

22 February 2020

On Friday's Close

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Gold keeps getting better

Again we have seen the US equity markets surge to new highs and then profit taking has knocked them lower. That is to be expected. Meanwhile, the very strong gold price performance is probably exceeding expectations of many market observers just now. Since Christmas the US\$ gold price has improved by 9.7%. The weakness in the A\$ means that it is performing even better for Australian gold producers. Gold keeps getting better, and the probability is that the recent movements will be sucking more players into the game.

It is difficult to suggest that the Mexican beer virus is responsible for the recent movements in the gold price. There have been reports of disruptions to the supply chain out of China, but why should this affect the gold price? One argument is that the consequential slow down in economic activity will cause central banks (principally China) to pump liquidity into the system, which will lower interest rates and make gold more attractive. Maybe there is some merit in this view, but does it justify a 10% movement in the price? Whatever the reason, it would be a brave man to short gold right now.

Two more for the Million Ounce Club

Apollo announced its maiden resource

Apollo Consolidated has been beaver away on the Rebecca, Dutches and Duke deposits, located 150 km ENE of Kalgoorlie. Over the last three years it has completed 58,000m of RC and diamond drilling. Earlier in February, it released its maiden resource of 27.1 Mt at 1.2 gpt for 1.035 Moz of gold (Indicated and Inferred). This was based on a 0.5 gpt cut-off, and A\$2,250/oz optimised pit designs. Over 90% of the gold is in fresh rock, as opposed to oxidised material. Rebecca accounts for 775,000 oz of the resource.

Apollo is considering a 3 Mtpa treatment plant with typical industry operating costs for an open pit operation. That means capex in the order of A\$130-150m for a new plant. Gold recoveries are estimated to be 93%. However, it still has to drill many more holes to upgrade the confidence levels in the resources.

The share market seemed to take the announcement in its stride, showing that the figure was widely anticipated. The market capitalisation of \$52m with \$7.5m cash in the bank, appears to be in-line with valuations given to similar companies that have resources but which are still early in the planning and development cycles.

Kin Mining almost qualifies

Kin Mining (KIN) put in its early application for the million ounce club last week with the announcement of a 21 Mt resource at 1.4 gpt, for 945,000 oz of gold at its Cardinia Gold Project near Leonora. The pit designs were based on a gold price of A\$2,000/oz. (Would it have achieved 1 Moz if it used the same gold price in its pit design as Apollo

used?). The resources are not in one convenient pit, but come from six different locations. Each has its own pit design parameters that have changed in a number of aspects, such as cut-off grades, calculation methodology and gold price parameters. Ordinary kriging seems to be the preferred method now.

This project has been around for some time now, with Kin originally being a small exploration IPO in 2013, that acquired Leonora properties from Navigator Resources in April 2014. At the time the resource comprised 745,000 oz at 1.9 gpt. The cost was \$2.7m in cash. Kin stated an intention to get to the "decision to mine" point by October 2015. However, this never happened and there has been no mining since then.

Having the resource is good but the development of the mines will be more complicated due to the large number of ore positions. The resource is mostly in supergene and deeper primary zones with a range of varying metallurgical properties that could complicate the flow sheet. Nevertheless, the plan is to develop an eight year project producing 51,000 oz p.a. for the first five years. The AISC figure from the August PFS came in at A\$1,442/oz, based on a head grade of 1.09 gpt. Capex for a 1.4 Mtpa plant was estimated at \$77m, including infrastructure costs of \$23m. It is substantially cheaper than other projects because of the use of the old Lawlers plant that will be relocated to site.

The financial position of the company is modest with a market capitalisation of \$34m, with the shares selling at 6.4¢. The cash position as at 31/12/19 was only \$2.9m, so there is more work required to secure funding.

From where I sit this looks like it will be a gold mine that is "made, not found". That means that it will require a strong management team to make it happen. It is coming from a background of slow progress over the last five years in getting to this point. The biggest risks right now are the financing, development and commissioning risks.

Dacian and Gascoyne

As we have been writing in recent Weeklies, there are a number of emerging gold companies about to embark on feasibility studies. Hopefully, these will progress to operating gold mines as there has been a shortage of new mines being built in the last couple of years.

