detectORE™ – Explorers & Miners Sponsorship Program

10 October 2019

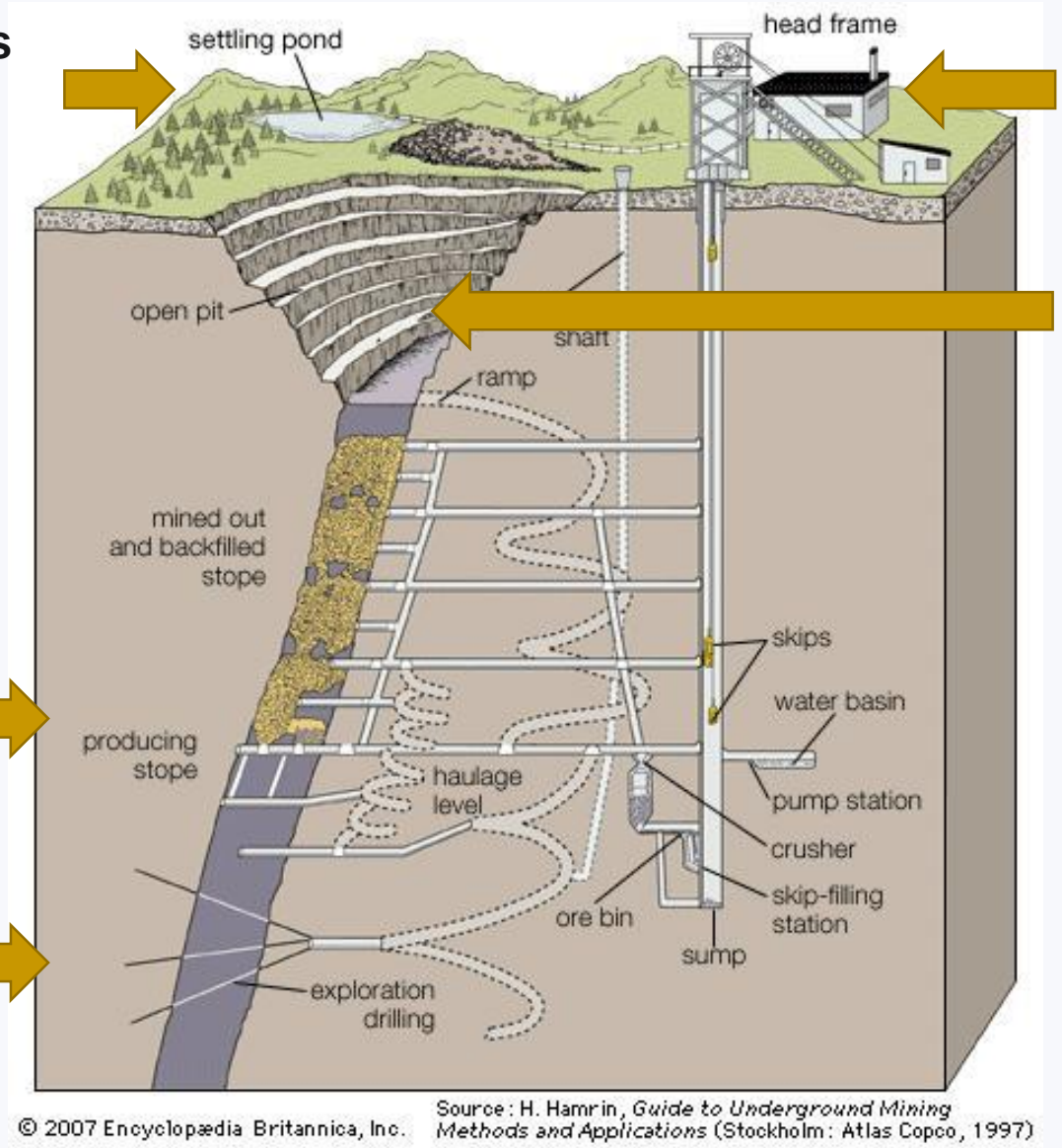
detectORE applications throughout the gold industry

Brownfields & greenfields Exploration

- Drill samples
- Soils
- Trench
- Drainage

UG grade control

UG drilling



Process plant monitoring

- CIL Au grade?
- Tailings grade?

