



A.B.N 35 000 689 216

QUARTERLY REPORT TO 31 DECEMBER 2005

KEY SUMMARY

- **PEAK HILL GOLD MINE** – The Peak Hill mine recovered its final gold during the Quarter with the total output reaching 153,655 ounces over the project life and returning a net cash flow of A\$9 million to Alkane.

➤ **TOMINGLEY GOLD PROJECT**

- **Drilling in the Porphyry Zones at Wyoming One continued to confirm the potential of the high grade structures as well as the newly discovered '831' Zone:**

WY 837D	5.00 metres grading	3.35g/t gold from 134 metres
including	3.00 metres grading	5.11g/t gold from 136 metres
and	11.00 metres grading	2.91g/t gold from 221 metres
including	6.00 metres grading	4.16g/t gold from 224 metres

WY 838D 9.00 metres grading 9.57g/t gold from 207 metres
including 5.00 metres grading 15.60g/t gold from 208 metres

WY 839D 15.00 metres grading 4.43g/t gold from 99 metres
including 9.00 metres grading 6.08g/t gold from 99 metres
and 6.00 metres grading 7.98g/t gold from 151 metres

- Screen fire assay checks of the high grade zone in WY 831D within the Wyoming One deposit have significantly upgraded the original intercept of 66.00 metres grading 13.80g/t gold to:

66.00 metres grading 19.49g/t gold from 268 metres

- **Compilation of data for the pre-feasibility study continued and is scheduled for completion before the end of the current quarter.**

► EXPLORATION

- **Reconnaissance drilling at Molong intersected extensively altered sediments and volcanics. While assay results received to date were not significant the nature of the alteration and widespread pyrite mineralisation are indicative of systems peripheral to porphyry gold-copper deposits and sedimentary replacement style mineralisation.**
- **Discussions regarding the potential channel iron deposit within the Nullagine Project continued and title is expected to be granted before the end of January.**

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NEW SOUTH WALES

TOMINGLEY GOLD PROJECT (TGP)

Alkane 100% subject to separate royalty agreements with Compass Resources NL, Golden Cross Operations Pty Ltd and Climax Mining Ltd.

Total resources for the **Wyoming** gold deposits stand at **7.13Mt grading 2.70g/t gold (606,400 ounces)**. Drilling during the Quarter was focussed on checking high grade zones within the **Porphyry** and testing extensions to the newly discovered '831' structure to assist with the optimisation of the development model.

Wyoming Resource Development Drilling

Three diamond core holes (total 1005.6m) were completed at Wyoming One to check the lateral extent of the newly discovered '831' zone as part of the pre-feasibility study into the development of the **Wyoming** gold deposits. Initially this zone was interpreted to form part of the east-west '497' zone but the follow up drilling and re-logging of existing core suggested it is a separate structure which is located between the high grade '376' and the '497' structures.

The holes were targeted to the east and west of the **WY 831D** (66m @ 19.49g/t Au) intersections at approximately the same vertical level of 000mRL, (250 metre depth) within the main Wyoming One porphyry. **WY 837D** intersected mineralisation in the **Northern Zone**, the '376' structure and alteration and mineralisation associated with the interpreted '831' structure to the west of the original WY 831D hole. Scattered visible gold was observed in all three zones.

WY 838D was located to test the eastern side of the zone but was deviating away from the main target after intersecting alteration and mineralisation associated with several zones including the possible eastern extension of the '831', each with occasional visible gold, and was terminated at 305 metres. **WY 839D** was orientated slightly further west and it again intersected several zones of alteration and mineralisation, with scattered visible gold. Parts of these zones have been interpreted to be the eastern extension of the '831' zone. Recent results are summarised in Table 1.

The '831' zone is now interpreted to trend west north-west across the porphyry with a strike length of at least 70 metres, widths ranging up to 20 metres and an open vertical extent. It is believed to constitute a new and substantial ore shoot which will be incorporated into the underground mining plan.

The significant upgrading of the original gold results for WY 831D by screen fire assay and this technique will also be used the check intervals containing visible gold in WY 837D, WY 838D and WY 839D.

