

1. How to Read Old/ Historic Mine Workings

Based on Site Visits
and geology/mining knowledge
of Keith Goode:

(4 to 5 yrs mining u/g; 11 yrs analysis shaft access u/g,
12yrs opencut analysis,
~25yrs Eagle Research Advisory / ERA;
– ie 100s of mines and exploration property visits)

1 How to Read Old Mine Workings - 1

- Has often been stated, old timers could go to an area and appraise what they are looking for.
- I think it's true – but it has taken me numerous site visits, especially under Eagle Research, & tying in underground knowledge based on accessing by shafts, to gradually understand what can be seen on a visit.
- Hence this presentation to pass on knowledge that could be useful in the field – plus possibly where to examine/find historical details etc beforehand

How to Read Old Mine Workings - 2

I wrote a Paydirt article on this subject in June 2017 as shown – this presentation is an elaboration, including further experience, namely :
After Preparation, there are 3 main aspects to focus on

- Straight lines and Divining
- Walking the Pits
- Examining any Shafts and Stopes, and Other

GOODE NEWS Reading Old Workings

As the Australian gold mining industry passes through another phase of goldfield revival, I continue to be amazed that many do not seem able to read the old workings, but have to admit that I have never seen a course on that subject.

It is common knowledge to examine the rock chips left on the ground from previous explorers (ie hopefully not environmentally cleaned up) to see what was intersected : as in mafic, ultramafic, sediments, and if lucky quartz veins (that may have even oxidized brown due to sulphides breaking down). And to walk the pits from the last revival : as in walk around their rims to see the exposed geology from different angles and the often standout of weathered veining (while obviously taking care of pit edges and any cracks implying future wall failures).

Or looking at the last buckets of spoil (often on a waste dump), in case they contain ore grade as the mine approached closure. Plus the state of the walls themselves in terms of competency, and any white patches, often indicating oxidation proximal to mineralization, or possibly even palaeochannels. But taking care that the patterns on some of the pit walls may be due to an eroded layer.

However, many overlook the really old workings of the turn of the century (end of the 1800s to early 1900s) and the wealth of geological and mining information that they contain. I often wonder if the group I am site visiting with think "Keith's focus on old workings must be a mining thing", which it partly is viewing old stopes, bedding planes, remnant sticks (props), rails, scotch cars' handles (trucking limitations) and mining styles (production limitations) etc viewpoint.

But I digress. There have been many instances where I wonder if a geo has instructed someone to drill a hole near old workings without studying them first. After all, how else can one explain the clearly barren drillholes from : drilling parallel to old stopes at Wombola (before Silver Lake [SLR]), or parallel to the stope and long axis of the shaft on the outside northern edge of the Lady Shenton pit at Menzies (before Intermin [IRC]), or drilled eastwards away from the clear (it's partly exposed on surface) N/S striking vein structure between two of the old shafts at Sandstone North (before Aito [AME]).

However the old shafts (especially if they are in the top of a spoil / mullock heap), contain key geological and mining information and characteristics.

The two main geological aspects of old shafts are :

The long axis represents the strike of the orebody that was mined which can be plotted using a compass and a camera/phone, or more easily now using a drone, as shown in the Goode News column of Paydirt's (latest issue). Mapping the strike directions of the long axes of the shafts identifies whether there were parallel and/or cross-cutting vein structures that were mined. Such identification can often highlight orebodies striking E/W & NE/SW compared to the more common NW/SE.

Secondly the spoil heap (if present) should be examined for its host rock composition being mafic, ultramafic, sedimentary, quartz (the rough percentage that is quartz, and whether it is bucky/blocky, laminated, variegated (different colours etc) or salt & pepper textured due to the degree of iron), sulphide minerals and whether oxidized, inclusions etc, plus any other sulphides.

Then there are the mining aspects :

Being whether the long axis of the shaft contained 2 compartments (or squares) or 3 compartments (usually inferring that money was spent and such shafts are often relatively deep, together with winding gear etc).

The quality of the timbering style is also relevant (if it still remains), and of course there is the classic rock drop for depth (or a splosh).

Additional information can be gleaned from old stopes as in angle of dip, wallrock competency etc.

By examining the old workings, especially the long axes of the old shafts and stopes, the chance of drilling parallel to such workings should be reduced, and possibly lead to more encouraging exploration results.

Figure. Typical Pictures taken of Old Workings in Various WA Goldfields



Preparation – 1

I do an info check - WA is the easiest imo

I go to Geoview, select Minedex, & bring in Landgate (which is Google Earth)

The screenshot displays the GeoVIEW.WA web application interface. The top navigation bar includes links for Getting Around, Identify Tools, Drawing & Measurement, Maps & Data Sources, Search, Printing, and Help & Feedback. Below this is a toolbar with icons for What's New?, Open Project, Save Project, Initial View, Full Extent, Previous Extent, Next Extent, Zoom Tools, Pan, Zoom In, Zoom Out, and Identify Find Data. The main map area shows a map of Western Australia with various layers visible. The 'Layers' panel on the left lists available layers, with 'Mines and Mineral Deposits (MINEDEX)' selected. The 'Filter Layers...' panel on the right shows a list of layers with checkboxes, including 'Minerals', 'Drillholes', 'Tenements', 'Native Title', 'Special Category Lands', 'Geochronology & Isotope Geology', 'Geochemistry & Mineralogy', 'Geophysical Surveys', 'Petroleum & Geothermal', 'Indexes', 'Administration Boundaries', 'Topography & Cultural', 'WA Cadastre Vector (visible < 4,622,324)', 'Land Use Planning', 'Geology', 'Topographic Imagery', 'Geology Imagery', 'Geophysics Imagery', 'ASTER Imagery', 'Landgate Aerial Imagery', and 'DMPE Basemap'. The map shows major cities like Perth, Newman, Broome, and Kununurra, along with the coastline and surrounding waters. A search bar at the top right contains the text 'I want to...'. The bottom right corner shows a small inset map of Australia with a red dot indicating the location of Western Australia.

Preparation – 2

Then using the mine names estimate which ones did ~1oz/t (1st col tons, 2nd col oz) – how much mined depends on when - because hammer & tap vertical was 100ft (30m) per year in hard rock



Search Results: be

ALPHABETICAL INDEX TO THE 1954 LIST OF CANCELLED GOLD MINING LEASES WHICH HAVE PRODUCED GOLD

By
Peter J Bridge

LIST OF CANCELLED GOLD MINING LEASES

WHICH HAVE PRODUCED GOLD 1954

Sir Samuel	21, 24, 25, 308, 309, 310, 348, 350, 329, 538, 580, 584, 585, 688, 619, 890, 891	Bellevue, Ltd.	38,004-50	21,548-38	1909-12	
21, 24, 25, 38, 308, 310, 348, 430, 359, 520, 583, 584, 585, 586, 619, 766, 890, 891	Bellevue Proprietary, Ltd.	211,762-00	108,107-88	1897-07	Mostly same ground.	
1078	Calliope	20-00	19-99	1898	Same ground.	
1073	Camperdown	45-00	7-58	1910		
1176	Canberra	355-00	108-10	1910	Same ground.	
1202	Canberra	118-00	\$26-24	1915-16		
1230	Canberra	68-00	28-16	1917		
1241	Canberra	18-00	14-80	1924-29		
1144	Carlisle	12-00	11-02	1932-34	Same ground.	
459	Chidlow	139-00	147-14	1911-12		
1072	Chidlow	1,584-50	1,220-14	1900-04		
1102	Chidlow	125-00	98-13	1910-11		
1114	Coddigumbrie	347-56	299-17	1916-18	Part same ground.	
434	Cooder	132-00	48-23	1910		
327	Cooder United	978-00	\$83-30	1900		
1074	Doolong	342-90	21-42	1924-50		
1235	Dooly Pore	88-00	21-42	1910	Same ground.	
1092	Dreamland	4-00	67-65	1927-28		
1161	Dreamland	306-00	266-31	1910-11		
28	Good Enough	19-00	28-17	1912		
1029	Good Enough	90-00	48-75	1910	Same ground.	
106	Great Wooralla	60-00	7-77	1910		
1300	Gr. H.	1,164-00	500-88	1909		
483	Gr. McElroy	223-50	146-31	1920-27		
1282	Palmyra	30-00	0-17	1901	Same ground.	
1122	Dunde	33-00	28-34	1926		

Preparation – 3

I also use the mine names and district they are in (eg Bellevue, Sir Samuel district) in Trove to see what they mined. Trove is NLA (National Library Australia) – all Australian newspapers (incl regional) digitised since ~1850 (can search mine managers etc, stone is <~15gpt, a {dray} load is 1t).

The screenshot shows the Trove search results page for the query 'bellevue gold mine mine managers'. The page is titled 'Newspapers & Gazettes' and shows 57,817 total results. The search results are sorted by Relevance. The first three results are listed below:

- BELLEVUE MINE.**
Article - Western Mail (Perth, WA : 1885 - 1954) Friday 3 June 1898 - Page 52
... The secretary of the **Bellevue mine**. Mt. Sir Samuel, East Murchison manager :-" Banked to-day 1850oz. of smelted **gold**, result of treat ... 75 words
- THE BELLEVUE MINE.**
Article - Western Mail (Perth, WA : 1885 - 1954) Friday 10 December 1897 - Page 57
... The **manager** re-ports, undpr date of December 1 :-" Have banked 3350z. **gold**, the result of treating ... THE **BELLEVUE MINE**. Mr. H. Davey, secretary of the **Bellevue mine**, Mount Sir Samuel, informs us that ... 252 words
- BELLEVUE PROPRIETARY MINE.**
Article - Western Mail (Perth, WA : 1885 - 1954) Friday 8 April 1898 - Page 50
... Sir Samuel. East Murchison received the following telegram from the active **manager** on March 30 :-" Banked 3920z ...

On the right side of the page, there is a 'REFINE YOUR RESULTS' section with filters for Type, Place, and Title.

REFINE YOUR RESULTS

Type

- ☐ Newspaper (57k)
- ☐ Gazette (1k)

Place

- ☐ New South Wales (36k)
- ☐ Western Australia (9k)
- ☐ Queensland (6k)
- ☐ Victoria (4k)
- ☐ South Australia (1k)
- ☐ Tasmania (1k)
- ☐ National (37k)

Show more ▼

Title

- ☐ The Sydney Morning Her... (32k)
- ☐ The West Australian (P... (7k)

Preparation – 4

I then try and find any geology comments and ideally a historical plan such as in GSWA bulletins or Annual Reports, which can be accessed for free. For other States see Geological Survey Qld, or Victoria (goes to a 6gb file).

The screenshot shows the GSWA eBookshop interface. The header includes the Government of Western Australia logo, the Department of Energy, Mines, Industry Regulation and Safety, and the eBookshop title. Navigation links include HOME, ABOUT US, SHIPPING, HELP, LOG IN, and SIGN UP. A search bar is present with a 'Go' button and links to 'Advanced search' and 'Search tips'. A 'Categories' sidebar lists various geological resources. The main content area displays details for the 'Report of the Geological Survey for the year 1940', including author, series number, publication date, format, type, and year. A 'File list' table is also shown.