Grade control drilling

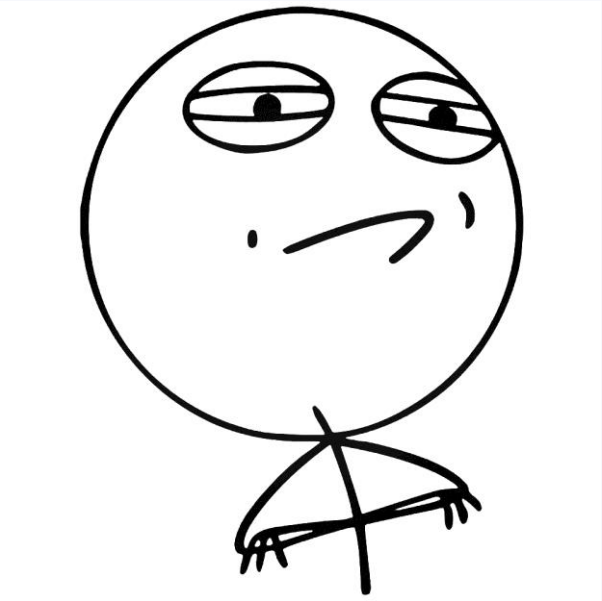
detectORE benefits, compared with conventional gold analyses:

- ***Low capital and operating costs*** compared with traditional assay methods
  - Fire Assays require very skilled staff and has high running costs
  - ICPMS uses expensive equipment & skilled operators
- ***Larger sample*** (250g) – more representative
- **Easier to scale up** and be run by technicians than traditional Au analyses

R&D plan involves:

- SMART Testing in mission critical areas, of the technique – including field and laboratory trials
- Simultaneously work on scaling up supplies and systems ahead of release – The “D” part – including cloud based processing and QA/QC
- Staged roll-out – R&D partners to receive priority access
- On-going R&D / improvements
  - Reduced pXRF detection limits for other commodity & pathfinder elements
  - Alternative “widgets”
  - Development of other complimentary applications

Making the system “Fred Proof” – so, who is Fred?