Pre-feasibility Study

The geological and resource model for the Wyoming One deposit is currently being updated to include these recent intersections. The collaborative structural study of the Wyoming deposits with the **pmd*CRC (CSIRO)** group continued. The current work was designed to collect structural information from drill core and factor this data into the computer models to assist with the understanding of the mineralised system, and provide future targeting. The delay in completing the last three drill holes has extended the time frame for finalising the study to the end of March.

The revised geological model is being incorporated into the feasibility study for the optimal development of the Wyoming deposits currently in progress. This is scheduled for completion in the March Quarter.

DUBBO ZIRCONIA PROJECT (DZP)

Australian Zirconia Ltd (AZL) 100%

A program and budget has been proposed to initiate the process optimisation work recommended by the Project's

consultants, TZ Minerals International Pty Ltd (TZMI). This work will lead to the design and construction of the Demonstration Pilot Plant (DPP) scheduled for later in 2006. The DPP will allow all of the processing steps (milling, sulphation, leaching and solvent extraction) to be run continuously for the first time at a rate considered to be appropriate for scale up to the full commercial plant.

Several products will be generated sequentially along the production line and ultimately 7.5 tonnes of zirconium products, 1.5 tonnes of niobium/tantalum product and 3 tonnes of yttria-rare earth concentrate will be produced. These products will be presented to potential customers in Europe, US and Japan for their evaluation (through downstream processing).

It is anticipated that the DPP program would enable the feasibility study to be updated in the second half of 2007.

PEAK HILL GOLD MINE

Alkane Exploration Ltd 100%

The Peak Hill Gold Mine poured its final gold bar of 243 ounces during the Quarter. Total production over the 10 year mine life totalled **153,655** fine ounces.

This compares well with the 86,000 ounce forecast production upon which the heap leach mine was commenced in 1996. The addition of several satellite resources and the commissioning of dump leaching (no crushing) of the low grade stockpiles provided the additional ounces and doubled the anticipated 5 year mine life. Approximately 5 million tonnes were heap and dump leached from 5 open cuts at an average grade of 1.56g/t Au and waste to ore ratio of 1:1. Treatment rates were ramped up to 600,000 tonnes per annum for heap leaching and a similar rate for dump leaching. Gold production peaked at 30,000 ounces in 2000 and the operation employed around 50 full-time employees.

The mine returned a healthy net cash flow of approximately \$9m to Alkane over its life. This is after all costs and royalties associated with the project.

Mine closure activities continued during the Quarter. The heap leach pad was decommissioned with removal of all the irrigation equipment. Final rehabilitation involving major works in reshaping, topsoiling and seeding of the heap to create a long-term stable landform was also completed.

The Peak Hill Gold Mine represented Alkane's first substantial operating venture and it is one the Company intends to build on in the near future.

The significant (450,000 ounces) but moderately refractory sulphide gold-copper orebody below the oxide mine remains subject to ongoing review and will be re-assessed following successful development of the Wyoming deposits.

ORANGE DISTRICT EXPLORATION JOINT VENTURE - ODEJV (gold-copper)

Alkane Exploration Ltd 100%, subject to Newmont Australia Limited earning an initial 51%

As advised on 17 August 2005, Alkane reached agreement with Newmont Australia Limited (Newmont) to farm in to Alkane's **Orange Project** which includes the **Molong** (EL's 6025 and 6091) and **Moorilda** (EL's 5760 and 6111) tenements located near the city of Orange in the Central West of New South Wales, adjacent to Newcrest Mining Ltd's Cadia Valley Operations (~30Moz total resources).

Unfortunately Alkane and Newmont have been unable to reach agreement with Rio Tinto Exploration Pty Limited (Rio) to restructure the buy-back option held by Rio for the **Cudal** tenements which would be triggered by the discovery of a mineral resource of 5 million ounces of gold or equivalent value. Accordingly Cudal will not form part of the ODEJV but the terms of the Newmont farm-in remain unchanged. Alkane believes that Cudal retains significant potential for gold and gold-copper mineralisation and will review the options for advancing the project.