However, keep in mind that having an orebody doesn't automatically lead to a good gold mine. There have been two disastrous gold mines commissioned recently that have burnt shareholders badly. Gascoyne Resources (GCY) crashed and burned within a year of commissioning its Dalgaranga project, failing to deliver the expected grade. Dacian Gold (DCN) managed to keep its head above water for almost two years, but its Mt Morgan's project is obviously having serious issues. Management has

changed and the shares have been suspended since early February.

The lesson here is that it takes more than an orebody to make a mine. Exploration risk is more manageable than commissioning and operating risk, even though it is viewed as being more speculative. When something goes wrong with a mine in the first year, the chances are that the outcome will be terminal.

Pure Minerals - another HPA company & more

As a follow-up to the piece we did on HPA a couple of weeks ago, we sat down with another candidate; Pure Minerals (PM1). At first glance its HPA process is a simplification of other process and the costs seem quite low, as it doesn't come from the kaolin route, but there are a few hurdles to leap before it gets to the point where it can start to make HPA.

Very simply, PM1 plans to import limonitic laterite nickel from New Caledonia, to a processing plant at Townsville. This will be fed into the Direct Nickel process, to produce a mixed hydroxide precipitate that contains nickel and cobalt. This is then taken into a sulphate refinery to produce 99.99% nickel and cobalt sulphates used for batteries. Aluminium hydroxide is a by-product of the process, at a grade of 33%. PM1 would use this as the feedstock to produce 4,000t pa of HPA at a cost of US\$3,075 pt. Capex for this would be US\$60m. Both these cost figures would be at the bottom end of the HPA cost curve.

Pure Minerals is capitalised at \$12m with modest cash resources. It will need additional working capital at some point as it progresses matters preliminary to the big ticket items, once it has committed to the development. The current estimate is US\$300m for the nickel/cobalt plant, then US\$60m for the HPA plant. The Company has its work cut out for it, but it does look very interesting. Maybe the best way forward is to bring in a serious, well-funded partner.

Kimberlite exploration is heating up at Lulo

Background to the kimberlite program

Going back 4-5 years, when Lucapa was developing its highly profitable alluvial diamond mining operation at Lulo in Angola, most investors were actually more excited about the prospects of finding the hard rock, source kimberlite. The size and shape of the diamonds being recovered suggested that the pipes weren't far away. At one point there was even speculation that one of the alluvial mining sites lay directly over the pipe, but drilling wasn't able to confirm this. As punters realised that there wasn't going to be instant gratification on the kimberlite exploration front, they gradually moved their money into other speculative stories and the share price drifted lower.

Exploration continued while mines were developed

Fast forward to today and Lucapa now has two profitable diamond mines; the Lulo alluvial mine in Angola, and the Mothae hard rock kimberlite in Lesotho. However, the kimberlite exploration story hasn't gone away. In fact, as the announcement yesterday has indicated, it is just starting to hot up again. You need to look beyond mundane heading, "Positive Lulo Kimberlite Exploration Results", to appreciate what is really happening.

Zeroing on the source of the diamonds

In recent years, Lucapa has identified more than 100 kimberlite pipes near its alluvial mining blocks at Lulo. It has drill tested target anomalies to depths that range from 50-100m in most cases, to get to levels below the tropical weathering zone and beyond contamination. Follow-up mineral chemistry analysis and technical reviews involving expert consultants have narrowed down the numbers to achieve a priority kimberlite list. Five of the 16 kimberlites on that priority list, and two other prospective targets, are located in the Canguige catchment area, which feeds into the Caculo River valley where Lucapa has been mining some of the world's most valuable alluvial diamonds for the past five years.

Wednesday's announcement included a map (see below) of the Canguige catchment area, highlighting those five priority kimberlites and the two other targets. Lucapa has bulk sampled the Canguige tributary which feeds into the Caculo River valley with some highly encouraging results, recovering 45 diamonds of up to 3.75 carats in weight, including top D-colour gems.

There is added significance to these diamond recoveries because the sample site is only 3 km upstream of alluvial Mining Block 46, which has produced high value and Type IIa diamonds of 88, 68, 60, 59, 35, 33, 32 and 31 carat sizes, along with fancy pink and yellow diamonds.