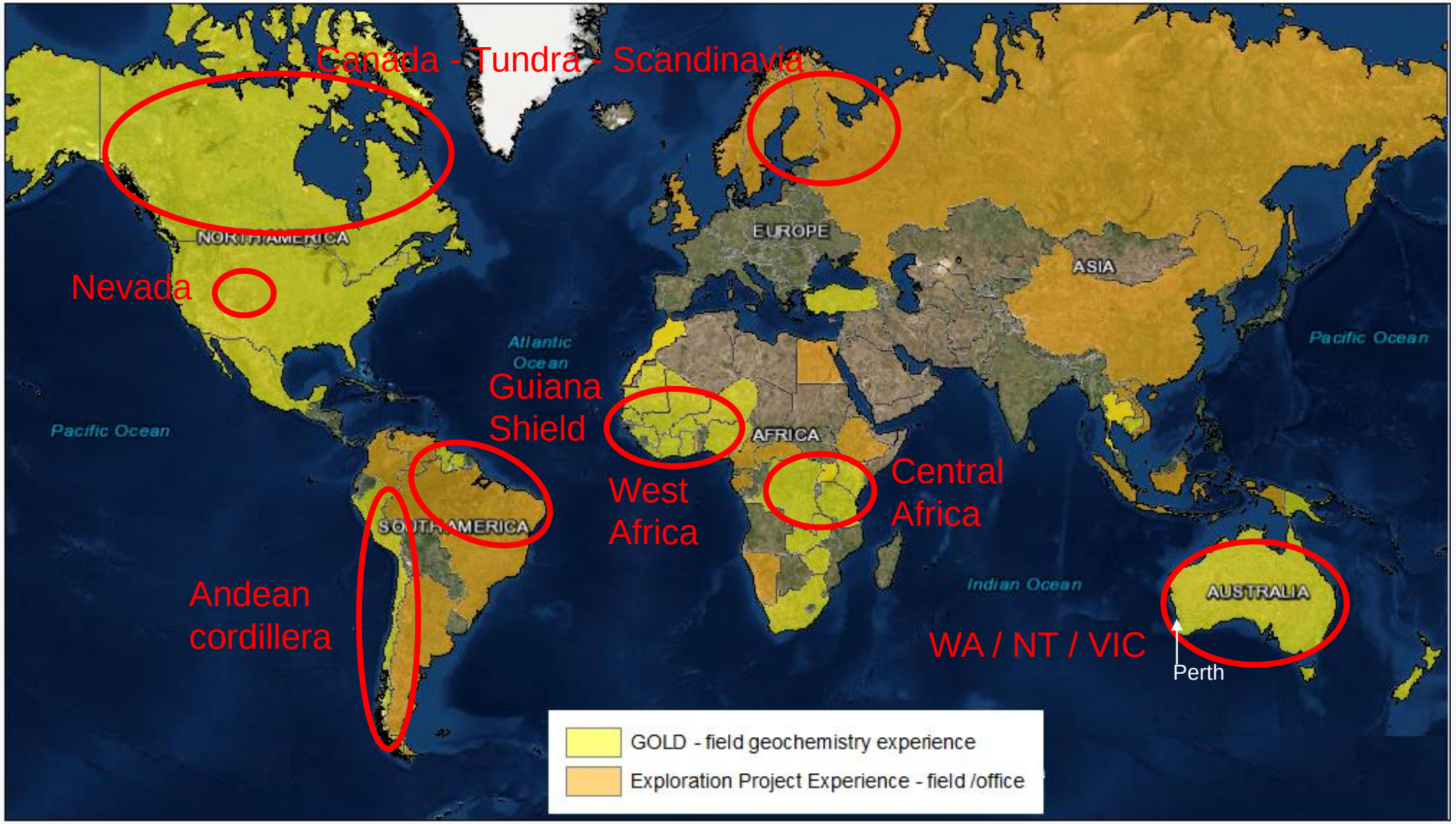


- Fred the ‘fat fingered’ fieldie
- When he is good he is very very good, but when he is bad he …..
  - Makes simple ‘human’ errors
  - Suffers from number dyslexia
  - Periodically takes short cuts
  - Fiddles with equipment, including pXRF settings

Developing a field system that is simple, safe, robust and reliable

- many verifiable checks
- covering off on all potential error sources (Fred induced, or otherwise)

Global trial areas



Western Australia – “our backyard”

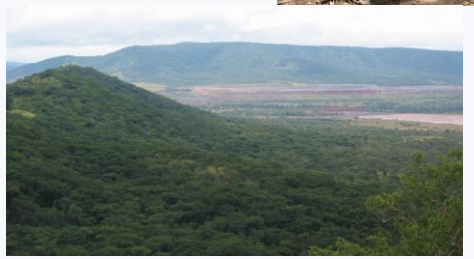
- Convenient source exploration samples
- Expecting detectORE to be of most benefit in remote areas of WA
- Technique to deliver clear cost and time benefits over traditional labs and fieldie labour costs are high
- Have secured a Silver Sponsor who is supplying drill, soil, laterite, calcrete, drainage samples (Northern Goldfields)
- Keen to talk to companies interested in becoming R&D Sponsors – could be WA Explorers or based in Perth exploring elsewhere.

West Africa – an active, remote exploration region

- detectORE addresses many problems for West Africa explorers
- A region familiar to management after combined >40yrs in region
- Limited labs mostly in nation capitals – some long transport distances – long assay delays especially during boom times
- Roads in some regions are poor adding to transport costs and delays
- Wet season / green season means exploration window is short
- Drilling - retain / release rigs with assays backing decisions
- Labour in West Africa is plentiful, cheap and trainable
- Extensive tests planned in Burkina and Cote d'Ivoire
- Open to discuss with other potential R&D sponsors

Central Africa – high cost high return exploration

- detectORE has many potential benefits for explorers in Central Africa
- True Elephant country, lacking extensive modern gold exploration
- Limited number of quality gold labs – can mean shipping samples to another country (e.g. Mwanza, Tanzania)
- Poor quality and some high risk roads adding to HSLP risks, time and expenses
- Wet seasons mean exploration window is short
- High drill costs – retain / release rigs with benefit of assays backing decisions
- No sponsors to date. Expected to be of interest to greenfields explorers.