During the Quarter an initial reconnaissance drilling program was completed at **Molong** where targets include

monzonite intrusive associated porphyry gold-copper mineralisation of the Cadia-Ridgeway type and sediment replacement gold deposits of the Carlin type. The program comprised four core holes (**MDD 028 - 031**) totalling 1,266.3m and one RC hole (**MDD 032**) for 150m and was designed to test stratigraphic, alteration and geophysical targets in the Charlies and Galloway areas. Previous drilling in these areas has intersected extensively altered monzonite intrusives within altered sediments and volcanic rocks, with narrow high grade gold intercepts up to 9.91 g/t gold and 0.56% copper.

Hole No	East (AMG)	North (AMG)	Azimuth	Inclination	Type	EOH (m)	Prospect
MDD 028	680740	6321200	180°	-60°	HQ3	315.8	Charlies
MDD 029	679892	6322110	180°	-60°	PQ3/HQ3	372.8	Charlies
MDD 030	681908	6323606	180°	-60°	PQ3/HQ3	327.9	Galloway
MDD 031	682575	6319995	180°	-60°	PQ3/HQ3	246.8	Charlies South East
MRC 032	681108	6322816	180°	-75°	RC	150	Galloway

In the **Charlies** area, holes **MDD 028** and **029** are over 1km apart and both intersected extensively altered sediments and volcanics, with narrow intensely hematite-magnetite altered intrusive monzonite dykes. Sections containing in excess of 10% pyrite with rarer stringer veining of quartz-carbonate ± chalcopyrite ± molybdenite were also observed. Only weakly anomalous results were returned from MDD 028 with peak values of 0.17g/t gold, 0.12% copper and 0.7% zinc (not coincident).

Gold was more widespread in MDD 029 with numerous intercepts of greater than 0.1 g/t gold. Results include:

- 4m @ 0.16g/t Au from 157m
- 3m @ 0.16g/t Au from 177m
- 3m @ 0.17g/t Au from 186m

The results from both holes are consistent with them being peripheral to the outer zone of a typical NSW type porphyry system and are considered very encouraging.

At the **Galloway** prospect, about 3km northeast of Charlies, **MDD 030** also intersected extensively altered sediments and volcanics, including a 20m intercept of oxidised garnet-hematite-diopside skarn with up to 3% pyrite and rare chalcopyrite. This skarn horizon presents both an exploration vector to porphyry style gold-copper mineralisation as well as a target in its own right.

Results are yet to be received.

MDD 031 is located approximately 2km southeast of MDD 028 and was sited to test an aeromagnetic structural target. The hole intersected a thick package of relatively unaltered sediments but no assay data is available to date. RC hole **MRC032** tested a geophysical anomaly 800m west of MDD 030 at Galloway but failed to intersect any mineralisation.

These widely spaced reconnaissance holes have confirmed the potential of the project area to host both porphyry style and sedimentary replacement style mineralisation and a significant exploration effort, including further RC and diamond core drilling, is being scheduled for the tenements.

WELLINGTON (copper-gold) and **BODANGORA (gold-copper)**. No field work was completed during the quarter.

WESTERN AUSTRALIA

LEINSTER REGION JOINT VENTURE (nickel-gold)

Alkane Exploration Ltd 49%, Jubilee Mines NL 51%

*The three prospects - **Leinster Downs**, **Miranda** and **McDonough Lookout** - are subject to a farm-in agreement with Jubilee*

Mines NL where Jubilee can earn a 75% interest in the properties by spending \$4.5M before March 2006. In March 2002 Jubilee reported expenditures to earn a 51% interest and have elected to continue to earn a further 24%.

Jubilee have advised that no field work was carried out during the Quarter.

The **Mt KEITH** tenements were relinquished.

NULLAGINE DIAMOND PROJECT (diamonds, iron, gold)

Alkane Exploration Ltd 60%, Randolph Resources Syndicate 40%

Discussions continued with groups interested in advancing the potential 150 to 220 million tonne channel iron deposits within the Nullagine tenements. The tenements are scheduled to be approved late January.

CORPORATE

Following extensive discussions with brokers/financiers in London, the Board is reconsidering the proposal to separate Alkane's Dubbo Zirconia Project (DZP) by seeking simultaneous listing of the Company's wholly owned subsidiary Australian Zirconia Ltd on the Australian Stock Exchange Limited (ASX) and London's AIM market.