The next step is to hit each of these chemically favourable targets with a number of drill holes to sample different facies and to start to determine the geometric shape of the pipes. Subsequent bulk sampling programs can then be undertaken to find which of the pipes are diamondiferous and to get an early indication of commercial grades and diamond values. Speculative interest will be building throughout this process as shareholders keenly await news flow that may confirm that the pipes are indeed potential sources of the exceptional Lulo alluvial diamonds.

What Does all this mean? Plenty of Upside.

Well, after many years of methodical and systematic exploration, Lucapa is closer than ever to potentially holding a majority stake in the kimberlite venture and to finding the hard rock source of the fantastic quality diamonds that have been coming from the Lulo alluvial diamond field – diamonds which have achieved average sale prices of US\$1,900/carats. This has the potential to be a significant discovery.

You can define indicated JORC resources for a kimberlite mine which then allows you to calculate a value. There is much greater certainty with hard rock deposits and the opportunity to develop mines that could easily extend beyond 20 years. Perhaps more significantly though, is that Lucapa could find itself gobbled up by major diamond producers who want to control new supply to the market, particularly in light of recent media reports suggesting the diamond majors are keen to get into Angola due to its prospectivity for new discoveries.

Obviously shareholders could receive huge premiums over the current share price in such an event. Maybe those earlier speculators should be getting back on board.

Disclosure: Interests associated with the author own shares in Lucapa, and in past years have received corporate fees.

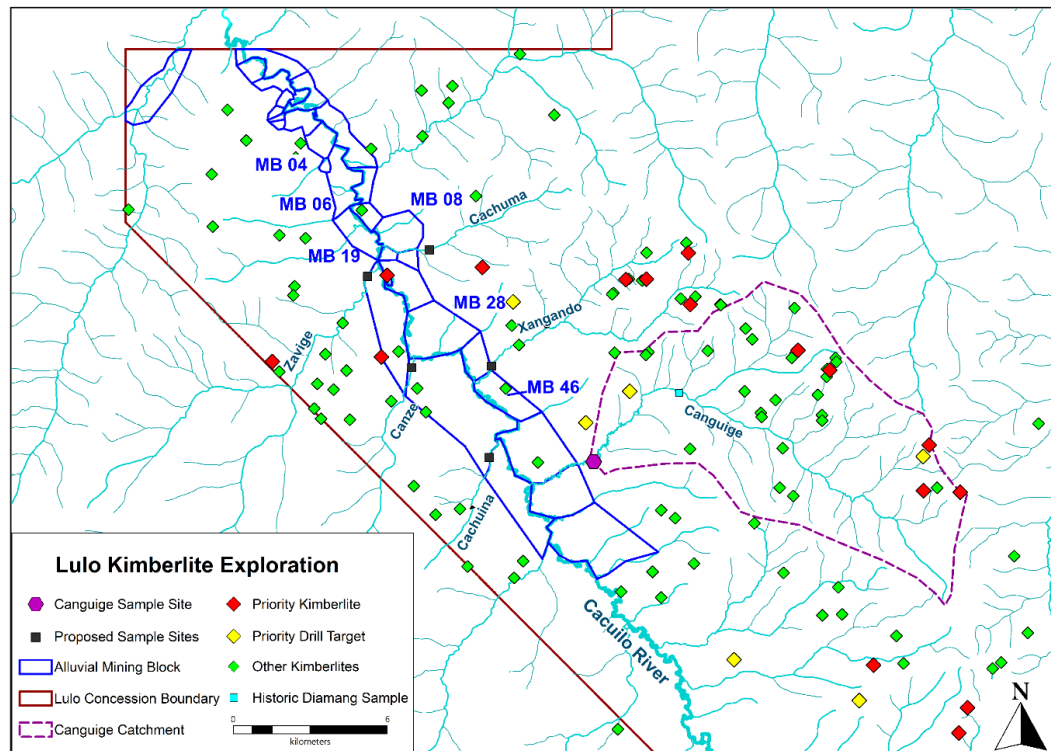
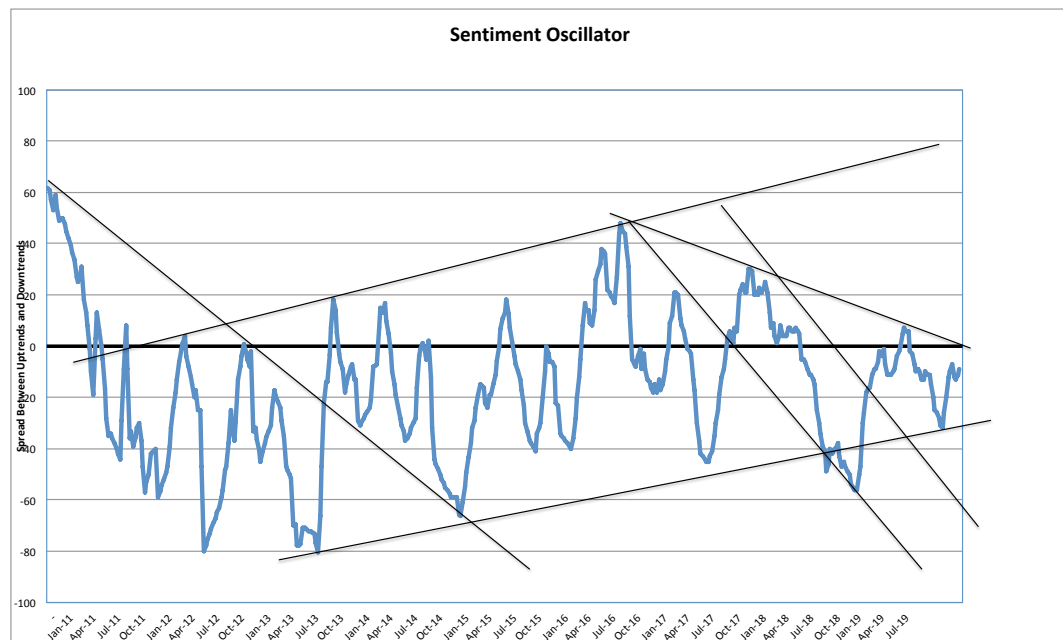


