

## Richmond Vanadium is changing the rules with a low-cost innovative recovery process

I wasn't able to update the charts this week due to my absence in WA, but I get the feeling that the suggested short term bottoming of the market indicated last week is holding up quite well. Certainly, the strength in New York on Friday night augers well for the coming week.

This week there is some commentary on news flow and a more detailed column on the Richmond Vanadium IPO that looks quite interesting. In the last two weeks I have seen about 40 companies in conferences, giving me plenty to think about. When time permits I will add comments on some of these in subsequent Weeklies.

### *West Wits gets its toll treating agreement*

Yesterday WWI announced what we have all been waiting for - a toll treatment agreement for the Witswatersrand Gold Project in South Africa. It has taken a while, but large companies like Sibanye-Stillwaters don't move quickly.

So, step by step, WWI is getting closer to becoming a long-life gold producer. The most time consuming delay was the granting of the Mining Right, which took many years. Now the securing of the toll treatment agreement means the door is open to securing additional finance with greater certainty of the production schedule. Whether WWI elects to raise it in incremental equity phases over the next couple of years, or whether it secures a whole-of-development package with specialist financiers, depends on negotiations.

The immediate significance of yesterdays' announcement is that it can proceed with the underground development knowing that in five months, once a ROM stockpile has built up sufficiently to the 30,000 tonne level, it can start turning the ore into positive cashflow. That will probably be in mid 2023.

As with all underground mines it will take time to develop drives and start to stope ore. Here, it will be a continual ramp-up over the next three years to reach the 50,000 oz p.a. rate with the maximum cash outflow being about US\$63m. From that point the Company expects that this development capex will be repaid over a two year period, which is a good measure of the earnings power of the project.

The tolling rate starts off at 15,000 tonnes per month initially, lifting to 54,000 tpm within three years as production ramps up. Drawing on the 4.3 Moz resource base, progressive expansions could ultimately see a production rate of 200,000 oz p.a.

*Disclosure: Interests associated with the author own shares in West Wits. Capital raising fees have been earned. The author is a non-executive director.*

### *Richmond Vanadium Technology IPO is open*

I mentioned Richmond Vanadium (RVT) recently as an interesting new vanadium play that was coming up for an IPO. I noted that vanadium plays in Australia have been hard work and they always seemed to be behind the 8-ball when being compared to the well-established vanadium sector in South Africa. However, Richmond has an oxidised orebody with an innovative process route. The prospectus is full of interesting technical information.

### *A different style of vanadium*

Richmond's deposits are non-titanomagnetite vanadium deposits formed as soft marine sediments. They are lower grade than that from traditional sources and require a different processing technology. Up until recently they have not been considered suitable for commercial mining, but Richmond has successfully developed and patented a new process route that shifts the goalposts.

### *Low grade is not a problem*

The low-grade of Richmond's orebody is the most distinguishing feature at first glance. Normally that would give ground for dismissal but you need to look more closely and consider that the low-grade is due to the secondary nature of the mineralisation that opens the door to a lower cost treatment route and capex.

Back in 2012, Intermin Resources (now Horizon) identified the extensive vanadium resource but it couldn't crack the metallurgy. Shaun Ren, the CEO of Richmond, approached Horizon and closed a deal whereby it could earn a 75% interest in the project by funding metallurgical test work and coming up with an economic solution, culminating in a PFS.

Shaun learnt that the obstacle in the process flow sheet was the over-grinding of the ore. Despite being scoffed at by various labs in Australia, he eliminated the grinding stage from the flow sheet and quickly started to achieve much better results. The scale of the batch testing was progressively increased and a new flotation agent, RVT1, was introduced. A patent application covering this innovative approach was lodged.

The net result has been a new process that achieves a 1.82% V<sub>2</sub>O<sub>5</sub> concentrate that is actually higher grade than traditional titanomagnetite projects with which Richmond has to compete, with lower capex and opex.

