1. APPENDICES

Appendix A: Historical records of mining, prospecting and exploration

Source: Trove is an Australian online library database aggregator hosted by the National Library of Australia at https://trove.nla.gov.au

Acknowledgement:
Excerpts searched, sourced and re-typed from Trove newspaper scans by Rory Wray-McCann.

18th February 1915, Zeehan and Dundas Herald

Diamond Creek Prospecting Association:--A meeting of those interested in the above association was held at Clinch's Hotel on Monday night, Mr. M. Donnelly being in the chair. The property is situated on the track to Zeehan, and the reef was found by Mr. E. Hunn, a wood contractor, about six months ago. After doing a lot of prospecting work, it was decided to form a company, to extend operations, and the meeting in question was held for this purpose. …

13th October 1915, Zeehan and Dundas Herald

A special meeting of shareholders in the Diamond Creek Prospecting Association was held at Clinch's Hotel, Queenstown on Saturday night last when about 40 were present, the chair being occupied by Mr. E. Hunn.

The reports of the mine manager was read as follows:--Since starting work at your mine the following work has been done with very satisfactory results.:--We have traced the north lode along the surface for a distance of 110 ft. in highly payable stone; also sunk a shaft to a depth of 20 ft. in stone 2 ft. 6' in width of the same quality as that exposed on the surface. This lode I consider it to be a very valuable one. We are driving a tunnel into it at a cost of 2 s 3p per foot, and expect to cut the lode at a point about 20 ft. ahead of where we are at present.

The main tunnel has been extended to a distance of 282 ft., and then passed through the lode in a fault. After driving some 30 ft. past this we came back and opened out east at the fault, and cut stone in a few feet of driving. The reef at this point is 1 ft. wide, carrying gold and making into a very solid lode with very clean walls. We have driven a distance 31 ft. east of this lode and 11 ft, west, where we found stone making. This lode we will call the south lode. It has been traced on the surface for a distance of 15 chains (300m), carrying gold for the whole length.

We have not done any extra work on the north and south lode, which is over 40 ft. in width carrying very fair gold right across it. I would very strongly advise you to drive a tunnel from the creek level, which would give 150ft. of backs and open up one of the biggest quartz lodes on the West Coast. There is also a great quantity of loose stone on the surface which would give a handsome return from the battery.

The report of the assays made by Mr. B. Whitington of the Mt. Lyell School of Mines, was as follows.

Sample No. 1 Crushed quartz taken from shaft on top. Assay value 3oz 8 dwt. per ton.

Sample No. 2 Taken from outside bottom tunnel. Assay value, nil.

Sample No. 3 Taken from outside bottom tunnel showing galena. Assay value, trace of gold.

Thursday 16 July 1916, Zeehan and Dundas Herald

Diamond Creek P.A. …

There has been a lot of work done on the mine. A tunnel has been driven about 300ft. into the hill. A quartz reef was cut at 260ft. bearing gold. A deal of surface work has also been done, and the company has about eight months crushing at grass, assaying about 1oz. to the ton. Several samples have been taken from different parts of the mine, and have assayed up to 3oz. per ton. The mine has been in operation for about 12 months, and the shareholders have spent about 800 pound in opening up the mine.

The mine is situated about five miles from Queenstown and about two miles on the Zeehan track, and the directors are now hopeful that having secured a 10-head battery, result will follow. This battery will be driven by water power. A large wheel is in course of construction, and a weir will be constructed across the creek, which will give abundance of water all the year round. It is hoped that the shareholders will be rewarded for their enterprise in making another long link to the prosperity of the West Coast.

19th January 1934, Mercury

GOLD DISCOVERY. RICH REEF ON WEST COAST

The discovery of a rich gold reef near the old track running from Queenstown to Zeehan has created much interest, especially among prospectors who know the locality, and those spoken to at Launceston regard the find as one of considerable importance.

It is recalled that 35 years ago there were a couple of good gold shows within a comparatively short distance from where the present find was made, the Madam Howard at Howard's Plains, and the Princess. A large amount of gold was won before the lodes in each petered out. Gold is to be obtained in most of the creeks running through the hills between Zeehan and Queenstown, and until quite recently fair quantities of alluvial were being obtained. The opinion is held that some of this gold had been shed from the lode opened up at Diamond Creek by Messrs. E. Aulich and S. Brown and traced for 1000ft. If the stone stood up to the dollying tests—9 dwts. to the ton—it would mean the opening up of a big mine.

2nd July, 1934, Advocate

Much Prospecting. Western Division.

