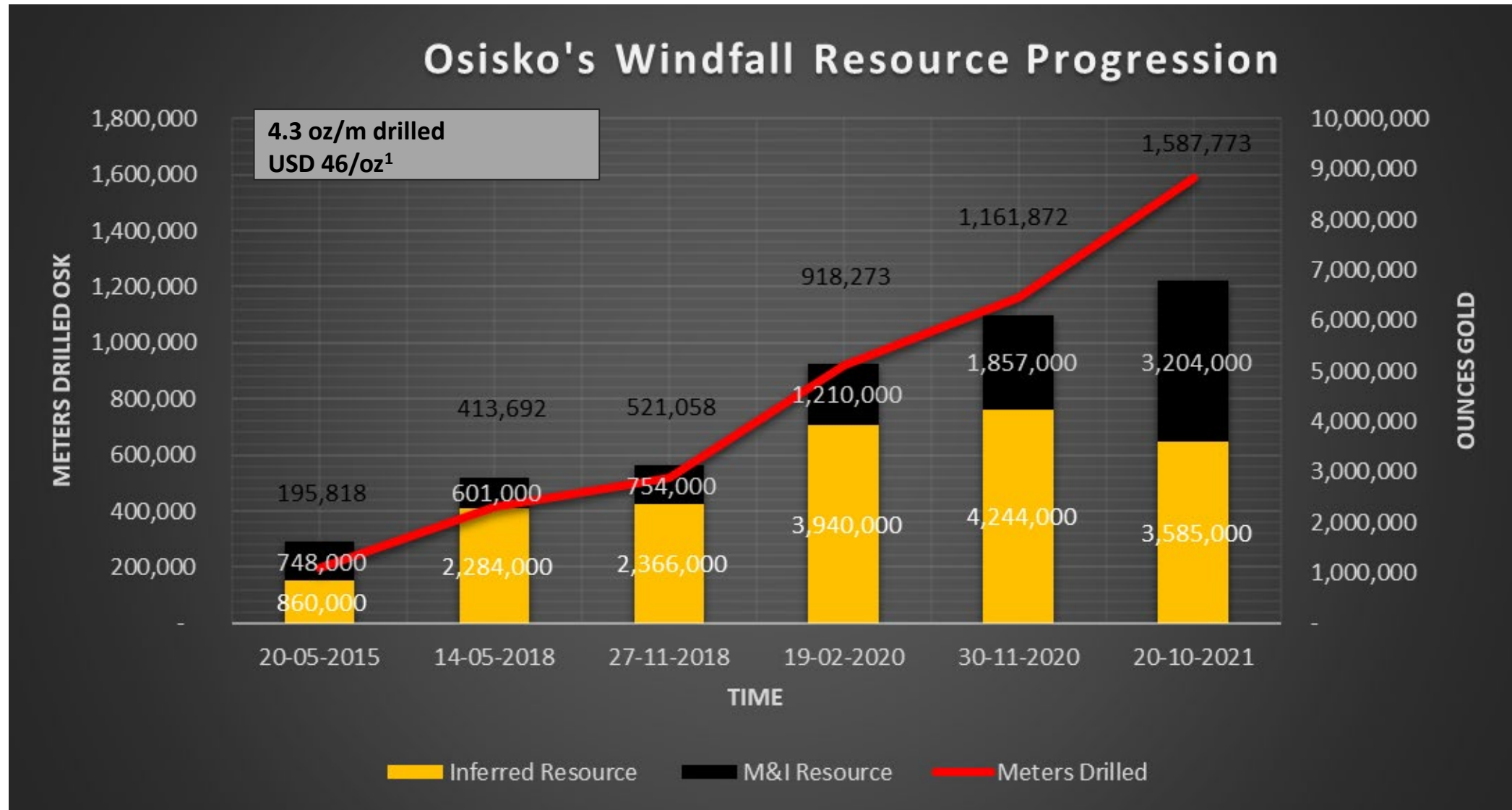
Lynx Mineral Resource Estimate from MRE (3.5 g/t Au cut-off)

Cut-off Grade (g/t Au)	Measured + Indicated					Inferred				
	Tonnes (000 t)	Grade Au (g/t)	Grade Ag (g/t)	Ounces Au (000 oz)	Ounces Ag (000 oz)	Tonnes (000 t)	Grade Au (g/t)	Grade Ag (g/t)	Ounces Au (000 oz)	Ounces Ag (000 oz)
Lynx	5,996	12.0	5.6	2,307	1,075	5,052	10.9	7.1	1,777	1,147
Underdog	800	9.5	3.3	244	85	4,419	7.9	3.0	1,119	432
Main Zone	2,676	7.6	4.8	654	410	2,909	5.8	3.3	540	306
T8	-	0.0	0.0	-	-	655	7.1	4.7	149	99
Total	9,472	10.5	5.2	3,204	1,570	13,035	8.6	4.7	3,585	1,984

Notes: ¹ Values are rounded to nearest thousand which may cause apparent discrepancies. ² Lynx area includes: Lynx Main, Lynx HW, Lynx SW and Lynx 4, Triple Lynx See Windfall Gold Deposit Mineral Resource Estimate.



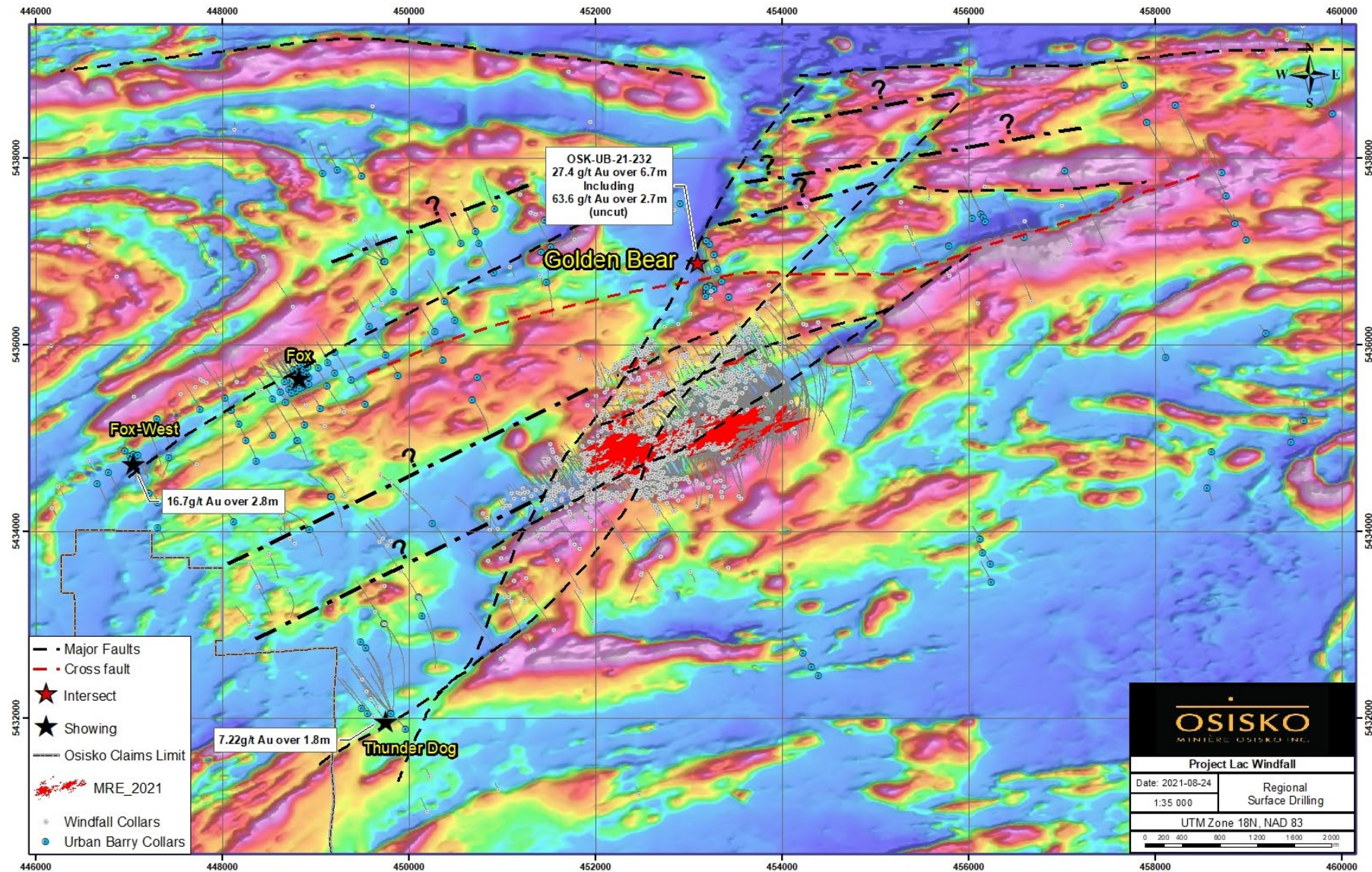
Drilling and Resource Growth: Lynx Adding Significant Ounces



¹ Non-audited estimation using actual exploration expenditures as of December 31st, 2021 (excluding exploration ramp expenditures), the amount of meters drilled by Osisko since 2015 and considering Quebec Tax Exploration Credit returns divided by global ounces. This is considered a non-GAAP number.

