

ASX Code: ZMI  
May 2019



# BUILDING ON A HISTORIC DISCOVERY

*The Kildare Zinc Project – On the Pathway to Development*

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# Competent Person's Statements



*The information in this report that relates to exploration results is based on information compiled by Mr. Sean Hasson, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr. Hasson is Zinc of Ireland NL's Exploration Manager. Mr. Hasson has sufficient experience, which is relevant to the style of mineralisation and types of deposits under consideration and to the activity which has been undertaken to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Mr. Hasson consents to the inclusion in the presentation of the matters based on his information in the form and context in which it appears.*

*The information in this document that relates to mineral resource estimates is based on information compiled by Mr Phil Jones BAppSc (App Geol), MAIG, MAusIMM, a Competent Person who is a Member of the Australian Institute of Geoscientists and the Australasian Institute of Mining and Metallurgy. Mr Jones is a full-time employee of Al Maynard & Associates: Geological (AM&A) and does not hold any interest in Zinc of Ireland NL. AM&A invoiced ZMI and ZMI are expected to pay a fee for the preparation of the mineral resource estimate report. This fee comprises a normal, commercial daily rate plus expenses and the payment is not contingent on the results of the report. Mr Jones has sufficient experience, which is relevant to the style of mineralisation and types of deposits under consideration and to the activity which has been undertaken to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Mr Jones consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

*The information in this document that relates to mineral resource estimates is extracted from the ASX announcement entitled "High-Grade Zn-Pb Inferred Resource Estimate at Kildare" released on 1 June 2017 and is available to view on [www.zincofireland.com](http://www.zincofireland.com). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which Competent Person's findings are presented here have not been materially modified from the original market announcement.*

# The Project, Team and Plan to Progress Development



- Located within a mature mining district with excellent infrastructure.
- Existing resources located in ideal Irish-type zinc setting.
- Significant exploration upside; 7,500m drilling program commencing May 2019.
- Excellent metallurgical performance: high quality, marketable, zinc and lead concentrates produced.
- Parallel studies planned to reduce project risk.
- Experienced board and management team with considerable operating experience within Europe.
- Strong shareholder base with links to operating European mines.
- Strong cash position of ~A\$3.6 million.

# Corporate Overview



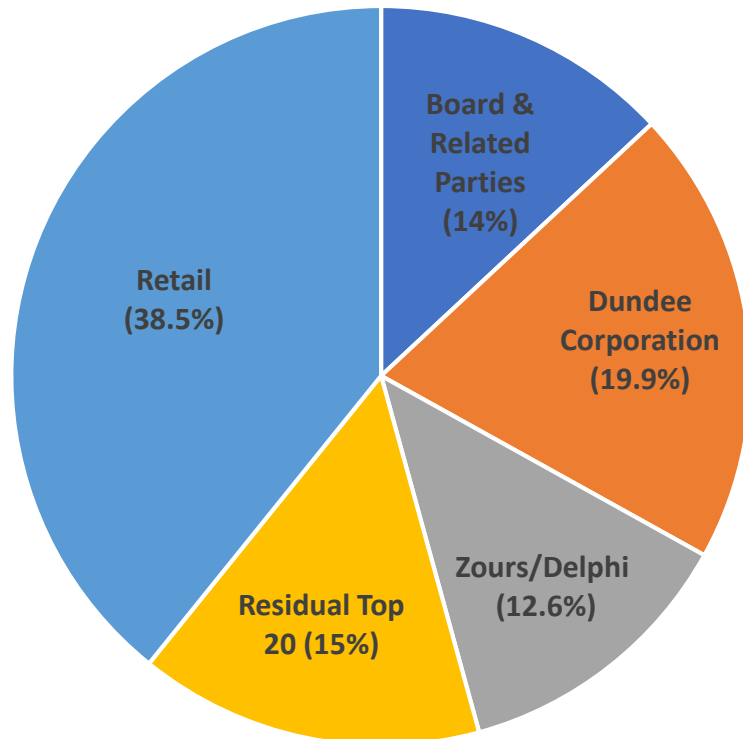
**TICKER**  
**ASX: ZMI**

**SHARES ON ISSUE**  
**121.5 million**

**OPTIONS ON ISSUE**  
**83 million**

**MARKET CAPITALISATION**  
**~A\$12 million**

**CASH AT BANK**  
**~A\$3.6 million**



**Positioned with a strong share register including significant insider & institutional ownership; fully funded 2019 budget.**

- Top 3 groups own ~46%
- Top 20 own ~60%
- Project potential recognised by cornerstone investor Dundee Resources
- Consolidation of capital (20:1) completed in March 2019

**Notes:**

1. A breakdown of the Options on issue is available in the latest Appendix 3B lodged with ASX.
2. Details are as at 1 May 2019.

# Experienced and Proven Board of Directors



## **Richard Monti**

*Chairman*

Corporate geologist with over 30 years experience in the international resource industry. Over 42 “director years” experience for 13 ASX and TSX listed companies.

## **Patrick Corr**

*Executive Director*

Corporate lawyer with considerable legal, finance and management experience with private, public and ASX listed companies.

Has been a director of companies with projects in Europe, Australia, Africa, North America and South America.

## **Julian Barnes**

*Non Executive Director*

Geologist with over 37 years experience in major exploration and development projects. Previously, he was Executive Vice President Dundee Precious Metals, founded and led Resource Service Group which ultimately became RSG Global then sold to Coffey Mining.

## **Adrian Goldstone**

*Non Executive Director*

In excess of 35 years experience in senior roles. Was the Executive Vice President responsible for Dundee Precious Metal’s major projects in Europe and Africa and is uniquely successful in the areas of environmental, social licence and project management and taking new projects through the development process and into construction.