A further sweetener is the oxide concentrates are easier to treat than titanomagnetites. So, it ticks all round for this innovative process that completely changes the economics for low-grade oxidised vanadium deposits.

### *Details of the \$25-35m IPO*

Richmond is offering 62.5m shares at 40¢ to raise \$25m, with oversubscription of another \$10m. Horizon

shareholders have a priority entitlement, up to 25% of the issue. Up to 20 mill. shares will be distributed in-specie to Horizon shareholders on a pro-rata basis. Bell Potter is the Lead Manager. The market capitalisation upon closing will be \$88.7m to \$98.7m, at the issue price. There will be another 15-16 mill. options and performance rights to consider.

### *Very much a vanadium specialist*

Vanadium is used in many industries and applications with characteristics which make things stronger, lighter, more efficient and more powerful. Most vanadium consumption (up to 92%) is in ferrovanadium (a mixture of iron and vanadium) to significantly increase the strength and hardness of steel. More recently, vanadium has been topical for its use in a vanadium based battery called the Vanadium Redox Flow Battery (VRFB). Vanadium consumption for VRFB's is forecast to grow at an average 20.7% a year over 2020 to 2029. It has been listed as a critical mineral.

China holds around 42% of the world's reserves, but produces around 62% of vanadium, while Australia holds 18% of the world's reserves but currently does not produce any vanadium.

### *Vanadium Redox Flow Batteries (VRFB)*

The VRFB is a type of rechargeable flow battery where rechargeability is provided by vanadium electrolyte dissolved in solution. The electrolyte that stores the energy is housed in external tanks, allowing power and energy density to be scaled up independently of each other. To store more power, simply increase the size of the tanks. This makes the VRFB a very adaptable energy storage system, with kilowatt capacities ideal for residential and commercial applications, and megawatt capacities for the power grid and stand-alone storage systems for solar and wind farm installations.

### *Vanadium prices and market*

The price of vanadium pentoxide took a dramatic jump a few years back when the Chinese government issued a directive that rebar should be made at higher quality by the greater addition of vanadium. The vanadium pentoxide price increased from US\$2.80/lb in February 2016, to US\$28.80/lb in November 2018, in response.

The majority of vanadium supply currently comes as a by-product of magnetite and uranium production. In 2020, China, Russia, South Africa, and Brazil accounted for roughly 99.8% of global vanadium production.

### *A very large resource with a PFS completed*

RVT's global Mineral Resource, located 500 km west of Townsville in Queensland, is 1.8 Bt at 0.35% V<sub>2</sub>O<sub>5</sub> for 6.6 Mt of V<sub>2</sub>O<sub>5</sub>. The priority Lilyvale vanadium deposit has a JORC Probable open pit reserve of 459 Mt at 0.49% V<sub>2</sub>O<sub>5</sub> for 2.6 Mt of V<sub>2</sub>O<sub>5</sub>.

The mineralisation was historically looked at as an oil shale deposit back in the 1980s, when it was called Julia Creek. Oil shale-hosted vanadium is associated with mixed and layered clays that host approximately 60% of the vanadium present. The remaining 40% occurs within silicates, pyrite and organic compounds.

The vanadium appears in a variety of forms, including hydrated oxides and vanadates adsorbed on clays or

precipitated on limestone, as vanadium silicates within clays or micas, and as organically bound vanadium. Studies have shown that the vanadium can be extracted using a range of acids, including hydrochloric and hydrofluoric types.

Natural processes have helped with oxidation of pyrite in the hosting Toolebuc Formation, creating an acidic environment that enhanced the release of vanadium from the various mineral species (particularly the kerogen and pyritic zones), resulting in mobilisation and enrichment of vanadium grades associated with the oxide zones.

The deposits have been extensively drilled by a number of methods, mostly on broadly spaced grids, with Lilyvale being RC drilled on a 400m x 200m pattern. This is considered to be adequate for resource assessment given the consistency of the mineralised sequences.

