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GEOPHOTO MINERALS REPORT 1969/55

PROPOSALS ON EXPLORATION OF THE COMET-  
KOSMINSKY-SOUTH COMET LINE, E.L.7/68 -  
WEST TASMANIA

TEXINS DEVELOPMENT PTY. LTD.

MARCH, 1970.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONSIt is recommended at this time

1. Diamond drilling in E.L.7/68 be concentrated at Kosminsky Hill and South Comet until June 30th, 1970 with a view to
  - i) intersection at depth of lenses intersected in KHDDH1, KHDDH3, KHDDH4 and KHDDH6;
  - ii) closing in laterally to firstly 200 feet and 100 feet spacing between Comet Creek and South Comet Creek;
  - iii) probing of gossans and geochemical and geophysical targets near the Comet Line of Lode;
  - iv) probing South Comet mineralised lenses (the extension of those at Kosminsky Hill).

The priorities for this depend largely on our budget and amounts we can allocate for gaining access to drill sites but proving large tonnage should be our first objective and this is most cheaply obtained on lateral extensions of present indicated ground.

2. Diamond drilling should preferably be aimed at targets outlined after geophysical check by I.P. or E.M. methods.
3. Concurrent with drilling, cross sections and longitudinal sections should continue to be prepared, and a perspex three dimensional model be prepared to assist in planning feasibility of mining by trackless or other methods.

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4. Concurrently, surface search (geophysical, geological and geochemical) should proceed normally in all other areas of E.L.7/68 that are worthy of exploration.
  5. If results show promise of a viable mining operation on June 30, a separate development budget should be made available for the Kosminsky-South Comet project.

#### SUMMARY OF PROGRESS

##### DRILLING

1. The Comet-Kosminsky Line of Pb-Zn-Ag mineralisation is a zone of mineralised faults extends for some 10,000 feet.
2. Over this length mineralisation is exposed at intervals and old shallow workings lie on these exposures.
3. Eight holes declined at  $55^{\circ}$  -  $60^{\circ}$ , but shallowing on drilling, have been put into the Comet-Kosminsky Line of lode over a distance of 1,500 feet in the Kosminsky Hill area. One outlying hole 1,200 feet north and a second 900 feet north have been completed on the Comet-Maestries section. A southern sector (South Comet) is shortly to be tested.
4. The sites were selected mainly on geologic grounds with limited geophysical assistance after gaining access and gridding the areas.

- 5. Of the eight inclined Kosminsky holes, all have intersected mineralised zones. Six have shown some intersections with widths of possible mining significance and with grades that would probably be economic if sufficiently large tonnages can be proved. These cluster in an area about 1,500 feet by 400 feet as proved to date.

Two holes have met minor mineralisation only. For one, KHDDH2, this may be explained by transverse faulting causing the drill to miss the main targets whilst in the other, KHDDH5, the mineralisation of the inferred extension of one "ore" lens was limited in grade and thickness, and other mineralised lenses were not strongly developed gradewise. This would suggest "making" and "breaking" of ore in the lode zone as suggested also by past shallow workings.

- 6. Of two Comet section drill holes, minor copper and lead-zinc mineralisation occurred in Comet DDH1 and more significant intersections (not yet assayed) in Comet DDH2.

GEOLOGY

- 1. The whole zone is strongly disrupted by faulting and stratigraphy is complex. Surface outcrop is poor and forest coverage difficult to work. These conditions lead to difficulty in interpreting and correlating data even between close spaced drill holes and between bore holes and surface.

GEOLOGY (cont.)

2. The shape of ore lenses is not known. It is possible that they may pitch steeply and consequently have important vertical expression in fracture planes. This can only be determined by deep drilling as to date we have lateral data at about one level only.
3. To assist geologic interpretation a 3 dimensional model showing all geologic, topographic, drilling and mine working data is being prepared. Drill sections have also been prepared.
4. A summary of drill hole results to March 31st, 1970 is appended (Table I).
5. Some 9,000 feet of the line, including ground recently optioned at South Comet, remain to be probed.