## **Thomas Corr**

*Non Executive Director*

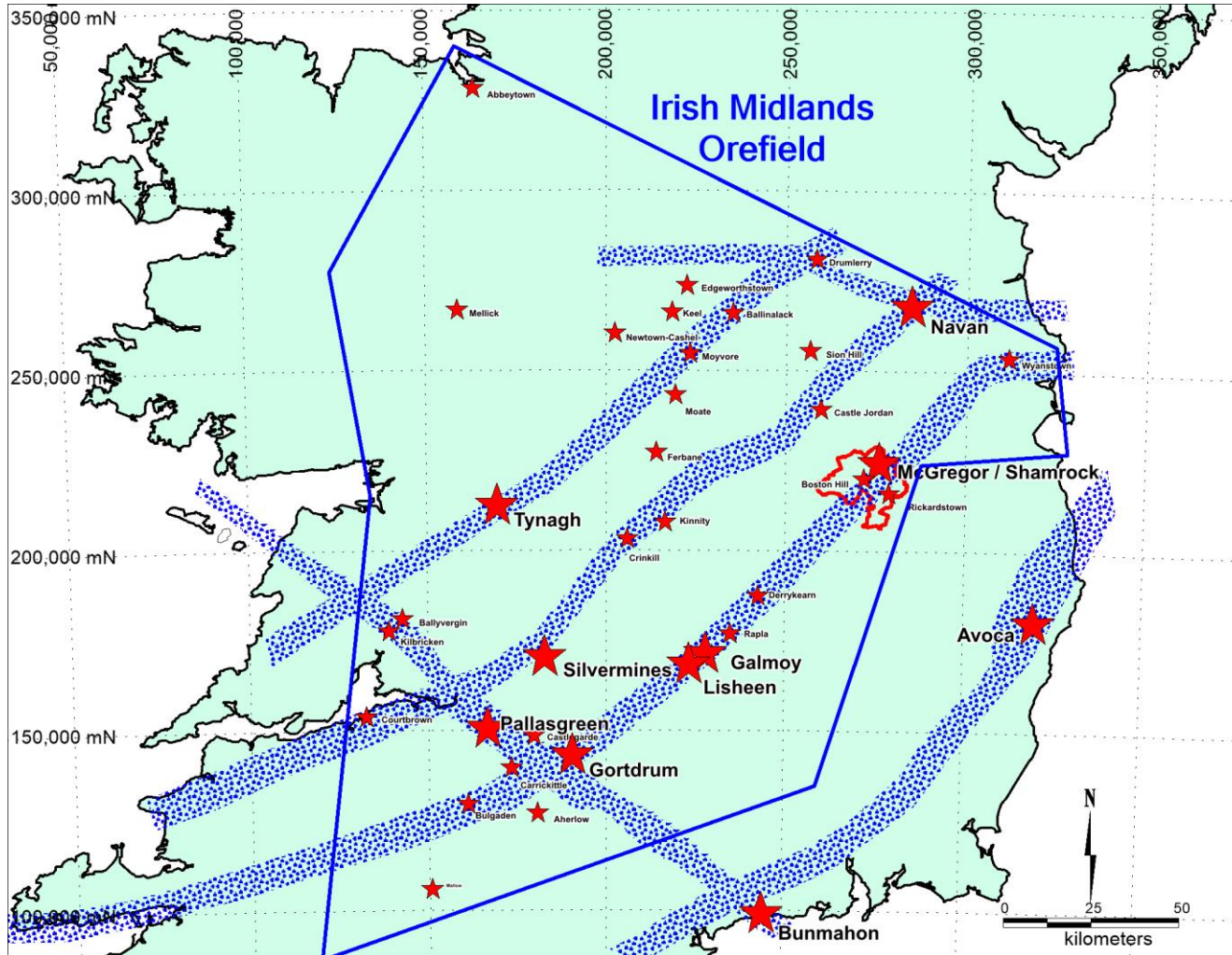
10 years experience in the finance and resource sectors in both Australia and Europe. Resides in Ireland.

Responsible for identifying the potential of Kildare and successfully acquiring the projects.



# Active in the World's Most Prospective Zinc Region

IRELAND IS RANKED FIRST IN THE WORLD FOR ZINC DISCOVERED PER KM<sup>2</sup>



- 50 years of exploration has resulted in the discovery of >25 deposits containing **+20Mt** of Zn metal.
- Majors presently exploring and mining; Boliden, Teck & Glencore.

Deposit	Year of Discovery	Mt	Grade % Zn+Pb	Status
Lisheen	1990	22.8	14.10%	Closed Underground
Galmoy	1986	9.7	16.20%	Closed Underground
Silvermines	1963	17.7	8.90%	Closed Underground
Tynagh	1961	9.2	11.20%	Closed Pit / Underground
Pallas Green	2004	44	8.0%	Resource Definition
Navan	1970	112.0	9.8%	Operating Underground

# Ireland: A Place Where Zinc Mines are Built



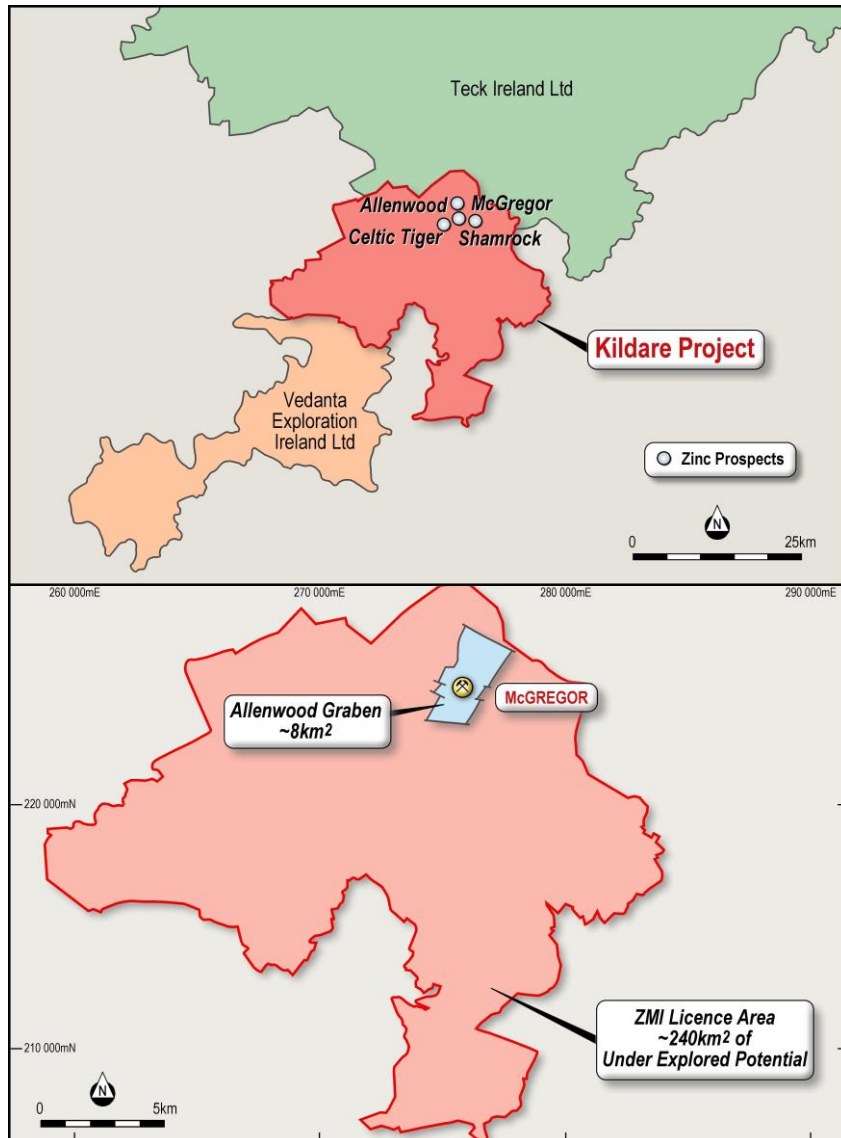
*Aerial view of Lisheen Mine whilst in production.*

- Established mining industry.
- Home to Boliden's Tara mine; Europe's largest Zn mine in operation since 1977.
- Grid power, roads, railways & ports.
- Modest cost profiles, skilled local workforce.
- Numerous smelters within Europe.
- 25% corporate tax rate on mining operations.
- Royalty: negotiated on a project basis, expected range 1.5% - 3.5% NSR.



