# REPORT ON Drillhole MH1103 Headway Au PROPERTY Red Lake, Ontario



for

## Mega Precious Metals Inc.

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**Tim Twomey Consulting** 

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#### 1. EXECUTIVE SUMMARY

Mega Precious Metals Inc. (Mega) has requested that Timothy Twomey ("Author") prepare a Technical Report ("Report") on Source's Headway Gold Property (the Property) located in the Province of Ontario, Canada. This Report has been prepared to support the initial diamond drilling results. Photos and information for the report were obtained from a site visit by the Author on September 25<sup>th</sup>, 2013 as well as from data and reports received directly from Mega's personnel. The author would like to thank in particular, Joe Magnotta for an organized and fruitful visit. This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects.

Mega's Headway Property is located in the Red Lake gold belt, Ontario, Canada, approximately 585 kilometres northeast of the City of Thunder Bay by highways. The Property is comprised of 7 mining claims.

The entire Property is a contiguous block and consists of 7 claims covering approximately 127 hectares. Mega has made an Option Agreement and has earned 100% interest in the Headway Property by making cash payments and commitments to exploration expenditures. The Property is subject to a 2% Net Smelter Royalty (NSR).

Recent work on the Property by Mega, was primarily diamond drilling from 2009 to 2013. Exploration by Mega has targeted the deep extensions of gold-bearing structures in Goldcorp's adjacent Red Lake Gold Mines.

All core samples have been collected and handled in a professional manner by Mega personnel. Core is generally sampled on standard 1.5 m intervals with geologically constrained intervals determined on the basis of lithologic contacts or, in some cases, visible mineralization.

Mega has used the services of one commercial laboratory for all of their assaying; Accurassay Laboratories in the city of Thunder Bay, Ontario. Mega has submitted standards and blanks in their sample stream for QA/QC purposes.

#### **Conclusions and Recommendations**

Deep drilling on the Headway Gold Property by Mega Precious Metals Inc. has confirmed their geologic model that altered and deformed Balmer Assemblage rocks occur within the property and are the same rock types that occur within Goldcorp's Red Lake Mine to the north of the Property. Mega's drilling has encountered rocks that exhibit similar alteration and deformation as those that host gold deposits at the Red Lake Mine.

The presence of pervasive brown-biotite in the wall-rock with low amounts of disseminated pyrite contains anomalous gold from 2261 m to 2264 m in drillhole MH1103, up to 291 ppb Au. This indicates that the shear zone was an active structure

during auriferous fluid migration. The style and intensity of alteration and structure is similar to the HW Shear and HW7 Shear associated with Goldcorp's High-grade Zone (HGZ) at the Red Lake Mine.

Recent deep discoveries at the Red Lake Mine, demonstrate that rocks hanging-wall to the HGZ have excellent exploration potential for high-grade gold mineralization. The intersection of a regional Shear Zone in MH1103 that was open to auriferous fluids has similarities to ore-bearing structures at the adjacent Red Lake Mine. This suggests that this regional Shear Zone has good potential for higher gold-grades within the Headway Property.

Based on the results of exploration on the Property thus far as well as Goldcorp's recent successes at deep exploration in the hangingwall of the HGZ, it is the author's opinion that deep diamond drilling should continue at the Headway Property northward to the boundary of the Red Lake Mine. Drillhole MH1103 should be extended northward to the boundary of the Red Lake Mine, in order to explore for other regional foliation-parallel shear zones in Balmer basalt. Proposed budget for this work is in Table 1-2.

Daughter holes that branch off MH1103 could also be designed to intersect the regional Shear Zone 100 m away from the original MH1103 parent hole intercept, to test for any other rock contacts at high angles to regional fabric as well as attempt to vector towards higher gold grades within the regional structure.

Table 1-2 Recommended Budget for Work on the Headway Property

Diamond drilling 1,000 m @ \$230/m	\$230,000
Drillcore assays 1,000 @ \$15/sample	\$15,000
Geological, core sawing and support @ \$45/m x 1,000 m	\$45,000
Wedging	\$100,00
Contingency @ ~10%	\$39,000
TOTAL	\$429,000

#### 2. INTRODUCTION AND TERMS OF REFERENCE

## 2.1 Introduction

Mega Precious Metals Inc. (Mega) has requested that Tim Twomey ("Author") prepare a brief report ("Report") on Mega's drillhole MH1103 from their Headway Gold Property (the Property) located in Red Lake, Ontario. Photos and information for the report were obtained from a site visit by the Author on September 25<sup>th</sup>, 2013 as well as from data and reports received directly from Mega's personnel. The author would like to thank in particular, Joe Magnotta for an organized and fruitful visit.