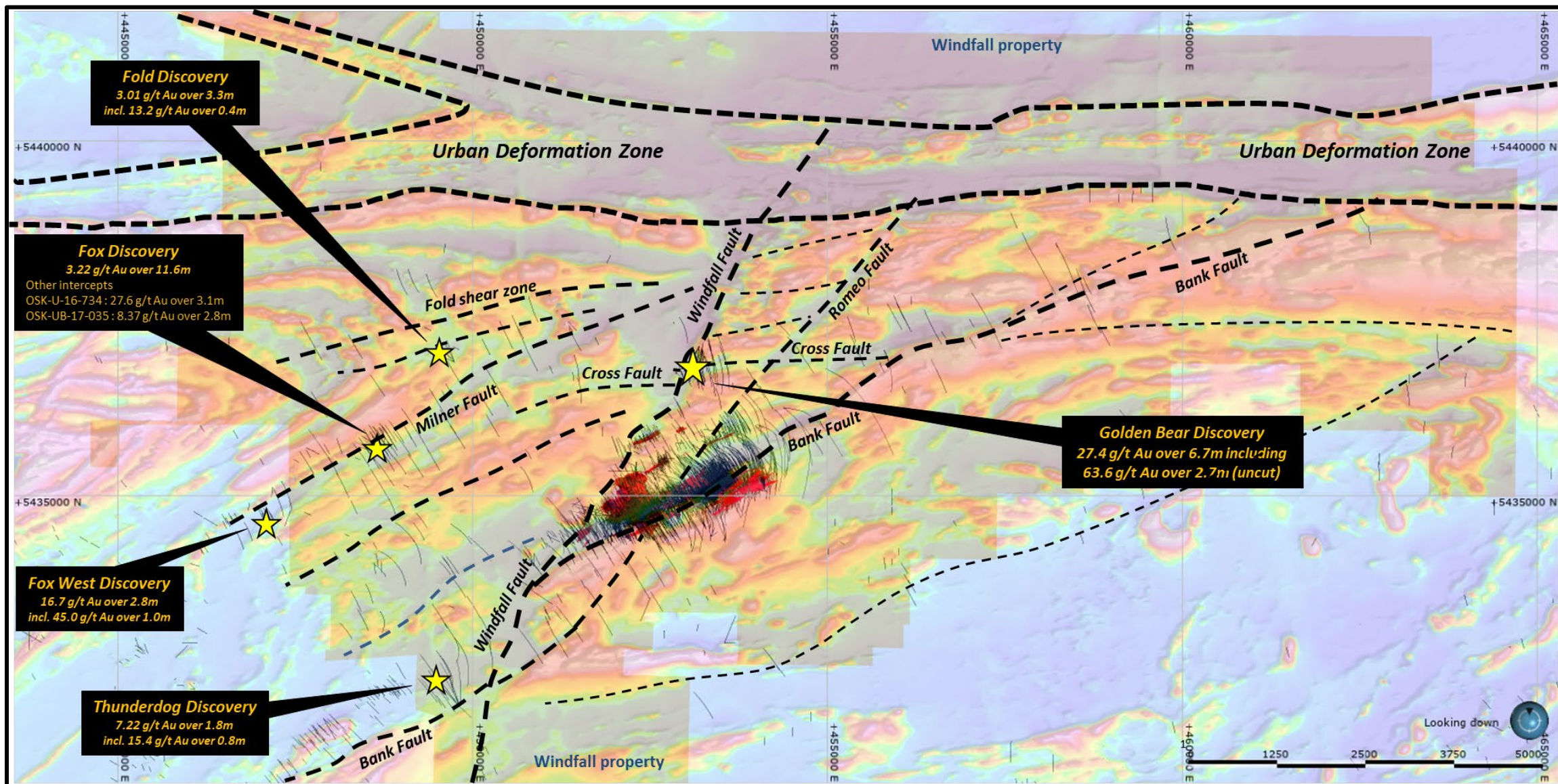


Golden Bear Discovery and Regional Upside Potential



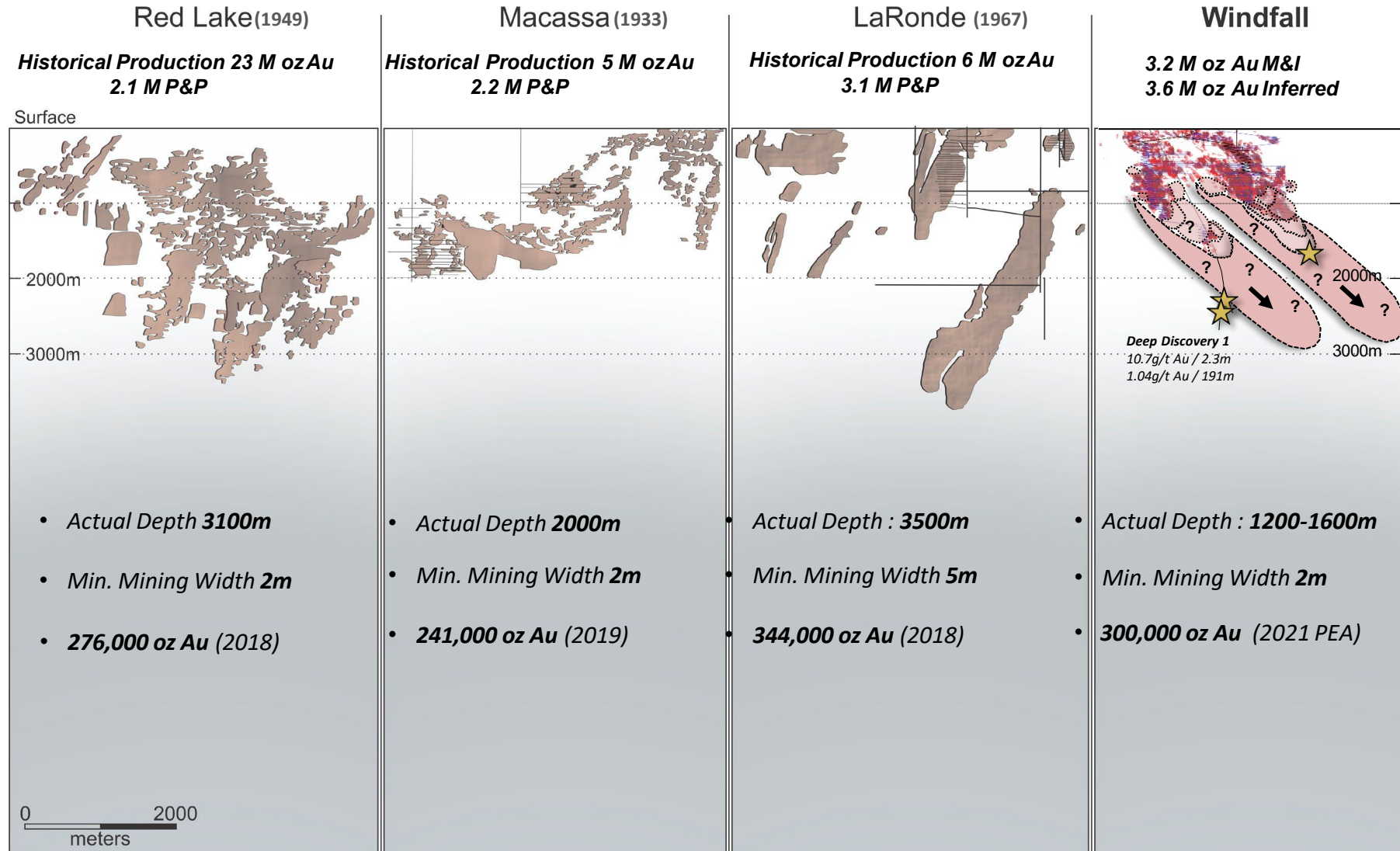


Windfall Area Discovery Potential





Major High-Grade Canadian Archean Gold Deposits



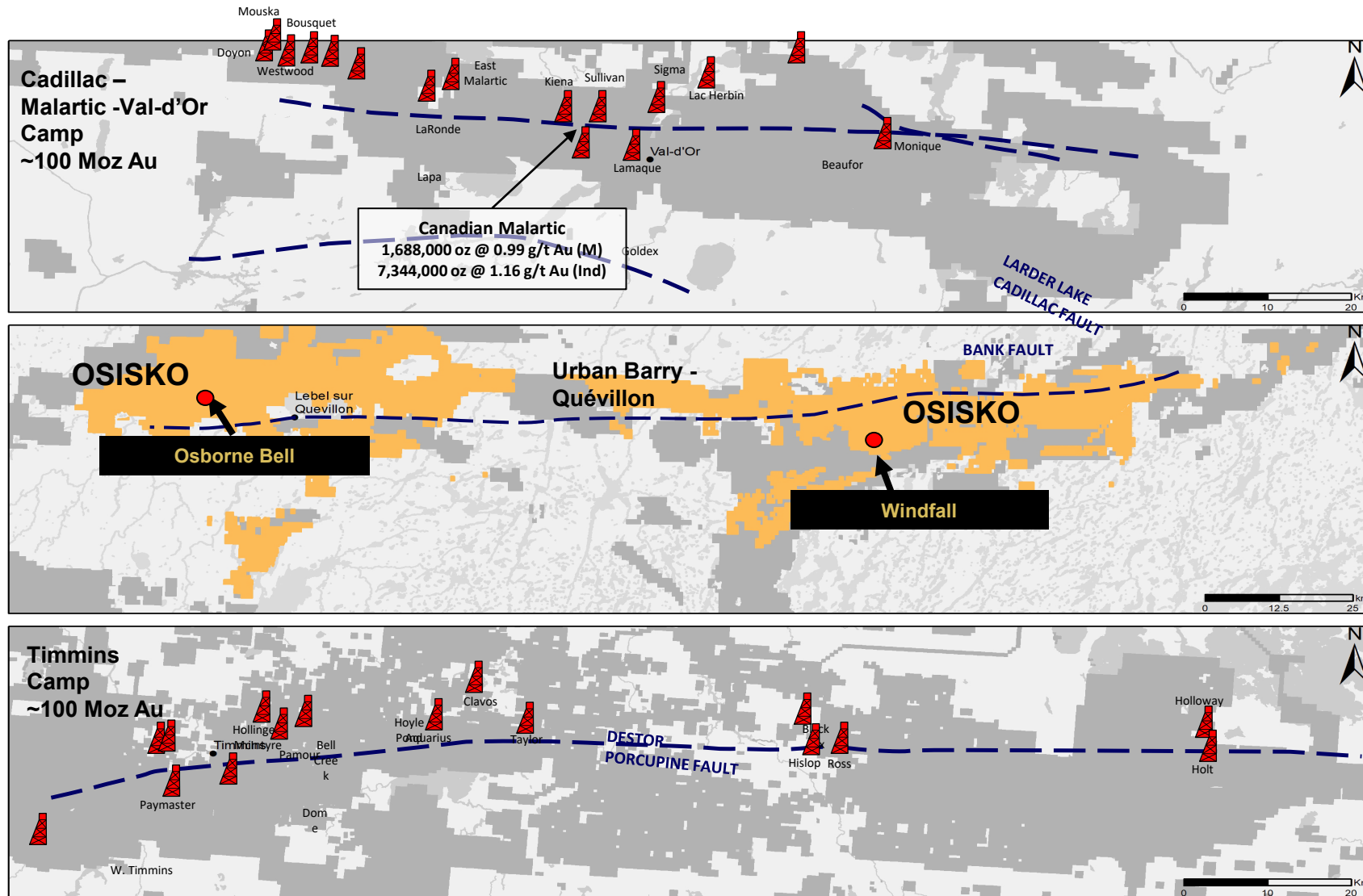


Windfall Among the Highest Gold Grade Deposits in the World

Rank	Project	Company	Country	State	Ounces Gold	Gold (g/t)
1	Macassa	Kirkland Lake Gold Ltd.	Canada	Ontario	3,924,000	16.9
2	Island	Alamos Gold Inc.	Canada	Ontario	4,684,000	12.3
3	Tshepong	Harmony Gold Mining Company Limited	South Africa	Free State	38,982,000	11.1
4	Segovia	GCM Mining Corp.	Colombia	Antioquia	2,634,000	10.7
5	Mayskoye	Polymetal International plc	Russia	Chukotskiy	4,582,000	10.4
6	Brucejack	Pretium Resources Inc.	Canada	British Columbia	10,320,000	10.1
7	Driefontein Consolidated	Sibanye Stillwater Limited	South Africa	Gauteng	11,352,000	9.9
8	Pogo	Northern Star Resources Limited	USA	Alaska	6,907,000	9.4
9	Fruta del Norte	Lundin Gold Inc.	Ecuador	Zamora Chinchipe	9,480,000	8.3
10	Kensington	Coeur Mining, Inc.	USA	Alaska	1,555,000	7.7



An Emerging Mining District: Property Position >2,600 km²





Preliminary Economic Assessment Update (Based on February 2021 MRE)

Base Case (*US\$1,500/oz Au, US\$17.00/oz Ag, Exchange rate C\$1.00 = US\$0.77, 5% discount rate*)

IRR after taxes and mining duties	39.4%
NPV after taxes and mining duties	C\$1.534 Billion
Pre-Production Construction costs (<i>including 94 km power line and C\$55M contingency</i>)	C\$544 Million
Average payable production first 7 years (LOM 238,000 oz)	300,000 oz
Peak-year payable production	328,000 oz (year 6)
Average diluted gold grade	8.1 g/t Au
Life of mine (LOM)	18 years
Contained gold in mined resource	4,401,000 oz
Payable gold LOM	4,173,000 oz
All-in Sustaining Costs net of by-product credits and royalties over LOM	US\$610.10/oz
Total unit operating cost	C\$121.76/ tonne milled
Mine start-up/Full production	2024/2025



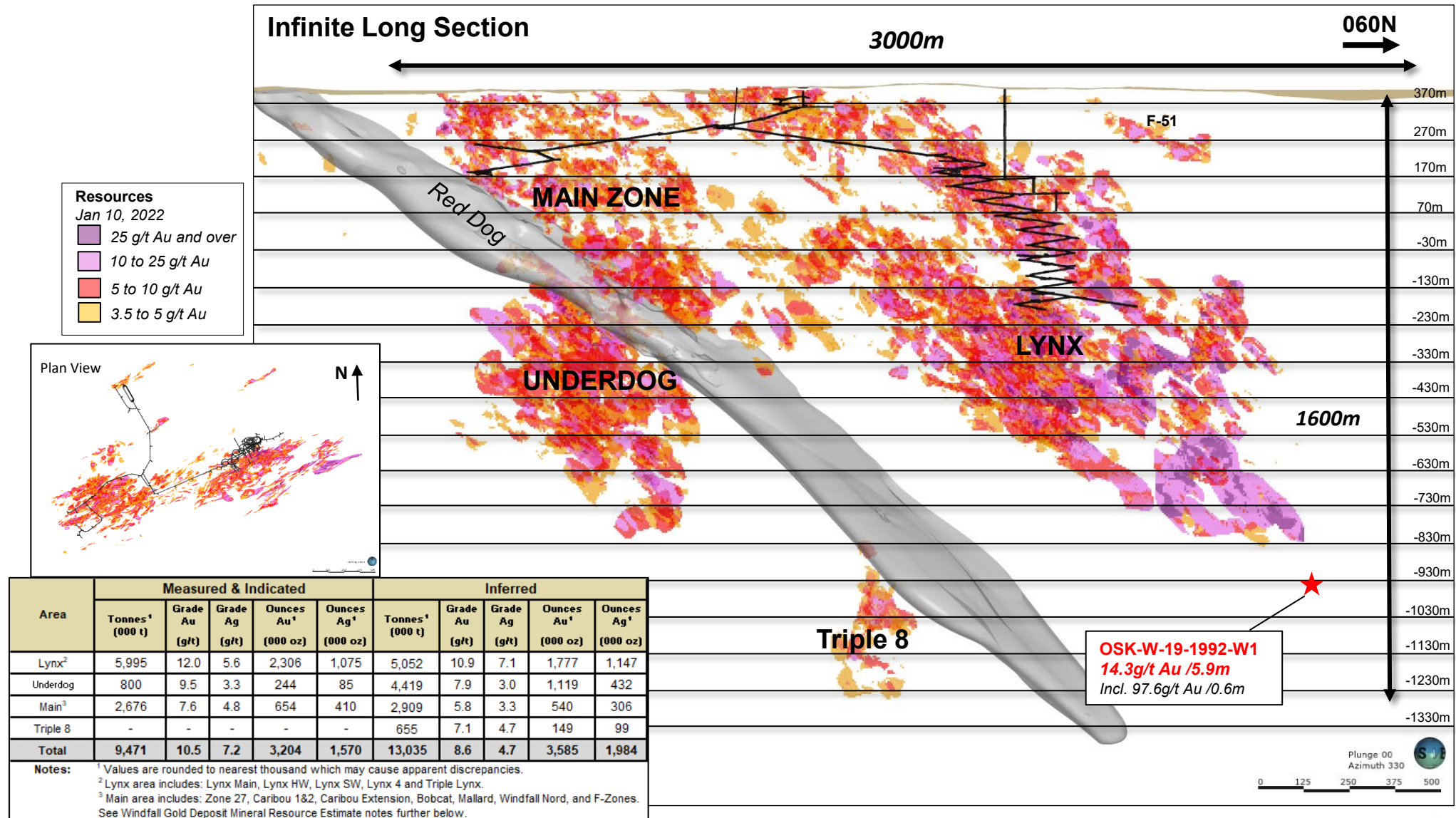
Windfall in Production Would Rank Among the Top 10 of Canadian & US Producers