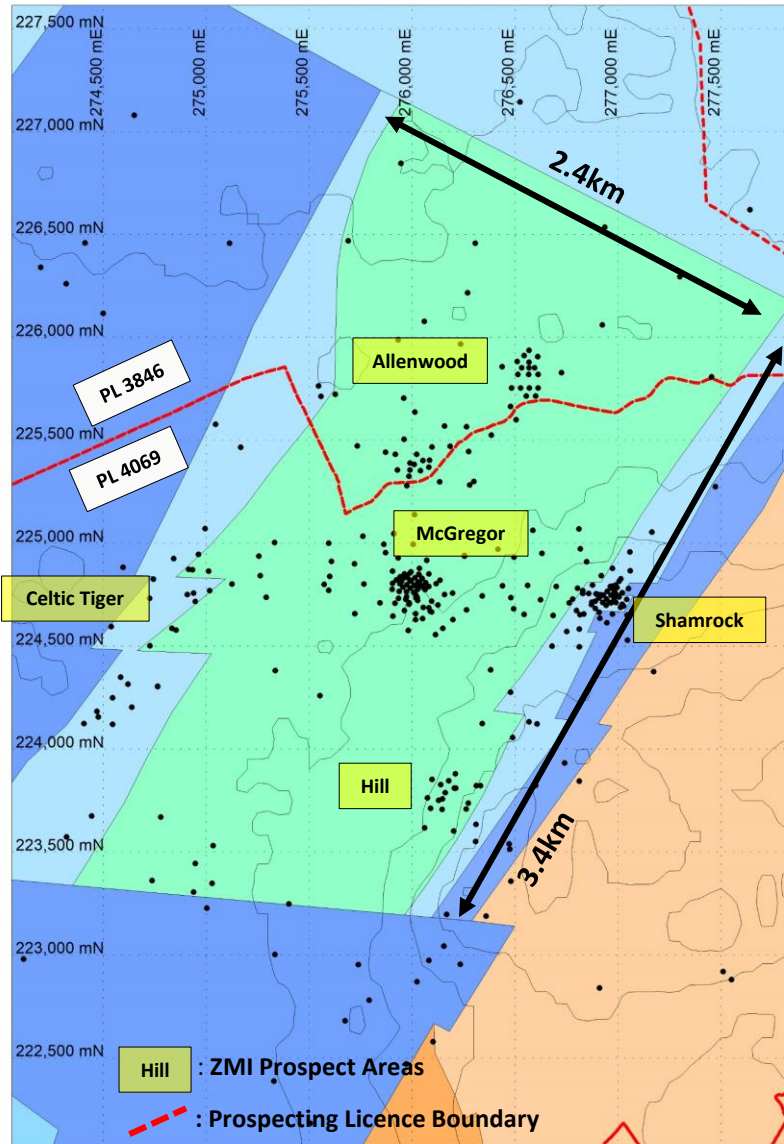
# The Kildare Project

## THE RATHDOWNEY TREND – THE HOME OF PROFITABLE ZINC MINES

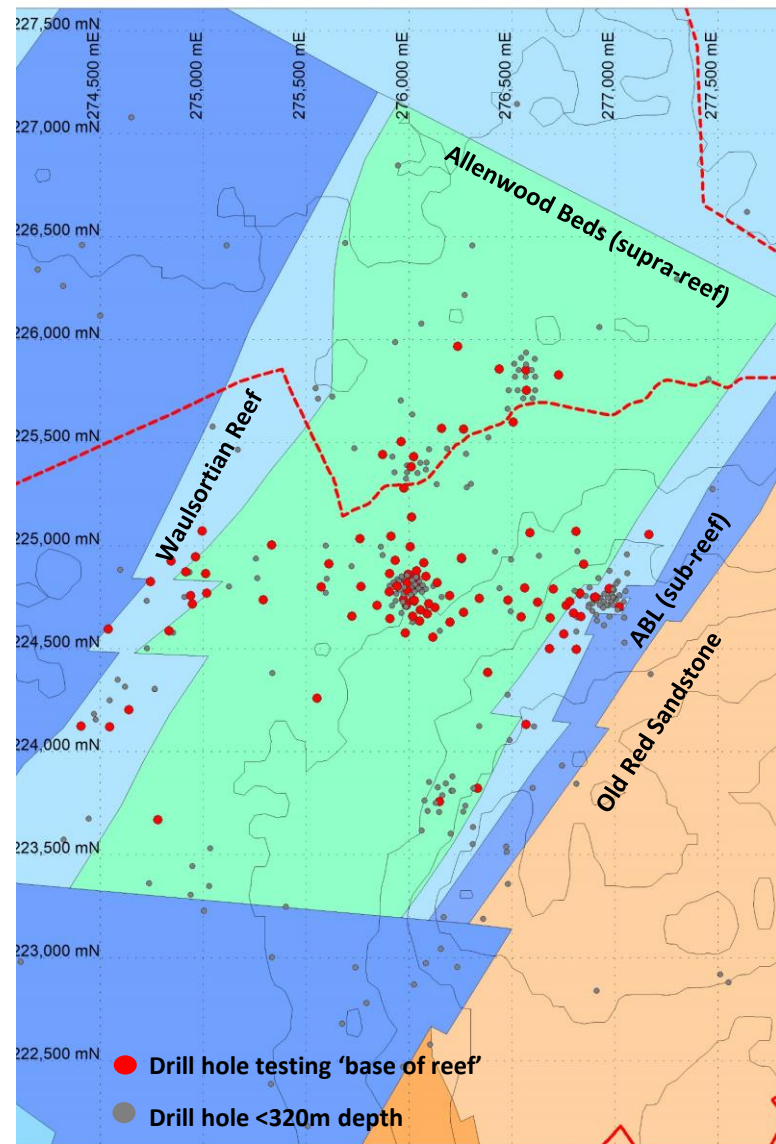


- Large (~240km<sup>2</sup>), contiguous and prospective land package within the Rathdowney Trend.
- The Rathdowney trend has produced two profitable zinc mines: Lisheen and Galmoy, both located within ~80km of Kildare and along the same trend.
- Focus on the Allenwood Graben - first time controlled by a single company.
- 50 years of periodic exploration at the Allenwood Graben; ~68,000m of drilling; estimated replacement value of data in the order of 15M AUD.

# The Allenwood Graben: Historic Exploration



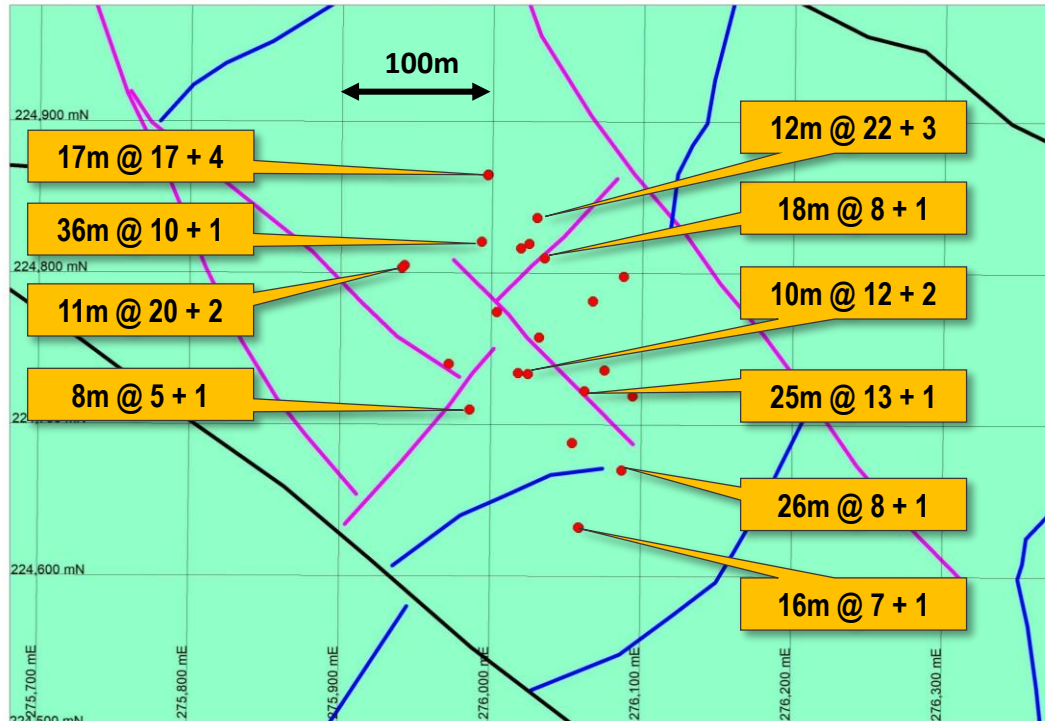
Historic and ZMI Drill Collars (~68,000m)



Historic and ZMI Drill Collars subdivided by Hole Depth

- Well-constrained exploration search area hosting a large hydrothermal system.
- <20% of all drilling has tested the prospective 'base of reef' position.
- ~40% of historic drilling have no available assays and where assayed, historic sampling has been selective in nature.
- Lithologies have been consistently recorded through time.
- The McGreggor Zone was the original discovery.