Figure 1: Location of the Canguige tributary sampling site, proximity to Mining Block 46 and kimberlites within the Canguige catchment, including five of the 16 pipes rated most prospective by a technical review to host diamonds and two priority drilling targets








Sentiment Oscillator: There was another slight improvement in sentiment with 31% (30%) of the charts in uptrend and 40% (41%) in downtrend on Friday's close. The improvement came about due to a number of stocks moving out of downtrends and into sideways patterns, as the selling had exhausted itself.

Detailed Chart Comments

NB. Only the bold comments have been updated. Comments in grey type are from previous weeks and will be less relevant. Please note that this list is a cross section of the market. It IS NOT a list of recommendations.

Indices	Code	Trend Comment	
All Ordinaries	XAO	heavy correction	
Metals and Mining	XMM	new recent high	
Energy	XEJ	breached uptrend	
Stocks	Code	Trend Comment (updated comments in bold)	Main Interest
Alpha HPA	A4N	new high	HPA
Adriatic Resources	ADT	good rally	zinc
Aeon Metals	AML	falling again	copper + cobalt
Alacer Gold	AQG	testing uptrend	gold – production
Alkane Resources	ALK	new high	gold, zirconia
Acacia Resources	AJC	Sideways at the bottom	coal
Alicanto Minerals	AQI	surged higher	gold exploration
Allegiance Coal	AHQ	on support line	coal
Alliance Resources	AGS	breached uptrend	gold exploration
Apollo Consolidated	AOP	surge higher	gold exploration
Arafura Resources	ARU	down	rare earths
Argent Minerals	ARD	breached downtrend	silver
Aurelia Metals	AMI	testing downtrend	gold + base metals
Australian Potash	APC	breached downtrend	potash
Australian Mines	AUZ	base forming	cobalt/nickel
Australian Vanadium	AVL	new low	vanadium
BHP	BHP	heading lower	diversified, iron ore
Base Resources	BSE	testing downtrend	mineral sands
Bathurst Resources	BRL	down	coal
BBX Minerals	BBX	breached downtrend	gold exploration
Beach Energy	BPT	heavy fall	oil and gas
Beacon Mining	BCN	testing uptrend	gold production
Bellevue Gold	BGL	testing downtrend	gold exploration
Blackstone Minerals	BSX	new high	nickel
Breaker Resources	BRB	down	gold exploration
Broken Hill Prospecting	BPL	at lows	minerals sands
Buru Energy	BRU	turning down	oil
Buxton Resources	BUX	turned down at resistance line	nickel exploration
Capricorn Metals	CMM	new high	gold
Cardinal Resources	CDV	testing ST uptrend	gold exploration
Cassini Resources	CZI	testing downtrend	nickel/Cu expl.
Central Petroleum	CTP	down	oil/gas
Chalice Gold	CHN	new recent high	gold exploration
Chase Mining	CML	heavy slump	nickel/copper/PGE
Chesser Resources	CHZ	new high	gold exploration