Miners from Lake Margaret, Linda Creek, Lynch Creek, Conglomerate Creek, Raggetty Creek, Diamond Creek and Flanagan's Flat produced a total of 19.80 oz. Prospecting operations are being carried on in the alluvial deposits near Lynch's Creek and an adit is being driven near Banjo Creek. At Diamond Creek a party was engaged in testing the surface outcrop of the quartz reef opened up some years ago.

Saturday 13th April 1918, Zeehan and Dundas Herald

BARYTES.

The Colonial Barium Co., of Melbourne is opening up a property at Queenstown, Tas. During the last quarter of 1917 52 tons were dispatched to the Electrolytic Zinc Co., at Hobart, and the Broken Hill Associated Smelters, Port Pirie. A grinding plant will probably be installed to turn out the article in a form suitable for manufacturers. Mr. A. S. Wesley is in charge of operations at the mine, and Mr. W. J. Strong is the secretary.

Saturday 18th May 1918, Zeehan and Dundas Herald

THE COLONIAL BARIUM COMPANY

The Colonial Barium Company are shipping 31 tons of high-grade ore to Melbourne by the s.s. Wainui to-day. This is the first shipment out of a lot of 500 tons which the company have engaged contractors to break.

Thursday 13th June 1918, Zeehan and Dundas Herald

BARIUM.

Contractors are still at work at the Colonial Barium Co.'s mine near Queenstown, and 25 tons of ore were dispatched to Melbourne last week. Another quantity will be sent this week, but the company is meeting difficulties in getting the necessary bags for the ore.

Friday 3rd October 1919, Zeehan and Dundas Herald

QUEENSTOWN.

BARIUM CO.

MINE TO BE RE-OPENED.

Mr. J. Burt, of Melbourne, has arrived in Queenstown to manage the Barium mine, near the Lake Margaret tram, previously owned by the Colonial Barium Co., and managed by Mr. A. H. Wesley. The old company went into liquidation, and a new one has been formed. It is the intention of the company to fully open the mine, and Mr. Burt has already let the work on contract. When seen yesterday Mr. Burt stated that the company has orders for more ore than they can possibly supply.

Appendix B: Catchment based stream sediment gold sampling program

Pan concentrate drainage survey for gold

At each site one litre of -5 mm sediment is sieved into a pan, then panned to a concentrate of approximately 60 g of sand. The concentrate is bagged and sent to Analabs Burnie (2018) where it is assayed, unpulped, by Fire Assay/AAS so that a total concentration (ppb) of gold in the sample is determined. The concentration values in Table B are derived by relating the ppb (micrograms) of gold in the 50g pan concentrate sample to the original field sample weight of about 2 kg.

Note that the concentrates were not sieved to -#80 as in other programs so that larger particles would not be excluded.

Table B: Gold pan concentrate results of initial samples – Summer 2017

Sample ID	Easting GDA94	Northing GDA94	Concentrate Au (ppm)	Sediment Au (ppb) est.
DCa	378363	5344600	13.55	**1350**
DCf(downstr)	378506	5344530	4.31	**430**
DCg	378544	5344549	1.96	**200**
DCb	378428	5344717	1.52	**150**
DCd	378461	5344508	0.769	**80**
DCh	378507	5344508	0.402	**40**
Dce	378469	5344510	0.12	**10**
DCj	378512	5344492	0.052	**5**
DCn	378251	5344543	0.026	**3**
DCm	Unreliable (roadside)		0.011	**1**
DCf(upstream)	378517	5344522	0.004	**0.4**
DCk	378388	5344569	0.004	**0.4**
DCc	378494	5344772	0.003	**0.3**
DCl	378333	5344561	0.001	**0.1**

Table F: Results of 2016/17 sediment sampling

Values of gold concentrations are relative only, not precise or quantitatively comparable.

Stream sediment analysis is an inexact science due to variation between samples:

- Impacts of historical human disturbance of alluvium and removal of gold (including roads, drainage alteration and quarries) (especially 30 years of onsite prospecting as at Davies Hill)
- Accessibility of sites (creek gullies are thickly overgrown, streams go ‘underground’)
- Accessibility of similar alluvial gold trap types
- Sample depths (some deeper or closer to bedrock)
- Fens, organics and muds act as filters to colluvial gold
- Organic mud content - 2 kg including mud in a sieve is not the same as 2 kg of sand/gravel
- Different processes (eg mesh) and panning techniques
- Gold concentrations in source veins might be distal or proximal to the creek.

Appendix C: Lithological Logs, core sample assay

MH05 Lithological log

LOW IMPACT DIAMOND DRILLING SPECIALISTS PTY LTD

Madam Howard Prospect Diamond Drill Log

MADAM HOWARD — **Hole ID:** MH 05 — ***Date 22nd September 2007*** — ***Logged by Geoff Iliff 19th, 20th September 2007.***

Location: Corner of Zeehan Highway and Lake Margaret Road. — Dip -55°, azimuth 265° magnetic, 280° AMG.