The Property has not been described in any previously filed NI 43-101 compliant Technical Report. Tim Twomey Consulting, is responsible for the preparation of this report. Pertinent geological information was reviewed in sufficient detail to prepare this report.

#### 2.2 Terms of Reference

The purpose of this report is to support the diamond drilling program for the Headway Property, which is held by Mega.

#### 2.3 Units and List of Abbreviations

Unless otherwise stated, all units of measurement in this report are metric and costs are expressed in Canadian dollars (CAN\$). The payable metals gold (Au) and silver (Ag) are priced in United States dollars (US\$) per troy ounce or converted to the metric equivalent, United States dollars (US\$) per gram. Most of the historical data has been left in imperial measure (short tons and troy ounces).

Drill-hole locations and other spatial data are recorded by Mega in the UTM NAD84, Zone 16 coordinate system. The Author used the same co-ordinate system during his visit to the property.

## The following abbreviations are used in this report:

Term	Abbreviation
above sea level	a.s.l.
airborne electro-magnetic	AEM
Accurassay Laboratories	ACL
atomic absorption	AA
atomic absorption spectroscopy	AAS
atomic emission spectroscopy	AES
gold	Au
below sea level	b.s.l.
Mega Precious Metals Inc.	Mega
centimetre	cm
cubic metre	$m^3$
dollar (Canadian)	\$ or C\$ or CAN\$
dollar United States	US\$
electro-magnetic	EM
Global Positioning System	GPS
gram	g
gram per tonne	gpt or g/t
Induced Polarization	IP
kilograms	kg
kilometre	km
litre	L
License of Occupation	LO
magnetometer	mag
metre	m
National Instrument 43-101	NI 43-101
net smelter return	NSR
ounce per short ton	opt
parts per million	ppm
parts per billion	ppb
pound	lb.
quality assurance/quality control	QA/QC
silver	Ag
square kilometre	km <sup>2</sup>
square metre	m <sup>2</sup>
tonne (1000 kg)	Т
troy ounce (31.1035g)	OZ.

## 3. RELIANCE ON OTHER EXPERTS

This report has been prepared by the Author for Mega Precious Metals Inc. The information, conclusions, opinions, and estimates contained herein are based on:

- •information available to the Author at the time of preparation of this report;
- •assumptions, conditions and qualifications as set forth in this report, and
- •data, reports and opinions supplied by Mega.

The Author does not guarantee the accuracy of conclusions, opinions, or estimates that rely on third party sources for information that are outside his area of technical expertise. He has relied on reports and opinions from Source for information that is outside the area of technical expertise of the Author, including:

- •Information on property holdings, lease agreements and legal status of property title was provided by Mega.
- •Title status of mining claims. The Author has not researched title to the Property and the Author does not express any opinion in connection with title. However, a title search on the claims was done by a legal firm hired by Mega.
- •Information relating to the various option, joint venture and purchase agreements described in Section 4 of this report; and
  - •Information relating to property titles, surface rights, and environmental matters.

Except for the purposes legislated under provincial securities laws any use of this report by any third party is at that party's sole risk.

A draft copy of the report has been reviewed for factual errors by Mega. Any changes made as a result of these reviews did not involve any alteration to the conclusions made. Hence, the statement and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are true and accurate at the date of this report.

## 4. PROPERTY DESCRIPTION AND LOCATION

The Property described in this report is located approximately 585 km by road northwest of the City of Thunder Bay, Ontario, and centred at 446700 E and 5654000 N NAD83 Zone 15 (or approximately at Latitude 51.033 N and Longitude 93.833 W). It is readily accessible on paved highways and then a dirt road within the property.