GEOPHYSICS

It is recommended that R.E.M. geophysics or I.P. be done over geologic targets prior to drilling as both methods, after orientation on our drilled intersections, seem to give positive responses (anomalies) over mineralisation.

We have only limited capacity in these geophysical methods and without capital appropriations we must either do without the data or hire contractors.

OBJECTIVE AND TARGET

- 1. The objective is to prove up ore on this field that can be developed as a mine. The program should be abandoned if shoots prove too small or separated by too much barren ground to be economically mined.
- 2. Concentrated effort should soon be made on the Kosminsky Hill-South Comet area to prove size, distribution and attitude of ore lenses. The axis of ore shoots should be determined for later structural analysis for repetitions. We have had little data, let alone time to this date for proper mining geologic analysis.
- 3. Extensive mineralisation is undoubted. Multiple lodes or lenses exist and many targets (Table 2) remain to be tested over the Comet Line.
- 4. Besides the Comet Line, other nearby areas offer considerable scope for ore occurrence that could be fed to a common mill and treatment plant. Targets on these areas are being actively explored in the current field season. Many geochemical, geological and geophysical targets as yet untested by drilling are appearing.

The ideal aim would be to have adequate geologic, geochemical and geophysical data on these before each drilling site and target proposal and site priorities are put forward.

VIEWS ON PROGRESS

- 1. Progress on exploration has been excellent at limited cost.
- 2. Results have been promising. Host rocks are good, fracturing is intense and mineralisation is prominent. At Renison Bell after some years exploration in the Mt. Lyell-Goldfield programs, it is probable that the value of recoverable metal in Federal Lode intersections was only of the order of \$12 - \$15 per ton at then current tin prices and the mine was projected on this.
- 3. The exploration at the Comet Line resolves itself into proving whether or not a number of ore lenses (either individual bodies or faulted sections of once continuous bodies) carry enough ore and are sufficiently close spaced to be mined economically.

VIEWS ON MINING METHODS

- 1. It is too early yet in the exploration sequence to plan feasibility of mining at moderate to large scale.
- 2. Essential steps to this end are
  - i) further closeup drilling and a series of deeper holes beneath existing intersections in the Kosminsky Hill, Kosminsky and South Comet sectors of the Comet Line where our best intersections are;

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    - ii) full topographic and bore hole survey;
    - iii) preparation of a 3 dimensional model of the mineralised block.
  3. The following views present themselves on mining methods:
    - i) Newer mines such as Renison (Tasmania) and Otter (Kambalda, W.A.), are trackless and ore is brought out of inclined tunnels direct to mill dump by diesel powered haulers. Ore is won very cheaply and mines can be established in a very short time (6 weeks at Otter).
    - ii) It appears to me that the topographic and ore situations at Comet-South Comet are particularly suitable for decline (including tunnel) development for mining and trackless vehicles for haulage. This does away with shaft haulage and poppet heads etc.
    - iii) Trackless mining with rubber tyred haulers carting ore direct to mill offers efficiencies over railed transport and in mine maintenance etc. and flexibility in that transfer to new sections of mine or new mines is easily accomplished.
  4. Use might be made of existing shallow workings for haulage and for ventilation, and raise boring should be considered for ventilation of decline.

5. Ground water in this wet region may be a problem but Renison and Rosebery mines are in similar situations.
6. The first essential in considering feasibility is to outline ore lenses from barren ground so that the cost of mining and dumping barren development ground, in getting to "ore", can be assessed.
7. Ore of value to \$20 to \$25 to be mined at a rate in excess of 250,000 tons a year for 10 years should be aimed at (i.e. Rosebery tonnage dimensions). For this purpose 1,000,000 tons of ore of \$25 value or its equivalent will be the first target to be achieved.
8. It should be realised that the Comet-Kosminsky Line is but one of many lead-zinc prospects within our Zeehan permits, so that the prospect itself should not be considered in isolation in a mining treatment operation. It is possible that several individual mines could feed a central crushing plant and metal concentrating plant.