DEPTH	Struct	GRAPHIC	LITHOLOGY			ALTERATION			COMMENTS
m, from-to	Struct		Strat	Lith	Code	Text	Type	Min	Int	
0-31.6	25m: fault			**SST**			wthd	kao	strg	**Pale cream, bleached massive equigranular fine grained sandstone/ quartzite.** Bedded 30-50°. Mostly sand from 5.9-17.4m. Core loss:0-3m 1m, 3-6m 2.6m, 6-9m 2.5m, 9-12m 2m, 12-15m 2m, 15-17.5m 1.9m. Solid from 17.4m, though broken to 30.5m. Core loss 24-26.5m 1.7m: fault?
31.6-32.1	**dyke**			**POR**						**Grey, fine grained siliceous dyke.** Contacts stoped into brecciated sandstone.
32.1-36.3				**SST**						**Light brown-buff massive equigranular fine grained sandstone.**
36.3-36.7	**dyke**			**POR**						**Grey, fine grained siliceous dyke.** Contacts stoped into brecciated sandstone. Flow banding within the lower contact.
36.7-38.1				**SST**						**Light brown-buff massive equigranular fine grained sandstone,** with quartz-carbonate veins <8mm, 50°.
38.1-72.1				**RHY**						**Light brown, buff and pink rhyolitic lava.** Top contact is conformable, at 60°, with sandstone deposited on it, indicating the sequence is facing up hole, thus younger eastwards.
39.7-41.2	dyke			POR						Grey fine grained siliceous dyke, similar to those above, except it contains xenotliths of the lava it intrudes. Contact flow banding, which flows also around the xenoliths.
51.8-52.8	veins			QZ						White and pink quartz veins at about 40° up to 7cm thick. Many joints of at least 3 sets with dark grey manganese coating of rough surfaces, continuing to 59.8m.
65.6-66.3	veins			QZ						White and pink quartz veins.
66.3-67.3	dyke			POR						Grey siliceous dyke.
69.3-71.2	dyke & fault			POR						Grey siliceous dyke, brecciated and broken at 69.6-70m. Fault at 69.9-70m at about 30°. Chloritic planes within it and quartz veins in the brecciated dyke at 70-70.6m.
72.1-101.7				**BKSHL**						**Dark grey fine grained siltstone, which can be described as black shale.** Well broken and brecciate, with a network of fine quartz veins.
77.9	fault			BKSHL						Fault, <10cm pug.
79.5	fault			BKSHL						Fault, <10cm pug, about 30°.
84.5	fault			BKSHL						Fault, 12cm pug, 60°. Broken rock to 85.5m.
85.7	fault			BKSHL						Fault at 15°.
85.5-86.2				SST						Light grey sandstone, bedded at 50°.
88-88.5				SST						Light grey sandstone.
90-90.5				SST						Light grey sandstone.
94.9-96.5				SLTST						Buff siltstone with a network of fine siderite veins. Upper contact 30°, lower 15°.
97.2-98.3				SLTST						Buff siltstone with a network of fine siderite veins. Upper contact 50°, lower 45°.
100-100.4				GRIT						Grey-buff coarse quartz sandstone/grit. Upper contact is irregular, lower clean at 35°.
100.6	fault			BKSHL						Fault at 40°, <3cm pug.
101-159				**SLTST**			low	ser		**Buff-fawn and pale olive green sericitic siltstone with sandy horizons,** a network of fine siderite veins and spots of euhedral pyrite and arsenopyrite crystals, mainly up to 1mm, some <2mm diameter. Occasionally, these crystals have darker siliceous halos <3mm diameter.
104.4-104.7	veins			QZ						Quartz vein with siderite veins in it.
120	bed'g			SLTST						Bedding about 20°.
124	fault			SLTST						Fault 45° <5cm pug.
125.1-125.8	fault			SLTST						Broken rock with a fault at 125.5m, 60°, <8cm pug.
136.0-136.8				SLTST						Zone of euhedral pyrite cubes <1mm diameter.
138.6-138.8	vein			QZ						Quartz vein with euhedral recrystallised pyrite.
141.6-141.8	vein			QZ						Quartz vein.
145	bed'g			SLTST						Bedding 15°.
156-159.8				**BKSHL**						**Black shale,** dark grey, fine grained with pale siltstone beds <8cm thick. Bedding about 45°.
158.7	fault			BKSHL						Fault at 40o, <3cm pug.
158.4-158.6	veins			QZCB						Quartz veins containing siderite veins and remobilised, crystalline sphalerite and pyrite.
159.8	cont			BKSHL						Lower contact of black shale at 40°.
159.8-164.4	**vein**			**SLTST**			low	ser		**Mostly quartz vein, with sericitic siltstone** to 160.7m,with minor siderite veins and pyrite on the margins. Thereafter sericitic siltstone heavily veined with quartz containing recrystallised pyrite.
164.4	fault			SLTST						Contact is a fault at 40°, <10cm pug.
164.4-167.6				**BKSHL**						**Dark grey fine grained black shale with fine network of siderite veins.**
166.6	fault			BKSHL						Fault with about 10cm of breccia.
167.6	fault			BKSHL						Fault <5cm of breccia and slickensides, at 50°. Contact.
167.6-173.7				**SLTST**						**Fawn to pale green siltstone-sandstone.**
173.7-175.8	**shear**			**BKSHL**						**Sheared black shale with euhedral pyrite crystals, quartz and siderite veins.**
174.5	fault			BKSHL						Fault 30° <3cm pug.
175.8-182.4				**SLTST**			low	ser		**Pale green sericitic siltstone with sandstone zones.**
178-179	veins			SLTST						Mostly quartz veins.
182.4	cont			SLTST						Contact at 10°.
182.4-185				**BKSHL**						**Black shale.**
185	fault			BKSHL						Faulted contact at 20°.
185-185.5				**SLTST**			med	sil		**Grey and pale olive green siliceous siltstone with euhedral pyrite and arsenopyrite.**