Cobalt Blue	COB		stronger	cobalt
Dacian Gold	DCN		testing uptrend	gold
Danakali	DNK		drifting lower	potash
Davenport Resources	DAV		at lows	potash
Ecograp (was Kibaran)	EGR		rallying	graphite
Emerald Resource	EMR		gentle downtrend	gold
Evolution Mining	EVN		testing downtrend	gold
Exore Resources	ERX		sideways to lower	gold exploration
FAR	FAR		new low	oil/gas
First Graphene	FGR		breached downtrend	graphene
Fortescue Metals	FMG		new high	iron ore
Galaxy Resources	GXY		breached downtrend	lithium
Galena Mining	G1A		breached steepest downtrend	lead
Galilee Energy	GLL		downtrend forming	oil and gas, CBM
Gold Road	GOR		steeply higher	gold
Graphex Mining	GPX		testing downtrend	graphite
Heron Resources	HRR		new low	zinc
Highfield Resources	HFR		ST uptrend	potash
Hillgrove Resources	HGO		still in downtrend	copper
Iluka Resources	ILU		slump out of downtrend then rebound	mineral sands
Image Resources	IMA		still in downtrend	mineral sands
Independence Group	IGO		new high	gold, nickel
ioneer (was Global Geoscience)	INR		testing support	lithium
Jervois Mining	JVR		testing resistance line	nickel/cobalt
Jindalee Resources	JRL		at apex of flag	lithium
Karoo Gas	KAR		breached downtrend	gas
Kasbah Resources	KAS		new low	tin
Kin Mining	KIN		steeply higher	gold
Kingston Resources	KSN		edging through the resistance line	gold
Kingwest Resources	KWR		testing downtrend, but placement	gold
Legend Mining	LEG		stronger	nickel exploration
Lepidico	LPD		down	lithium
Lindian Resources	LIN		pullback	bauxite
Lithium Australia	LIT		surged higher	lithium
Lucapa Diamond	LOM		off its lows	diamonds
Lynas Corp.	LYC		strong rally	rare earths
Mako Gold	MKG		rising off lows	gold exploration
Marmota	MEU		new high	gold exploration
MetalsX	MLX		new low	tin, nickel
Metro Mining	MMI		gentle uptrend	bauxite
Mincor Resources	MCR		continuing higher	gold
Musgrave Minerals	MGV		new high	gold exploration
Myanmar Minerals	MYL		breached downtrend	zinc
Nelson Resources	NES		falling again	gold exploration