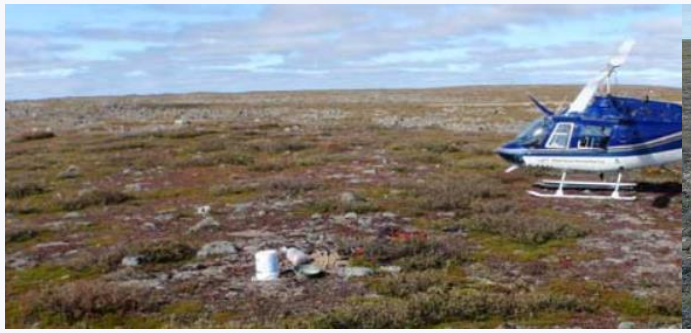


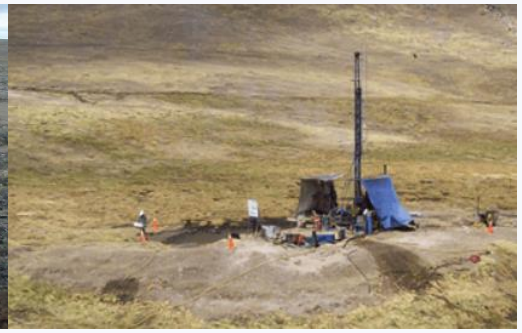
Guiana Shield – one of the last great gold frontiers

- One of the last great gold exploration frontiers with many World Class gold deposits
- Under explored because of the tropical rainforest and regolith
- Transport by air, boat or ATV – slow & expensive .
- Real time adaptive gold sampling on-the-fly from a jungle field camp would be a game changer
- Priority testing of stream sediments (GGMC method), soils and other regolith materials
- Seeking R&D Sponsor(s)

Tundra region of Northern Canada / Scandinavia

- Extremely remote areas
- Very short field season – 5 months or less
- Transport people and samples by air, boat or road - slow & expensive
- Near real-time till and lake sediment gold assays - immediate follow-up
- Seeking trials with R&D Sponsors with suitable till or lake sediment anomalies & samples



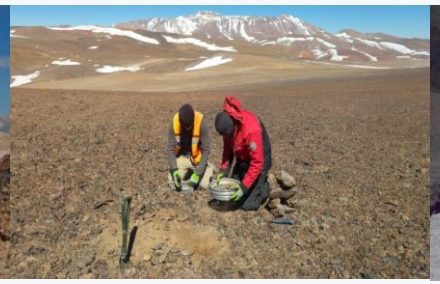


Nevada – Carlin deposits

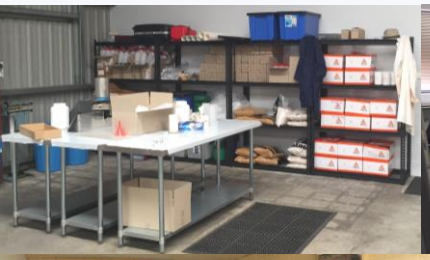
- Remote exploration areas >3 hours drive from labs in Reno or Elko
- Limited field season – <8 months
- Deep drilling through pediment sediments – expect it would be good to have rig side gold assays
- Keen to discuss trials with potential R&D Sponsors with suitable suites of Carlin type / Nevada exploration samples

Andean Cordillera – remote high cost, high return exploration

- Many extremely remote areas often >1 day travel from labs
- Slow transport of samples out of projects – including mules & ATV
- Exploration benefits from near real time low level gold:
  - Stream sediments – next day follow-up
  - Soil and rock chip assays – follow-up or move on
  - Drill testing – retain / release rigs with assays backing decisions
- Want to test detectORE on porphyry and epithermal mineralisation
- Keen to discuss trials with potential R&D Sponsors



Established R&D capacity – lab and field



Some detectORE known unknowns…

What is precision like for various sample media?

- If this needs to be improved, how is this achieved?

How accurate is the technique for different sample media?