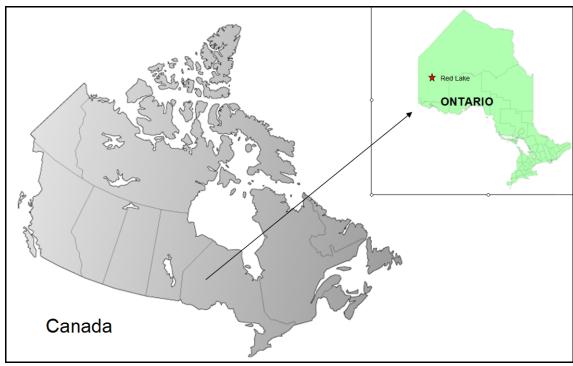


Figure 4-1: General Location Map, Headway Property, Red Lake, Ontario, Canada.

## 4.1 Headway Property

The Headway Property is located in the Mining District of Red Lake, Ontario, Canada, (Figures 4-1 and 4-2). The Property consists of a contiguous block of 7 mining claims covering an aggregate area of 127 hectares. The claims are listed in Table 4-1 and an agreement is in place granting 100% ownership to Mega subject to a 2% NSR.

## 4.2 Agreement

The agreement was first announced by Mega on October 5, 2009, whereby Mega would enter into a 3-year Option Agreement with King's Bay Gold Corporation. The terms of the agreement are that Mega has an option to earn up to a 100% interest in the Headway

Property by making cash payments of \$460,000, issuing 4,425,000 common shares and spending \$3,000,000 on exploration within the property.

Mega subsequently announced on November 29, 2012 that the final payment to the Option agreement had been made and the Property was 100% owned by Mega.

All claims in the Headway Property are subject to a 2% Net Smelter Return (NSR) held by Mr. Perry English. Mega has the right to purchase 1% for \$1,000,000 at any time and retains a first right of refusal to purchase the remaining 1% of the NSR.

#### 4.3 Mineral Tenure

The Property consists of 7 mining claims held by Mega. A summary of the 7 mining claims on the Headway Property is provided in Table 4-1. They consist of 6 patented claims and one unpatented claim.

Six of the mining claims held on the Property are patented, which is the most secure method of holding mineral rights in Ontario. There is also a 2.0% NSR on the property held by Mr. P. English. Mega has the right to purchase 1% for \$1,000,000 at any time and retains a first right of refusal to purchase the remaining 1% of the NSR.

## 4.4 Other Matters and Permits

#### **Environmental Matters**

There are no old mine workings known on the Headway Property and no tailings areas were observed. The Author has relied on reports and opinions from Mega for the information relating to environmental matters as well as personal observations of property.

The land is moderately rolling and about 80% tree covered and 10% water covered. The rest of the land use is taken up by roads and cottage lots.

## Government Royalties and Permits

Conventional royalties or taxes on possible future mineral production would be due to the Ontario Government as the Mining Act is controlled provincially. Permits are also required for drilling and general surface exploration according to the new mining act regulations in effect since April 1, 2013.

## Surface Rights Owners

The patented mining claims that comprise the Property include surface rights owned by Mega. The staked mining claim has different surface rights owners.

## First Nations

Memorandum of Understanding agreements have not yet been negotiated with relevant First Nation communities.

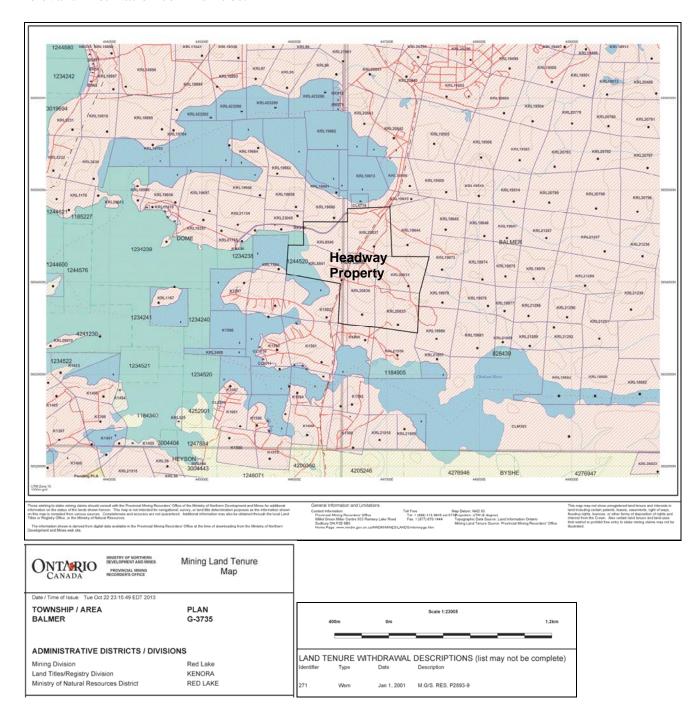


Figure 4-2 Headway Property Claim Map, in UTM co-ordinate grid, NAD83, Zone 15.