The ore can be mined in broad, shallow pits with initial waste to ore ratios of approximately 1:1. Overburden will mostly be at 10-20m thicknesses. All material will be low cost, free digging. Bulk mining machinery would be employed, giving mining costs of \$2.93 pt at the time of the PFS. Costs will be adjusted for recent inflationary trends and be fine tuned upon the completion of a DFS.

### *Metallurgical test work has overcome earlier issues*

Early test work dating back to the 1990s exposed problems with high reagent consumption and high capex. Further test work in the period 2017-2020 focused on pre-concentrating steps and reduction of acid consumption, with the emphasis on vanadium recovery rather than on the deeper, less oxidised shale oils.

Beneficiation tests showed that the vanadium predominantly resides within the mica minerals, as well as iron oxides such as limonite, and clay minerals such as kaolin, overall containing 96% of the V<sub>2</sub>O<sub>5</sub>.

The next, commercial stage of testing will be undertaken in a beneficiation (concentrator) pilot plant located on site. It will process large-scale samples from the Lilyvale deposit to confirm the range of metallurgical behaviours, product quality and the metallurgical recoveries. The objective will be to maximise a concentrate suitable for shipping to a refinery to achieve a 98% V<sub>2</sub>O<sub>5</sub> flake product.

The proposed processing flowsheet is a relatively simple one involving limited crushing, sizing and preparation steps, followed by flotation and recovery, but it assumes there is no grinding requirement as the naturally fine size fractions, nominally below 37 µm, contain the majority of the V<sub>2</sub>O<sub>5</sub>. According to SRK, the consultants, further test work is required to confirm aspects of the process, including its suitability to variations of material from a range of locations and different levels of oxidation. It regarded the PFS beneficiation plant unit costs of \$10.35 pt to be at the low end of the range. More complete information can be obtained in the RVT prospectus at ;

[www.richmondvanadium.com.au](http://www.richmondvanadium.com.au)

A PFS was completed in August 2021, showing a 25 year mine life with a 3-5 year payback period. The capital cost was estimated at \$242m. The mining rate was 4 Mtpa with a 1:1 waste to ore ratio. Mine life was nominally 100 years with concentrate production of 790,000 tpa.

### Key technical and cost points

- the deposits have formed in free-digging, large shallow marine sediment at depths of 2-25m below surface
- no drilling, blasting, grinding or roasting is required, thereby minimising power costs and capex.
- a two-step process has been designed to upgrade ore to a shipping concentrate grading of 1.82% V<sub>2</sub>O<sub>5</sub>, followed by a second stage involving refining to produce 98% V<sub>2</sub>O<sub>5</sub> flake product for use in the steel and energy storage markets.
- no need to drill and blast or mill, saving 10% and 40% of operating costs respectively, compared to titanomagnetite projects
- 1.8% concentrate grade versus 1.4% of other projects
- 50% cost saving by avoiding roasting in the refining stage

### The Bottom Line

Based on what I have read in the prospectus, Richmond Vanadium Technologies appears to be a well-considered company. The development of a process flow sheet suitable to the oxidised, low-grade nature of the mineralisation is critical to the success of the endeavour. Given that the primary innovative factor is the removal of the grinding step, which is not technically difficult, the technology risk doesn't seem to be a problem. No project is risk free, but this one seems more procedural than problematic. The reward is a very long life, metallurgically simpler source of vanadium than everything else in the industry.

The world will need a range of battery types if it is going to meet the de-carbonisation challenge. No one product will be suitable for everything. The Vanadium Redox Flow battery will be competing with others such as Lithium-ion, Calcium-Antimony and Sodium Alumina batteries in the large scale grid storage fields, to name a few. Time will tell which are the best and most profitable. Richmond looks like it will be well-placed to be an important supplier of vanadium to the VRFB and the forecast growth curve.