Rank	Mine	Location	Owner/Operator	2020 output (oz Au)
1	Canadian Malartic	Quebec	Yamana/Agnico Eagle	569,000
2	Detour Lake	Ontario	Kirkland Lake	517,000
3	LaRonde	Quebec	Agnico Eagle	350,000
4	Brucejack	BC	Pretium	348,000
5	Porcupine	Ontario	Newmont	319,000
6	Meliadine	Nunavut	Agnico Eagle	312,000
7	Rainy River	Ontario	New Gold	229,000
8	Hemlo	Ontario	Barrick	223,000
9	Meadowbank	Nunavut	Agnico Eagle	209,000
10	Macassa	Ontario	Kirkland Lake	183,000
Rank	Mine	Location	Owner/Operator	2020 Au output (Oz)
1	Carlin	Nevada	Barrick/Newmont	1,666,000
2	Cortez	Nevada	Barrick/Newmont	799,000
3	Turquoise Ridge	Nevada	Barrick/Newmont	537,000
4	Round Mountain	Nevada	Kinross	324,000
5	Cripple Creek & Victor	Colorado	Newmont	272,000
6	Long Canyon	Nevada	Barrick/Newmont	261,000
7	Fort Knox	Alaska	Kinross	238,000
8	Marigold	Nevada	SSR Mining	234,000
9	Phoenix	Nevada	Barrick/Newmont	205,000
10	Bald Mountain	Nevada	Kinross	191,000