Advice from financial advisers in London is that the diversity of Alkane's existing mineral portfolio offers a more attractive investment opportunity than a single asset company and an AIM listing of the parent company was recommended. AIM listing would expose the Company to the broader and more sophisticated UK and European markets which appear more understanding of projects such as the DZP. This recommendation is being considered.

As advised to ASX on 15 December, Alkane placed 10 million shares with clients of D J Carmichael Pty Limited at an issue price A\$0.19 per share. The A\$1.9 million raised (less costs) will be applied to completion of the Wyoming pre-feasibility study, further development work for the DZP and working capital.

Following this placement, Alkane's issued and quoted capital is 165,999,501 ordinary fully paid shares. There are also 6,225,000 unlisted options on issue with varying exercise prices and expiry dates.

DI Chalmers

Technical Director

ALKANE EXPLORATION LTD

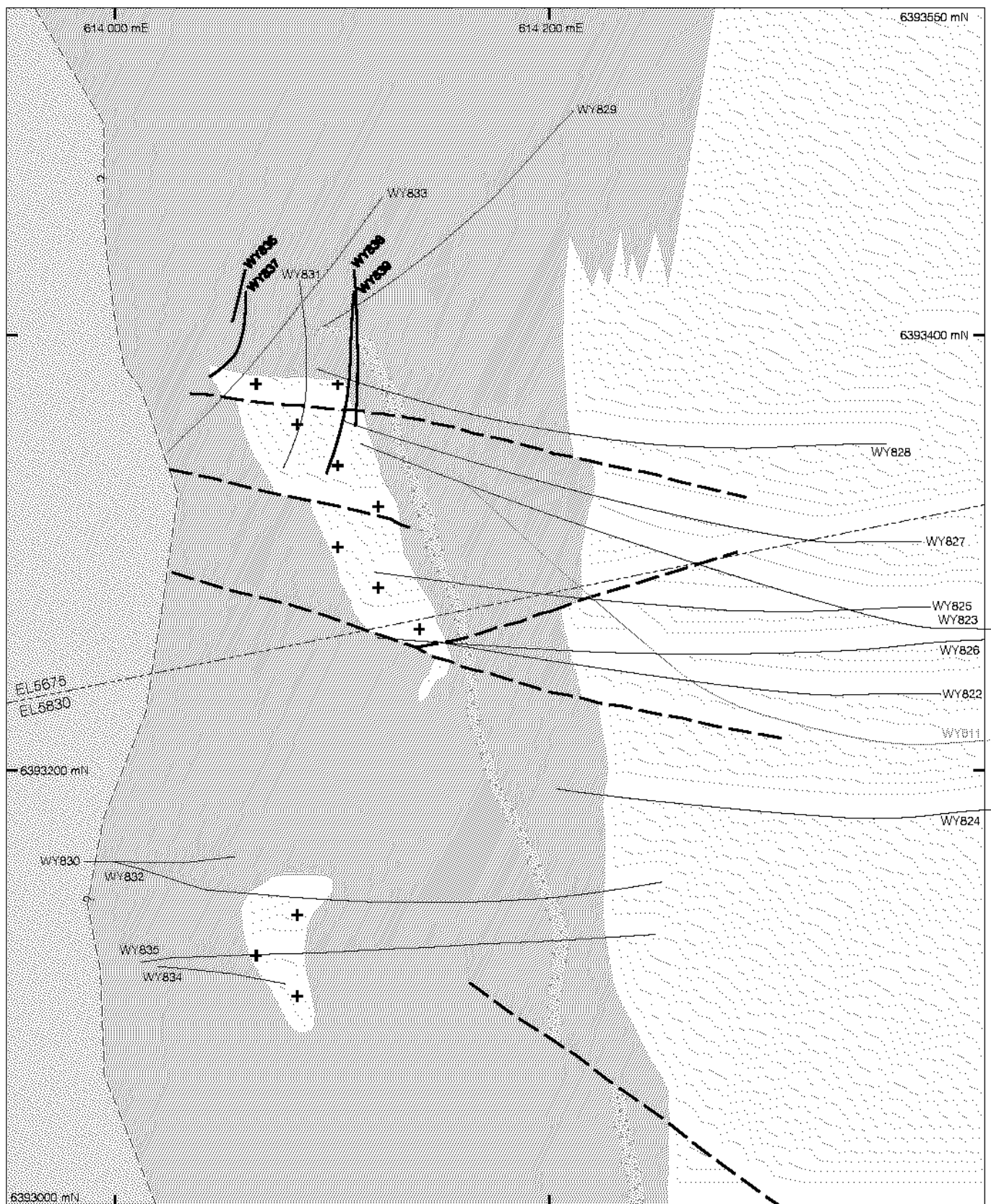
Mr D I Chalmers, FAusIMM, FAIG, (director of the Company) has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Ian Chalmers consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Table 1 - Wyoming results.