Department of Energy, Mines, Industry Regulation and Safety
eBookshop

HOME ABOUT US SHIPPING HELP LOG IN SIGN UP

Search keyword, title, author, locality Go
Advanced search Search tips

Categories

- Accelerated Geoscience Program (AGP)
- Book series
- Explanatory notes
- Non-series books and articles
- Geological map series
- Regolith geochemical maps
- Geophysical maps
- Other maps and atlases
- Data packages
- 3D geology
- Virtual tours
- Posters and flyers

Report of the Geological Survey for the year 1940

Author: Geological Survey of Western Australia
Series Number: 1940
Publication date: 01 January 1941
Format: PDF online (free)
Type: Annual Report 1940
Year: 1941

Open PDF

Product details

Tectonic Units
Western Australia

Keywords
Western Australia

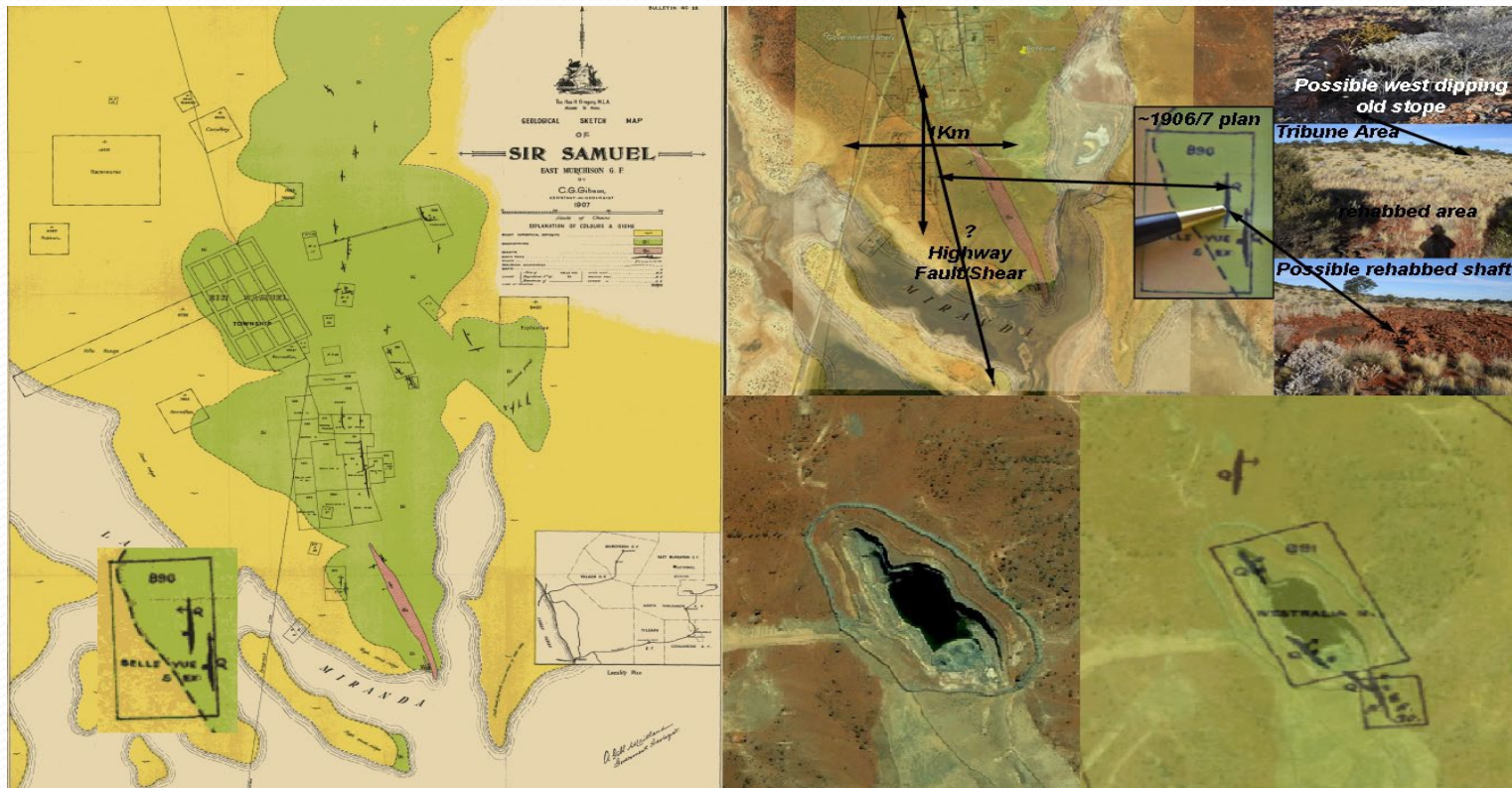
Broad Terms
Economic geology, Management, Mineral exploration, Petroleum exploration, Policy, Regional geology

File list

Title	Author	Category	Released d...	Size
The geology and mineral resources of the Yilgarn Goldfield Part III - The gold belt north of Southern Cross, including Westonia	Blaichford, I., Horman, C. S., Simpson, I., S. Forcuherson, R. A.	GSWA Publications	1 Jan 191 /	10 / 91 MB

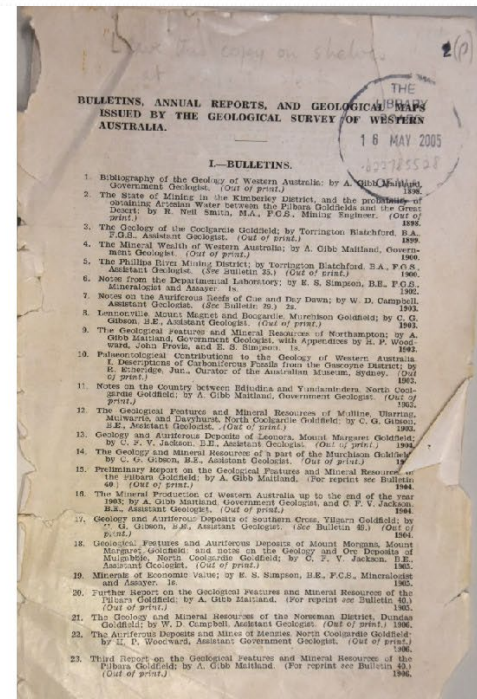
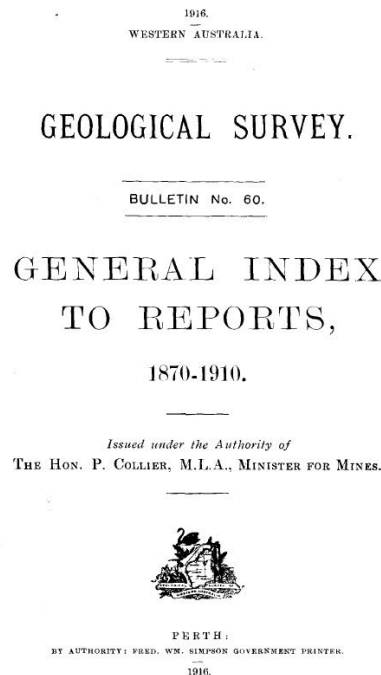
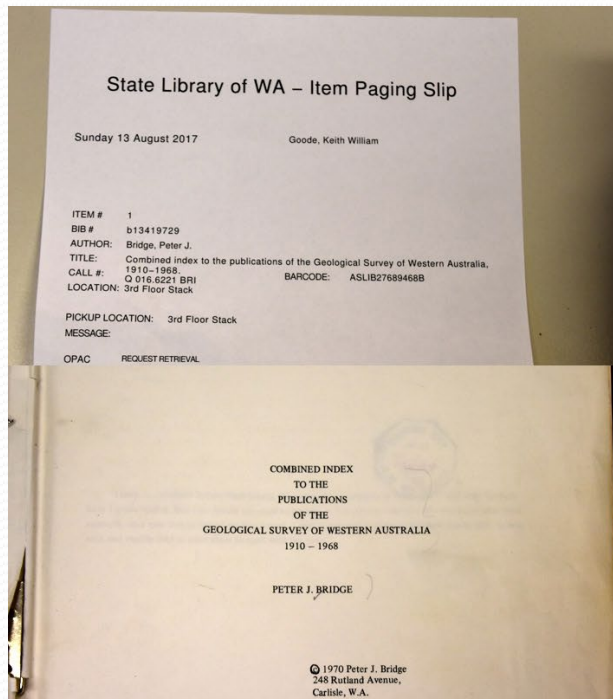
Preparation – 5

The reason for trying to get historical plans is that they may show shaft positions as rectangles and dip directions of lodes mined – this 1907 plan resulted in the Tribune discovery hole for Bellevue (\$BGL) – and can overlay Google Earth



Preparation – 6

Trying to find which bulletin or annual report containing the info you want is an additional exercise. The ones from 1910 to 1968 are indexed (including everything else in WA) in Peter Bridges' ring-bound folder available in the State Library of WA., with 1870 to 1910 in Bulletin 60, otherwise you have to wade through – alas not digitised (see Appendix)



Preparation – 7

It can also be useful to check which coy owned the mine (eg Bellevue) and closed it – I knew it was Plutonic / \$PLU - to view its Quarterlies and Annual Reports for figures, plans, interpretations etc.

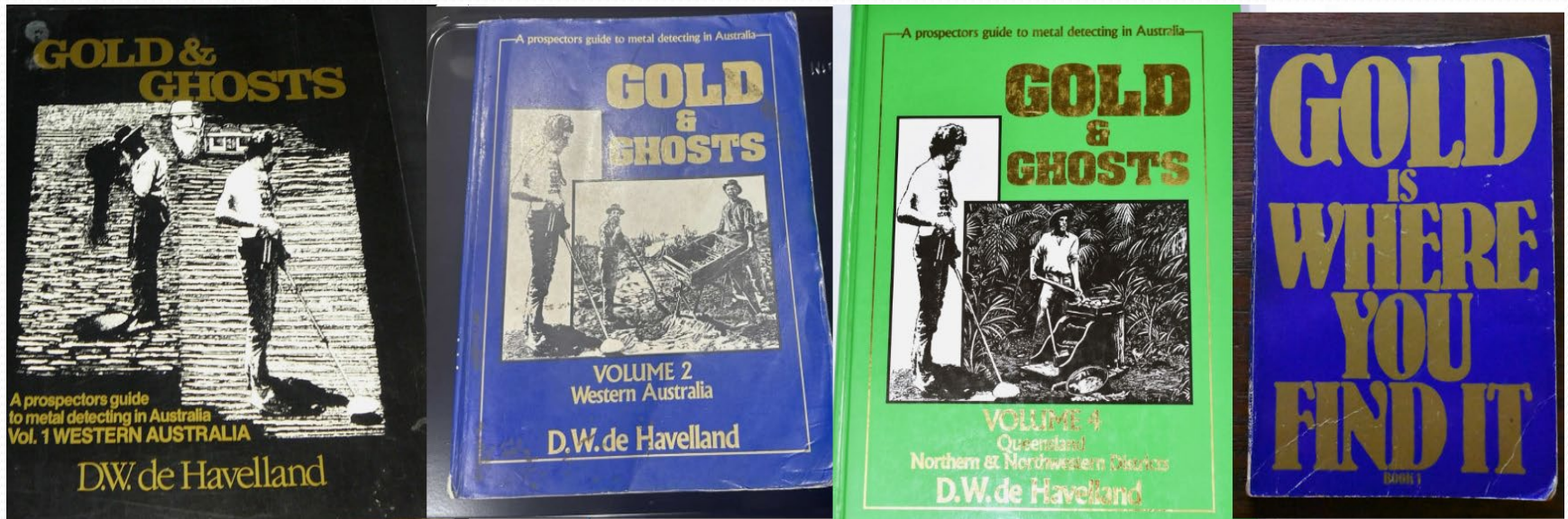
Wherever the coy had its head office, the Qtrlys & ARs are kept in the State Library and can be accessed by joining the State Library eg PLU was in Perth (note, after joining, request the research extra classification to access everything – sometimes its an extra card or extra label).