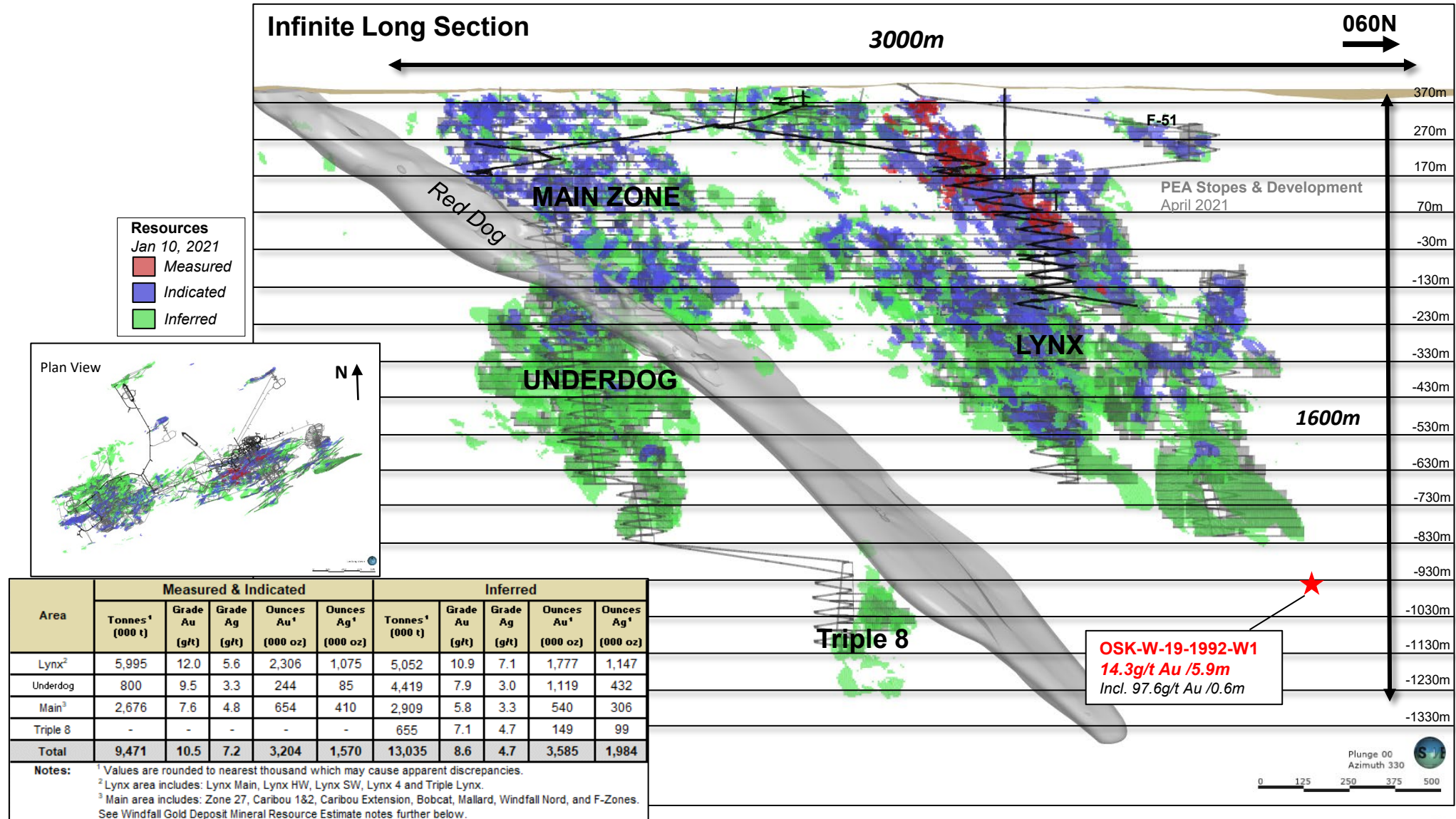


Windfall Grade Isopachs: Higher Grade Down Plunge



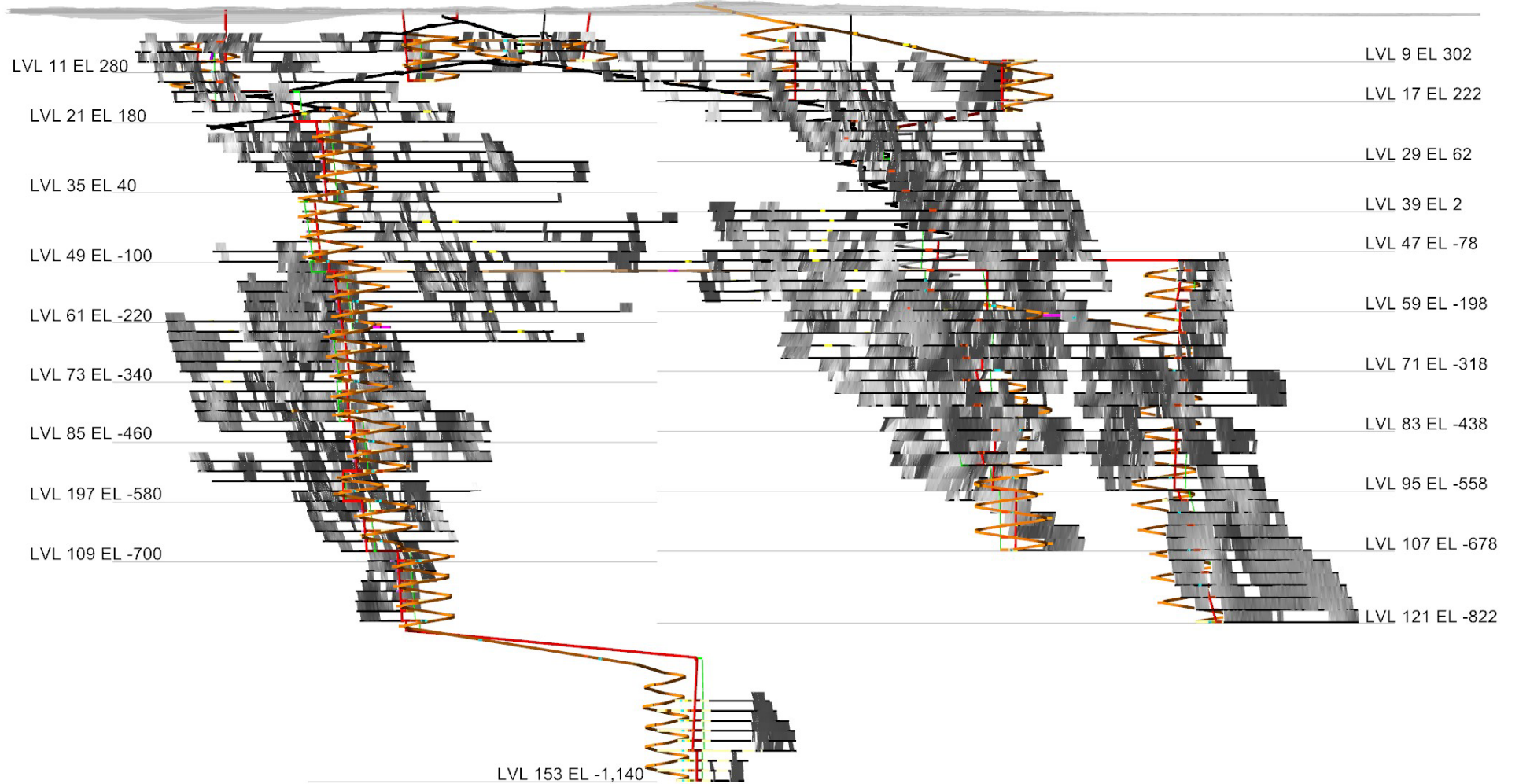


Measured and Indicated Drilling Completed to Date





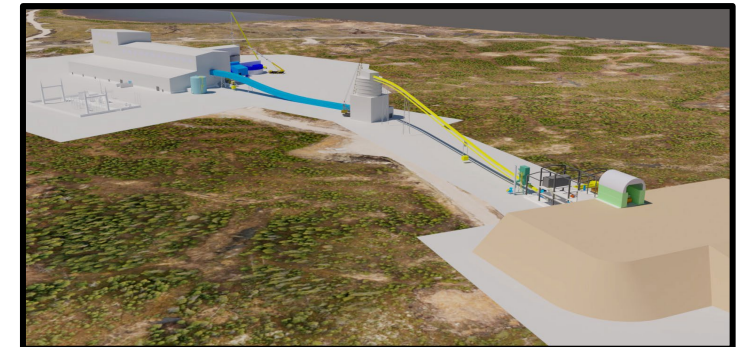
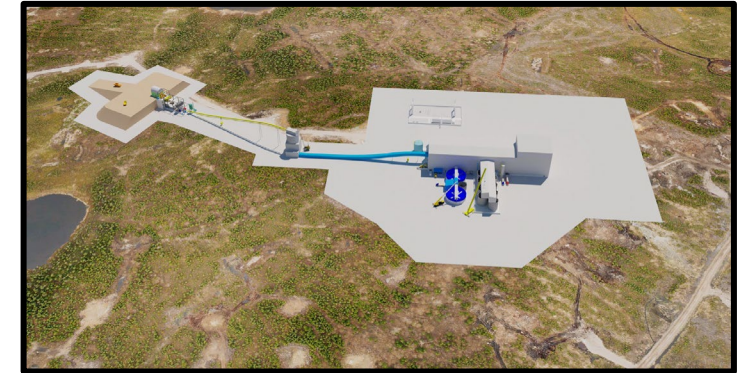