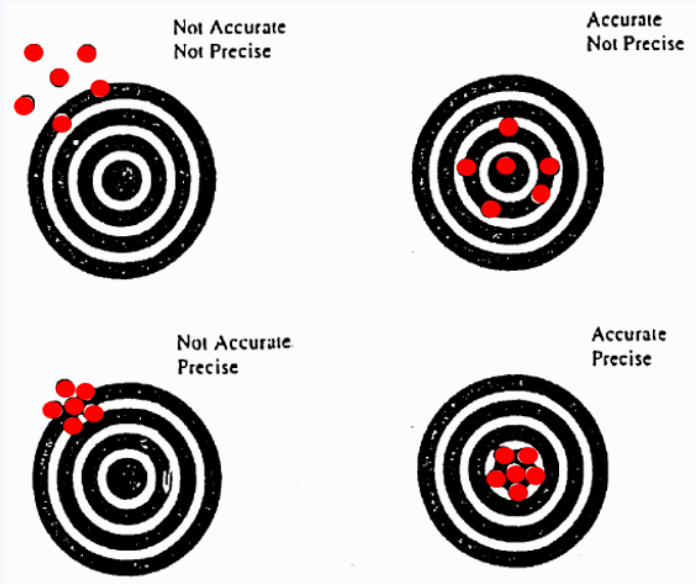
- If this needs to be improved, how is this achieved?

What are the absolute lower detection limits?

The “widget” currently stays in the bottle for 24 hours

- What is the optimal period for different sample media?
- Can we speed this up, if so, when to and how?

Which pXRF instruments are best suited / less well suitable



R&D focused on 4 key aspects….