185.5	cont					SLTST				Lower contact at 40°.
185.5-187						**BKSHL**		med	sil	**Black shale with some silicification.**
186.7-186.8	fault					BKSHL				Fault with pug and fractured black shale.
187-194.4						**SLTST**		low	ser	**Buff and pale olive green mostly fractured siltstone and sandstone.**
190.6-191						SLTST				Zone with dark bands: layers with concentration of grains of a dark mineral: tourmaline, chromite, spinel or what?
192-192.3	brx					SLTST				Brecciated crushed zone with siderite fill, followed by 20cm of siltstone containing euhedral pyrite.
193.5-193.6	veins					SLTST				Irregular early generation of quartz veins predating the larger, more obvious quartz veins, which are seen to cut the earlier veins. These veins contain euhedral pyrite.
194.4-200.1						**SLTST**		low	ser	**Pale grey and olive green siltstone and sandstone** with beds up to 1cm containing grains of a black minerals of the same size as the quartz grains of the matrix. Tourmaline, chromite, spinel?
200.1-200.2						**BKSHL**				**Black shale** with siderite and quartz veins. **EOH.**

MH06 Lithological log

DIAMOND HILL EL16/2015 **MH06 Borelog**

Hole title: Madam Howards Plains DDH 6
Drill date: 25/08/2012
Logged by: Callaghan T. / Resource and Exploration Geology
Log date:

Type: Diamond Cored NQ3
Location: 378663 mE 5344212 mN (GDA94 - MGA Zone 55)
Hole length: 140 metres
Dip/Azimuth: -55° / 105°True North