### Felix Gold continues to release big intervals

Felix Gold continues to release good intercepts from gold mineralisation at its NW Array gold project in Alaska, but the market seems to be struggling with the interpretation and the implications. Perhaps it is just the state of the market at the moment, but it may also be due to the low grade nature of the orebody.

Felix's best interval in the release last week was 41.1m at 1.72 gpt from 59m, with this being absorbed into a broader intercept of 89.9m at 0.97 gpt. Is that enough to get excited about? Perhaps not at first glance, but you have to place it in perspective with the scale and strategic location near the 11 Moz Fort Knox gold mine in the Fairbanks gold mining district. When you have such large scale operations the

gold companies can make good profits from orebodies with grades of 0.5-1.0 gpt.

At NW Array, the newly reported drill holes have expanded the Southern Zone mineralisation to an area of approximately 750m x 400m. The targeted gold-in-soil anomaly in this zone of NW Array is 2.5 km x 2.5 km, with the mineralisation target remaining open to the north, south, east and at depth (with the deepest hole at NW Array currently only 115m true vertical depth).

Fort Knox has been a huge mine that started off with a Proved and Probable Reserve of 158 Mt at 0.83 gpt in a single pit, containing 4.2 Moz of gold. After the production 7.5 Moz, it still had a resource of 255 Mt at 0.3 gpt, in 2019. In 2021, it produced 264,000 oz at a cash cost of US\$1,041/oz, with a head grade around 0.3 gpt. Kinross expects the mine to operate until 2030 on existing resources, but there may be the opportunity for Felix to do a deal on its ore.

*Disclosure: Interests associated with the author own shares in Felix Gold*

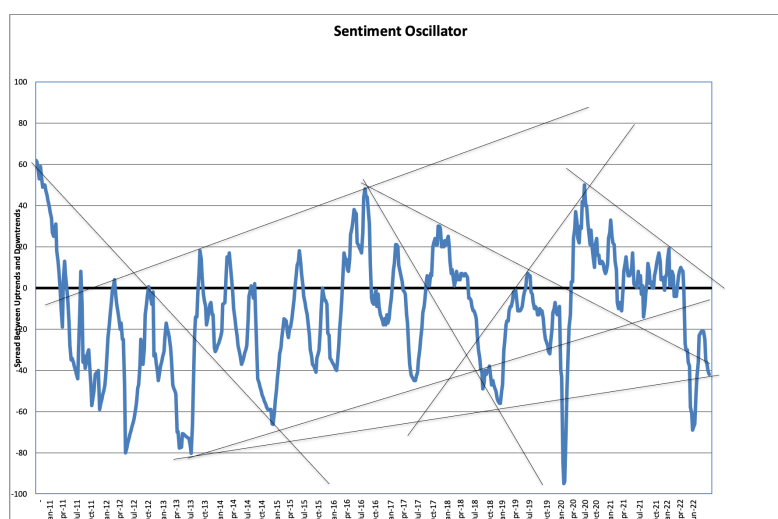
### Celsius extends near surface high grade

Last week Celsius reported an intercept 65m at 1.73% Cu and 0.37 gpt Au at its MCB copper-gold project in the Philippines. I frequently caution readers about placing too much emphasis on one good intercept, but in this case it is of incremental significance as it demonstrates that the near surface higher-grade copper mineralisation envelope extends further to the east, thereby enhancing the potential of early stage economics. We will see the significance of these numbers when the feasibility study comes out in 2023.

*Disclosure: Interests associated with the author own shares in Celsius and capital raising fees have been earned.*

### Emotive wording of announcements

Companies seem to be increasingly using great hyperbole to get the message across in ASX releases rather than just allowing the facts to speak for themselves. For example, a company that released some rare earth results last week said that it was "... extremely pleased with our first drill program ..." and samples have been sent for "rush analysis" (is that even possible?) Further, "The team is extremely excited by visual drilling results ...". While it might be encouraging to gauge their enthusiasm, and I am extremely happy for them, such emotional wording doesn't add to the quality of data or the gravity of the news flow. The excitement of the shareholders is more relevant to the share price. FOMO traders might get excited, but more sticky investors will be less emotional.