We have not progressed beyond surface exploration with most of these other prospects.

Dr. J.H. Rattigan  
Minerals Exploration Manager.

HOLE	SITE PARTICULARS	ASSAYED MINERALISED INTERSECTIONS			ASSAY				APPROX. VALUE PER TON \$A	GEOLOGY AND REMARKS		
		INTERVAL	WIDTH	NAME	PB	ZN	AG	CU				
KH DDH 2	COMET-KOSMINSKY 18.5W, 20.5S RL 140' 070° true, 55° D. 946'6" Comm. 22.8.69 Compl. 27.9.69	74'0" - 76'0"	2'0"	PRESIDENT						Cherty mudstone, pink veined with carbonate and dolomite? Narrow vein cannot be worked to this width. Dolomitic siltstone, pink or green brecciated and mineralised.		
		76'0" - 77'8"	1'8"		10.08	5.1	2.2	Tr.	50 *			
		76'0" - 79'0"	3'0"		6.6	2.8	1.3	Tr	30			
				291'0" - 295'5"	↑ 24' ↓	LUNAR LANDING						Light grey dolomites and dolomitic siltstone with fissure veins of galena and sphalerite. Part of 24' zone of galena and sphalerite. Brecciated dolomite and slates weakly mineralised Dolomites and slates mineralised weakly.
				294'8" - 298'0"			1.00	1.99	Tr	Tr	8 *	
				298' - 315'								
				353' - 362'3"								
		656' - 657'										
KH DDH 3	COMET-KOSMINSKY 14W, 19.5S RL 262' 070° true, 55° D. 772'3" Comm. 21.10.69 Compl. 12.11.69	67'0" - 77'0"	10'0"	-	0.42	0.46	Tr	Tr	- *	Ferruginous, gossanous zones with some visible galena.		
		85'6" - 91'6"	6'0"	-	0.25	0.9	Tr	Tr	- *	As above.		
		121'0" - 129'0"	8'0"	LUNAR LANDING	15.8	2.40	3.2	Tr	56 ***	Fissure lode in sedimentary dolomite; gangue-ankerite. Grade allows considerable margin for dilution.		
		120'0" - 130'0" (10'0")			12.6	1.9	2.5	Tr	47 ***			
		770'0" - 772'3"	2'3"	-	-	-	-	-	-	Entered mineralised fault. Must be tested from new site.		
KH DDH 5	COMET-KOSMINSKY 16W, 22S, RL - 070° true, 55° D. 936' Comm. 4.12.69 Compl. 22.12.69	243'8" - 245'8"	2'0"	LUNAR LANDING	2.15	1.62	0.5	Tr	10 *	Fissure veins in dolomite.		
		481'0" - 482'0"	1'0"	-	-	-	-	-	- *	Weak galena.		
		517'0" - 546'0"	19'0"	?APOLLO	-	-	-	-	-	Wide zone of weakly mineralised dolomite slates.		
KH DDH 1	COMET-KOSMINSKY 16W, 22S, RL - 100° true, 55° D. 988' Comm. 5.7.69 Compl. 18.8.69	288'0" - 328'0"	40'0" best (30')	LUNAR LANDING	3.75	1.50	2.0	Tr	18 ***	Fissure lode in sedimentary dolomite.		
					4.0	2.10	2.0	Tr	21 ***			
		650'0" - 675'0"	25'0"	APOLLO	5.66	0.88	4.0	Tr	25 ***	Fissure lode in dolomite slates.		
		665' - 675'	10'0" best (7')		10.31	1.64	9.3	Tr	51 ***			
				TRANQUILITY	14.2	2.1	1.3	Tr	68 ***	Fissure lode in graphitic slates.		
		821' - 831'	10'0" best (4')		2.2	0.15	2 oz.	Tr	10 ***			
			3.38	0.33	4 1/2 oz.	Tr	20 ***					
KH DDH 6	COMET-KOSMINSKY 13.5W, 25.75S RL - 070° true, 55° D. 577' Comm. 4.12.69 Compl. 22.12.69	237' - 249'	12'0"	LUNAR LANDING	4.7	3.1	2 1/2 oz.	Tr	27 ***	Fissure lode in graphitic slates, and quartzites; and dolomitic slates.		
		237' - 267'	30'0"		2.3	1.7	1 1/2 oz.	Tr	14 ***			
		267' - 307'	30'0"							Weak galena and sphalerite at intervals. Adds to attraction of zone in case of increase in width of ore zone on strike.		
									* of no economic consequence mining wise because of narrow width of low values but indicates possible lode site.			
									*** of possible economic consequence.			