PROJECT	Hole Id	From (m)	To (m)	Strat Code	Lithology code	Alteration code	Grain size	Colour code	Visual	Downhole contact	Structure	BCA	Description
Diamond Hill	MH DDH06	0.00	5.40		KL								Core loss
Diamond Hill	MH DDH06	5.40	22.80	Cs	VALB	Ch, Arg	CG	AG		FT	Fo Fo Bg	30 30 45	Massive, pale grey and green andesitic lithic breccia. Coarse andesite clasts to 5cm in sandy matrix-supported mass flow. Selective chlorite replacement of coarse clasts. Weak sericitic matrix.
Diamond Hill	MH DDH06	22.80	25.30		VALB, FALT	CyCh		C		FT	Ft	30	Puggy fault, mostly volcaniclastic fragments, includes coarse Quartz vein material. Vughy quartz with crystals 2-3 cm. Minor disseminated
Diamond Hill	MH DDH06	25.30	32.30	Cd	LDFM	SiPy	MG	B1	0.2		Bd	50	Massive pale cream to brown feldspar-phyric dacite(?) lava. 1-2mm feldspar phenocrysts in vitric-rich matrix. Pervasive siderite alteration with very minor disseminated pyrite pyrite
Diamond Hill	MH DDH06	32.30	46.10	Cys	VRVF	Cb	FG	C1		SP	Bd	45	Laminated pink-brown and cream volcaniclastic vitric sandstone and siltstone. Rhyolitic in top 3m, below which well-bedded, graded beds facing up-hole. Weak pervasive siderite alteration. Hornblende 1-2%.
Diamond Hill	MH DDH06	46.10	74.00	Cp	LDFP	Ab	FG	R2	0.2	GD			Massive pale-red feldspar porphyry. Sparse 1-2 mm feldspar grains altered to yellow sericite. Dominantly albitised vitric-rich matrix. Lithic bands to 15mm towards base.
Diamond Hill	MH DDH06	74.00	86.00	Cp	LDFP	Ab	CG	R2	0.2	GD			Massive pale-red feldspar porphyry. Sparse 1-2 mm feldspar grains altered to yellow sericite. Dominantly albitised vitric-rich matrix. Sparse fine disseminated pyrite. 5-15% white quartz
Diamond Hill	MH DDH06	86.00	93.00	Cp	LDFP	Ab	FG	R2		GD			Massive pale-red feldspar porphyry. Sparse 1-2 mm feldspar grains altered to yellow sericite.
Diamond Hill	MH DDH06	93.00	106.20	Cp	LDFP	Se	MG	AG	0.2	GD			Massive pale green grey feldspar porphyritic lava. Coarser-grained away from chilled margins. Moderately sericite-altered feldspars and matrix. Minor disseminated euhedral pyrite.
Diamond Hill	MH DDH06	106.20	111.00	Cp	LDFP	Ab	FG	R2		GD			Massive pale-red feldspar porphyry. Sparse 1-2
Diamond Hill	MH DDH06	111.00	114.00	Cp	LDFP	Se	MG	AG	0.2	GD			Massive pale green grey feldspar porphyritic lava. Coarser-grained away from chilled margins. Moderately sericite-altered feldspars and matrix. Minor disseminated euhedral pyrite.
Diamond Hill	MH DDH06	114.00	118.80	Cp	LDFP	Ab	FG	R2		GD			Massive pale-red feldspar porphyry. Sparse 1-2 mm feldspar grains altered to yellow sericite. Dominantly albitised vitric-rich matrix.
Diamond Hill	MH DDH06	118.80	119.70	Cp	QTZ	SiCb	MG	W	0.1		Vn	50	Massive white quartz vein with minor calcite-siderite and trace pyrite on selvedge.
Diamond Hill	MH DDH06	119.70	133.50	Cp	LDFP	SeCh	MG	AG	0.2	GD			Massive pale green grey feldspar porphyritic lava. Coarser-grained away from chilled margins. Moderately sericite-altered feldspars and matrix. Minor disseminated leucoxene.
Diamond Hill	MH DDH06	133.50	137.50	Cp	FALT	Si							Puggy brittle fault. 2M CORE LOSS.
Diamond Hill	MH DDH06	137.50	140.00	Cp	LDFP	Ab	FG	R2		GD			Massive pale-red feldspar porphyry. Sparse 1-2 mm feldspar grains altered to yellow sericite. Dominantly albitised vitric-rich matrix. Minor disseminated pyrite. Sparse 1-2 cm quartz-calcite veins.
													EOH

MH06 Additional Core assay samples

Previously reported assays (2013):

Tasmania Mines Ltd - Drill Hole Assay Data

Project	BHID	From m	To m	Sample ID	Au ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Bi ppm	Ba %	S %
Madam H	MH06	45.20	46.00	4500	0.02							
Madam H	MH06	46.30	46.90	4501	0.32							
Madam H	MH06	55.00	56.00	4502	0.03							
Madam H	MH06	56.00	57.10	4503	0.34							
Madam H	MH06	62.20	63.20	4504	0.24							
Madam H	MH06	63.20	64.00	4505	0.08							
Madam H	MH06	78.80	80.70	4506	0.67							
Madam H	MH06	81.00	82.50		0.01						0.1	
Madam H	MH06	82.50	84.00		0.09						0.07	
Madam H	MH06	112.00	113.00		0.14						0.08	
Madam H	MH06	119.00	120.00		1.41						0.03	
Madam H	MH06	125.50	126.50	4507	<0.01							
Madam H	MH06	139.30	140.00	4508	<0.01							

MH06 Assay samples

Reason	Sample Id.	Top	Base	Thickness	Description	Au (ppm)
Corrected	4506	79.8	80.7	0.9	Previous typo as 78.8 gave 1.9m thk	0.67
Corrected	4508	137.5	138	0.5	Mismeasured at 139.3 to 140.0m	<0.01
From photos		119	120	1.0	Suspect measurement inaccuracy	1.41
Additional sample	MH6001	90	91	1.0	Slightly altered porphyry	
Additional sample	MH6002	80.7	81	0.3	Vein below sample 4506 (0.67 ppm)	
Additional sample	MH6003	70.2	70.4	0.2	Unaltered porphyry c sparse pyrite	