Annual Reports can contain schematics not shown elsewhere because investor relations ppl asked for something to go in and it gets included.



Preparation – 8

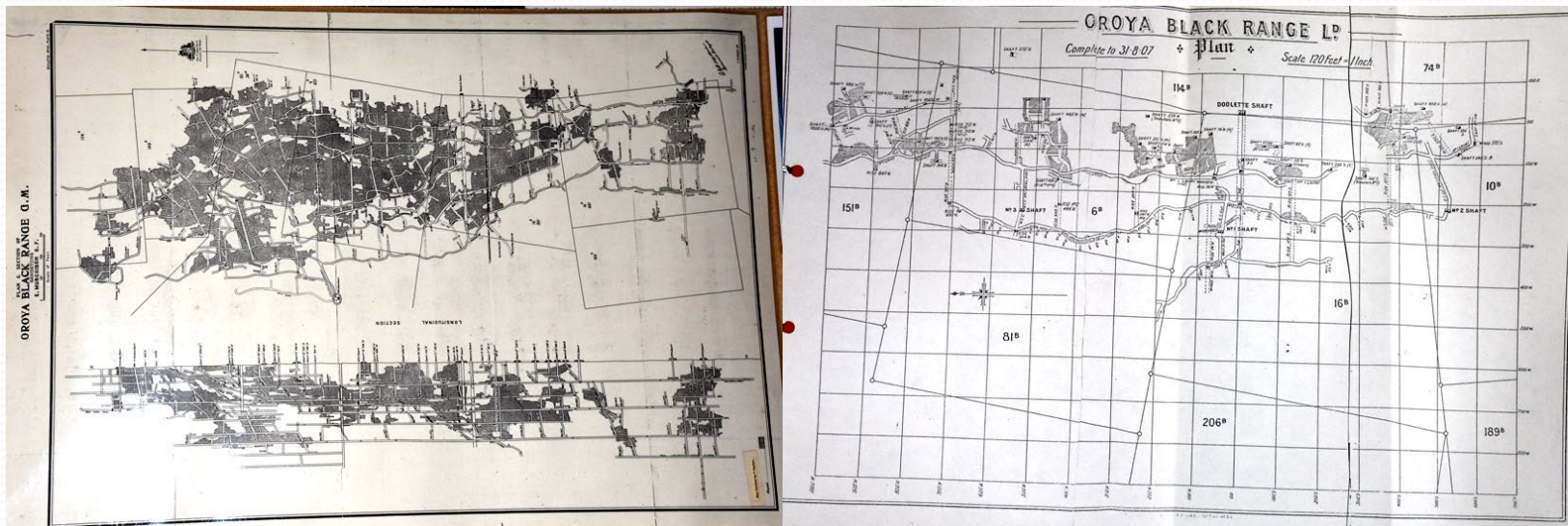
Occasionally there is useful info and plans in the Gold and Ghosts books (available in State Libraries if you don't have a copy) – they now typically cost up to A\$500 each (or more). There were 2 for WA, 2 for QLD; NT, SA, TAS & VIC didn't have one as far as I know, though NSW had "Gold is where you find it".



Preparation – 9

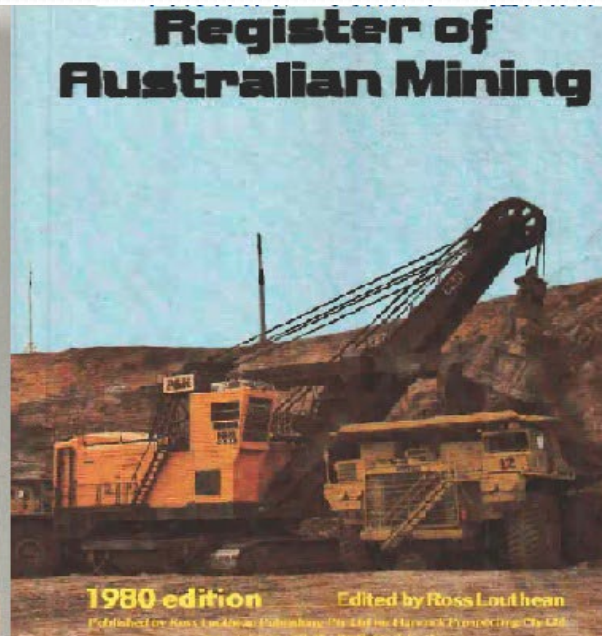
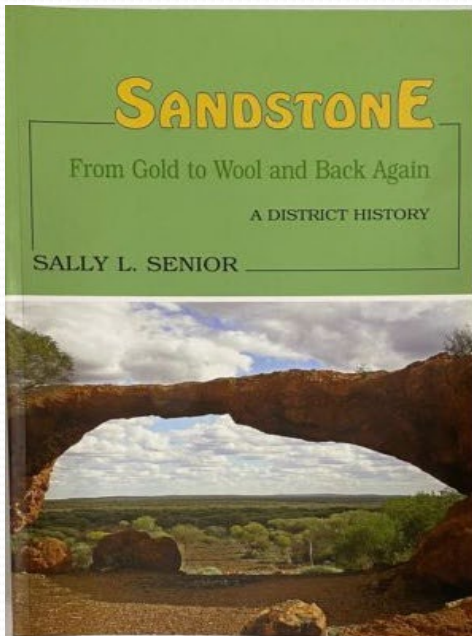
And when I get to a mine site area, I try and find a local museum and ask them (if nothing on the mine/mines is on display) if they have an overflow area – because what happens when ppl die is they don't know what to do with their info and usually/often give it to their local museum.

At Sandstone for example, no one had been into the museum – which has some historical plans and sections of the original mines – and some historic annual company reports, & descriptions of mines from 1907!



Preparation – 10

Other sources of info are the RAMs (I have 1980 to 2012 on flashdrive – happy for it to be stored wherever – its 1gb – they can be searched by Ctrl F – other copies after 2012 are in the State Libraries), or historical books on individual goldfield area. And any IPO summaries or independent geo reports on the closed mine areas (note sometimes they are misinterpreted or incorrect – I recall one pit was described as folded – it was an optical illusion – hence the need to walk around the old pits)



Preparation – 11

Should also check if the mine/exploration area being examined was owned or still owned by a Nth Am coy or Nth Am listing – if so track down the NI-43101 description of the area using “sedar” (if not on a website) – note this was the version on 21 March 2026 – search for documents and select eg Westgold in the profile (top right)

[Fees, Payments and Refunds](#) >

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'Contains' or 'Starts with' as your search operator and enter the name in the 'Search for profiles' field. Refer to [Search profiles](#) for information on the 'Contains' or 'Starts with' search operators. To include more than one profile in your search, select 'Add another', select your search operator and enter the name as above. You can add up to 50 profiles for your search. Once selection(s) have been made, click on 'Search' to view results.

<https://www.sedarplus.ca/csa-party/viewInstance/view.html?id=0c11>

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Filing category
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Filing type
-- Please select --

Document type
-- Please select --

Submitted date
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Filing type
ni 43
Technical report(s) (NI 43-101) - continuous disclosure
Technical report(s) (NI 43-101) - exempt market offerings

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Select profile(s) to search on
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Document content search
Enter term(s) to search in contents of documents

Filing number

Filing category
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x Technical report(s) (NI 43-101) - continuous disclosure

Filing sub-type
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Document type
x Technical report (NI 43-101)

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Preparation – 12 – using sedar

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Filing type

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Filing sub-type

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Document type

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Search results

Displaying 1-19 of 19 results

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Profile(s)	Document	Submitted date	Principal jurisdiction	File size	Actions
☐ Westgold Resources Limited / Westgold Resources Limited (000047807)	Technical report (NI 43-101) - English.pdf	17 Oct 2025 08:32 EDT	Ontario	5525 KB	Generate URL
☐ Westgold Resources Limited / Westgold Resources Limited (000047807)	Technical report (NI 43-101) - English.pdf	17 Oct 2025 08:31 EDT	Ontario	34576 KB	Generate URL
☐ Westgold Resources Limited / Westgold Resources Limited (000047807)	Technical report (NI 43-101) - English.pdf	17 Oct 2025 08:30 EDT	Ontario	26302 KB	Generate URL

Adobe Creative Cloud



Report Date: October 17, 2025
Effective Date: June 30, 2025
Prepared for: Westgold Resources Limited



Straight Lines and Divining – 1

To some degree this is still preparation in that I examine Google Earth for **straight lines** – because they infer structures, whether it is from:

- rivers that have taken the easiest route going down
- roads and railway lines (eg Kalgoorlie and areas of WA)
- vegetation boundaries and trees
- or my favourite – lake edges (eg salt lake edges/ shorelines) – straight shorelines are parallel to structures – I once wrote an article covering it – imo \$GG8/Gorilla's Comet Vale (RHS) appears to be a classic example:

GOODE NEWS

Using Salt Lakes as an Exploration tool

The following is based purely on observation. However, the fact is that when salt lakes have straight line edges, they appear to have been due to underlying structures - which is a logical afterthought.

We first observed an unusual almost N/S edge of Lake Cowan, north of Higginsville in WA almost parallel to Focus Minerals' (FML AX) Treasure Island in August 2010, as shown on the left hand side of Figure 1. After exploration in the past year, it has been shown that this edge is parallel to the St Ives gold mine sequence that has been delineated as passing over the island.

More recently in September 2011, we visited Exorre's (XG.TO) Cerro Moro gold/silver exploration project SW of Puerto Deseado in the Santa Cruz province of Argentina.

Although the NW/SE Carla trend (extending SE from the Esperanza trend) and joining the E/W striking Zoe trend has been delineated through exploration, it can be seen that the adjacent salt lake (to the west) has NW/SE straight line edges (in the right hand side of Figure 1) almost parallel to the Carla trend.

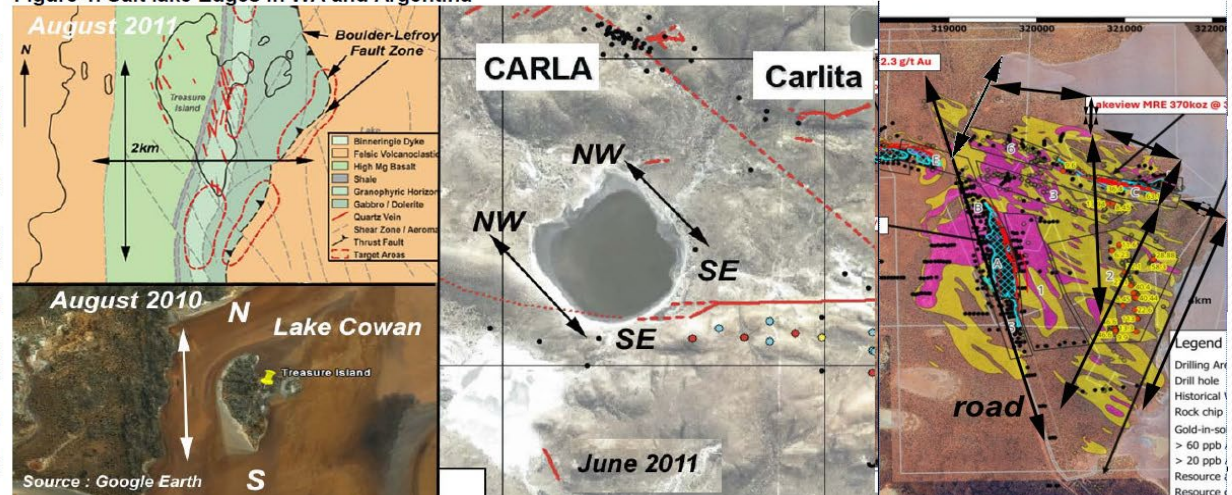
There are other examples - however, these appear to be the most obvious and appear to back up the observational theory.