**Sentiment Oscillator:** Sentiment was slipped over the week. Touching the trend line, as it is, suggested this might be the bottom ... at least for a while. There were 14% (16%) of the charts in uptrend and 56% (53%) in downtrend on Friday's close.

## 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	surge higher, but still in downtrend	
Metals and Mining	XMM	hitting resistance line	
Energy	XEJ	spiked higher	
Information Technology	XIJ	down	
Stocks	Code	Trend Comment (updated comments in bold)	Main Interest
A-Cap Energy	ACB	breached support line	uranium
Alpha HPA	A4N	breached downtrend	HPA
Adriatic Resources	ADT	approaching resistance line	zinc, polymetallic
Advance Metals (was Pacific American)	AVM	down	coal, gold exploration
Alkane Resources	ALK	testing downtrend	gold
Alicanto Minerals	AQI	new low	base metals, silver, gold
Altech Chemical	ATC	strongly higher	HPA, anodes
Anteotech	ADO	new low	silicon anodes, biotech
Alto Metals	AME	at resistance	gold exploration
American Rare Earths	ARR	fallen back to resistance line	rare earths
Antilles Gold	AAU	still down	gold
Arafura Resources	ARU	good bounce	rare earths
Ardea Resources	ARL	testing support	nickel
Aurelia Metals	AMI	new low	gold + base metals
Australian Potash	APC	sideways through downtrend	potash
Australian Rare Earths	AR3	at lows	rare earths
Auteco Minerals	AUT	recovering	gold exploration
Arizona Lithium	AZL	failed at resistance line	lithium

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Azure Minerals	AZS		falling at resistance line	nickel exploration
BHP	BHP		testing resistance line	diversified, iron ore
Beach Energy	BPT		new uptrend confirmed	oil and gas
Bellevue Gold	BGL		breached downtrend	gold exploration
Benz Mining	BNZ		breached downtrend	gold
Black Cat Syndicate	BC8		breaching uptrend	gold
Blue Star Helium	BNL		sideways through downtrend	gas, helium
BMG Resources	BMG		down	gold exploration
Boab Metals	BML		failed at resistance line	silver/lead
Breaker Resources	BRB		testing downtrend	gold exploration
Buru Energy	BRU		gently lower	oil
Calidus Resources	CAI		new low	gold
Capricorn Metals	CMM		back into downtrend	gold
Caravel Minerals	CVV		at resistance	copper
Castile Resources	CST		down	gold/copper/cobalt
Celsius Resources	CLA		sideways at lows	copper
Chalice Mining	CHN		down	nickel, copper, PGMS, gold exploration
Chesser Resources	CHZ		new low	gold exploration
Cobalt Blue	COB		testing uptrend	cobalt
Cyprium Metals	CYM		new low	copper
Dateline	DTR		down	rare earths
De Grey	DEG		good recovery	gold
E2 Metals	E2M		breached new uptrend	gold exploration
Ecograp	EGR		falling again	graphite
Element 25	E25		new uptrend commenced	manganese
Emerald Resources	EMR		trying to recapture uptrend	gold
Empire Energy	EEG		down	gas
Euro Manganese	EMN		breached new uptrend	manganese
Evolution Mining	EVN		new low	gold
Firefinch	FFX		suspended	gold
First Graphene	FGR		breached downtrend	graphene
Fortescue Metals	FMG		failed at resistance line	iron ore
FYI Resources	FYI		sideways through downtrend	HPA
Galena Mining	G1A		testing steepest downtrend	lead
Galilee Energy	GLL		softer	oil and gas, CBM
Genesis Minerals	GMD		down	gold
Genmin	GEN		rising	iron ore
Gold Road	GOR		breached downtrend	gold
Great Boulder Resources	GBR		but approaching resistance line	gold exploration
Hastings Technology Metals	HAS		new low	rare earths
Hazer Group	HZR		still in downtrend	hydrogen
Heavy Minerals	HVY		still in downtrend	garnet
Highfield Resources	HFR		new low	potash
Hillgrove Resources	HGO		down	copper