# McGregor Zone: Reduces the Exploration Target Threshold



● Drill hole with significant intersection at 'base of reef' position.

Selected significant intersections at McGregor: 6% Zn+Pb cut-off, minimum 4m composite length, maximum 4m internal dilution; intersections are downhole lengths; Zn% + Pb% grade respectively; rounded to the nearest metre and nearest percent.

- Initial Resource Estimate (May 2017): McGregor: **4Mt @ 8.8% Zn+Pb** of Global Resource of **5.2Mt @ 8.6% Zn+Pb**.
- Review of Initial Resource Estimate underway.
- Post-Initial Resource Estimate drilling results include:
  - **15.7m @ 18.0% Zn, 4.1% Pb** from 458.4m (Z\_4069\_027).
  - **6.3m @ 9.1% Zn, 0.6% Pb** from 475.3m (Z\_4069\_027).
  - **24.9m @ 13.0% Zn, 0.8% Pb** from 474.5m (Z\_4069\_003).
  - **12.4m @ 8.2% Zn, 0.5% Pb** from 516.3m (Z\_4069\_003).
- Outstanding development prospects:
  - High-grade zones of **>12% Zn+Pb**.
  - Thick, flat-lying zones of **>20m**; amenable to efficient mining methods.
  - Confirmed excellent metallurgical performance.



# Exceptional Metallurgy: McGregor

## Zinc concentrate:

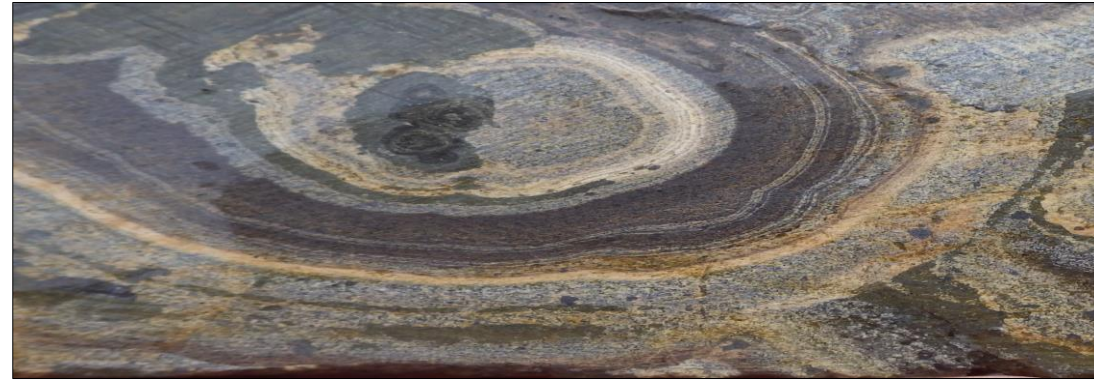
- **96% recovery** of Zn to concentrate.
- **56% Zn** in concentrate.
- Minimal Pb in Zn concentrate.

## Lead concentrate:

- **86% recovery** of Pb to concentrate.
- **62% Pb** in concentrate.
- Minimal Zn in Pb concentrate.

## McGregor 'base of reef' massive sulfide:

- Head Grade: 10.1% Zn, 1.8% Pb

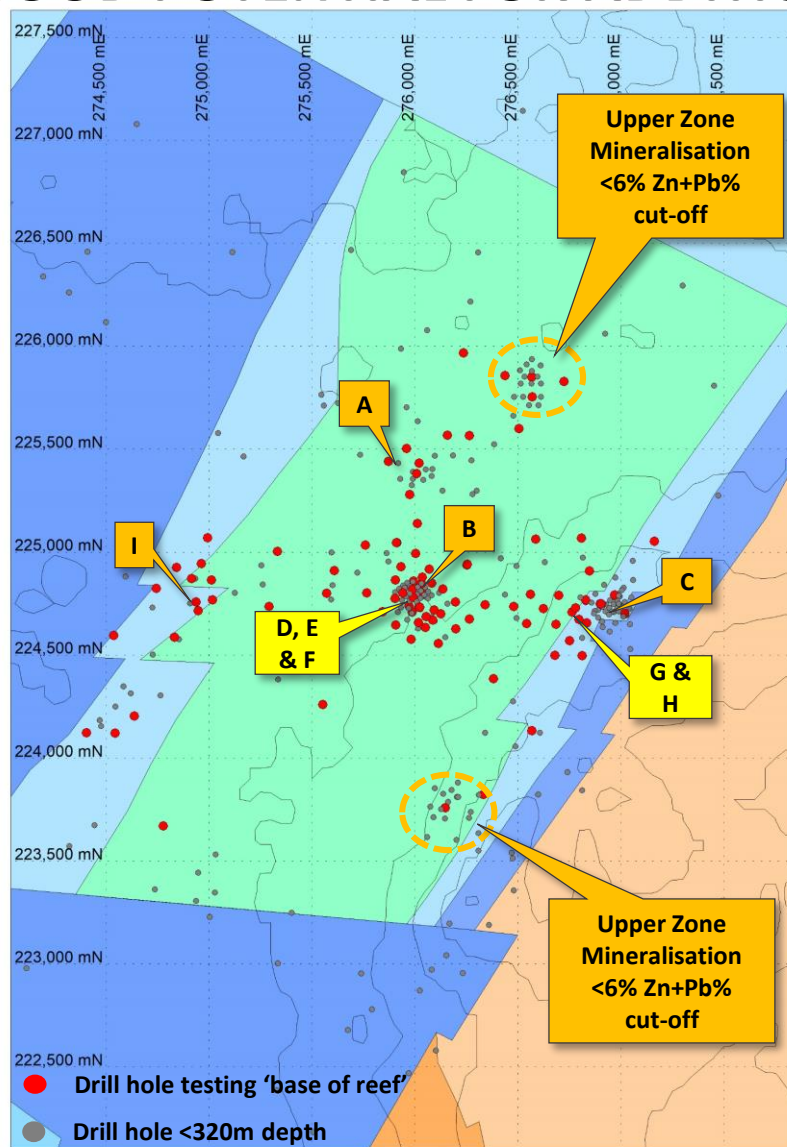


- Minimal levels of deleterious elements in either concentrate.
- Standard differential flotation process employed using a standard reagent scheme.
- Low expected energy costs (BWI 10.2kWh/t) to achieve target grind size ( $P_{80}$  150 $\mu$ m).
- Additional process refinements will be aimed at optimising metallurgical performance.