Summary of all holes completed during the Quarter

Hole No	East	North	Azimuth	Intercept (m)	Grade (g/t Au)	Interval (m)	EOH (m)	Target Zone
WY 837D	614060	6393420	180°	6*	2.11	60 - 66	315.7	North
and				3*	2.81	87 - 90		North
and				12*	1.33	105-117		North
and				5	3.36	134-139		North
incl				3	5.11	136-139		
and				10	2.09	167-177		'376'
incl				5	2.55	168-173		
and				2	3.48	175-177		'376'
and				7	1.30	184-191		'376'
and				2.7	3.05	201-203.7		Porphyry
and				11	2.91	221-232		'831' ?
incl				6	4.16	224-230		
and				1	4.54	247-248		Porphyry
WY 838D	614110	6393430	175°	9*	1.77	117 - 126	305	HWZ
incl				3*	3.97	123 - 126		
and				5	2.87	195 - 200		'376'
incl				3	3.85	197 - 200		
and				9	9.57	207 - 216		'376'
incl				5	15.6	208 - 213		
and				3	3.10	257 - 260		Porphyry
				1	6.87	258 - 259		
WY 839D	614110	6393420	185°	15*	4.43	99 - 114	384.9	HWZ
incl				9*	6.08	99 - 108		
and				6	7.98	151 - 157		North
incl				1	38.8	156 - 157		
and				6.5	1.98	173 - 179.5		'376'
and				6	1.28	247 - 253		Porphyry
incl				1	3.35	247 - 248		
and				6	1.65	257 - 263		Porphyry
and				2	1.23	275 - 277		Porphyry
and				30	1.87	342 - 372		'831'
incl				1	5.87	342 - 343		
incl				2	3.33	350 - 352		
incl				2	4.89	356 - 358		
incl				1	6.97	361 - 362		

Holes drilled at a nominal inclination of -75°. Gold analysis by 50g fire assay of half core samples or 3m composite RC samples (*). All true widths are not clear at this time.



- Massive, well foliated pelitic siltstone (Cotton Formation)
- Feldspar porphyry
- Undifferentiated volcanoclastic sediments
- Black graphitic shales
- Volcanoclastic conglomerate
- Epidote altered volcanics and volcanoclastics
- Strongly sheared, chlorite-talc schist
- Undifferentiated andesitic volcanics with minor volcanoclastics