MH07 Lithology Log

DIAMOND HILL EL16/2015 **MH07 Borelog**

Hole title: Madam Howards Plains DDH 7 Type: Diamond Cored NQ3
Drill date: Approx. December 2012 Location: 378684 mE, 5344166 mN (GDA94 - MGA Zone 55)
Logged by: Delaney S. D. / AMR Hole length: 99 metres
Log date: 24/01/2018 Dip/Azimuth: -50° / 105° True North

PROJECT	Hole Id	From (m)	To (m)	Strat Code	Lithology code	Alteration code	Grain size	Colour code	Visual S%	Downhole contact	Structure	BCA	Description
EL16/2015	MH DDH07	0.00	5.00		KL								Core loss
EL16/2016	MH DDH07	5.00	9.50	Ca	VALB	Ch	MG	AG		FT			Pale grey-green volcaniclastic(?). Highly weathered, bleached, broken on closely-spaced joints. Weak limonite-staining on joint surfaces.
EL16/2017	MH DDH07	9.50	11.80		KL						Ft(?)		Core loss
EL16/2018	MH DDH07	11.80	16.50	Ca	VALB	ChSe	FG	AG		FT			Pale grey-green volcaniclastic(?). Weathered, broken on closely-spaced joints. Weak limonite-staining on joint surfaces. Weak sericitic/chloritic
EL16/2019	MH DDH07	16.50	20.80		KL					FT	Ft(?)		Core loss
EL16/2020	MH DDH07	20.80	36.20	Cd	LDFM	SiPy	MG	B1	0.2	IR	Bg	50	Massive pale cream to brown feldspar-phyric dacite lava. 1-2mm feldspar phenocrysts in vitric-rich matrix. Pervasive siderite alteration with very minor disseminated pyrite crystals and nodules. Moderately weathered and bleached in top 4m. Downhole contact intermixed,
EL16/2021	MH DDH07	36.20	40.20	Cys	VRVF	Se	FG	C1		GD			Laminated pink-brown and cream volcaniclastic vitric sandstone and siltstone. Well-bedded, graded beds facing up-hole. Weak pervasive siderite and limonitic alteration. Broken core. Quartz vein towards
EL16/2022	MH DDH07	40.20	40.85		KL					BR	Ft		Core loss
EL16/2023	MH DDH07	40.85	61.80	Cp	LDFP	Se	MG	R2	0.2	IR	Vn, Ft		Massive pale-red feldspar porphyry, pale green-grey in part. Sparse 1-2 mm feldspar grains altered to yellow sericite. Dominantly albitised vitric-rich matrix. Frequent irregular quartz veins throughout.
EL16/2024	MH DDH07	61.80	79.30	Cys	VRVF	SiSeQz	FG	C1		BR	Vn, Ft		Laminated pink-brown and cream volcaniclastic vitric sandstone and siltstone. Siliceous. Moderate pervasive siderite alteration. Sericitic bands at 70-75m. No quartz veins
EL16/2025	MH DDH07	79.30	82.10		FALT	Fe							Broken core - 82% recovery. Light grey glassy quartz and lithic fragments. Iron-staining.
EL16/2026	MH DDH07	82.10	99.00	Cys	VRVF	SiSeQz	FG	C1		BR	Vn, Ft		Laminated pink-brown and cream volcaniclastic vitric sandstone and siltstone. Siliceous. Moderate pervasive siderite alteration. Sericitic bands at 70-75m. Frequent quartz
													EOH