Then there is why the salt lakes are there and what mineralisation may exist under them as has been successfully shown at GFI's (previously WMC's) St Ives Gold Mine near Kambalda in WA. Increased exploration of the salt lakes is anticipated in WA, and perhaps other parts of the world too.

Consequently, examine the edges of salt lakes on your and nearby properties as they could provide a clue towards your next discovery.

Disclosure and Disclaimer: This article has been written by Keith Goode, the Managing Director of Eagle Research Advisory Pty Ltd, (an independent research company) who is a Financial Services Representative with Taylor Collicott Ltd.

Figure 1. Salt lake Edges in WA and Argentina



Straight Lines and Divining – 2

Trees grow down structures – hence straight lines of trees often infer they have grown down a structure - as shown in this example of \$GA8 / Gold Arc

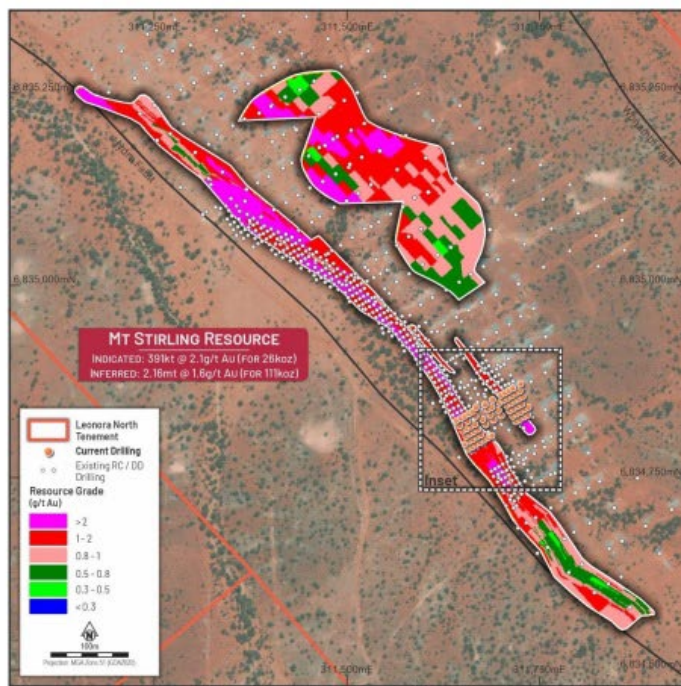


Figure 1 – Plan View of Grade Control RC Drilling and the Block Model at Mt Stirling Gold Deposit

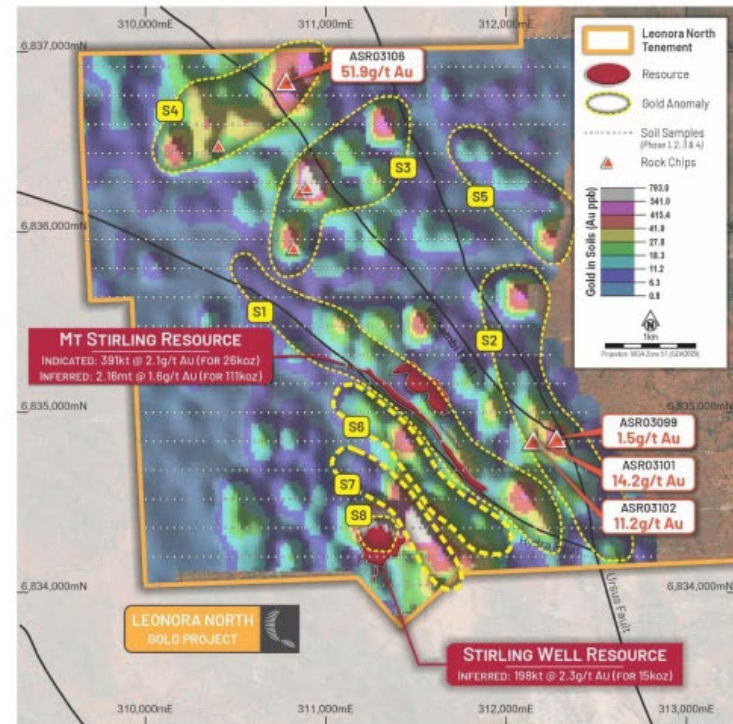


Figure 2: Gold Mineralisation in Rock Chips and Gold Anomalies in Soil Survey at Leonora North Project²

Straight Lines and Divining – 3

It can also be useful to take Google Earth back in time :

- I initially applied it to a 2019 RED 5 (now Vault/ \$VAU) report that included KOTH , and in that same report covered Darlot (they apparently did drill a hole in the northern mine area - the original pit went down on [it was based on 3 historical mines], but it went under the haul road access and was lost)
- basically use the time bar in GE (Google Earth) that can be clicked on (on the top left) - :

Google Earth can go back to 1984 !

The following comments are based purely on observation. While writing a research report for Red5 (RED) I wondered if it was possible to see on Google Earth when the bund wall for the ~20Mt No 5 Tailings Pond had been built at RED's 100% owned King of the Hills (KOTH) mine. Also, whether the wall failure that occurred in the KOTH north pit, which effectively closed the open-cut operations in 2004 could be seen (before and afterwards).

I knew there is that time bar in GE (Google Earth) that can be clicked on (on the top left) - what I didn't know was zooming out (and then back in to view) was that by clicking the arrow on the left of the time bar, *it is possible to step back annually in time from 2005 to 1984 !!* (yes Google Earth has apparently been annually recording us - apparently at 10am on New Years' Eve since 1984 - at least in Landsat etc).

Resolution is poor/low before 2005 - but it is possible to track the development of a mine over time, such as KOTH in the figure – and that bund wall for the No 5 tailings dam at KOTH was hence constructed between 2003 and 2004 (by SGW).

With such knowledge I have looked back at some other mine developments in WA and have noticed some things that possibly appear to have been forgotten – perhaps you can too, eg at the original oxide at Darlot. For daily detail of course there is still the free Sentinel app (<https://apps.sentinel-hub.com/sentinel-playground/>) which goes back to December 2015, should you want to view the progress of Dacian's Jupiter pit, or other surface operations.

Figure. King of the Hills in Google Earth from 1984 to 2018

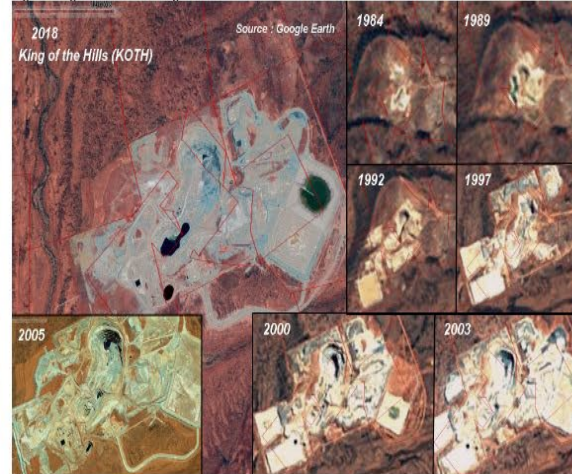


Figure 16h. The Darlot Surface Area from 31 Dec 1984 to 2018



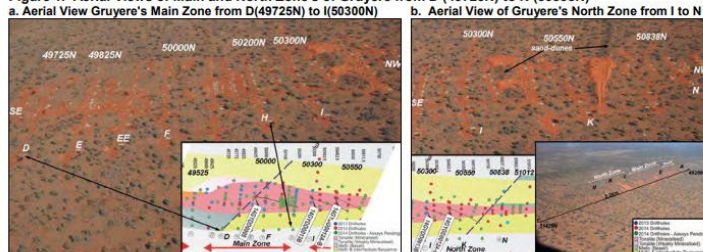
Straight Lines and Divining – 4

Divining is often viewed with great scepticism

- I once saw a number of old late 1800s/early 1900s historic workings tracing a curve across a flat area north of Kalgoorlie and was told that it traced directly on a structure – had to be historically using divining.
- Early on in the discovery of \$GOR/Gold Road Gruyere by Ziggy, Ziggy used his free-floating divining rods that could be held in one hand.
- both pointing in opposite directions was water (well known)
- both pointing straight ahead was no orebody (/mineralisation ?)
- both crossing was an/the orebody – it was how Gruyere's limits under the sand was initially determined (he still uses it walking along dirt roads)

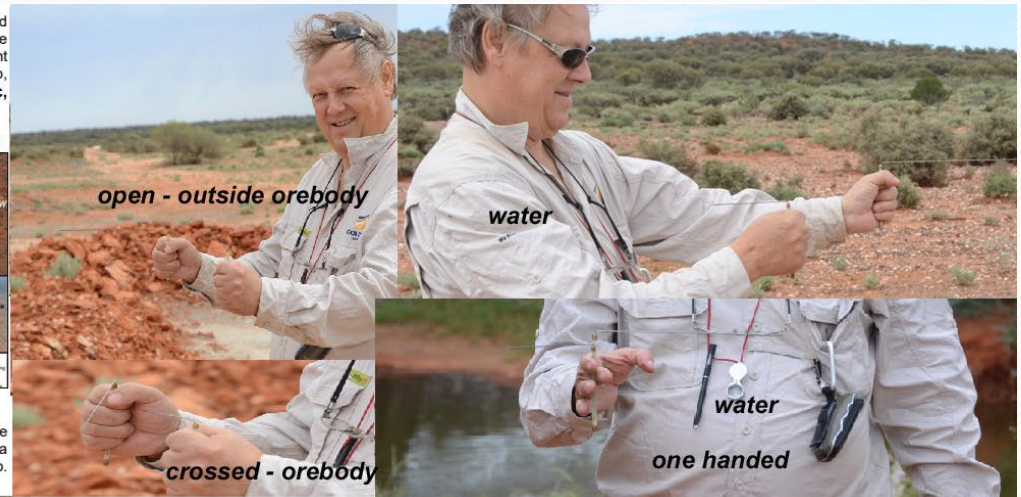
Since our last Gold Road report dated 28 April 2014 at 16.5c with a one year target of >25c, GOR had risen to ~30c ahead of the announcement and to ~35c when the maiden resource was announced to the ASX on 4 August 2014. With a market cap now greater than \$100m, GOR has advanced into a different investment category. The next investment category level GOR needs to break is at ~\$300m market cap, equivalent at the current number of issued shares and options to ~55c. **At a current price of ~33.5c, our/ERA next perceived achievable target for GOR is >45c, and GOR is rated as a BUY.**

Figure 1. Aerial Views of Main and North Zone's of Gruyere from D (49725N) to N (50838N)