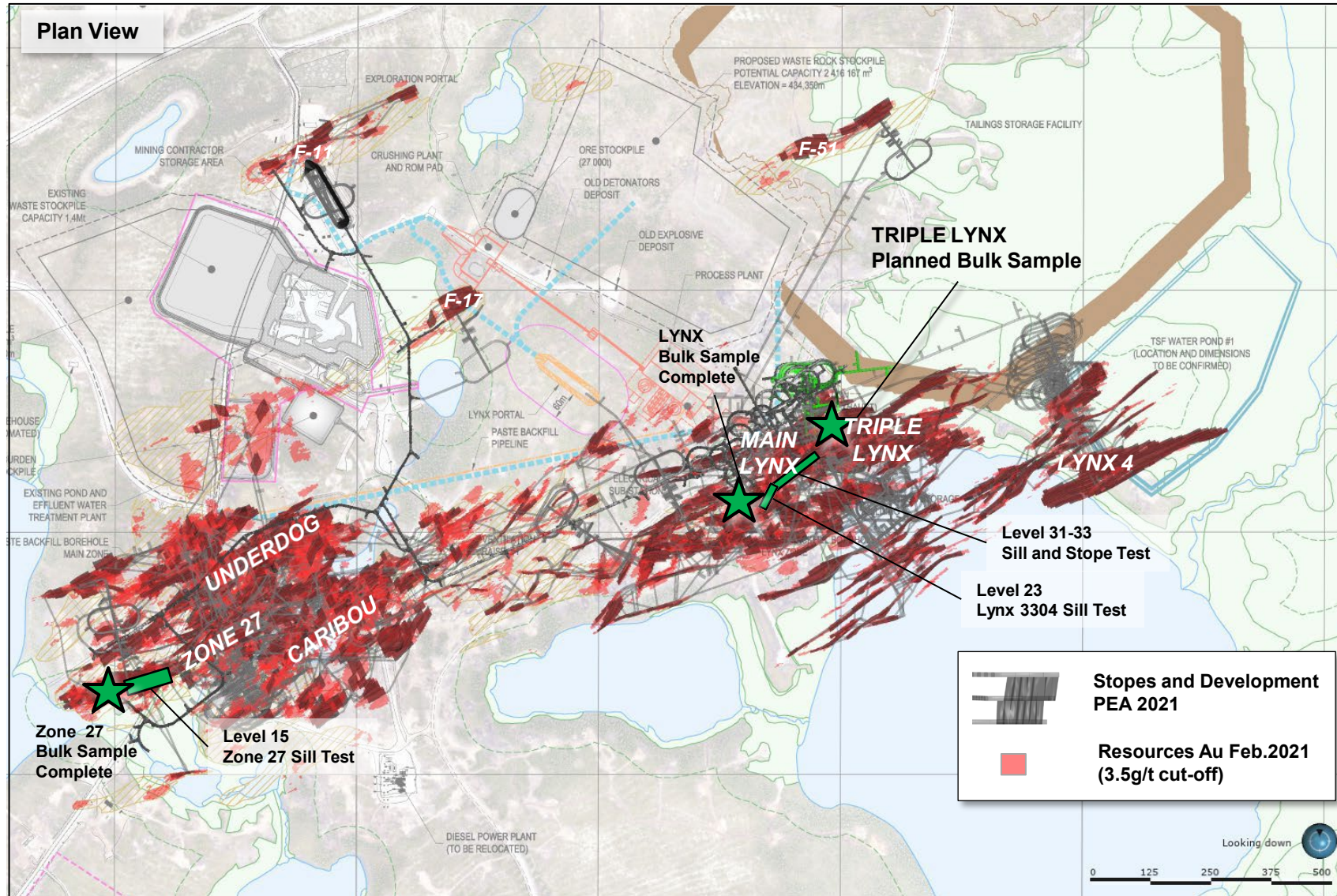
2021 PEA Mine Plan¹: 2024 – 2042



Note ¹: PEA Mine plan is based on Feb 2021 MRE with an effective date of Nov 30, 2020.



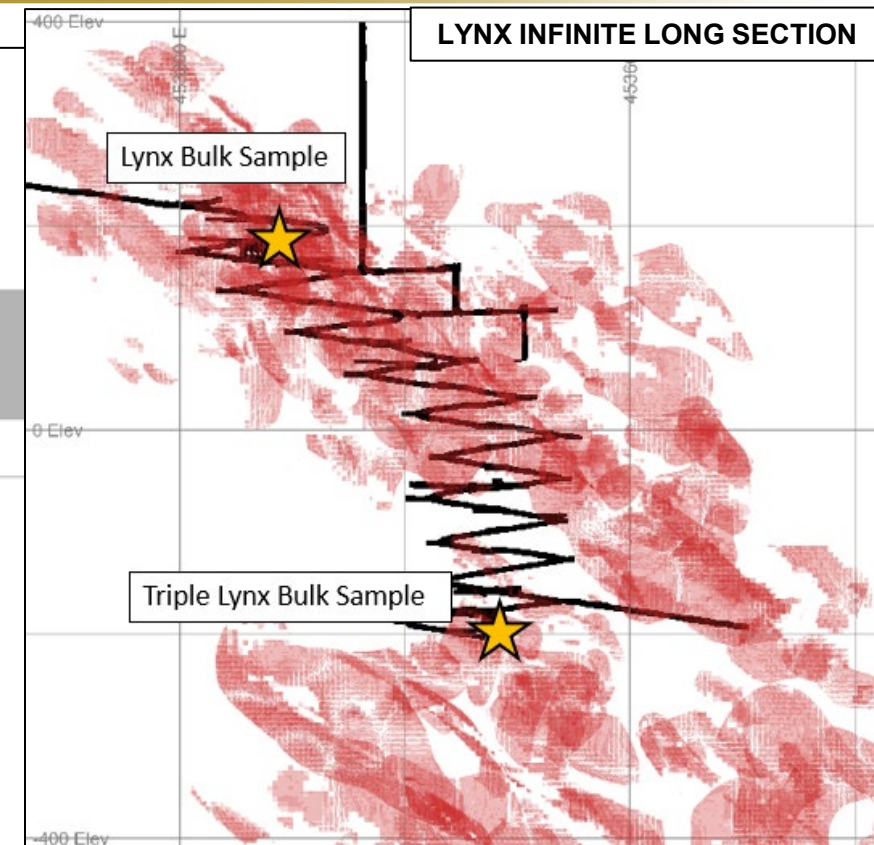
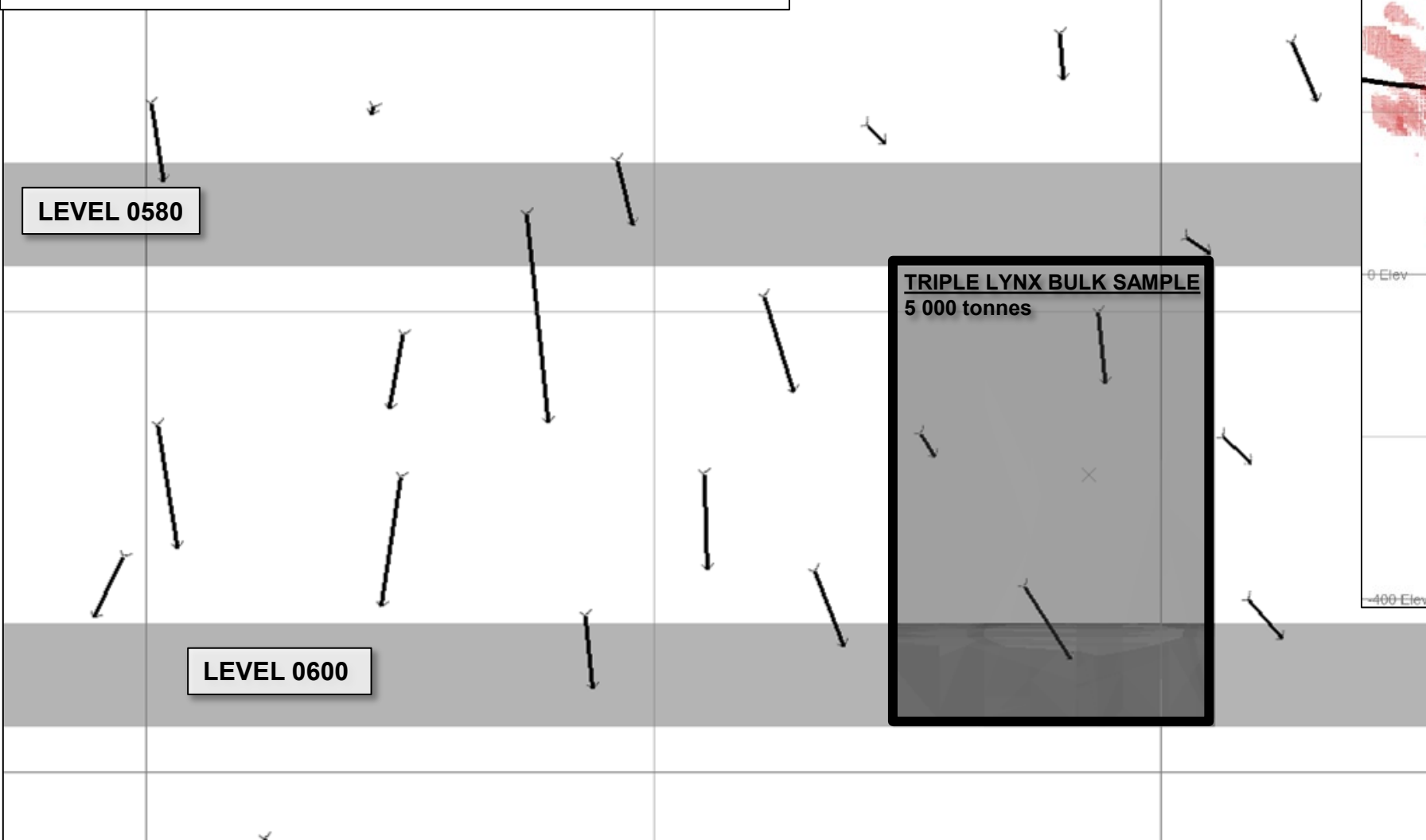
Surface Infrastructure – Preliminary Mine Layout