HOLE	SITE PARTICULARS	ASSAYED MINERALISED INTERSECTIONS			ASSAY				APPROX. VALUE PER TON \$A	GEOLOGY AND REMARKS	
		INTERVAL	WIDTH	NAME	PB	ZN	AG	CU			
KH DDH 4	COMET-KOSMINSKY 12.5N, 27S; R.L. - 070° true, 55° D. 627' Comm. 13.11.69 Compl. 3.12.69	258'0" - 283'0"	25'0"		3.53	1.22	2oz	Tr	18 ***	Brown dolomitic slate and light grey quartzites with graphitic partings and black graphitic slates veined with secondary carbonate. Galena, sphalerite much pyrites.	
		265'0" - 279'0"	best (14')		4.87	1.48	3oz	Tr	21 ***		
		237'0" - 303'0"	16'0"		-	-	-	-	-	-	Altered, cream dolomite and black slates; secondary dolomite with galena and sphalerite.
		319'0" - 325'3"	6'3"		-	-	-	-	-	-	Core lost 321' - 325'3"; slates 317' - 319', some weak galena. Quartz, cream dolomite with galena and sphalerite.
		332'0" - 337'0"	5'0"		-	-	-	-	-	-	Massive quartz-calcite dolomite vein with galena fault?
		346'9" - 349'9" 349'6" - 355'6" 355'6" - 358'0"	3'0") ) 2'6")	11' 3"	4.9 - 1.08	1.17 - 1.72	1.5 - 1oz	Tr - Tr	20 *** - -	-	Dark slate, secondary veins with galena.
KH DDH 8	COMET-KOSMINSKY 15.5W, 30S; R.L. - 100°, 55° D. 827' Comm. 27.1.70 Compl. 17.2.70	16'6" - 47'2"	30'8"	CLIPPER	0.39	0.47	Tr	Tr	- *	Weakly mineralised sections. Wide oxidised Clipper lens demands testing at depth and on strike.	
		102'0" - 102'3"	3"		0.13	0.11	Tr	Tr	-		
		546'8" - 547'6"	10"		0.86	4.38	Tr	Tr	-	-	
		585'0" - 598'0"	13'0"	SNOOPY	-	-	-	-	-	-	Laminite with quartzite - black slate alternation. Brecciated slate and light grey dolomitic? slate with secondary dolomite and sulphides.
		585'0" - 597'0"	best (12')		0.32	1.52	Tr	Tr	6 *	-	
		633'0" - 649'0" 636'0" - 647'0"	16'0" best (11')	CHARLIE BROWN	- 2.04	- 0.45	- 1 1/2 oz	- Tr	- Tr	10 ***	Dark slate and mid grey quartzite sandy dolomite.
726'0" - 729'0"	3'0"	PEANUTS							Laminite with breccia fillings of carbonate and sulphides.		
KH DDH 7	SOUTH COMET 13.5W, 25.75S; R.L. - 070, 55° D. 754'2" Comm. 6.1.70 Compl. 26.1.70	666'0" - 672'6"	6'6"	SNOOPY	3.62	3.04	0.6	Tr	21 ***	Light grey, quartzites with pyrite and fine galena with black dolomite slate and alterations.	
		710'0" - 716'0"	6'0"	CHARLIE BROWN	3.0	1.5	1.5	Tr	15	Laminite of thin quartzite - black slate above with mid-grey, massive "sandy" dolomite from 711' - 718' as ore host.	