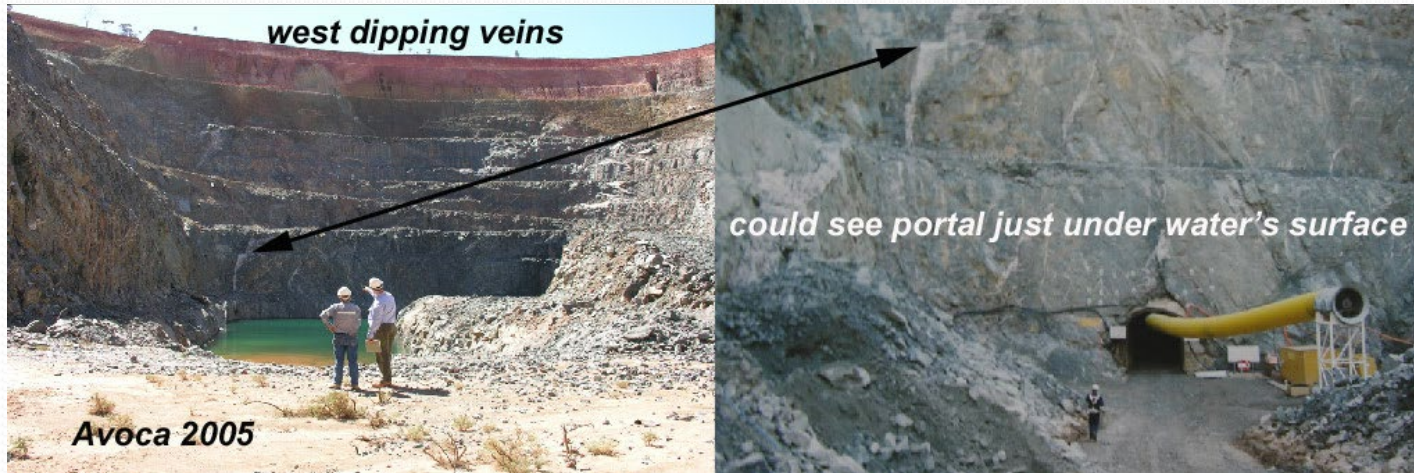
Site Visit

The extent of the drilling (being 26.4km in 208 RC holes & 11.7km in 54 diamond holes [note : 32 of the pre-collared RC holes had diamond tails]) that GOR achieved is shown in the aerial views of Figures 1a and 1b, and in comparison on the ground between March 2014 & August 2014 in Figures 2a and 2b. Gruyere is ~15m to 190m wide, with mineralisation from 1m under the sand cover to >600m depth.



Walking the Pits -1

It is essential to spend time walking completely around the top of old pits to look for cross-structures, shafts, weathered quartz veins in the walls (they stand out eroded after time), possible mineralisation and whether there are the ***two ore directions of steep one way and shallow back the other way (D3 & D4)*** – Avoca's Trident discovery at Higginsville was because the GFI geo didn't look at the weathered northern backwall of the Poseidon pit (hence missed west dipping veins with some flats) and incorrectly estimated horizontal mineralisation because drilled west. *(RSG previously closed Higginsville because they encountered As under the palaeos – but didn't know crystalline As is not refractory)*



Walking the Pits -2

If the pits contain water, try and assess the pollution by colour, and depth above a possible portal (from previous pics or the sun angle on the water [3pm?]), and walk down to the water level looking for flats (horizontal stoping), alteration, white kaolin (usually adjacent to mineralisation), veining, other minerals/crystals etc. Also look for sandfill of old stopes (if light green jarosite can be ~3 to 4gpt), any old drive/cross-cut directions, plus cracks in the ramp or behind the walls inferring future collapse risk.



Figure 12a. View North of the Paris Pit and Old Portal Access



Figure 11a. East Dipping Stope at Area C, West of Hendersons Pit

Shafts –1

The main characteristic I focus on is the shafts and stopes, especially the shafts because their long axis is the strike of the orebody that was mined. There are 1 compartment ~1m x 1m, mostly 2 compartment (2m x 1m) which enabled hoisting using a winder, and ideally 3 compartment (3m x 1m) – which included a travelling way with ladders, pipes for drilling water etc – ***3 compartment shafts infer they made money- especially if it was and is still timbered (eg at Sons of Erin {mapped as striking NS}, west of the \$WGX Higginsville plant) .***



Shafts – (show as rectangles)-2

I consequently asked clients (coys) to drone map their workings and plot the shafts accurately as rectangles & I look for EW striking shafts because they infer overlooked mineralisation/possibly linking structures because most drilling targets NWSE or NESW striking and hence miss the EW.

There are 2 or 3 EW 3-compartment shafts along the west side of the Oroya pit (open-pit mined NS, but with a direction change resulting in a banana-shaped open-cut – only the oxide was mined because it was a soft-rock plant) at Sandstone (now \$BTR's flagship and rated Tier 1).

1. A View looking North of the Oroya Pit in 2017



a. Drone Plan of Oroya with possible EW striking Mineralisation

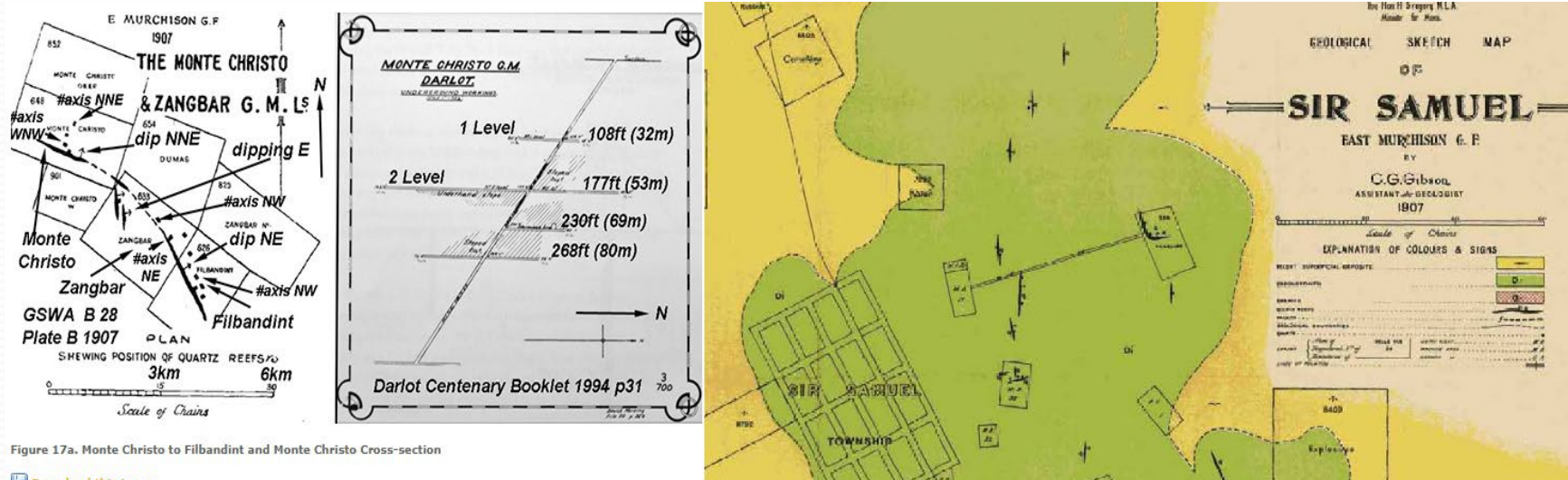


b. View of the East Wall of the Oroya Pit



Shafts – (show as rectangles)-3

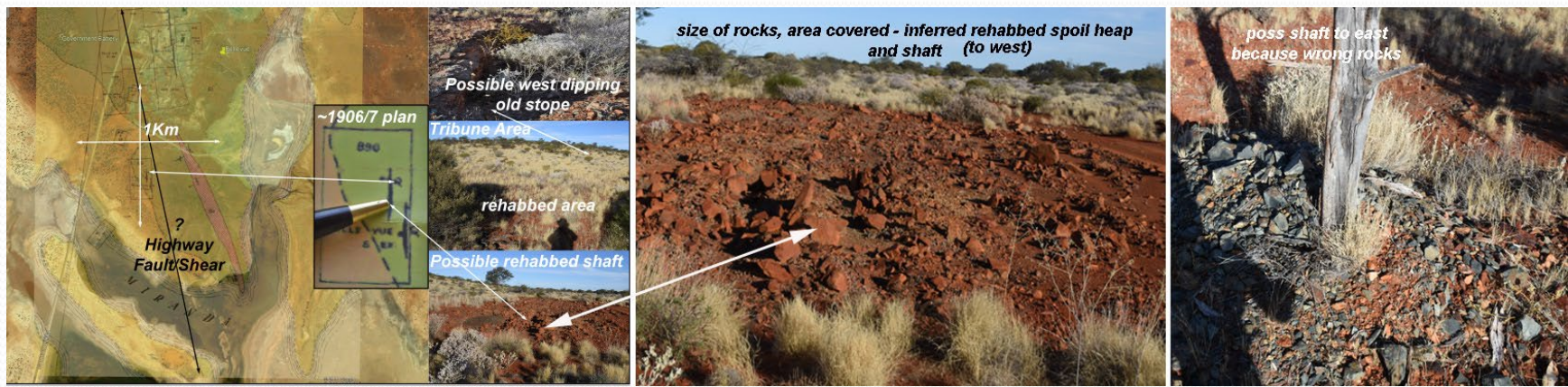
The old timers understood the importance of showing shafts as rectangles (ie not triangles or anything else) and usually mapped them as such on their historical plans (another reason to find any such plans) eg \$VAU's Darlot's northern historical Monte Christo shaft (in the pit) involves a direction change (backed up by Sarah Jones' interp of the area). \$BGL's 1907 plan shows its shafts as rectangles, a lode direction change and dips



Shafts– (if rehabbed)- spread/filled in

Example – Bellevue - a number of the shafts had been filled in or spoil heaps spread out on the ground, evidence removed, but it was possible to identify where the Tribune shafts had been and hence lodes mined between them as shown by the area involved and the rocks themselves, or rocks that did not appear to belong there.

The 12m @ 12gpt (4 double-digit grades in the 12m) discovery hole in November 2017 that became Bellevue was 100m south on strike of the position between these perceived rehabbed shaft areas of Tribune.



Shafts– (if rehabbed)- ie filled in

Example –Trunkey – yet to be drilled east of \$ARD Kempfield silver in NSW – possibly had a woodline (a railway to transport wood in the form of sticks/poles for underground support, especially stoping – remnants still exist in WA – see eagleres.com.au) if so, someone made money.

Trunkey mostly has shafts filled in and trees were planted after 1900-1918 (Trove). The spoil heaps/waste dump axes theoretically should be parallel to the line of strike - also check for EW possibilities. I was impressed by the height of the dumps at Trunkey being more similar to WA vs old Victorian goldfields I have visited, mostly had shallower high mullock dumps in their historic fields.



Spoil heaps, Stopes, Rubbish etc

The spoil/mullock piles are usually useful for estimating their size, % of quartz contained etc, and whether the quartz is laminated/grey (grades can be >2gpt). I have often observed stopes and seen a hole drilled parallel to them or clearly drilled in the wrong direction.

If you see tailings and they are coloured pink (eg south of Oroya, then usually they are >1gpt not having been processed, whereas if they contain black plastic, pipes etc they are possibly ~0.7gpt having been treated once [in the 70s?]).