**Table 4-1: Claim Summary - Headway Property.** 

			SIZE		
Claim Type	Claim # (Lease #)	Parcel #	<u>Hectares</u>	<u>Acres</u>	
Patented	KRL8545 (KRL 20834)	PIN 42012-0281 (LT)	18.850	46.580	
Patented	KRL8546 (KRL 20835)	PIN 42012-0280 (LT)	20.590	50.880	
Patented	KRL8544 (KRL 20836)	PIN 42012-0282 (LT)	23.209	57.350	
Patented	KRL8542 (KRL 20837)	PIN 42012-0283 (LT)	24.221	61.640	
Patented	KRL8541 (KRL 20838)	PIN 42012-0930	16.082	39.740	
Patented	KRL8540 (KRL 20839)	PIN 42012-0929	14.654	36.210	
Staked	1244520		9.650	23.846	
		TOTAL	127.257	316.246	

# 5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

## 5.1 Accessibility

The Property is accessible year round via paved roads from Balmertown to Red Lake to the Property on Highway No. 125, which crosses the property from north to south. The closest major city is the City of Thunder Bay located 585 km to the southeast by paved highway. Public roads are maintained by the Provincial government. Gravel roads provide good access to the areas that are being explored by Mega within the property.

## 5.2 Climate

The Property has a climate typical for an area located in Northern Ontario. The nearest permanent weather monitoring station is located in Red Lake airport at the town of Cochenour, approximately 6 kilometres northwest of the Property. Weather statistics are shown in Table 5-1. Temperatures range between a maximum of 24°C and a minimum of -25°C. The mean annual rainfall is recorded at 640 millimetres, much of which occurs from storm events from June to September.

Table 5-1: Weather statistics for Red Lake, Ontario, Canada.

		Average	
	Tempe	Rainfall	
Month	max	min	mm
January	-14.0	-25.1	28
February	-9.0	-21.4	19
March	-1.1	-14.2	29
April	8.2	-4.5	35
May	16.6	3.4	55
June	21.2	9.2	98
July	23.8	12.3	91
August	22.4	11.0	86
September	15.3	5.4	80
October	7.7	-0.4	52
November	-2.7	-10.0	42
December	-11.3	-21.1	26
TOTAL			640

Source: Weatherbase.com

Climate conditions do not seriously hinder either exploration or mining activities, with adjustments needed for seasonal work such as winter cold season and summer warm season. There is a year-round water source in the waters of Red Lake.

## 5.3 Local Resources and Infrastructure

The Property benefits from local human resources and services in the town of Balmertown, located 3 kilometres north of the Property, as well as the Town of Red Lake. The area is serviced by a scheduled commercial airline connecting to Thunder Bay, Ontario as well as Winnipeg, Manitoba. The entire area is administrated under one municipality. Balmertown has a population of approximately 1,600 people and has all of the services typical for a town of that size including food, lodging, and wireless telecommunications. The area has a long history of mining activity since 1930, and also has a skilled and trained workforce as well as mine related services. Mega has established a field office in the Town of Red Lake for core logging/cutting, core storage. Red Lake is located at an altitude of 341 m and has approximately 2,000 inhabitants. An independent sample preparation facility owned by Accurassay is located in the city of Thunder Bay. Other significant resources include close proximity to the Highway as well as hydro-electric power.

## 5.4 Physiography

The topography of the project area is moderately hilly terrain to gently rolling with local relief ranging up to 10 metres. It is typical for Canadian Shield in shape and relief. It is 350 metres above mean sea level.

The Property is within forested hills consisting of deciduous and coniferous trees, intermingled with alders in swampy areas. The land is rolling and about 80% tree covered with 10% under the waters of Red Lake. The rest of the land use is taken up by roads and cottage lots.