# The Allenwood Graben: Widespread Zinc Mineralisation

## GOOD POTENTIAL FOR ADDITIONAL DISCOVERY

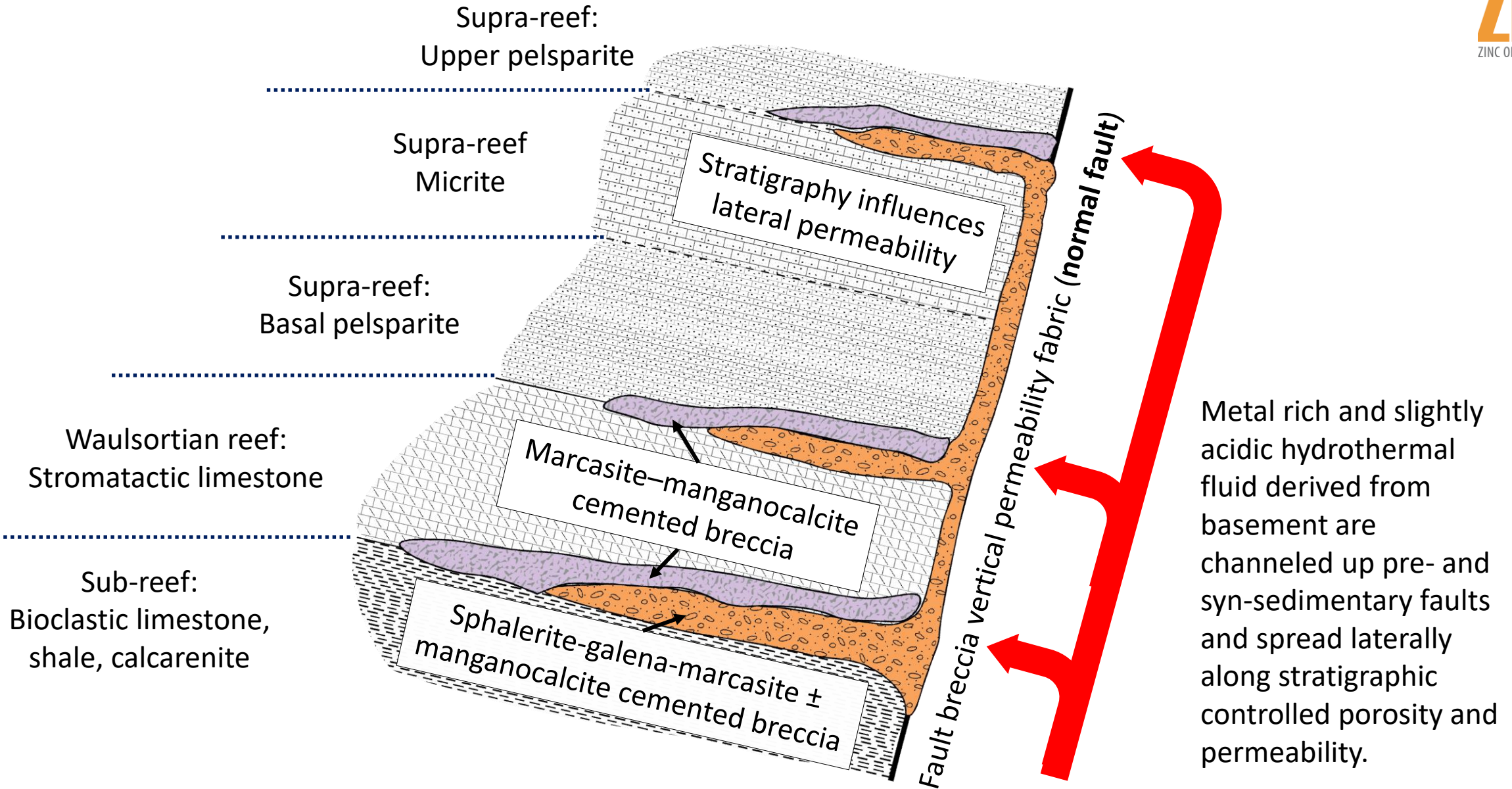


	Hole ID	From (m)	Length (m)	Zn (%)	Pb (%)	Zn+Pb (%)	Zone	Min. Style
<b>A</b>	1629_66*	135	5	8	1	9	Allenwood	Upper Zone
<b>B</b>	RHB_19*	32	19	13	2	15	McGregor	Upper Zone
<b>C</b>	RHB_02*	38	18	11	4	15	Shamrock	Upper Zone
<b>D</b>	HB_087*	373	36	10	1	11	McGregor	Base of Reef
<b>E</b>	HB_033*	389	17	17	4	21	McGregor	Base of Reef
<b>F</b>	Z_4069_027	458 475	16 6	18 9	4 1	22 10	McGregor	Base of Reef
<b>G</b>	HB_049*	390	42	8	1	9	Shamrock	Base of Reef
<b>H</b>	ZB16_004	436	15	7	1	8	Shamrock	Base of Reef
<b>I</b>	Z_4069_007	156	22	8	0	8	Celtic Tiger	Fault Related

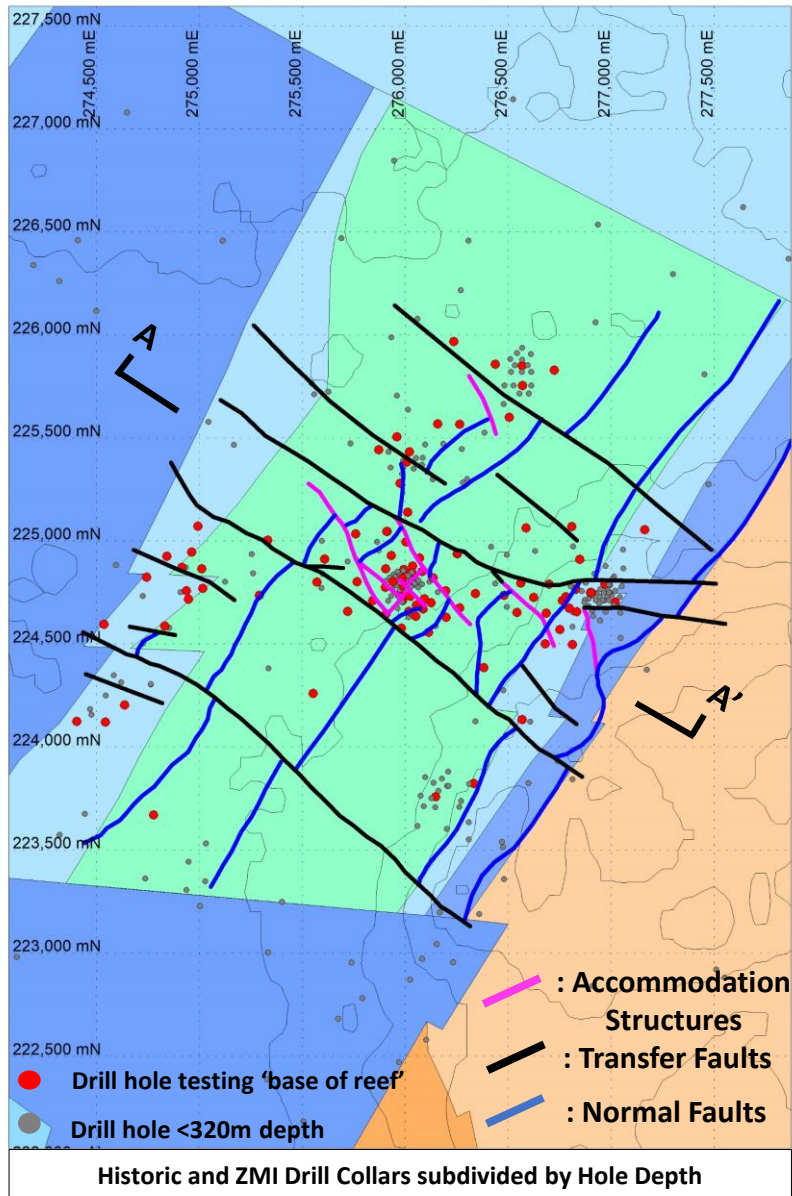
Significant intersections: 6% Zn+Pb% cut-off, minimum 4m composite length, maximum 4m internal dilution; intersections are downhole lengths; \*indicates historic diamond drill hole; rounded to the nearest metre and nearest percent.

- Zinc mineralisation is extensive throughout the Allenwood Graben.