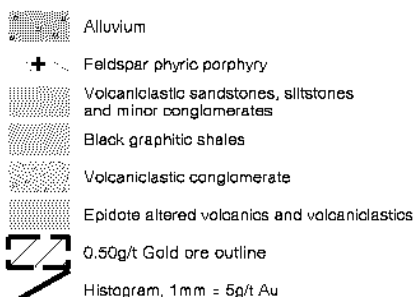
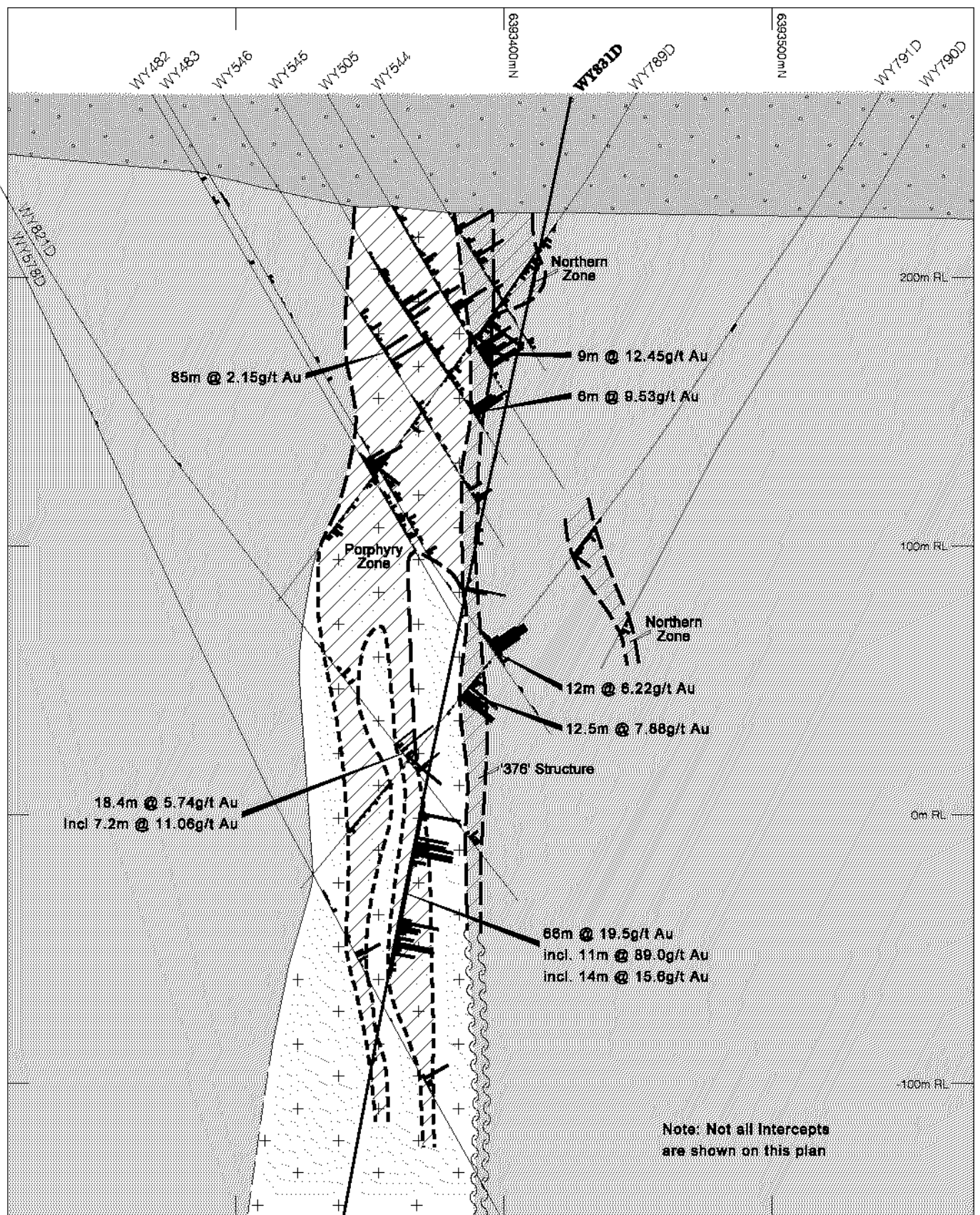
- Fault, shear
- Drill holes 2005