Spoil etc 2 - Discarded rubbish

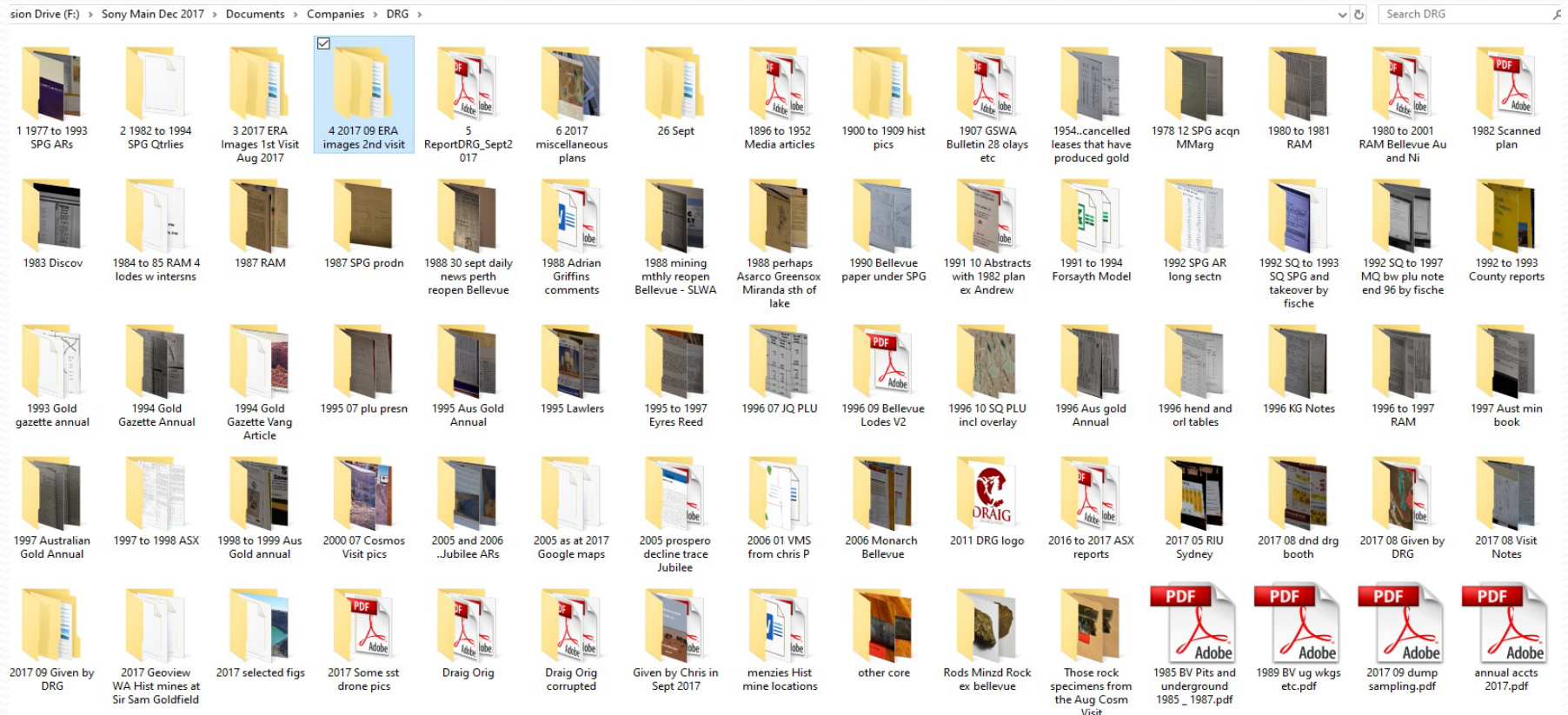
I also look at any glassware if purple for its approx age and any gas-used tins (early 1900s – was used as a preservation mechanism for food & tobacco).

If you are lucky you may come across an old object – such as this Waterbury watch (1885 to early 1890s) at Bellevue next to an old shaft (west of the highway). Or an 1896 penny at Mt Morgans (by Dacian)



Preparation – Results

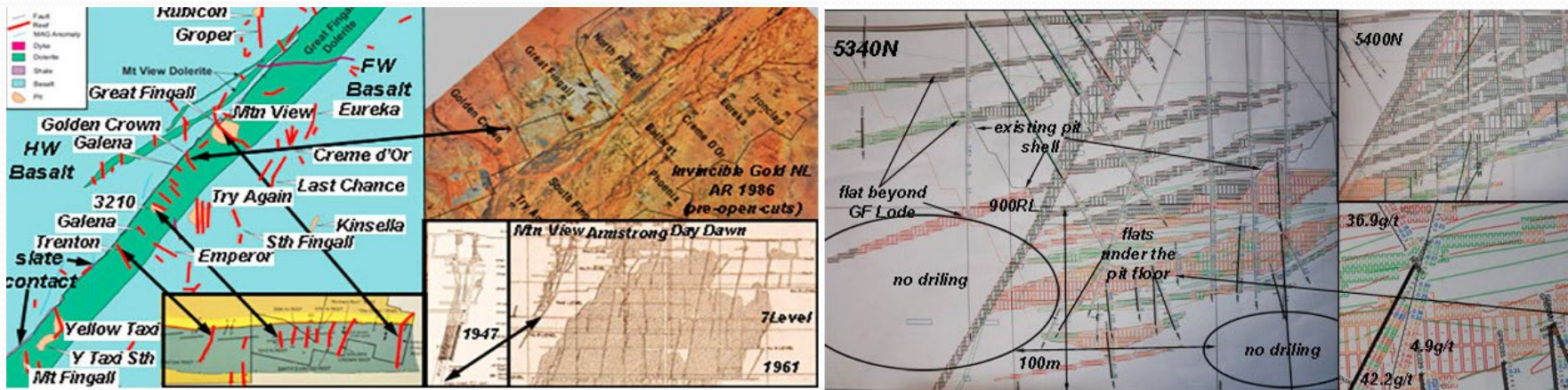
- There are many sources, this is what I used to write ERA's first 12 page report on Draig (which became Bellevue) in Oct 2017 – pre the Tribune discovery hole :



Other Considerations – Prejudices

Prejudices – Great Fingall dyke near Cue, most ppl assumed mineralisation was within the GF dolerite dyke or they drilled vertically because Gt Fingall had horizontal flats (off the feeder vein) – whereas many of the mines appeared on the contact or outside.

I have seen cross-sections on some mines stating no mineralisation outside of “lines”, or in a particular host rock, or mineralisation only on the eastern side of a dome, or can’t have fossils & mineralisation.



Other observations - 1

Testing for fluorescent minerals is standard practice in Finland where geos log core in daylight and then log again in a darkened room under uv light (they used a uv torch underground) to see if any gangue minerals fluoresce as an indicator to mineralisation (the attached article was written in October 2004)

I have mostly encountered it at Higginsville where scheelite was mined in WW2, and there were specimens of visible gold with brown scheelite (fluoresces a bluish to bluish purple) in white quartz. There was also a purple gangue mineral that fluoresced around the Trident orebody.

GOODE NEWS

Using fluorescent minerals to identify ore mineralisation

The use of fluorescent minerals to identify fluor spar and scheelite is known by those mining it. However, it is the first time that I have encountered it being used as an industry standard technique to identify gold and other ore mineralisation in drill-core and underground, which is what I encountered when recently visiting Dragon Mining's gold mine operations in Finland.

The ability of minerals to fluoresce or emit light when under ultra-violet (uv) light was first observed in fluor spar which gave rise to the name. It relates to the uv light (usually short-wave, though long-wave is also used) causing certain electrons in a mineral to jump to a higher energy level and release a usually vivid colour particular to that mineral when the electrons jump back down again.

The subject of fluorescent minerals was not covered when I was at uni over 30 years' ago, and tended later to be more something that could be seen as a feature in the geological section of a museum. However, the study and collection of fluorescent minerals has grown, especially in North America. In the past 5 or 6 years and there is a whole suite of minerals that are capable of fluorescing as can be seen in the following web reference (<http://minerals.galleries.com/minerals/fluotabl.htm>).

On a visit to Dragon's operations in Finland in mid-September 2004, I saw it being used underground at Pampalo in south-eastern Finland to identify the host rock boundaries for the gold mineralisation by using light blue-grey fluorescing scheelite (scheelite and gold apparently have a good correlation).

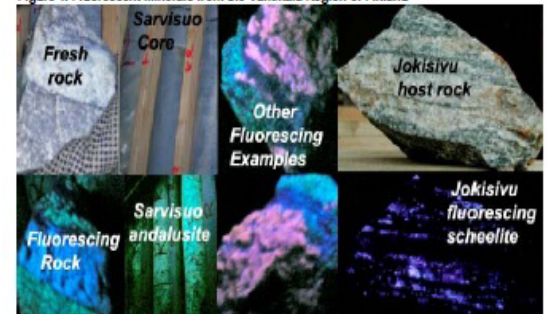
It is also being used at their Vammala operation in south-western Finland using blue fluorescing scheelite at their Jokisivu prospect, and yellow fluorescing andalusite in drill core (viewing the core in a windowless room) at their new Sarvisuo orebody at Orivesi. It was also used to identify each of the original 5 pipes of mineralisation at Orivesi all with their own fluorescent minerals such as blue fluorescing lazulite in one of the pipes as shown in Figure 1.

The gold mineralisation at Orivesi is in a 1.9bn year-old east-west trending greenstone belt called the Tampere schist belt, while Jokisivu is in a migmatite (caused when one rock is squeezed into another rock) south of the Tampere schist belt. Pampalo's gold mineralisation is in an Archaean mafic/ultramafic greenstone belt called the Hattu schist belt with felsic porphyrys. The use of fluorescence was regarded as a standard industry technique to identify mineralisation in Finland.

The cost of uv torches has apparently dropped significantly to only \$50 to \$60 or so, and care has been taken not to look directly at short-wave as it can apparently cause blindness, hence for that reason some prefer to use long-wave.

Perhaps there are other applications of using fluorescent minerals and it could become a recognised technique to identify ore mineralisation in Australia too.