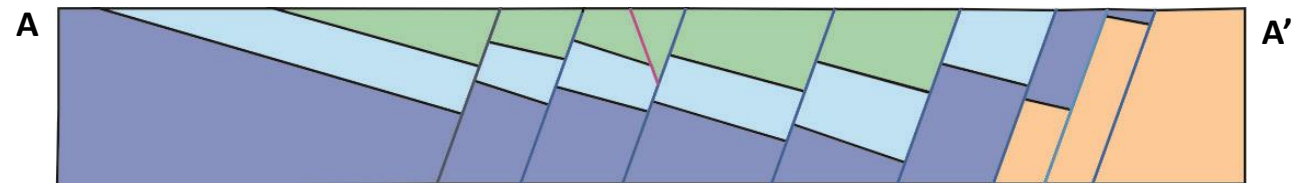
# The Allenwood Graben: The Exploration Model



# The Allenwood Graben: The Structural Model



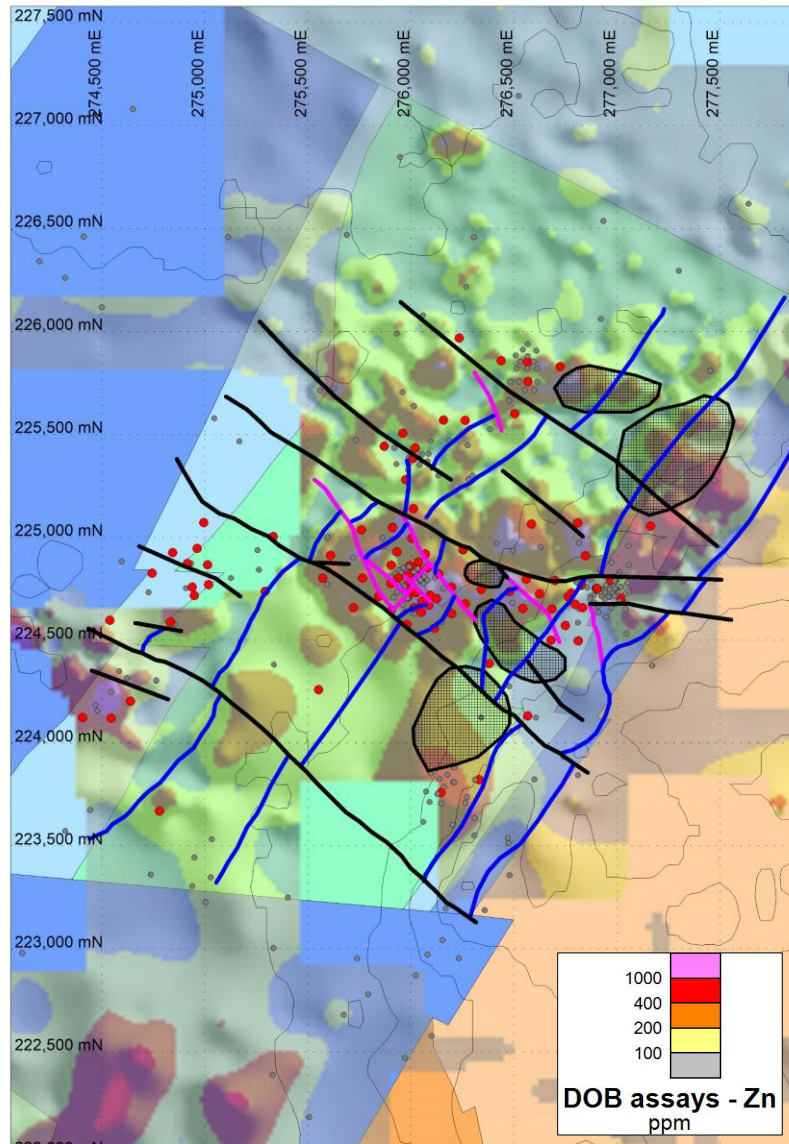
- Reinterpretation of the Allenwood Graben structural architecture has resulted in an increase in the potential for the discovery of additional Zn-Pb massive sulfides.
- The major basin-bounding normal fault (Kildare Inlier) on the eastern margin of the graben will be the immediate focus of exploration drilling.
- Good potential for McGregor/Shamrock-style Zn-Pb mineralisation elsewhere within the graben, hosted between transfer faults and constrained by accommodation structures and segmented normal faults.



Schematic Cross-Section Through the Allenwood Graben  
Stratigraphy generally dips 10-20° to the east



# The Allenwood Graben: 2019 Exploration Programme



Overall Structural Architecture with Zn Bedrock Geochemistry.

- Comprehensive and staged exploration programme within the Allenwood Graben commencing during May.

## Objective 1:

- Staged exploration drilling focussing on specific areas proximal to the prospective Kildare Inlier to define additional Zn-Pb resources.

## Objective 2:

- Targeting resource addition at McGregor and Shamrock.
- The Company expects to drill approximately 7,500m of diamond drilling in 2019.



: Phase 1 ZMI Exploration Target Area during 2019



# Additional Activities During 2019



## Metallurgical Testwork

- ✓ Excellent recoveries and concentrates produced.

## Resource Review

- ☐ Based on additional drilling and sampling since Initial Resource Estimate dated May 2017.

## Environmental Baseline

- ☐ Establish EIA-related baseline requirements.
- ☐ Commence pre-development footprint planning.

## Heritage & Social

- ☐ Stakeholder engagement, community relations, heritage study.