0 **Scale 1 : 2500** 100
metres

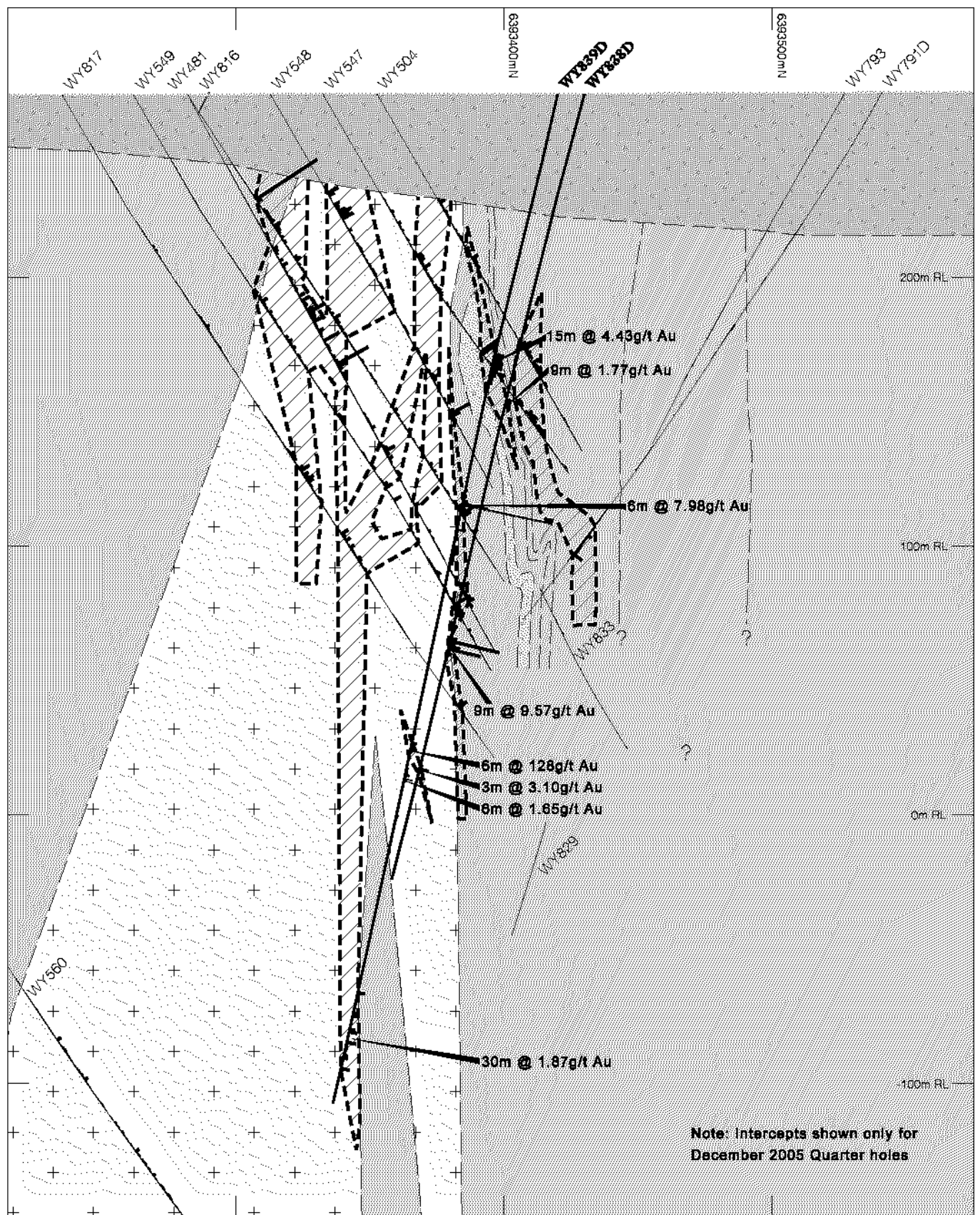


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TOMINGLEY GOLD PROJECT
WYOMING PROSPECT