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Iluka Resources	ILU		testing resistance line	mineral sands
Image Resources	IMA		down	mineral sands
ioneer (was Global Geoscience)	INR		testing resistance line	lithium
Ionic Rare Earths	IXR		rising again	rare earths
Jervois Mining	JVR		breached downtrend	nickel/cobalt
Kaiser Reef	KAU		recovering from lows	gold
Kingston Resources	KSN		improving	gold
Krakatoa Resources	KTA		rising	rare earths
Kingfisher Mining	KFM		down	rare earths
Kingwest Resources	KWR		new low	gold
Legend Mining	LEG		new low	nickel exploration
Lepidico	LPD		back to lows	lithium
Lindian Resources	LIN		correcting lower	bauxite
Lion One Metals	LLO		down	gold
Los Cerros	LCL		new low	gold exploration
Lotus Resources	LOT		sideways through downtrend	uranium
Lucapa Diamond	LOM		new uptrend forming, but struggling	diamonds
Lunnon Metals	LM8		down	nickel
Lynas Corp.	LYC		down	rare earths
Magnetic Resources	MAU		surge on REO news, then retracement	gold exploration
Mako Gold	MKG		failed at resistance line	gold exploration
Marmota	MEU		sideways	gold exploration
Matador Mining	MZZ		new low	gold exploration
Mayur Resources	MRL		strong rise from lows	renewables, cement
Meeka Gold	MEK		surge on drill results -capital raising	gold
Megado Gold	MEG		back to downtrend	rare earths, gold exploration
MetalsX	MLX		new low	tin, nickel
Metro Mining	MMI		slump out of new uptrend with a placement	bauxite
Mincor Resources	MCR		down	gold/nickel
Mithril Resources	MTH		down	gold/silver
Musgrave Minerals	MGV		testing downtrend	gold exploration
Nagambie Resources	NAG		stronger	gold, antimony
Neometals	NMT		rising	lithium
Northern Star Res.	NST		strong rise	gold
Nova Minerals	NVA		down again	gold exploration
Orecorp	ORR		at lows	gold development
Oz Minerals	OZL		new high on BHP takeover moves	copper
Pacific Gold	PGO		down	gold exploration
Pantoro	PNR		new low	gold
Panoramic Res	PAN		down	nickel
Peak Resources	PEK		rising	rare earths
Peel Mining	PEX		breached steepest downtrend	copper
Peninsula Energy	PEN		sideways	uranium
Poseidon Nickel	POS		still down	nickel