MH07 Core assay samples

MH07 Assay samples

Reason	Sample Id	Top	Base	Thickness	Description	Au (ppm)
Gold assay	MH7001	27.00	28.00	1.00	Porphyry near faulted contact	
Gold assay	MH7002	29.90	30.00	0.10	Slightly altered porphyry	
Gold assay	MH7003	30.60	30.72	0.12	Qz vein, rubbly, FeSt on surfaces	
Gold assay	MH7004	35.70	36.00	0.30	Fe stained porphyry	
Gold assay	MH7005	38.20	38.35	0.15	Slightly altered sheared volcaniclastic	
Gold assay	MH7006	38.35	39.15	0.80	Slightly altered vc c Qz veining	
Gold assay	MH7007	39.40	39.45	0.05	Qz stockwork in vc, pyrite	
Gold assay	MH7008	38.65	38.90	0.25	Lg Qz vein in vc sericitic alt'n	
Gold assay	MH7009	39.40	39.45	0.05	Irr Qz vein, alt pyrite band	
Gold assay	MH7010	40.85	40.95	0.10	Lg cryst Qz vein, Si on fractures	
Gold assay	MH7011	41.00	41.31	0.31	Qz and rubble in shear zone	
Gold assay	MH7012	42.40	42.55	0.15	Altered porphyry at Qz contact	
Gold assay	MH7013	42.55	43.50	0.95	Qz rubble, KL	
Gold assay	MH7014	43.50	43.90	0.40	Vein and pyrite in porphyry	
Gold assay	MH7015	43.90	44.00	0.10	Altered porphyry c 0.2% pyrite	
Gold assay	MH7016	44.00	44.35	0.35	Vein	
Gold assay	MH7017	44.35	45.00	0.65	Vein	
Gold assay	MH7018	48.02	48.14	0.12	Vein	
Gold assay	MH7019	49.00	49.10	0.10	Vein	
Gold assay	MH7020	53.00	53.10	0.10	Vein	
Gold assay	MH7021	54.50	54.65	0.15	Vein	
Gold assay	MH7022	56.30	57.33	1.03	Vein	
Gold assay	MH7023	70.50	71.50	1.00	Sericitic veins and black alteration	
Gold assay	MH7024	75.00	75.20	0.20	Sericite	
Gold assay	MH7025	79.80	80.00	0.20	Lg Qz vein, glassy, sparse fest	
Gold assay	MH7026	80.20	80.50	0.30	Fault breccia in Qz vein matrix	
Gold assay	MH7027	80.50	81.00	0.50	Fault breccia in Qz vein matrix	
Gold assay	MH7028	81.00	81.70	0.70	Broken fault breccia in Qz vein matrix	
Gold assay	MH7029	81.70	82.00	0.30	Unbroken fault breccia c Qz	
Gold assay	MH7030	88.90	89.80	0.90	Lg-wh Qz vein, broken, minor FeSi	
Supplementary - depending on results above						
To be decided		45.14	45.17	0.02	Vein	
To be decided		45.23	45.26	0.03	Vein	
To be decided		46.08	46.11	0.03	Vein	
To be decided		50.90	51.00	0.10	Vein	
To be decided		51.30	51.35	0.05	Vein	
To be decided		51.55	51.63	0.08	Vein	
To be decided		53.40	53.50	0.10	Vein	
To be decided		85.30	85.50	0.20	Lg-wh Qz vein, broken, minor FeSi	
To be decided		87.40	87.50	0.10	Lg-wh Qz vein, broken, minor FeSi	
To be decided		91.20	91.30	0.10	Lg-wh Qz vein, broken, minor FeSi	

MH08 Lithology Log

DIAMOND HILL EL16/2015 **MH08 Borelog**

Hole title: Madam Howards Plains DDH 8
Drill date: 2013
Logged by: Delaney S. D. / AMR
Log date: 22/02/2018

Type: Diamond Cored NQ3
Location: 378688 mE, 5344240 mN (GDA94 - MGA Zone 55)
Hole length: 68.3 metres
Dip/Azimuth: -50° / 105° True North
Note: Core logged 4 years after drilling, exposed to weather 18 months.

PROJECT	Hole Id	From (m)	To (m)	Strat Code	Lithology code	Alteration code	Grain size	Colour code	Visual S%	Downhole contact	Structure	BCA	Description
EL16/2015	MH DDH08	0.00	2.00		KL								Core loss
EL16/2016	MH DDH08	2.00	17.50	Cdsvx		Arg, Fe	FG			FT			Siliceous volcaniclastic. Highly weathered, bleached, broken with 78% core loss over unit. Weak limonite-staining on joint surfaces. Heavily iron-stained on joints below 15m. 2cm of quartz vein fragments at base.
EL16/2017	MH DDH08	17.50	24.25	Cdsvx		Fe, Arg	MG						Siliceous volcaniclastic. Weathered, bleached, broken with 8% core loss over unit. Weak limonite-staining on exposed surfaces. Dark brown staining in 15cm coarse-grained band 20cm from base (Iron/Manganese?)
EL16/2018	MH DDH08	24.25	33.10	Cdsvx		Fe	FG			GR			Rhyolitic pink-brown and cream volcaniclastic (tuffaceous) vitric cherty siltstone. Siderite alteration blebs and weak pervasive alteration throughout. 3cm quartz vein at 28.5m. Three brown iron oxide stained bands to 40cm thick.
EL16/2019	MH DDH08	33.10	37.20	Cdsvx						GR			Red brown and cream interlaminated volcaniclastic sandstone and siltstone.
EL16/2020	MH DDH08	37.20	46.20	Cdsvx			MG		0.2	IR			Massive grey green lithic sandstone (greywacke). Medium-grained. Weak pervasive siderite alteration throughout. Rip-up clasts of dark grey shales towards base. 3cm sericite veining at 45.5m and at base. Downhole contact intermixed, disturbed but unbroken.
EL16/2021	MH DDH08	46.20	47.80	Cdsvx		Se	FG			SB			Rhyolitic pink-brown and cream volcaniclastic vitric cherty siltstone. Siderite alteration blebs and weak pervasive alteration throughout. Two 3cm sericite veins towards top.
EL16/2022	MH DDH08	47.80	56.70	Cdsvx	SLST	Nil	FG	GYDG		IR			Grey and dark grey siltstone. Tends to fine-grained sandstone in part. Laminated, shaly in top 4m and basal metre. Irregular subvertical quartz/carbonate veining in middle 2 metres.
EL16/2023	MH DDH08	56.70	57.60	Cdsvx	SS	SeSi	MC	GYOB		IR			Massive grey and cream lithic sandstone, medium to coarse grained mass flow. Heavily siderite stained. Irregular unbroken downhole contact.
EL16/2024	MH DDH08	57.60	60.50	Cdsvx	SLST	Si	FG	LR		PB			Rhyolitic pink-brown and cream volcaniclastic vitric siltstone. Siderite alteration blebs and weak pervasive alteration throughout. Dark grey laminae throughout.
EL16/2025	MH DDH08	60.50	68.30	Cdsvx	SS/SLST		FG						Buff and grey green fine grained volcaniclastic sandstone. 25cm dark shaly bands at 61.3m and 64m. Sericitic banding at 61.4m.
													EOH