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Neometals	NMT		continuing down	lithium
Resolute Minerals	RML		heavy fall (was Northern Cobalt)	cobalt
Northern Minerals	NTU		down	REE
Northern Star Res.	NST		strong higher	gold
NTM Gold	NTM		new high	gold exploration
Oceana Gold	OGC		rising again	gold
Oklo Resources	OKU		stronger	gold expl.
OreCorp	ORR		continuing higher	gold development
Oro Verde	OVL		breached uptrend	rare earths
Orocobre	ORE		breached downtrend	lithium
Oz Minerals	OZL		uptrend breached	copper
Pacific American Holdings	PAK		testing downtrend	coal
Pacifico Minerals	PMY		down	silver/lead
Pantoro	PNR		down	gold
Panoramic Res	PAN		down	gold , nickel
Peak Resources	PEK		down	rare earths
Peel Mining	PEX		down	copper
Peninsula Energy	PEN		sideways	uranium
Pensana Metals	PM8		testing downtrend	rare earths
Perseus Mining	PRU		new high	gold
Pilbara Minerals	PLS		but strong rally	lithium
PNX Metals	PNX		sideways	gold, silver, zinc
Polarex	PXX		breached uptrend	polymetallic exploration
Prodigy Gold	PRX		down	gold exploration
Pure Minerals	PM1		sideways	nickel/cobalt/HPA
Ramelius Resources	RMS		breached ST downtrend	gold production
Real Energy	RLE		new low	gas
Red5	RED		breached downtrend	gold
Red River Resources	RVR		now in secondary downtrend	zinc
Regis Resources	RRL		rising	gold
Resolute Minerals	RML		heavy fall (was Northern Cobalt)	cobalt
Resolute Mining	RSG		testing downtrend	gold
RIO	RIO		rising again	diversified, iron ore
Salt Lake Potash	SO4		down	potash
Saracen Minerals	SAR		rising again	gold
St Barbara	SBM		still in shallow downtrend	gold
Sandfire Resources	SFR		down	copper
Santos	STO		into uptrend	oil/gas
Saturn Metals	STN		rising again	gold exploration
Sheffield Resources	SFX		new low	mineral sands
Sky Metals	SKY		surged higher	gold exploration
St George Mining	SGQ		sideways through downtrend line	nickel
Sipa Resources	SRI		down	general exploration - Ni,Cu, Co, Au
Spectrum Metals	SPX		back in uptrend	gold exploration

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Stanmore Coal	SMR		down again	coal
Strandline Resources	STA		sideways	mineral sands
Syrah Resources	SYR		down again	graphite
Talga Resources	TLG		breached downtrend	graphite
Technology Metals	TMT		sideways	vanadium
Vango Mining	VAN		breached uptrend	gold
Venturex	VXR		strong rally, hit resistance line	zinc
Vimy Resources	VMY		new low	uranium
West African Resources	WAF		uptrend again	gold
Westgold Resources	WGX		shallower uptrend	gold
West Wits Mining	WWI		new uptrend following US finance	gold
Western Areas	WSA		breached support line	nickel
Whitebark Energy	WBE		testing support	oil and gas
Whitehaven Coal	WHC		down	coal
Yandal Resources	YRL		down	gold exploration
Zinc Mines of Ireland	ZMI		down	zinc
Totals	31%	43	Uptrend	
	40%	55	Downtrend	
		138	Total	

Guides to Chart Interpretations

- Charts usually go pass from one trend (up or down) into the other via a period of indecision and uncertainty during which the trend can either recover or change. This period is signified by the orange colour. The orange represent both the greatest risk and greatest reward possibilities.
- Once a chart is in confirmed up or downtrends it is not uncommon for 10-20% of that trend to have already transpired.
- There are trends within trends. The focus of this chart review is the immediate trend that affects the sentiment i.e. it can be a downtrend within a long-term uptrend.
- Not every chart warrants a new comment every week. The new comments are in bold type. Grey type comments may be dated.
- Individual charts provide a single view. It is valuable to look at charts of other companies in similar commodities, and the overall sentiment is also very valuable. Not many stocks can swim against the tide.
- We periodically add or delete charts, some times for obscure reasons. If a chart consistent gives poor signals or is very erratic, we may delete it. Sometimes we add a chart because we want to see what all the fuss is about. We do have a preference for charting stocks that we cover in our research as well.
- Errors and omissions may occur from time to time, especially in fast moving markets.

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Weightings of Sectors Represented in the Company Charts

Sector	No. of Companies	Weighting	
Gold	30	21.7%	
Gold Exploration	21	15.2%	
Oil/Gas	9	6.5%	

Nickel	9	6.5%	
Lithium	8	5.8%	
Coal	6	4.3%	
Zinc/Lead	10	7.2%	
Mineral Sands	6	4.3%	
Rare Earths	6	4.3%	
Potash/Phosphate	5	3.6%	
Copper	5	3.6%	
Cobalt	3	2.2%	
Graphite	4	2.9%	
Tin	2	1.4%	
Iron Ore	3	2.2%	
Uranium	1	0.7%	
Bauxite	3	2.2%	
Vanadium	2	1.4%	
Silver	2	1.4%	
Diamonds	1	0.7%	
Other	2		
Total	138		

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