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Perseus Mining	PRU	<span style="color: red;">■</span>	down	gold
Provaris Energy	PV1	<span style="color: green;">■</span>	rising	hydrogen
PVW Resources	PVW	<span style="color: orange;">■</span>	breached downtrend	rare earths
QMiners	QML	<span style="color: red;">■</span>	new low	copper
Queensland Pacific Metals	QPM	<span style="color: orange;">■</span>	sideways	nickel/cobalt/HPA
Red River Resources	RVR	<span style="color: red;">■</span>	new low	zinc
Regis Resources	RRL	<span style="color: red;">■</span>	down	gold
Regergen	RLT	<span style="color: red;">■</span>	down	gas, helium
Resource Mining Corp.	RMI	<span style="color: orange;">■</span>	sideways	nickel exploration
RIO	RIO	<span style="color: red;">■</span>	new low	diversified, iron ore
Rumble Resources	RTR	<span style="color: red;">■</span>	secondary downtrend	gold exploration
S2 Resources	S2R	<span style="color: orange;">■</span>	sideways	gold exploration
St Barbara	SBM	<span style="color: red;">■</span>	down	gold
Sandfire Resources	SFR	<span style="color: red;">■</span>	heavy fall	copper
Santos	STO	<span style="color: orange;">■</span>	breached trend line support	oil/gas
Sarama Resources	SRR	<span style="color: red;">■</span>	down	gold exploration
Silex Systems	SLX	<span style="color: red;">■</span>	peaked, then sharp fall	uranium enrichment technology
Silver Mines	SVL	<span style="color: red;">■</span>	down	silver
South Harz Potash	SHP	<span style="color: red;">■</span>	still in downtrend	potash
Southern Cross Gold	SXG	<span style="color: red;">■</span>	down	gold exploration
Stanmore Coal	SMR	<span style="color: green;">■</span>	surge higher	coal
Strandline Resources	STA	<span style="color: green;">■</span>	strong rise	mineral sands
Sunstone Metals	STM	<span style="color: red;">■</span>	downtrend	exploration
Talga Resources	TLG	<span style="color: orange;">■</span>	testing steepest downtrend	graphite
Tamboran Resources	TBN	<span style="color: orange;">■</span>	breached downtrend	gas
Technology Metals	TMT	<span style="color: red;">■</span>	down	vanadium
Tesoro Resources	TSO	<span style="color: red;">■</span>	new low	gold exploration
Theta Gold Mines	TGM	<span style="color: red;">■</span>	strong rise from lows - at resistance	gold
Thor Mining	THR	<span style="color: orange;">■</span>	sideways through downtrend	gold exploration
Tietto Minerals	TIE	<span style="color: orange;">■</span>	breaching downtrend	gold
Turaco Gold	TCG	<span style="color: red;">■</span>	bouncing from lows	gold exploration
Vanadium Resources	VR8	<span style="color: orange;">■</span>	testing downtrend	vanadium
Venture Minerals	VMS	<span style="color: red;">■</span>	down	tin, tungsten
West African Resources	WAF	<span style="color: red;">■</span>	down	gold
Westgold Resources	WGX	<span style="color: red;">■</span>	down	gold
West Wits Mining	WWI	<span style="color: red;">■</span>	new low	gold
Whitehaven Coal	WHC	<span style="color: green;">■</span>	new high	coal
Yandal Resources	YRL	<span style="color: red;">■</span>	new low	gold exploration
Zenith Minerals	ZNC	<span style="color: orange;">■</span>	breached steepest downtrend	gold exploration
Zinc Mines of Ireland	ZMI	<span style="color: orange;">■</span>	sideways	zinc
Totals	14%	20	Uptrend	
	56%	82	Downtrend	
		146	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.

Amber Lights in Tables: Just a reminder if when the amber light is used in the table – it is when the charts are ambiguous or when there is a change of trend taking place. If a chart is breaching a downtrend it can either be a positive sign or a trap. Only once it has done more work can it be confirmed as a new uptrend. Maybe it is a new uptrend (or conversely a new downtrend); the risk takers can decide to jump on board early (or sell). They will maximise their profits (or minimise their losses if indeed it is the start of the new uptrend (downtrend). More risk-averse investors should wait a little longer, being prepared to give up some of the gains in return for greater certainty.

Weightings of Sectors Represented in the Company Charts			
Sector	No. of Companies	Weighting	
Gold	32	21.9%	
Gold Exploration	22	15.1%	
Rare Earths	12	8.2%	
Nickel	11	7.5%	
Copper	9	6.2%	
Oil/Gas	9	6.2%	
Iron Ore/Manganese	6	4.1%	
Zinc/Lead	5	3.4%	
Lithium	4	2.7%	
Uranium	4	2.7%	
Graphite/graphene	3	2.1%	
Potash/Phosphate	3	2.1%	
Coal	3	2.1%	
Mineral Sands	3	2.1%	
Silver	2	1.4%	
Bauxite	2	1.4%	
Vanadium	2	1.4%	
Cobalt	1	0.7%	
Tin	2	1.4%	
Diamonds	1	0.7%	



Other	10		
Total	146		

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