1 Sample

“widget” in container

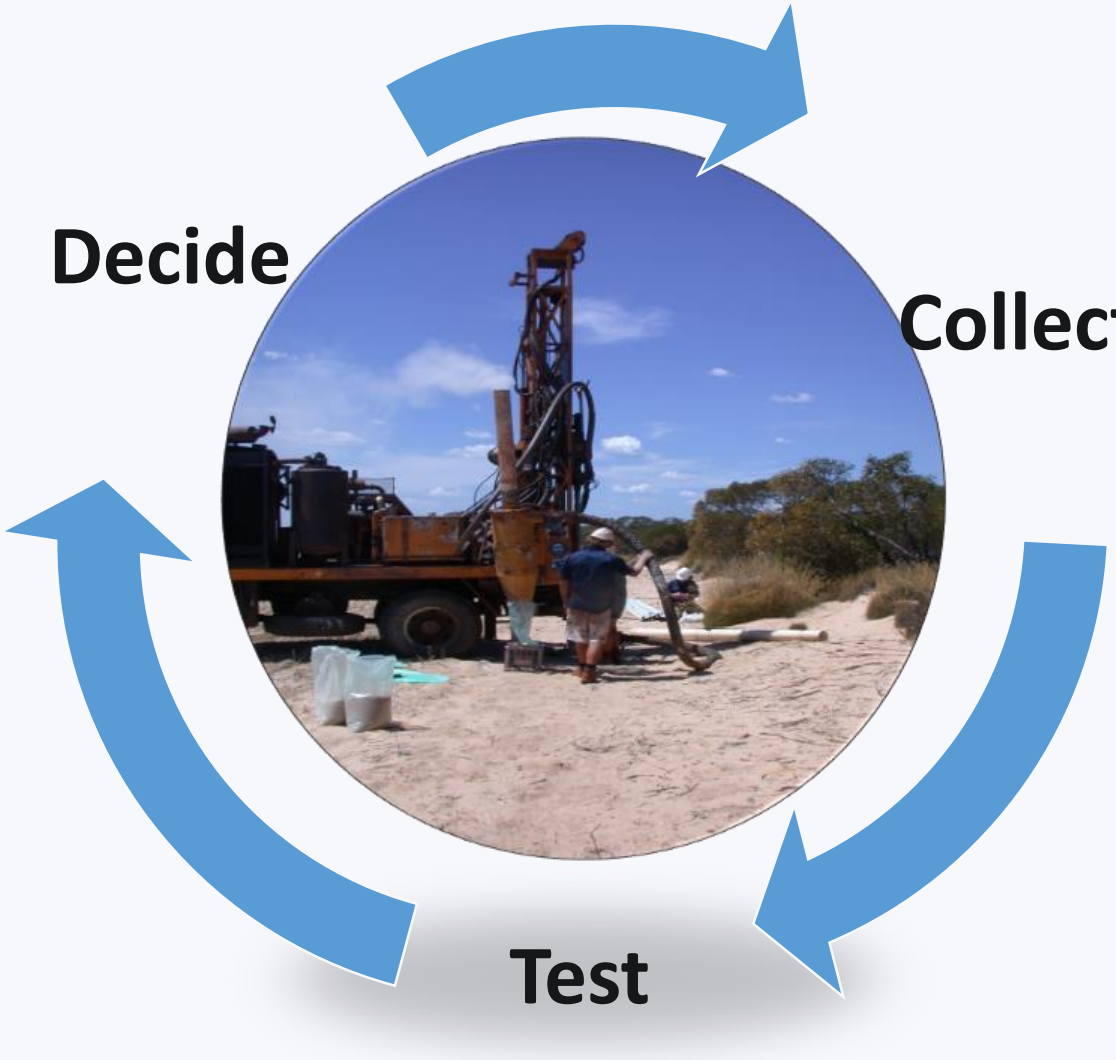
2

pXRF

3

detectORE
APP software

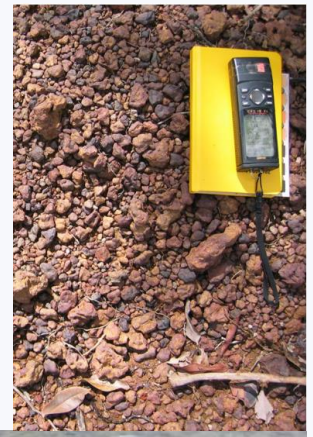
4



R&D is testing a variety of sample media…

Extensive work on various sample media

- Rock & Drill samples – **RC** / RAB / **AC** / **AUGER** (+/- **DD**)
  - Sample processing requirements for detectORE – developing pragmatic field methods
  - Weathered and fresh bedrock + overburden
  - **Orogenic** / **Porphyry** / Epithermal / **Carlin** / IOCG / IRG style deposits
- Surficial regolith: **Soil** / **Laterite** / Lag / **Calcrete**
- Transported regolith: **Drainage**, Lacustrine, Till



Cross checking detectORE values with traditional laboratory assays

Green text = samples obtained / currently undergoing test work

detectORE R&D Sponsor program – what is it?

- Opportunity for companies to work with us to accelerate the test work
- Sponsors receive immediate and longer term benefits for doing this
- Limited number of companies can get involved
- Rewarding those who get on-board and support us from the start
- Possibility to upgrade sponsor status by contributing more, provided that there is an opening at the higher level
- Three sponsor levels
    - Bronze – $30,000 (limited to 6)
    - Silver – $50,000 (limited to 8)
    - Gold – $100,000 (limited to 5)

detectORE Mining/ Exploration R&D Sponsor program

	Bronze	Silver	Gold
Advanced access to technology	✓	✓	✓
Direct access to detectORE principals to discuss product development and priorities	✓	✓	✓
Notification of new case studies and product releases	✓	✓	✓
Priority Access before full commercial release	✓	✓	✓
Orientation surveys – advice & design	✓	✓	✓
Express supply of detectORE CRMs	✓	✓	✓
Guaranteed supply of consumables for 12 months after release [1]	✓	✓	✓
Advanced access to any new elements or techniques (Assistors if assisted with the newest product)	✓	✓	✓
Earliest supply of SOPS in French / Spanish	✓	✓	✓
Orientation surveys – advice, design, *interpretation* [2]		✓	✓
In-house train-the –trainer workshop training [3]		✓	✓
Guaranteed supply of consumables after commercial release for 24 months[4]		✓	✓
Highest priority product support (<4hrs during normal business hours)		✓	✓
Guaranteed places (up to 10 days before) for 3 people at detectORE industry training sessions[5]		✓	✓
Highest Priority access to product after commercial release		✓	✓
Orientation surveys –free field supervision of up to 10 days / year[6]			✓
SOPS – specify one other language required at no charge			✓
Earliest access to any enhanced technology			✓
Highest priority analysis turnaround[8]			✓
On declared commercialisation receive FREE widgets [9]	✓	✓	✓
Early mover sign-on commitment rewards[10]		✓	✓
Ability to move to a higher tier (*or negotiate further benefits) by contributing additional funds[11]	✓	✓	✓*
On commercialisation receive a 10% discount on widget purchase costs for the next 10 years. [12]	✓	✓	✓

detectORE™ R&D Partner Company Sponsor Levels

[1] Limited to 5,000 units / year with dispatch from central supplies within 5 business days for 2 years