Wyoming One
Geological Interpretation



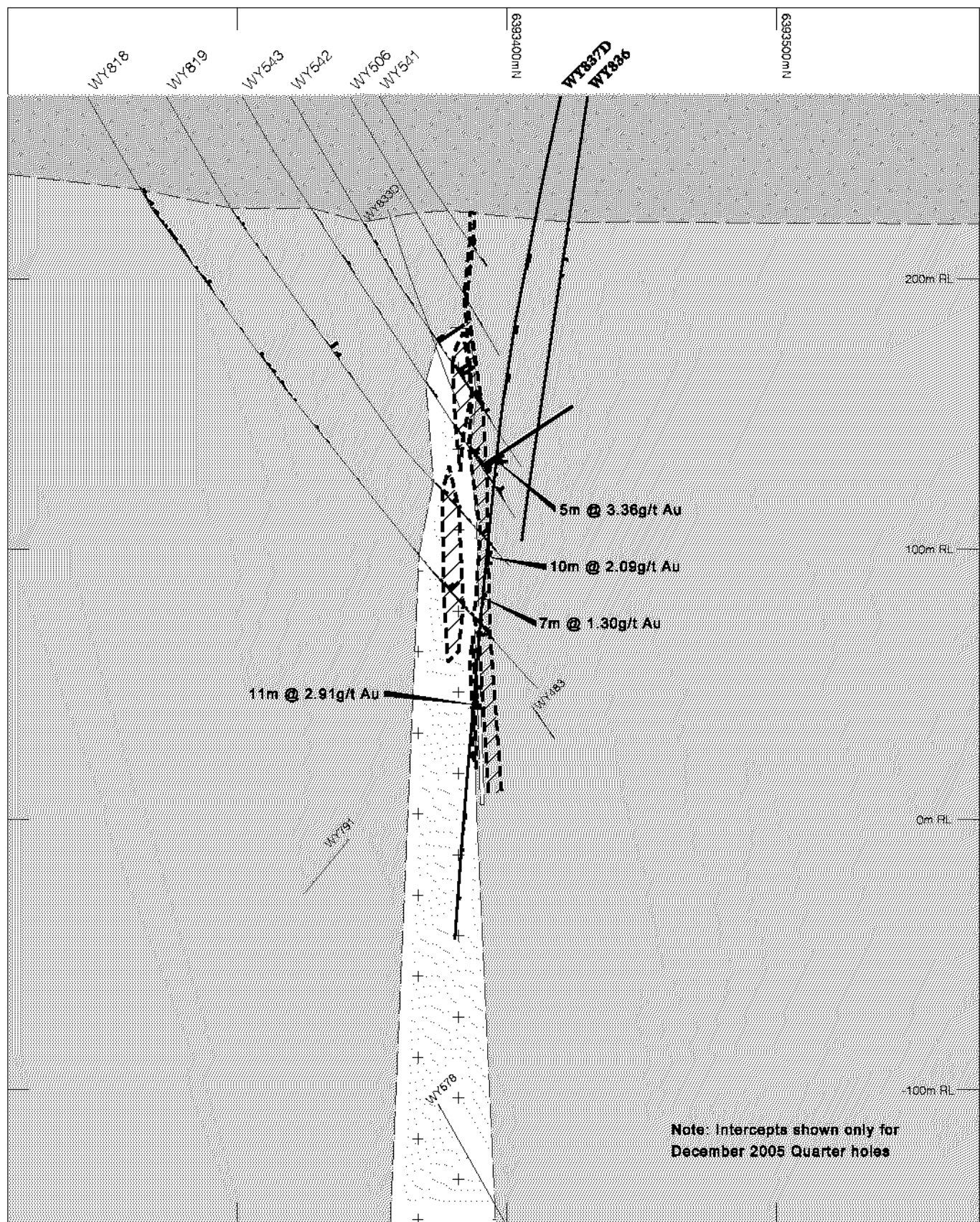
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TOMINGLEY GOLD PROJECT
WYOMING PROSPECT
Wyoming One
North - South Section 614075mE



-  Alluvium
-  Feldspar phyric porphyry
-  Volcaniclastic sandstones, siltstones and minor conglomerates
-  Black graphitic shales
-  Volcaniclastic conglomerate
-  Epidote altered volcanics and volcaniclastics
-  0.50g/t Gold ore outline
-  Histogram, 1mm = 5g/t Au

0 **Scale 1 : 2000** 100
metres

 **ALKANE EXPLORATION LTD**
TOMINGLEY GOLD PROJECT
WYOMING PROSPECT
Wyoming One
North - South Section 614100mE



-  Alluvium
-  Feldspar phyric porphyry
-  Volcaniclastic sandstones, siltstones and minor conglomerates
-  Black graphitic shales
-  Volcaniclastic conglomerate
-  Epidote altered volcanics and volcanoclastics
-  0.50g/t Gold ore outline
-  Histogram, 1mm = 5g/t Au

Scale 1 : 2000
0 100
metres

 **ALKANE EXPLORATION LTD**
TOMINGLEY GOLD PROJECT
WYOMING PROSPECT
Wyoming One
North - South Section 614050mE