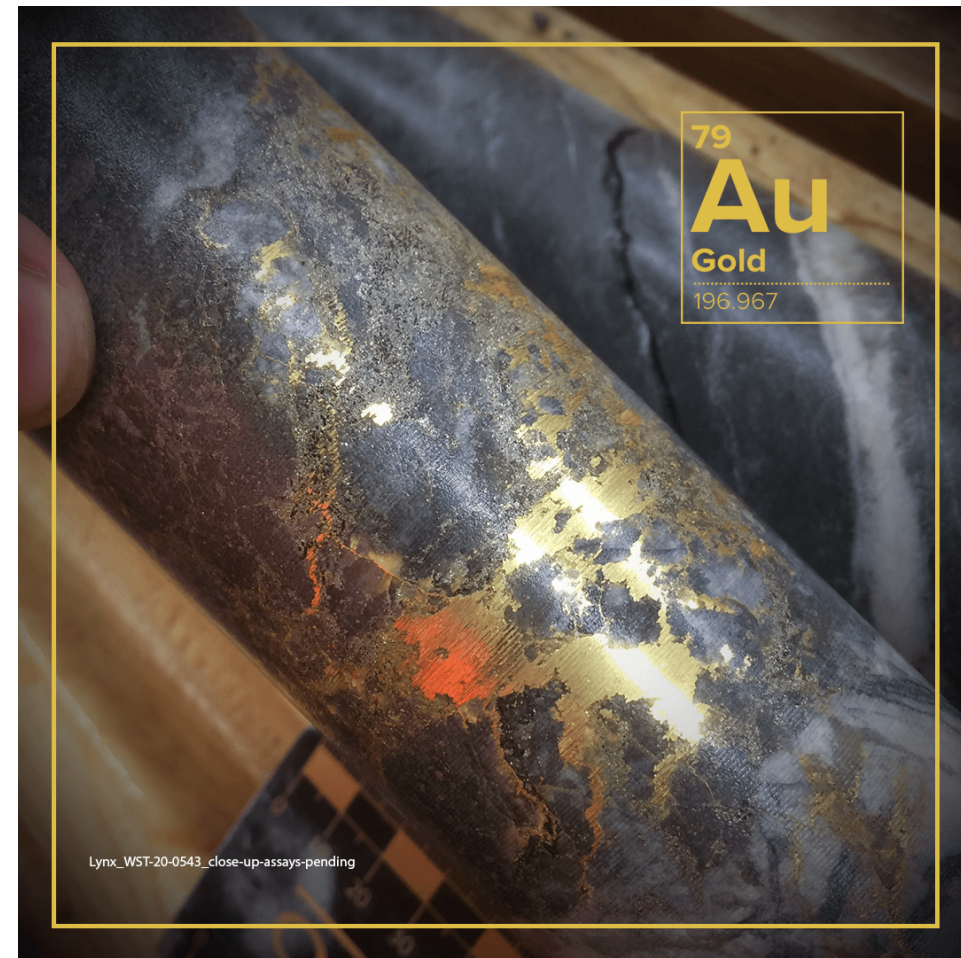
Triple Lynx (600) Bulk Sample in Progress

TRIPLE LYNX BULK SAMPLE LONG SECTION – PRELIMINARY DESIGN





- ✓ Powerline Agreement Q1-2022
- ✓ Triple Lynx Bulk Sample
- ✓ JV Agreement
- ✓ Feasibility Study Fall 2022
- ✓ Golden Bear and Property Wide Exploration





- ✓ **Largest high-grade gold deposit discovered in Québec**
- ✓ **Windfall is world-class in scale and grade and continues to grow**
- ✓ **Resource included within the first 1,200m**
- ✓ **3.2M oz M&I average 10.5 g/t Au (ounces increased by 73%, grade by 9%)**
- ✓ **Lynx: 12.0 g/t Au Measured & Indicated; 10.9 g/t Au Inferred**
- ✓ **60% of MRE hosted in Lynx: 4.1M oz @ 11.5 g/t Au**
- ✓ **Bulk samples have reconciled with significantly higher grade (126% - 189%)**
- ✓ **Lynx 600 bulk sample on deck**
- ✓ **Discovery Cost \$US46/oz¹**