#### 6. **HISTORY**

#### 6.1 **Property History and Previous Work**

The first discovery of gold within the Property was in the 1930's when gold-bearing quartz veins were found in outcrop hosted by quartz-feldspar porphyry (QFP) dykes. Headway Red Lake Gold Mines was incorporated in 1943 and stripping and trenching were conducted, and several surface grab samples exceeding 34 g/t gold. Headway diamond drilled 28 holes from surface in 1946, which tested a QFP dyke averaging 8 feet (2.5 m) wide and Headway reported erratic gold assays up to 20.9 g/t gold over 0.94 m in drill core (H-13). Further drilling in 1963 along with surface geological and geophysical surveys of the 6 patented claims met with negative results.

King's Bay Gold optioned the property and drilled QFP dykes from surface in 2005. Best results include 63.52 g/t gold over 0.5 m and 3.08 g/t over 10.8 m.

Mega optioned the property from King's Bay Gold in 2009 and completed 100% ownership in 2013.

#### 6.2 **General Area Gold Production**

The area in the general vicinity of the Property hosts a producing large-scale gold mine called the Red Lake Gold Mines, owned by Goldcorp Inc (see Fig. 6-1).

The Red Lake Mine is located in the historic Red Lake gold camp of northwestern Ontario. High grades and complex geometry characterize the ore that has been mined mainly from underground in Red Lake. Approximately 27 million ounces of gold have been mined to the end of 2012 at an average grade of 0.47 ounces per ton, from the Red Lake greenstone belt, mostly from rocks within the upper part of the Balmer Assemblage.

Gold was first mined in the camp starting in 1930 at the Howey Mine. Gold has been mined uninterrupted within the Red Lake gold camp ever since. Red Lake is a World Class gold camp and has produced over 27 million ounces of gold at a grade of 0.47 ounces per ton. Of the 18 original producers just one is operating today (Table 6-1), which is the largest mine in the camp both by number of ounces and average reserve grade, named Goldcorp's Red Lake Mines. This was an amalgamation that occurred between Placer Dome's Campbell Mine and Goldcorp's Red Lake Mine.

Table 6-1: Producing and past producing gold mines in the Red Lake District to Dec.  $31,\,2012$ 

NE.	Wasses of Deep Jacobian	Ore Milled	Gold Produced		
Mine	Years of Production	(Short Tons)	Troy Ounces	Ounces per Ton	
Red Lake Gold Mines	2006–present <sup>(1)</sup>	5 569 740	4 378 390	0.786	
Campbell Mine	1949-2006 <sup>(2)</sup>	19 944 241	11 216 443	0.564	
Goldcorp (Dickenson)	1948-2006 <sup>(3)</sup>	9 606 894	5 962 948	0.621 <sup>(4)</sup>	
Madsen	1938-1976, 1997 <sup>(5)</sup> -1999	8 678 143	2 452 388	0.283 <sup>(6)</sup>	
Cochenour-Willans	1939-1971	2 311 165	1 244 279	0.538 <sup>(7)</sup>	
McKenzie Red Lake	1935-1966	2 353 833	651 156	0.277	
Howey	1930-1941, 1957 <sup>(8)</sup>	4 630 779	421 592	0.091 <sup>(9)</sup>	
Hasaga	1938-1952	1 515 282	218 213	0.144	
Starratt Olsen	1948-1956	907 813	163 990	0.181	
Berens River	1939-1948	560 607	157 341	0.281	
Uchi	1939-1943	757 074	114 467	0.151	
Jason (Argosy)	1934-1952	276 573	101 875	0.368	
H.G. Young	1960-1963	288 179	55 244	0.192	
Sachigo River	1938-1941	46 457	52 560	1.131	
McMarmac	1940-1948	152 978	45 246	0.296	
Gold Eagle	1937-1941	180 095	40 204	0.223	
Jackson Manion	1934-1940	105 357	27 142	0.258	
Red Lake Gold Shore	1936-1938	86 333	21 100	0.244	
Hudson Patricia	1936-1937	11 228	1857	0.165	
Buffalo	1981-1982	31 986	1656	0.052	
Abino	1985-1986	2733	1397	0.511	
Lake Rowan	1986-1988	13 023	1298	0.100	
Mount Jamie	1976	972	377	0.388	
Kostynuk Brothers	1963-1966	577	1126	1.951	
Bobjo	1929	N/A	362(10)	N/A	
Bathurst	1927-1937	562	307	0.546	
Red Summit	1935-1936	591	277	0.469	
Sol d'Or	1933-1936	458	258	0.563	
McFinley	1987	N/A	N/A	N/A	
TOTAL	L	58 033 673	27 333 493	0.471	

Source: Ministry of Northern Development and Mines, Resident Geologists Annual Report, April 2013.