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TABLE 2

Possible short term drill targets over the Comet Line. \*

Hole	Grid	Approximate site particulars	Remarks
SC DDH 1	South Comet	6.5W, 36S, 070, 55 <sup>o</sup> D	(To test mineralised ground south of
SC DDH 2	South Comet	6W, 38S, 090, 55 <sup>o</sup> D	(Kosminsky in Optioned
SC DDH 3	South Comet	4W, 43S, 070, 55 <sup>o</sup> D	(South Comet Leases.
SC DDH 4	South Comet	8W, 58S, 070, 55 <sup>o</sup> D	(To test beneath exposed ore on Adelaide Mine Creek
C DDH 2	Comet-Kosminsky	7S, 11W, 070, 55 <sup>o</sup> D	(To test geophysical
C DDH 3	Comet-Kosminsky	14W, 1S, 270, 55 <sup>o</sup> D	(anomalies west of
C DDH 4	Comet-Kosminsky	11W, 10S, 270, 55 <sup>o</sup> D	(Comet Shaft.
KH DDH 9	Comet-Kosminsky	12W, 16S, 060, 55 <sup>o</sup> D	To test gossan zone, (low priority)
KH DDH 10	Comet-Kosminsky	12W, 16S, 120, 55 <sup>o</sup> D	To test mineralized fault intersected in KH DDH 3.
KH DDH 11	Comet-Kosminsky	15W, 28S, 070, 55 <sup>o</sup> D	To test mineralised gossans and geophysical anomalies at depth.
P DDH 1	Comet-Kosminsky	17W, 25S, 250, 55 <sup>o</sup> D	To test Ni, Cu, Zn and Pb anomalies under gossans.
P DDH 1	Comet-Kosminsky	21W, 16S, 250, 55 <sup>o</sup> D	To test mineralised gossans.
KH DDH 12	Comet-Kosminsky	17W, 24-28S, 070, 55 <sup>o</sup> D	To test geophysical, grid geochemical anomaly.
C DDH 5	Comet-Kosminsky	5W, 00N, 070, 55 <sup>o</sup> D	To test East Comet gossans.

\* These relate to present information and may be modified according to later data acquisition and interpretation. Many other targets are probable when geophysical work is completed in a small area of 5 square miles about Dundas.