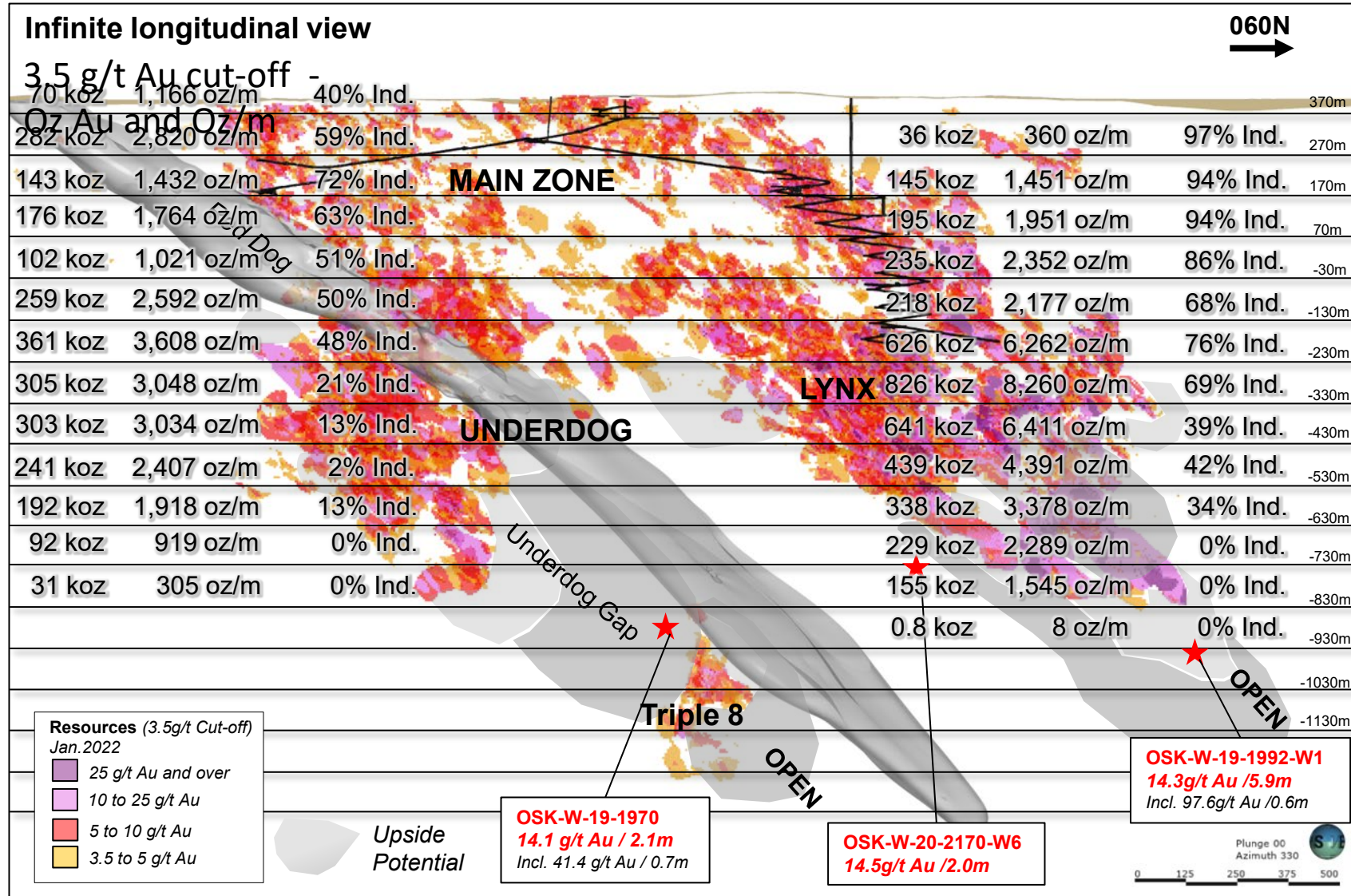
¹ Non-audited estimation using actual exploration expenditures as of December 31st, 2021 (excluding exploration ramp expenditures), the amount of meters drilled by Osisko since 2015 and considering Quebec Tax Exploration Credit returns divided by global ounces. This is considered a non-GAAP number.



Appendix



Windfall - Footprint of MRE, January 2022 – Ounces per Vertical Metre

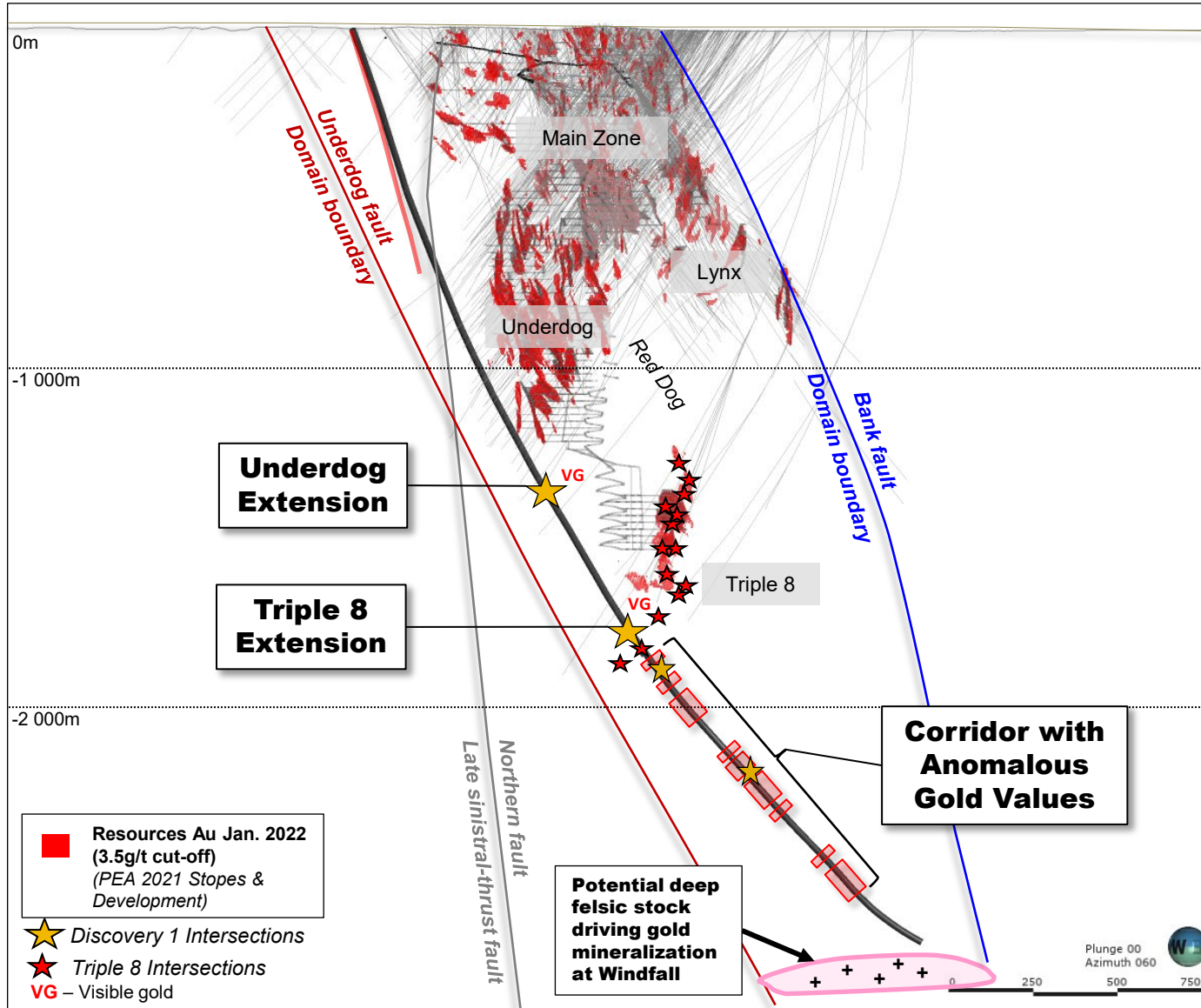


Note: Oz/Au reported per 100m level based on Mineral Resource Estimating from January 2022. Oz/m shoed per metre using level of 100m based on MRE from January 2022.