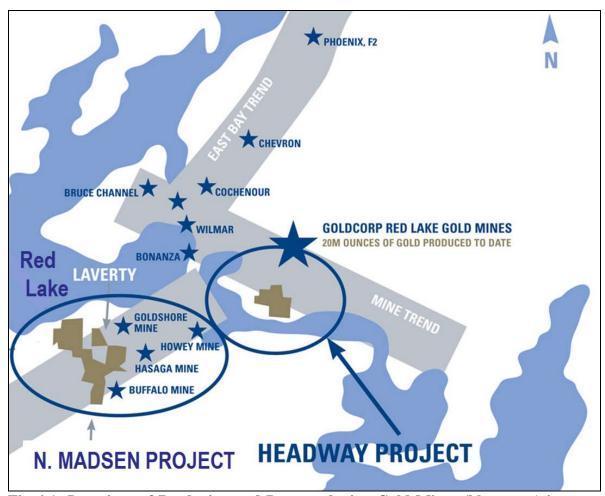


Fig 6-1: Locations of Producing and Past-producing Gold Mines (blue stars) in Red Lake relative to Mega's properties.

## 7. GEOLOGICAL SETTING

## 7.1 Regional Geological Setting

The Headway Property is located within the Red Lake Greenstone belt. The Red Lake greenstone belt is situated in the western portion of the Uchi Subprovince, a typical Archean granite-greenstone terrain consisting of volcanic and sedimentary assemblages and synvolcanic intrusions (Figure 7.1).

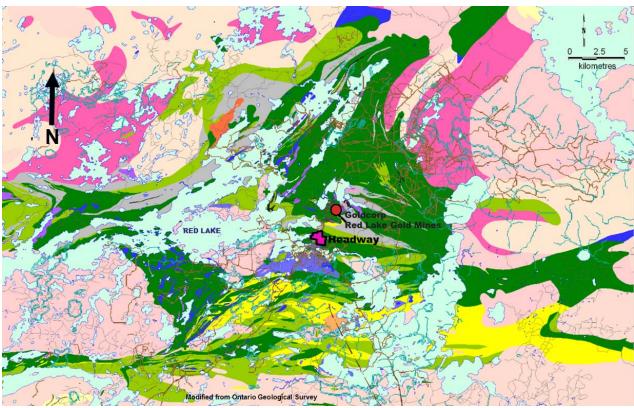


Figure 7-1: Regional Geology Map of the Red Lake Greenstone Belt (after Sanborne-Barrie et. Al., 2004)



The belt is subdivided into several distinct assemblages. The Balmer Assemblage, which hosts the Red Lake mine, is part of the oldest, Lower Mafic Sequence and constitutes 50% of the Red Lake greenstone belt and forms the central core. The assemblage consists primarily of basaltic tholeite and komatiite lava flows, ranging in age from 2,992 to 2,958 million years. Gold in the Red Lake belt is predominantly associated with the upper part of this assemblage.

The Balmer assemblage is unconformably overlain by the Bruce Channel assemblage at 2,8900 million years, which is dominated by metasedimentary rocks and calc-alkaline intermediate volcanic rocks. These are folded around the Balmer assemblage to the southeast of the Red Lake mine. Bedrock at surface within the Property is predominantly within the Bruce Channel assemblage.

## 7.2 Property Geology

The general geology of the Property is depicted in Figure 7-2. Within the property from west to east the rocks are:

Calc-alkaline mafic volcanics: Pillowed and massive flows are the predominant rocktype within the Property and are dark-green and fine grained, non-magnetic.

Calc-alkaline intermediate volcanics: Massive flows are the second most abundant rock-type within the Property

Quartz-feldspar porphyry: massive, medium-grained, leucocratic, containing grey-coloured feldspar and rounded quartz phenocrysts. This is the rock type that hosts gold mineralization at surface within the Property associated with irregular quartz veinlets (Fig. 7-2).