[2]. Planning and Interpretation time charges covered, but limited to 7 man days/ year.

[3]. Train-the-trainer course costs limited to out of pocket expenses

[4] Limited to 5000 units / year dispatched from central warehouse within 3 business days of urgent order receipt for a period of 24 months after declared commercial release date (to be posted on website)

[5] Expenses associated with training to be at client charge

[6]. Supervision time charges covered, limited to 10 man days/ year, but travel / expenses at sponsor costs. Additional days at prescribed day rates.

[7] Limited to 30 months after product release, thereafter based on client volume

[8]. Gold sponsor XRF spectral will be assigned highest priority for post processing and checking through company software and manual routines for a period of 18 months on start-up and thereafter based on on-going product volume

[9] Upon commercialisation the following number of units ("widgets") will be made available to sponsors free of charge ex-Perth for a period of 3 years (Freight and any import duty at sponsors own cost). Bronze 1000; Silver Sponsors 2500 widgets; Gold Sponsors 5000 widgets.

[10] Be among the first sponsors and besides assisting with the early trials, receive a further 2500 units for Silver or 5000 as Gold Sponsors upon declared commercialisation over and above standard tier level rewards.

[11] Enter at one level and like what you see and want more of it? Then contribute more R&D funds and provided that there is a vacant slot in our limited Sponsor Program, you receive all the benefits of the higher tier. For the avoidance of doubt, the free units are not cumulative, i.e. move from Bronze to Silver you receive 2500 units, not 1000+2500.

[12] The 10% discount will be over and above any other promotions or discounts on at any one time – i.e. pricing that would be available to non R&D Sponsors. The 10% discount is capped to a total discount value of 2x Sponsorship money provided to PPPB, i.e. a total cash saving of $60,000, $100,000 or $200,000 for Bronze, Silver and Gold sponsors respectively.

All sponsors must agree to make outcomes of the orientation / trial data available for PPPB to use to assist with informing others about the R&D. Project co-ordinates etc. will be removed to disguise the precise location, companies name can be removed (etc).

We are seeking a spread of trial sample materials in different geologic and regolith terrains and what sponsors offer will determine who will be able to join the Sponsor Program.

Bronze $30,000 + GST (limited to 6)
Silver $50,000 + GST (limited to 8)
Gold $100,000 + GST (limited to 5)
Exclusive – open to discuss possible exclusivity options

$= AUD for Australian domiciled businesses (with an ABN) $=USD for offshore businesses (no ABN) –

Disadvantages of not getting involved as a sponsor

- Perhaps 12-18 month delay with using the technology, compared with sponsors
- Any testing by you post commercialization will be at your companies expense (widget purchases / personnel / field = time and $$$)
- If issues encountered during testing then you may not benefit from PPPB's R&D team to problem solve (opportunity / time cost implications)
- Unable to access the R&D results for a considerable period
- Inability to direct the R&D in ways that can directly benefit your company
- No free widgets (equivalent in value to ~half the R&D sponsor fees)
- No on-going discount worth potentially double the value of the R&D sponsorship payment

Summary

- pXRF low level gold, in the field, near real time, now possible
- Many known unknowns so R&D still required before it can be adopted by explorers and enhancements being considered
- detectORE expected to be of greatest benefit to explorers in remote areas with poor access to labs, or where field seasons are short
- Expected to transform the way gold explorers go about their business once released
- PPPB working with Industry Sponsors will lead the industry change increasing efficiency and effectiveness of gold exploration
- R&D Sponsor Scheme to deliver win-win opportunity for those who can see the future and want to be exploration leaders

For more details contact…

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www.portableppb.com (in construction)

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