# Reasons to Invest

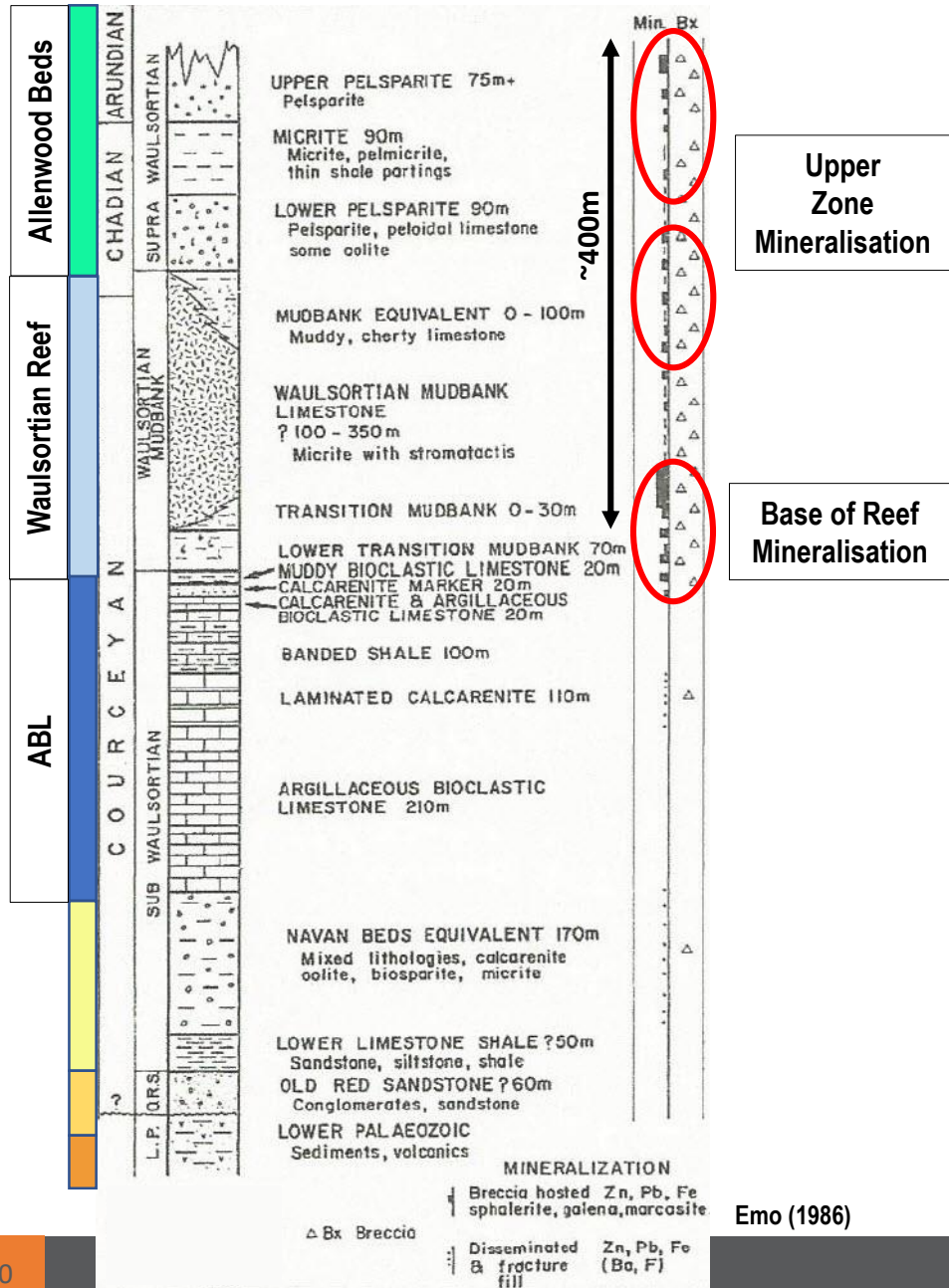


- **EXISTING ZINC RESOURCE** – reduces the exploration risk threshold.
- **EXPLORATION DRILLING COMMENCING MAY** – new exploration and structural models.
- **EXCELLENT METALLURGY** – high quality zinc and lead concentrates produced.
- **PROJECT DE-RISKING** – parallel activities to reduce study timeframes.
- **PROVEN BOARD AND MANAGEMENT** – operational experience in the EU.
- **STRONG SHAREHOLDER BASE** – cornerstone shareholders, EU mining experience, tight ownership structure.
- **CASH OF A\$3.6 MILLION** – funded to meet current project objectives.
- **HIGHLY LEVERAGED TO UPSIDE** – enterprise value of only ~A\$8 million.

# Appendix

## Additional Technical Slides

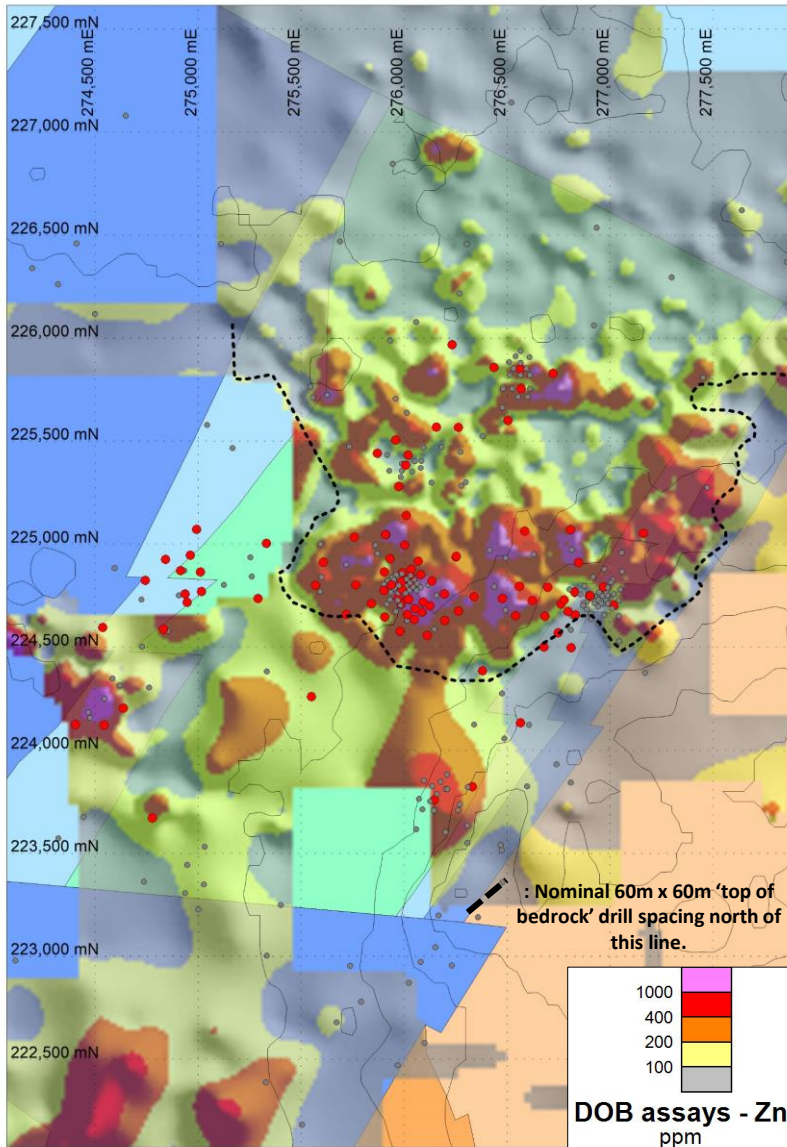
# The Allenwood Graben: Stratigraphy and Mineralisation



- Extremely well-preserved ~340Ma hydrothermal system with Zn-Pb mineralisation developed over a ~400m vertical extent.
- Favourably, the supra-reef rocks (Allenwood Beds) in the Kildare region are clean limestones, which together with the Waulsortian Reef, has created a very thick sequence of brittle limestone adjacent to a major northeast trending, normal fault structure; the Kildare Inlier.
- Significant, thick, flat-lying, 'base of reef' Zn-Pb massive sulfide has been drilled at the McGregor and Shamrock zones.
- Additionally, manganocalcite-marcasite ± sphalerite stockwork has been recognised throughout the graben where it is spatially associated with massive sulfide Zn-Pb mineralisation.