MH08 Core assay samples

MH08 Assay samples

Reason	Sample Id.	Top	Base	Thickness	Description	Au (ppm)
AAS Gold assay	MH8001	23.70	24.20	0.50	Contact of lim-stained vc with rhyolitic siltstone	
AAS Gold assay	MH8002	28.40	29.20	0.80	Vein in rhyolite Fe, Qz, siderite and black stain	
AAS Gold assay	MH8003	37.00	37.25	0.25	Fresh rhyolitic siltstone	
AAS Gold assay	MH8004	46.00	47.85	1.85	Sericitic bands in rhyolite siltstone	
AAS Gold assay	MH8005	53.30	53.55	0.25	Siltstone iron-stained in part	
AAS Gold assay	MH8006	56.70	58.50	1.80	top of mass flow	
AAS Gold assay	MH8007	58.50	60.80	2.30	Rhyolitic siltstone	
AAS Gold assay	MH8008	40.85	40.95	0.10	Lg cryst Qz vein, Si on fractures	
AAS Gold assay	MH8009	41.00	41.10	0.10	Lg cryst Qz vein, Si on fractures	
AAS Gold assay	MH8010	41.00	41.31	0.31	Qz and porphyry rubble in shear zone	
AAS Gold assay	MH8011	43.40	43.50	0.10	Qz rubble	
AAS Gold assay	MH8012	43.50	43.90	0.40	Vein and pyrite in porphyry	
AAS Gold assay	MH8013	43.90	44.00	0.10	Altered porphyry c 0.2% pyrite	

Appendix D: Plants of conservation significance – Queenstown area

Western cushion-bristlewort;

Slender heath myrtle

Roundhead yellow eye - 'Tasmanian' yellow eye pictured.

short purpleflag;

tasmanian ricegrass;

tassel cord rush;

graceful wallaby grass)

Appendix E: Excerpt from a heritage assessment of the Arthur Pieman Conservation Area

Source: Huys, Stuart. (2010). *An Aboriginal Cultural Heritage Assessment of Designated Vehicle Tracks Within the Arthur Pieman Conservation Area*. Cultural Heritage Management Australia. Sourced from http://www.parks.tas.gov.au/file.aspx?id=25109

"Dense vegetation, rugged terrain and huge annual rainfalls are believed to have restricted the movement of the North West tribe to the coastal fringes….Within the Queen River Valley, Corbett (1980) documented 30 sites, the majority of which represent a few artefacts scattered over a small area. Artefact scatters were found to typically occur on small flats close to water, low flat ridges and saddles, while on the upper valley slopes and low-lying button grass plains, cultural material was rarely encountered…. Within the King River valley region the largest and most numerous scatters are located on low ridges or rises on the buttongrass plains. In contrast to previous assessments of Holocene land use of the region, which depict fleeting visits using the rivers as highways, the evidence from the King River valley indicates more regular use of the area by Aboriginal people who used the sedgelands as highways as opposed to the rivers (Freslov 1993). … the general pattern of Aboriginal occupation of forests throughout Tasmania indicates limited occupation of the forest zone, with small artefact scatters resulting from transient camping by small mobile groups (Cosgrove 1990)".