## 7.3 Property Mineralization

#### **ALTERATION**

Bedrock at surface within the Property is altered to Greenschist Facies and the regional alteration product is primarily chlorite. Hydrothermal alteration at surface is restricted to the areas around the QFP dykes consisting of patchy iron-carbonate. Deep diamond drilling within the Property has discovered hydrothermal alteration within Balmer Assemblage mafic volcanic rocks similar to that found in the Red Lake gold mines to the north due to the southward dips of the rocks there.

The three largest mines in the Red Lake camp, which are Red Lake mine, Madsen and Cochenour-Willans, contain an unusual alteration in Balmer assemblage basalts consisting of "aluminosilicate bleaching". This distinctive buff-colored "silicification" represents intense cation leaching of Na, Ca, Fe, Mn, Mg, +-K, resulting in a residual enrichment of Al and Si in the basalt. This pre-ore alteration is spatially associated with gold on a mine scale but not on an ore zone scale and the genetic relationship of this alteration to gold is unresolved (TTwomey, 2.

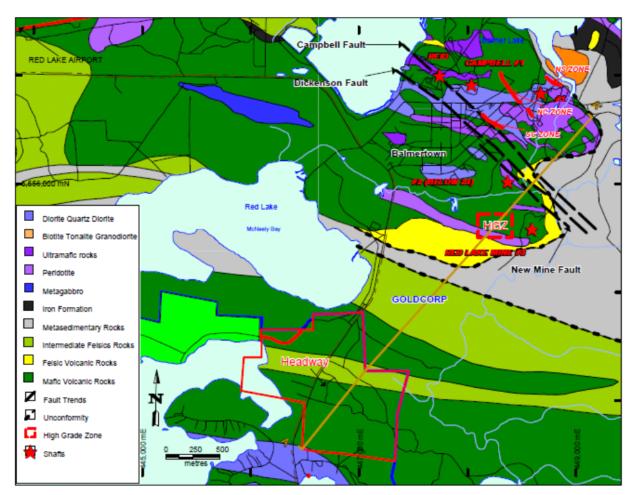


Figure 7-2: Simplified Surface Geological Map of the Headway Property.

#### **STRUCTURE**

A sheared zone found on surface in 1946 occurs in altered volcanics where sampling returned erratic gold values. It strikes parallel to regional fabric at 110 deg and dips vertically.

Gold deposits in Red Lake are hosted within strongly altered and variably deformed rocks that are arranged in regional trends (Andrews et al., 1986). The rocks within the Red

Lake Gold mines occur within a ¾ mile wide anomaly based on peraluminosity index, arsenic and CO2 (McGeehan, Hodgson and Saunders, 1981). This is part of an alteration/deformation trend that extends to the northwest which encompasses the Cochenour-Willans past producer (1.2 million ounces) and the McKenzie past producer (650,000 ounces). This corridor has been called the Cochenour-Gullrock Deformation Zone (see fig. 6-1).

#### **MINERALIZATION**

The mineralisation on the Property at surface is found within irregular quartz veinlets in QFP dykes. Gold is developed within quartz-carbonate +/- tourmaline +/- arsenopyrite veins associated with those quartz-feldspar porphyry dykes that intrude altered and sheared mafic volcanics of the Bruce Channel assemblage.

Mineralization located further north and at depth has been discovered in Balmer Assemblage mafic volcanics within the Property from deep diamond drilling. It is further discussed in Section 14. Two areas of interest were identified by assay results in drillhole MH1103. The first is a strongly altered shear zone in Balmer basalts containing brownbiotite and deformed quartz-carbonate veinlets with minor finely-disseminated pyrite. This returned anomalous gold, up to 291 ppb over 1 metre, from 2262.0 m to 2263.0 m.

The second area returned 1,050 ppb gold from a fine-grained, melanocratic, mafic dyke containing 2% finely disseminated pyrite, from 2695.0 m to 2696.0 m. This dyke intrudes highly-altered Balmer basalts and appears to be similar to a mineralized mafic dyke that is part of the PG70 Zone, within the Goldcorp/Premier Gold Mines Joint Venture property located about 2 km south of the Cochenour Mine (Premier Gold Mines Limited website, press release March 17, 2010).

Table 7-1: Selected Core Sample Results from Headway drillhole MH1103.