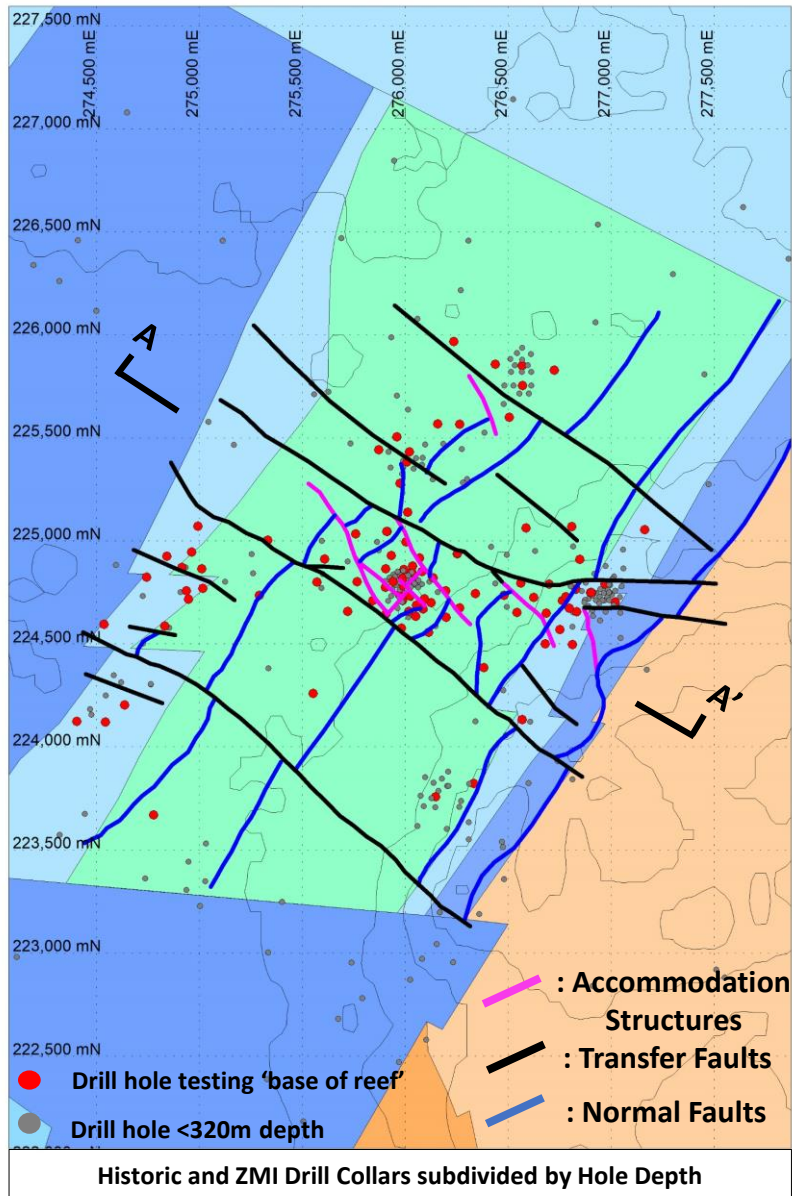
# The Allenwood Graben: Bedrock Zn Geochemistry



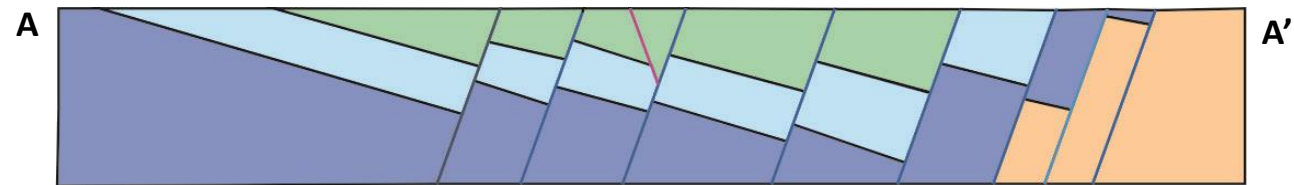
All drill collars overlain on Zn 'top of bedrock' sampling results

- Due to overburden/cover, 'top of bedrock' drill sampling was employed historically.
- ~1,500 'top of bedrock' samples have been collected through time predominantly in the northern half of the graben.
- Zn anomalism at the top of bedrock is primarily hosted within the supra-reef rock unit, but also occurs within the reef and sub-reef rocks on the graben margins.
- Zn anomalism represent hydrothermal upflow zones; the 'plumbing system' of the Allenwood Graben.
- Confirms pervasive, well-developed, fault-fracture network.

# The Allenwood Graben: The Structural Model



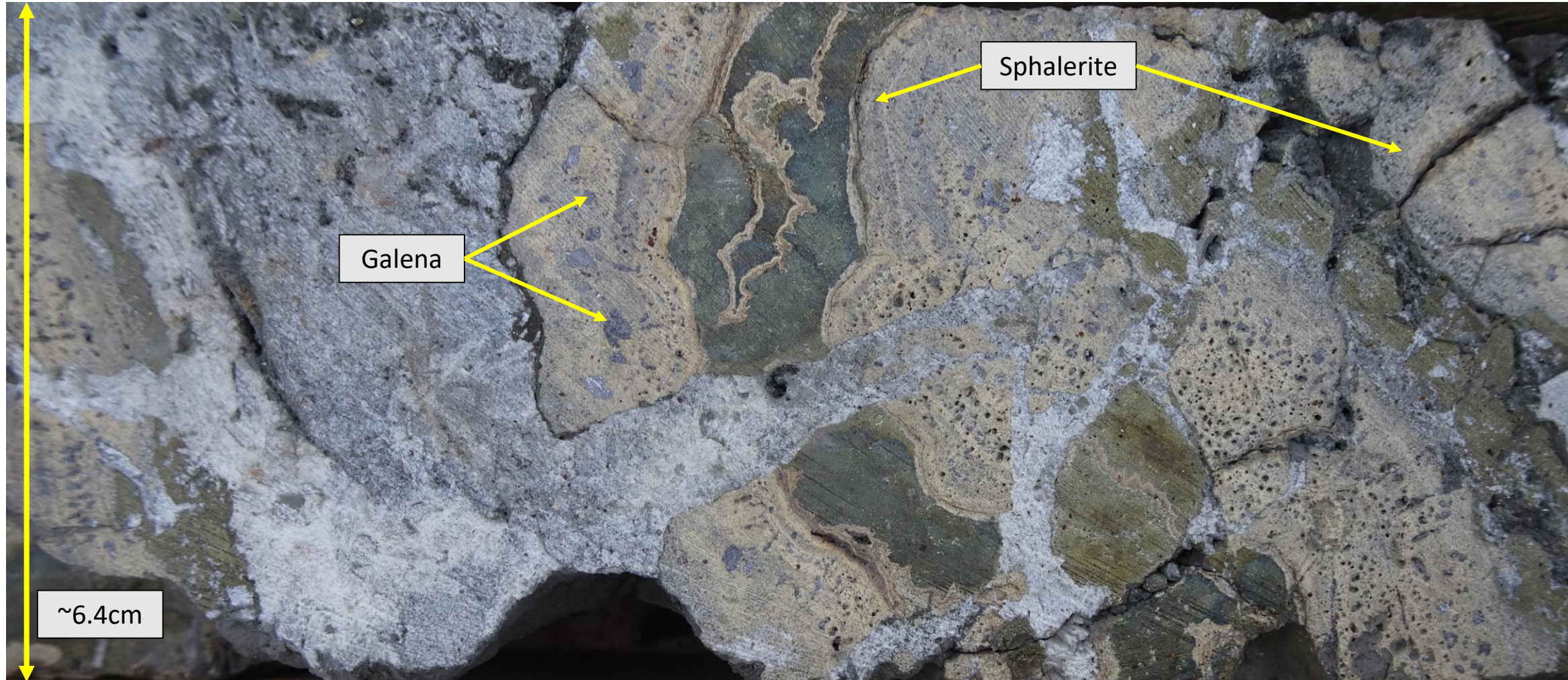
- A large asymmetric half graben.
- Major basin-bounding normal fault on the eastern margin with subparallel, subsidiary normal faults within the basin.
- Stratigraphy generally dips 10-20° to the east.
- Internal fault fabric compartmentalised by transfer faults.
- Local basin architecture between transfer faults is constrained by accommodation structures and segmented normal faults.
- Zn-Pb sulfides are localised within faults and areas of stratigraphically controlled permeability.



Schematic Cross-Section Through the Allenwood Graben



# Break-up and brecciation of massive colloform sulfide by late infill of grey to white manganocalcite.



DDH Z-4069-027: McGregor zone, base of Waulsortian reef (HQ half core); 16m @ 22% Zn+Pb



# Zinc: The World's Fourth Most Consumed Metal

## DEMAND FUNDAMENTALS REMAIN STRONG – 10 YEAR OUTLOOK

- Global demand forecast to grow by 2% annually.
- Consumption dominated by China and growing living standards.
- 2028 consumption forecast: 17.5Mt of zinc metal
- 287,000t additional metal per annum required to meet demand.