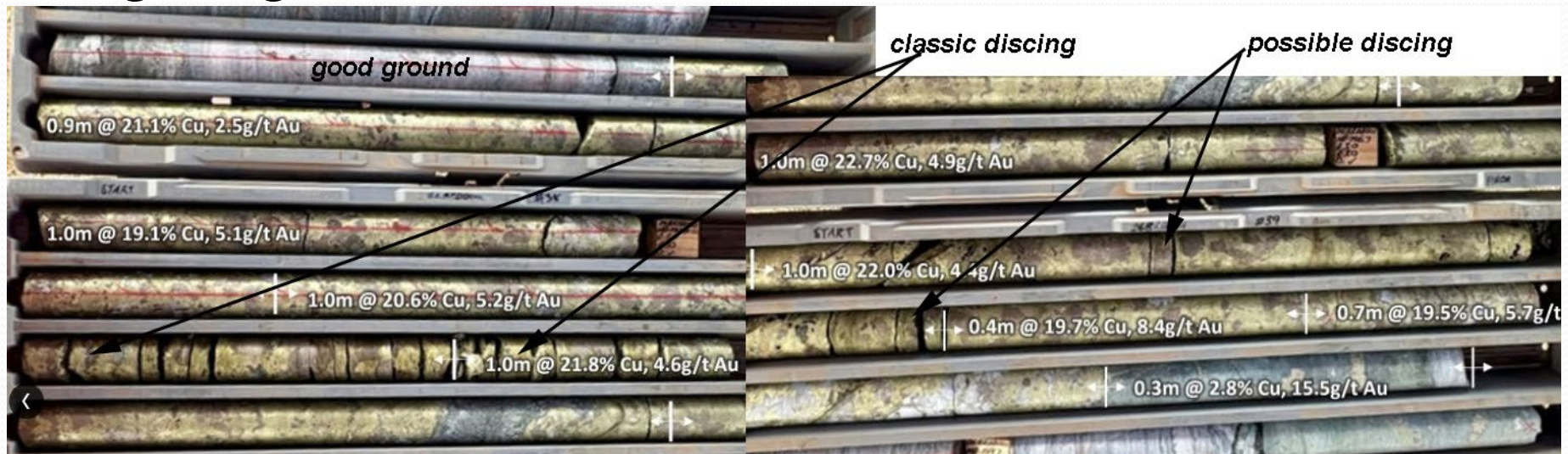
Figure 1. Fluorescent Minerals from the Vammala Region of Finland



Other observations - 2

I look for ground conditions in drillcore (aside from geology)

- Whether the core resembles discs – ie taken out and due to pressure, bursts into a series of discs.
- Or ideally comes out as an unbroken length inferring good ground conditions



Other observations - 3

I look for ground conditions in drillcore (aside from geology)

- Whether the drill core is broken, eg on planes like Auteco's Pickle Crow was possibly inferring why it was not mined, or is rubbly inferring future likely dilution. This had grade but I sold on poss ground conditions.

Figure 4: Vein 5 Extension discovery: AUDD0013: 1.6m @ 25.8 g/t gold from 95.0m in AUDD0013 (including 0.6m @ 65.2 g/t gold from 96m and 0.3m @ 122.0 g/t gold from 95.7m). 60cm quartz-tourmaline-gold shear vein in high-strain, sericite-ankerite altered basalts with multiple 0.5-1cm shear veins within fabric.

broken on bedding planes - inferring dilution and poss difficult mining



Other observations - 4

I look for ground conditions in drillcore (aside from geology)

- Activity in the drillcore – movement is usually a good sign.



Figure 4: Cockade (A) sulphide banded (B) quartz-adularia (C) veining within the high-grade A-Vein interval reporting 2.8m @ 15.15g/t Au from 59.2m in 25FCDD010.

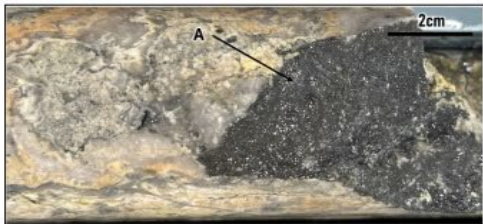


Figure 5: Marcasite fracture fill (A) within crustiform quartz-adularia vein breccia from within the high-grade A-Vein interval reporting 2.8m @ 15.15g/t Au from 59.2m in 25FCDD010.



Figure 4: Marcasite vugs (~1% of veined interval, A, D) and marcasite bands (<1% of vein fill, B) can be observed amongst the colloform banded quartz (C) from the A Vein in 25FCDD001.

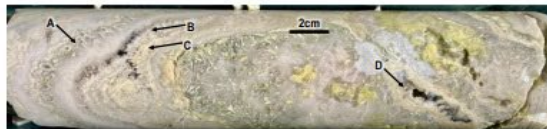
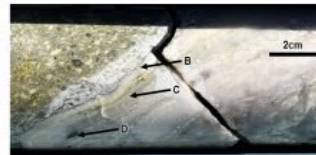


Figure 5: Colloform (A) – crustiform (B) quartz-adularia (C) banded vein with black silica crystals growing into vugs (D) in interval from A Vein in 25FCDD002.



Figure 6: Colloform (A) – crustiform (B) quartz-adularia vein with black silica banding in interval from A Vein

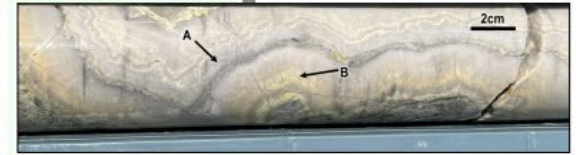


Figure 7: Exceptionally large colloform (A) – crustiform quartz-adularia (B) banded vein with black silica bands, from A Vein in 25FCDD003.

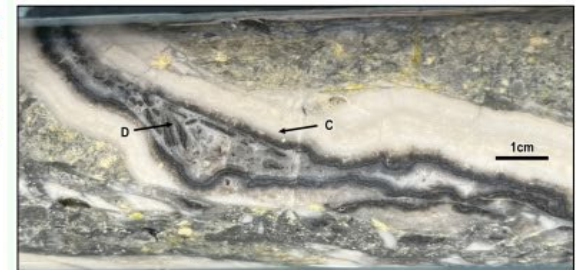


Figure 8: Black silica colloform – crustiform veining (C) containing brecciated black silica lathes (D) in interval from A Vein in 25FCDD003.



Figure 9: Marcasite colloform (<1% vein fill, A) within colloform – crustiform quartz – adularia (B) from in

Appendix

GSWA Bulletins 1/1903 – 58/1914

BULLETINS, ANNUAL REPORTS, AND GEOLOGICAL MAPS ISSUED BY THE GEOLOGICAL SURVEY OF WESTERN AUSTRALIA.

I.—BULLETINS.

1. Bibliography of the Geology of Western Australia; by A. Gibb Maitland, Government Geologist. (Out of print.) 1898.
2. The State of Mining in the Kimberley District, and the probability of obtaining Artesian Water between the Pilbara Goldfields and the Great Desert; by R. Neil Smith, M.A., F.G.S., Mining Engineer. (Out of print.) 1898.
3. The Geology of the Coolgardie Goldfield; by Torrington Blatchford, B.A., F.G.S., Assistant Geologist. (Out of print.) 1899.
4. The Mineral Wealth of Western Australia; by A. Gibb Maitland, Government Geologist. (Out of print.) 1900.
5. The Phillips River Mining District; by Torrington Blatchford, B.A., F.G.S., Assistant Geologist. (Out of print.) 1900.
6. Notes from the Departmental Laboratory; by E. S. Simpson, B.E., F.G.S., Mineralogist and Assayer. 1s. 1902.
7. Notes on the Auriferous Reefs of Cue and Day Dawn; by W. D. Campbell, Assistant Geologist. (See Bulletin 29.) 2s. 1903.
8. Lennonsville, Mount Magnet and Boordie, Murchison Goldfield; by C. G. Gibson, B.E., Assistant Geologist. (Out of print.) 1903.
9. The Geological Features and Mineral Resources of Northampton; by A. Gibb Maitland, Government Geologist, with Appendices by H. P. Woodward, John Provis, and E. S. Simpson. 1s. 1903.
10. Palaeontological Contributions to the Geology of Western Australia. I. Descriptions of Carboniferous Fossils from the Gascoyne District; by R. Etheridge, Jun., Curator of the Australian Museum, Sydney. (Out of print.) 1903.
11. Notes on the Country between Edjina and Yundamindera, North Coolgardie Goldfield; by A. Gibb Maitland, Government Geologist. (Out of print.) 1903.
12. The Geological Features and Mineral Resources of Mulline, Ullarinn, Mulwarrie, and Dayhurst, North Coolgardie Goldfield; by C. G. Gibson, B.E., Assistant Geologist. (Out of print.) 1903.
13. Geology and Auriferous Deposits of Leonora, Mount Margaret Goldfield; by C. F. V. Jackson, B.E., Assistant Geologist. (Out of print.) 1904.
14. The Geology and Mineral Resources of a part of the Murchison Goldfield; by C. G. Gibson, B.E., Assistant Geologist. (Out of print.) 1904.
15. Preliminary Report on the Geological Features and Mineral Resources of the Pilbara Goldfield; by A. Gibb Maitland. (For reprint see Bulletin 40.) (Out of print.) 1904.
16. The Mineral Production of Western Australia up to the end of the year 1903; by A. Gibb Maitland, Government Geologist, and C. F. V. Jackson, B.E., Assistant Geologist. (Out of print.) 1904.
17. Geology and Auriferous Deposits of Southern Cross, Yilgarn Goldfield; by C. G. Gibson, B.E., Assistant Geologist. (See Bulletin 49.) (Out of print.) 1904.
18. Geological Features and Auriferous Deposits of Mount Morgans, Mount Margaret Goldfield, and notes on the Geology and Ore Deposits of Mulgaibie, North Coolgardie Goldfield; by C. F. V. Jackson, B.E., Assistant Geologist. (Out of print.) 1905.
19. Minerals of Economic Value; by E. S. Simpson, B.E., F.G.S., Mineralogist and Assayer. 1s. 1905.
20. Further Report on the Geological Features and Mineral Resources of the Pilbara Goldfield; by A. Gibb Maitland. (For reprint see Bulletin 40.) (Out of print.) 1905.
21. The Geology and Mineral Resources of the Norseman District, Dundas Goldfield; by W. D. Campbell, Assistant Geologist. (Out of print.) 1906.
22. The Auriferous Deposits and Mines of Menzies, North Coolgardie Goldfield; by H. P. Woodward, Assistant Government Geologist. (Out of print.) 1906.
23. Third Report on the Geological Features and Mineral Resources of the Pilbara Goldfield; by A. Gibb Maitland. (For reprint see Bulletin 40.) (Out of print.) 1906.