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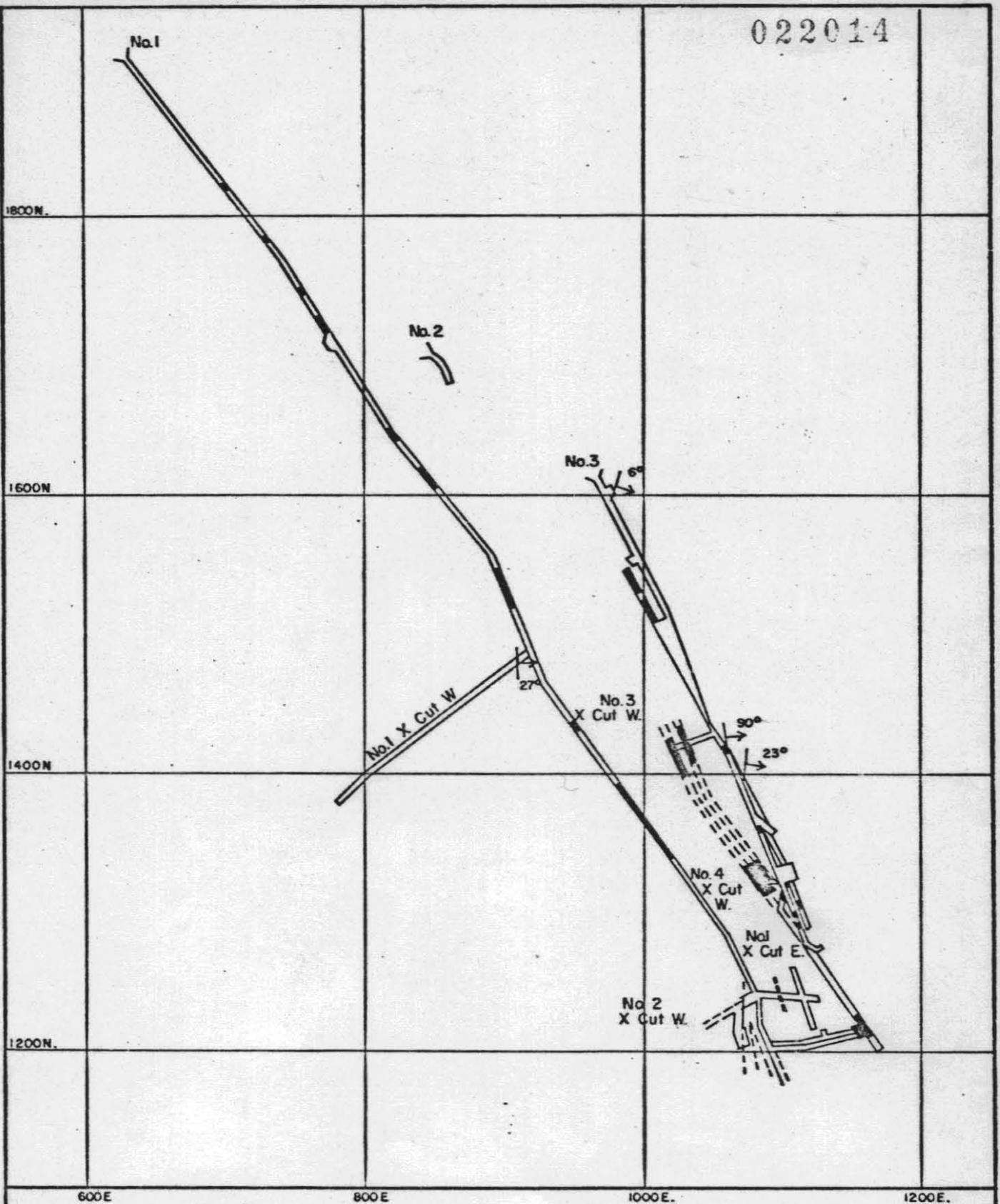
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THE GREAT SOUTH COMET WORKINGS

WEST TASMANIA.

by W. TURNER APRIL, 1970.

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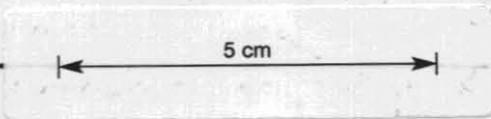
PLAN OF Nos. 1,2,3,4 ADIT LEVELS (TAYLOR 1950)  
 GREAT SOUTH COMET MINE TASMANIA

Scale : 1 inch = 100 feet.



DRAWING NO. 1/230

 Pb-Zn mineralization.



LODES AND ORE SHOOTS

Examination of South Comet Lodes in Adits 1 to 3 of the Smyth Leases 1M69 and 2M69 each of 34 acres and held under 2-year options by Texins Development Pty.Ltd. reveal significant features of ore habit.

Multiple linear mineralised zones here termed lodes exist in the district.

1.

No. 1 Lode or Smyth Lode

No. 1 Lode, Great South Comet (here termed Smyth) has been developed in No. 1 adit for a distance of 1,068 feet (of which 400 feet are now inaccessible because of fallen backs). This lode ranges from about 6 feet to a few inches and consists of coarse-grained sphalerite (dominant) with lesser coarse galena in a carbonated lode-shale breccia gangue and very little pyrite.