DISCOVERY 1: STRONG INDICATIONS OF MORE

Section 3100 E 700m thickness





Windfall vs Canadian Gold Deposit in the Superior Province

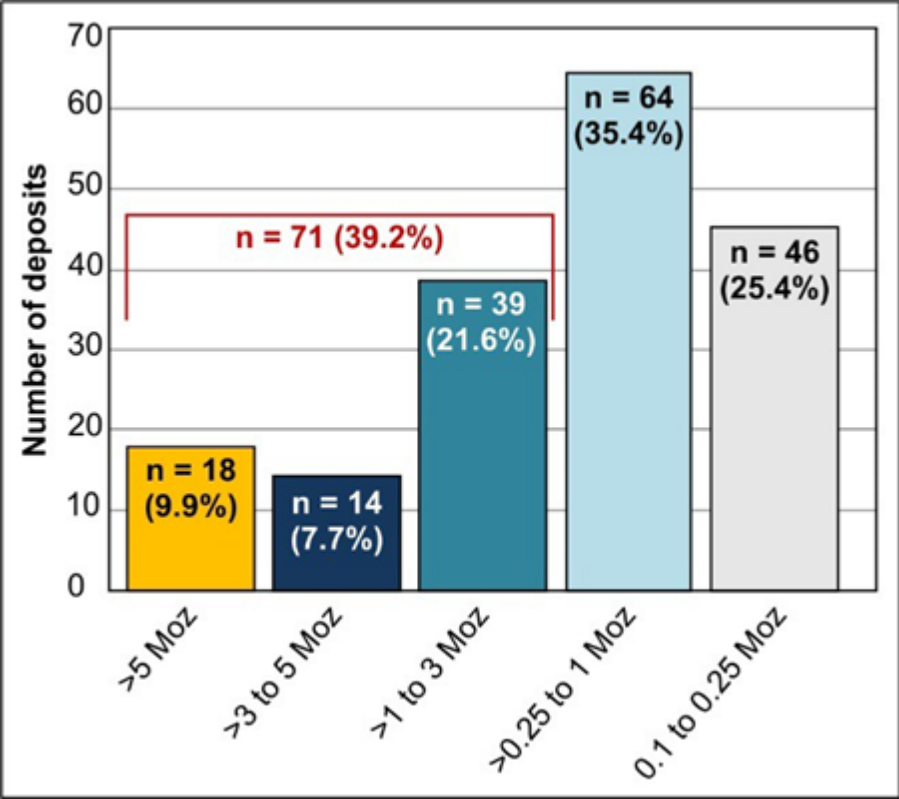
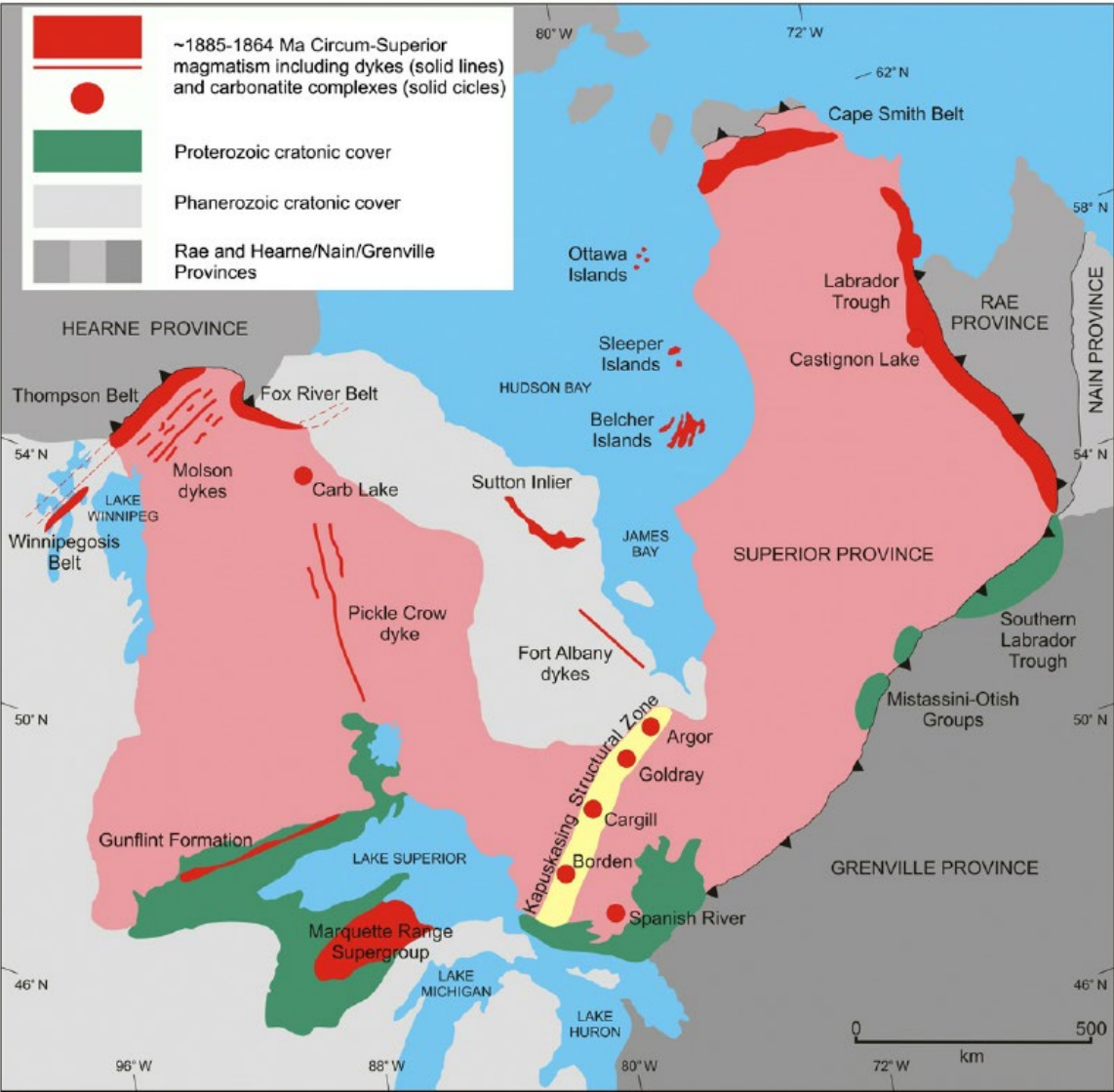


Figure 2. Gold deposits ($\geq 100\,000$ ounces, or 3.1 metric t Au) of the Superior Province. Number of deposits versus deposit size ($n = 181$). Only 10% of the deposits (18/181) contain 5 million ounces, or 155.5 t of gold or more. From Mercier-Langevin et al. (2020).

Windfall is among the 10% of deposit with > de 5M Oz Au



Notes on the Windfall Gold Deposit Mineral Resource Estimation

1. The independent qualified person for the MRE, as defined by NI 43-101 guidelines, is Pierre-Luc Richard, P.Geo.(OGQ#1119), of BBA Inc. The effective date of the estimate is October 20, 2021.
2. The Windfall mineral resource estimate follows the November 29, 2019 CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines.
3. These mineral resources are not mineral reserves as they have not demonstrated economic viability. The quantity and grade of reported Inferred mineral resources in this news release are uncertain in nature and there has been insufficient exploration to define these resources as indicated or measured; however, it is reasonably expected that the majority of inferred mineral resources could be upgraded to indicated mineral resources with continued exploration.
4. Resources are presented undiluted and in situ and are considered to have reasonable prospects for economic extraction. Isolated and discontinuous blocks above the stated cut-off grade are excluded from the mineral resource estimate. Must-take material, i.e. isolated blocks below cut-off grade located within a potentially mineable volume, was included in the mineral resource estimate.
5. As of October 20, 2021, the database comprises a total of 4,536 drill holes for 1,722,097 metres of drilling in the areal extent of the mineral resource estimate, of which 3,882 drill holes (1,539,984 metres) were completed and assayed by Osisko. The drill hole grid spacing is approximately 12.5 metre x 12.5 metre for definition drilling, 25 metre x 25 metre for infill drilling and larger for extension drilling.
6. All core assays reported by Osisko were obtained by analytical methods described below under "Quality Control and Reporting Protocols".
7. Geological interpretation of the deposit is based on lithologies, mineralization style, alteration and structural features. Most mineralization envelopes are subvertical, striking NE-SW and plunging approximately 40 degrees towards the North-East. The 3D wireframing was generated in Leapfrog Geo, a modelling software, from hand selections of mineralization intervals. The mineral resource estimate includes a total of 556 tabular, mostly sub-vertical domains defined by individual wireframes with a minimum true thickness of 2.0 metres.
8. Assays were composited within the mineralization domains into 2.0 metres length composites. A value of 0.00125 g/t Au and 0.0025 g/t Ag (¼ of the detection limit) was applied to unassayed core intervals.
9. High-grade composites were capped. Cappings were determined in each area from statistical studies on groups of lenses sharing similar mineralization characteristics. Cappings vary from 6 g/t Au to 200 g/t Au and from 5 g/t Ag to 150 g/t Ag. A multiple capping strategy defined by capping values decreasing as interpolation search distances increase was used in the grade estimations.
10. Block models were produced using Datamine™ Studio RM Software. The models are defined by parent cell sizes of 5 metres NE, 2 metres NW and 5 metres height, and subblocked to minimum subcell sizes of 1.25 metres NE, 0.5 metres NW and 1.25 metres height.
11. Ordinary Kriging (OK) based interpolations were produced for gold estimations in each area of the Windfall deposit, while silver grade estimations for most projects were produced using Inverse Distance Squared (ID2) interpolations. Gold estimation parameters are based on composite variography analyses. The gold estimation parameters were used for the silver estimation.
12. Density values vary between 2.73 and 2.93 and are mainly based on the densities of lithologies within the mineralized lenses.
13. The Windfall mineral resource estimate is categorized as measured, indicated and inferred mineral resource as follows:
 - a. The measured mineral resource category is manually defined and encloses areas where:
 - i. drill spacing is less than 12.5 metres,
 - ii. blocks are informed by a minimum of four drill holes,
 - iii. geological evidence is sufficient to confirm geological and grade continuity.
 - iv. lenses in the area have been accessed by underground workings.
 - b. The indicated mineral resource category is manually defined and encloses areas where:
 - i. drill spacing is generally less than 25 metres,
 - ii. blocks are informed by a minimum of two drill holes,
 - iii. geological evidence is sufficient to assume geological and grade continuity.
 - c. The inferred mineral resource category is manually defined and encloses areas where:
 - i. drill spacing is less than 100 metres,
 - ii. blocks are informed by a minimum of two drill holes,
 - iii. geological evidence is sufficient to imply, but not verify geological and grade continuity.
14. The mineral resource is reported at 3.5 g/t Au cut-off. The cut-off grade is based on the following economic parameters: gold price at 1,600 USD/oz, exchange rate at 1.26 USD/CAD, 94.9% mill recovery; payability of 99.95%; selling cost at 5 USD/oz, 2% NSR royalties, mining cost at 107 CAD/t milled, G&A cost at 32 CAD/t milled, processing cost at 31 CAD/t milled, transportation cost at 2 CAD/t considering mill at site, and environment cost at 12 CAD/t. A cut-off grade of 3.5 g/t Au was selected over the calculated cut-off grade of 3.1 g/t Au to better reflect a realistic mining cut-off.
15. Estimates use metric units (metres, tonnes and g/t). Metal contents are presented in troy ounces (metric tonne x grade / 31.103475).
16. The independent qualified person is not aware of any known environmental, permitting, legal, title-related, taxation, socio-political or marketing issues, or any other relevant issue, that could materially affect the mineral resource estimate.
17. Values in tonnes and ounces are rounded to nearest thousand which may cause apparent discrepancies.