24. The Laverton, Burville, and Eristoun Auriferous Belt, Mt. Margaret Goldfield; by C. G. Gibson, B.E., Assistant Geologist. (Out of print.) 1906.
25. The Prospects of Obtaining Artesian Water in the Kimberley District; by R. Logan-Jack, L.L.D., F.G.S., F.R.G.S. (Out of print.) 1906.
26. Miscellaneous Reports, I. Nos. 1-8: (1) Possibility of the Occurrence of Artesian Water in the Northampton and Geraldton Districts; (2) The Country between the Northward extension of the Gascoyne River and the Nuleri District of Western Australia; (3) The Phosphatic deposits near the Dandaragan; (4) Notes on the Meteorite deposits near the Dandaragan; (5) The Greenough River District; (6) Notes upon a Geological Map of the Greenough River District; (7) Recent advances in the knowledge of the Geology of Western Australia; (8) Prevention of External Corrosion of Goldfields Water Supply Pipes. (Out of print.) 1907.
27. Palaeontological Contributions to the Geology of Western Australia. II. (1) Plant Remains from the Collier Coalfield; (2) Notes on Fossils from the Collier Coalfield in the Collection of the National Museum, Melbourne; (3) Fossils from Mingener, Irwin River Coalfield; (4) Descriptions of Carboniferous Fossils from the Irwin River; (5) Fossils from a Calcareous Marlstone, Gingin. (Out of print.) 1907.
28. The Geology and Mineral Resources of Lawlers, Mt. Margaret Goldfield; by T. Blatchford, B.A., F.G.S., Assistant Geologist. (Out of print.) 1907.
29. A Report upon the Geology, together with a description of the Productive Mines of the Cue and Day Dawn Districts, Murchison Goldfield; Part I. Cue and Cuddingwarra Centres; Part II. Day Dawn Centre; by H. P. Woodward, Assistant Government Geologist. (Out of print.) 1907.
30. The Distribution and Occurrence of the Base Metals in Western Australia; by E. S. Simpson and C. G. Gibson. 1s. 1907.
31. The Bonnievale and Kunanalling Districts, Coolgardie Goldfield, and the Black Range District, East Murchison Goldfield; by C. G. Gibson, B.E., Assistant Government Geologist. (Out of print.) 1908.
32. Notes on the Geology of the Greenbushes Tinfield, with special reference to the Deep Leads; A Report upon the Mount Malcolm Copper Mine, Gold Mine, Southern Cross, Yilgarn Goldfield; and a Report upon Fraser's Assistant Government Geologist. (Out of print.) 1908.
33. Geological Investigations in the Country lying between 21° 30' and 25° 30' S. Latitude and 113° 30' and 118° 30' E. Longitude embracing parts of the Gascoyne, Ashburton and West Pilbara Goldfields; by A. Gibb Maitland, B.A., B.Sc., F.G.S. (Out of print.) 1908.
34. Report upon the Auriferous Deposits situated at Barramie and Errolle (Cue District) and on the Cue Creek (Nannine District) Murchison Goldfield, and Wiluna, East Murchison Goldfield; by C. G. Gibson, Assistant Geologist. (Out of print.) 1908.
35. Geological Report upon the Gold and Copper Deposits of the Phillips River Goldfield; by H. P. Woodward, Assistant Government Geologist, with a Description of the Crystalline Rocks of the District; by E. S. Simpson and L. Glauber (see Bulletin 110). (Out of print.) 1909.
36. Palaeontological Contributions to the Geology of Western Australia. III. (1) On the Fossil Spore Spicules in a Rock from the Deep Lead (9) from Western Australia; (2) Some Fossil Plants from the Norseman District; (3) Oolitic Fossils of the Greenough River District; (4) Sphenurus occidens; (5) Liliopsis; (6) Fossil Flora of Western Australia; (7) New Fossils from the Bungle Bungle Range, Napier Range, Kimberley; (8) The Geological Age and Organic Remains of the Gingin Chalk. (Out of print.) 1909.
37. The Geological Features of the Country lying along the Route of the proposed Transcontinental Railway in Western Australia; by C. G. Gibson, Assistant Geologist. (Out of print.) 1909.
38. The Irwin River Coalfield and the Adjacent Districts from Arntino to Notes upon some Irwin River Rocks by E. S. Simpson and L. Glauber (see Bulletin 106). (Out of print.) 1909.
39. Geological Observations in the Country between Wiluna, Hall's Creek, and Tanami; by H. W. B. Talbot. (Out of print.) 1910.
40. The Geology, Features and Mineral Resources of the Pilbara Goldfield; by A. Gibb Maitland, Government Geologist, with an Appendix by the State Mining Engineer on the Proposed Railway from the Coast to Marble Bar. (Reprint of Bulletin 15, 20, 23.) (Out of print.) 1908.

41. The Geology and Ore Deposits of the West Pilbara Goldfield; by H. P. Woodward, Assistant Government Geologist. (Out of print.) 1911.
42. Contribution to the Study of the Geology and Ore Deposits of Kalgoorlie; Part I; by E. S. Simpson and C. G. Gibson. (Out of print.) 1912.
43. Petrological Contributions to the Geology of Western Australia; by R. A. Farquharson, B.A. (Oxon.), M.Sc., F.G.S. 2s. 6d. 1912.
44. A Geological Reconnaissance of a portion of the South-West Division of Western Australia; by E. C. Saint Smith, Field Geologist. (Out of print.) 1912.
45. Geological Investigations in the Country lying between Latitude 28° and 29° 45' S. and Longitude 118° 15' and 126° 40' E. embracing parts of the North Coolgardie and East Murchison Goldfields; by H. W. B. M.Sc., F.G.S. (Out of print.) 1912.
46. A General Description of the Northern Portion of the Yilgarn Goldfield and the Southern Portion of the North Coolgardie Goldfield; by H. P. Woodward, Assistant Government Geologist. (Out of print.) 1912.
47. The Mining Geology of the Kanowna Main Reef Line, North-East Coolgardie Goldfield; by T. Blatchford, B.A., and J. T. Jutson, Field Geologists. Contributions by R. A. Farquharson, B.A. (Oxon.), M.Sc., F.G.S., and E. S. Simpson, B.E., F.G.S. (Out of print.) 1912.
48. Miscellaneous Reports, II: Nos. 9-32: (9) Radium-Uranium Ore from the Mineral Resources of Southern Cross; (10) Preliminary Notes on Monazite at Coogingale and Moolyella; (11) The Occurrence of Geological Sketch Map of the Country at the Heads of the Ashburton and Gascoyne Rivers; (12) The Possibility of Obtaining Artesian Water in the vicinity of Moora; (13) Extension of the Kilmacott Clay Deposit; (14) Investigation into the composition and properties of Coals from the Collier Fields, with an Appendix on the Spontaneous Combustion of Coal; (15) Limestone Deposits at Pinjarra; (16) Two new Meteorites from Western Australia; (17) Payne's Recent Gold Discovery near Goodingwood, Yalgorup Goldfield; (18) A Peculiar Biotite (Anomite) from Ubin; (19) The Nemesis Gold Mine, Tuckanarra, Murchison Goldfield; (20) Miscellaneous Mineral Notes; (21) Boring for Reefs on the Duke of York Lease near Cue, Murchison Goldfield; (22) Proposed Boring for Reefs at Nannine, Murchison Goldfield; (23) The Maori Lass Leases, Southern Cross, Yilgarn Goldfield; (24) Diamond Drilling on the Violet Lease, Golden Valley, Yilgarn Goldfield; (25) Koh-i-noor South Mines, State Well, Murchison Goldfield; (26) The mond Drilling on the Volunteer Flat, Cue, Murchison Goldfield; (27) Geological and Physiographical Notes on a Traverse over portions of the Darling Plateau; (28) On the Occurrence of Rutile at Yulgerring; (29) The Mount Jackson Centre, Yilgarn Goldfield. (Out of print.) 1912.
49. The Geology and Mineral Resources of the Yilgarn Goldfield, Part I. Southern Cross; by E. C. Saint Smith and R. A. Farquharson, with Chemical Notes by E. S. Simpson. (Out of print.) 1912.
50. The Geology and Mineral Industry of Western Australia; by A. Gibb Maitland and A. Montgomery. 2s. 1912.
51. Contributions to the Study of the Geology and Ore Deposits of Kalgoorlie, Part II; by F. R. Feldmann and R. A. Farquharson. 2s. 6d. 1912.
52. Mineral Resources of the North-West Division—Investigations in 1912; by T. Blatchford, B.A., Assistant Geologist. Appendix by E. Davenport, Chief Inspector of Mines. (Out of print.) 1913.
53. Geological Investigations in the Area embracing the Burbanks and Londonderry Mining Centres; by T. Blatchford, B.A., Assistant Geologist. Contributions by R. A. Farquharson. (Out of print.) 1913.
54. The Mining Geology of Ora Banda, Broad Arrow Goldfield; by J. T. Jutson, Field Geologist. Contributions by R. A. Farquharson and E. S. Simpson. (Out of print.) 1914.
55. Palaeontological Contributions to the Geology of Western Australia. IV. The Cretaceous Fossils of the Gingin "Chalk"; by R. Etheridge, Jun., Curator of the Australian Museum, Sydney. (Out of print.) 1914.
56. The Geology of the Country between Kalgoorlie and Coolgardie; by C. S. Honman, B.M.E., Field Geologist. Contributions by R. A. Farquharson and A. J. Robertson. (Out of print.) 1914.
57. A Geological Reconnaissance of a portion of the Murchison Goldfield; by H. P. Woodward, Assistant Government Geologist. (Out of print.) 1914.
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Interstate Artesian Water Conference; Graphite on the Lower Pallinup River, South-West Division; Notes on the Country in the Vicinity and to the Northward of Israelite Bay, Eucla Division; The Gypsum Deposits of Dukin, Avon District, South-West Division; Recent Discoveries and Development at the North End, Kalgoorlie; Field Notes upon the Results of various Reconnaissance and other Examinations.

Annual Progress Report for the Year 1925—

Some Gypsum Deposits of the Avon District, South-West Division; Progress Report on the Kalgoolie Survey; Work done during 1925 in the vicinity of the Paymaster and Mystery Lodes and Dykes at the North End, Kalgoolie; Peat in Western Australia, with particular reference to its geological occurrence in the Bayswater District, Metropolitan Area; Alunite at the North End, Kalgoolie.

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Progress Report on the Year 1926—
Mundijong, Cockburn Sound District, South-West Division; Alluvial
Lake Deposits, Campbells Sound District, South-West Division; Alluvial
Clay Deposit on M.C. 51H, Chickadee Sound District, South-West Division; The
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Yalzo; Subsoil Boring at Lady Shenton G.M., Menzies; Lecture to
Australasian Association for the Advancement of Science; On some Rocks
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 field: Water Supply at Holloes and Mount Fraser, Peak Hill Gold-
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 Occurrences in the Esperance, Kimberley Division; Possibilities of Mineral
 Occurrences in the Geraldton District; Possibilities of Oil in the
 Kimberley District; Prospecting: Water Supply at the Geraldton
 Kimberley up the Valleys lying between the towns made while travelling in West
 Australia; Prospecting: Water Supply at the Geraldton Kimberley up the
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 and the Murrumbidgee and Darling Rivers); Prospecting: Water Supply at the
 Meekatharra Talena on Speewah Station); Boring: Water Supply at the
 Old Deposits of Kalgoorlie; Report on the Interim Report on the Geological
 Mining: Prospecting: Water Supply at the Geraldton Kimberley up the
 Kalgoorlie and Wiluna; Prospecting: Boring at Coolgardie.

Annual Progress Report for the Year 1928—
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The Geology of the Areas set aside for Development of the 3,500 Farms, particularly with regard to a water-bearing aspect; Borings for Coal at Eradu; Boring for Mineral Oil at Poole Range (Freney Kimberley Coal Co.); Fitzgerald River Brown Coal Field; Petrological examination of bore cores from Tindal's Mine, Coolgardie; Petrological examination of bore cores from Harpur's near Cue; Surprise Lead Mine, Apsara; Big Bell Mine near Cue; Harpur's Lights G.M., Leonora; Black Range, Black Range West and Oroya; Black Range at Sandstone; Tin Lodes at Greenbushes.

Annual Progress Report for the Year 1929-
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Glossary of some Common Terms used in Mining, Field, and Physiographical Geology. * Each Chapter of the Mining Handbook issued separately. (Chap. I out of print.) is each extract. † Each Section of Chapter II is being issued separately. IV.—MAPS. ISSUED SEPARATELY. Geological Map of Northampton: by A. Gibb Maitland. Scale: 20 chains per inch. Two sheets. (Out of print.) 1938. Geological Map of the North Lead, Kanowna: by Torrington Blatchford. Scale: 8 chains per inch. (Out of print.) 1961. Geological Map of Kalbarrie: by A. Gibb Maitland and W. D. Campbell. Scale: 10 chains per inch. Six sheets. (Out of print.) 1962. The Regional Survey of the Metropolitan Area (Perth and Environs): by J. C. McMath, B.Sc., Senior Geologist, and N. M. Gray, B.Sc., J. Sotolus, B.Sc., L. E. de la Hunty, B.Sc., and G. H. Low, B.Sc. Scale: 1 mile to 1 inch. In three sheets, 3s. each sheet. 1952. 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