Lode and ore shoot Habit.

The lode walls are relatively clean and have a thin film of gouge (to  $1\frac{1}{2}$ " ). In level plan the lode shows strong continuity of mineralisation throughout

its observed length but better Pb-Zn mineralisation makes and breaks continually so that ore occurs as wider lensing shoots in "string of beads" habit joined by narrowed well mineralised sections.

According to B. Taylor's level plan the Smyth Lode may split (become composite) at the south-east extension of No. 1 adit.

The "ore shoots" contain strong veining of sphalerite and galena. Although the "ore shoots" within the lodes are clearly defined, the ankerite gangue with weak mineralisation (viz. veinlets and stringers of sphalerite and galena) continues between the rich shoots. It is possible that the weaker mineralised lode sections may also contribute in part to actual ore and are not necessarily mullock.

#### HANGING Wall Lodes

No. 1 crosscut driven south-west from No.1 adit intersected no ore, or significant mineralisation, on the hanging wall side of the Smyth Lode. This fact has to be reconciled with the first intersection (80 to 93 feet) in Geophoto SC DDH No.1 and may be explained by shoot lensing, or by dip of the first intersection.

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2. No.3 adit driven at a higher level topographically (230') and to the SSE of (and up-dip of) No.1 adit was presumably intended to be a productive development and mineralisation is met with along its course. Correlation of this adit "lode" and others adjoining is not completely clear of inference.
  
  3. No.3 and No.4 crosscuts driven westerly (hanging wall side) of adit 3, intersected two separated bands of mineralisation here termed:
    - (a) Hodge Lode (western) = Smyth Lode?
    - (b) Hodge Lode (eastern)
    1. On a dip of  $65^{\circ}$  the Hodge Lode (western) could correspond with the Smyth Lode of No.1 adit and on present data this interpretation is preferred.
    2. Alternatively, both Eastern and Western Hodge Lodes may be splits corresponding to the Smyth Lode.
    3. A third possible correlation presents itself. The Geophoto South Comet DDH1 intersected 2 "lodes" over the interval 350 feet to 476 feet bore depth (which corresponds to about 80 feet horizontal distance in level plan) and it is possible the Smyth Lode may correspond with the intersection at 450 - 476 feet. In this case both Hodge Lodes may be on the footwall side of the Smyth Lode. The minor fault picture is not yet clear on the Great South Comet area.

Footwall Lodes

4. From the hanging wall in No. 3 cross-cut east, to the No. 3 adit there is fine carbonate veining of the Hodge Slate (siltstone and fine sandstone) with two distinct lodes. There is more galena and sphalerite in the adit close to the turnoff of the cross-cut from the No.3 adit. This gives, here, no less than 35 feet of mineralised "lode-gangue" material. If continuous with depth this material should be found on No. 1 adit level to the east (footwall side) of the adit line where little development was ever done. The only cross-cut east from this No. 1 adit level (no. 1 cross-cut east) is reported to have cut a narrow lode about 15ft. from the mouth of the cross-cut. This may correspond to a weak lode on the footwall side of the Hodge intersected in the No. 3 adit.

DEVELOPMENT

Although the best mineralised lenses are clearly defined, the lode-gangue carbonate zones continue to a lesser degree between the lodes with veinlets and strings of sphalerite and galena. Very little ore has been however stoped out, the only large stopes being No.7 and No.8 in Adit 3. High zinc content was apparently a problem in early economic working, which was interested mainly in hand picked argentiferous lead of extremely high grade. The various adits, shafts, raises, winzes and

stopes give a very incomplete picture of geologic conditions and ore habit in the Great South Comet area.

The current diamond drilling programme will greatly extend our knowledge on lode, ore shoot and fault distribution. However, preliminary data suggests this is a very interesting economic prospect deserving of much more detailed exploration.

Additions.

- 1. Composite Level Plan. Dwg. 1/230
- 2. Cross Section. See Taylor 1950.