1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 1 0 1							
Sample Number	From	То	Interval	Au_FAA (ppb)	Description		
849263	2261.2	2262.0	0.8	100	Biotite altered basalt, qtz veinlets		
849264	2262.0	2263.0	1.0	291	Biotite altered basalt, qtz veinlets		
849265	2263.0	2264.0	1.0	125	Biotite altered basalt, qtz veinlets		
849293	2321.5	2321.8	0.3	271	Biotite alt'd, qtz veinlets, 2% diss. py		
849398	2695.0	2696.0	1.0	1,050	Mafic dyke, 2% diss. py		

## 8. DEPOSIT TYPES IN THE REGION

Economic concentrations of gold in the area are typical of epigenetic hydrothermal gold deposits and are considered to be mesothermal lode gold deposits. The gold mineralisation is primarily located in deformed and altered rocks in any rock-type but most ounces have been mined from lower Balmer Assemblage basalts. As such there is clearly a significant secondary lithological control as well as a strong structural control that has influenced the deposition of gold. Gold occurs primarily within deformed quartz-carbonate veins and as replacement sulphide bodies.

#### **Operating Mines in Red Lake** 8.1

The property is located within the Red Lake Gold Belt. Mining is presently occurring in Goldcorp's Red Lake Gold Mines, and in 2012 it produced 507,700 ounces of gold at an average grade of 19.52 g/t and had earnings of US\$503 million from Red Lake (Goldcorp website).

The Red Lake Gold Mines, owned by Goldcorp Inc (see Fig. 6-1), is the largest mine in the camp both by number of ounces and average reserve grade. It was created through an amalgamation of Placer Dome's Campbell Mine and Goldcorp's Red Lake Mine. This was two mine properties that were contiguous and essentially mined a single large auriferous hydrothermal system comprised of a number of individual ore zones. More than 21 million ounces have been mined from this deposit at a grade of more than 0.60 ounces per ton gold (20 grams per tonne). This is considered the highest grade gold deposit of this size in the world.

#### 9. EXPLORATION BY PRESENT OWNER

Since Mega began evaluation and exploration on the Headway Property in 2009 to the present, approximately 90% of the exploration expenditures have been on diamond drilling. Since October 5, 2009, the company has drilled 4 deep holes for a total of 9,881 m drilled, and have tested their geological model to a depth of 2,650 m below surface. Hole MH1103 is currently ended at 2,735 m and the bottom of the hole is within Balmer Assemblage rocks.

Table 9-1: locations and lengths of diamond drill holes on Headway Property.

HOLE-ID	LOCATIONX	LOCATIONY	LOCATIONZ	LENGTH
MH0901	447019	5653674	376	2603
MH1002	446396	5654175	370	1970
MH1103	446203	5654287	365	2735
MH0901-1	447019	5653674	376	2582

#### 10. DIAMOND DRILLING

#### 10.1 Data

A total of three drill-holes were drilled by Mega and are in the database for the Headway Property, named MH0901, MH0901-1, MH1002 and MH1103. Total cumulative meters for these drillholes are 9,881 m. Assays for each drill-hole has been tabulated and reported for Au, as well as whole rock. Selected assay results are summarized in Table 14-1.

## 10.2 Surveying

## Sample Locations and Orientations

Drill-hole locations by Mega for the Headway Property were located using a hand-held Global Positioning System (GPS). Source is using the UTM Coordinate System, NAD83, Zone 16 and this is the same units used by the author.

## **Topography**

The GPS data recorded in the field were used for drill-collar elevation locations. GPS elevation data is not as accurate as the x, y co-ordinate data but have not been compared to available topographic data.

## **10.3** Sampling Procedures

**Drill-holes** were marked up for sawing and sampling based on major lithologic units, structure, alteration, and mineralogy and were recorded in an excel spreadsheet. Assay results for samples and quality assurance/quality control (QA/QC) materials were entered into the logging database when received. All assay and QA/QC results were received electronically from Accurassay.

#### 11. SAMPLING APPROACH AND METHODOLOGY

## 11.1 Sampling

The Author has been familiar with Mega's core handling facility in Red Lake since it was Premier Gold Mine's core facility prior to being rented by Mega. The following description applies to Mega's drill core sampling. Sampling was marked by a geologist. Sample lengths are based on lithologic units and generally are at 1.5 m. For QA/QC, a duplicate was inserted for every 10 samples submitted.

Technicians sawed the samples with an electric diamond saw blade and the half was collected into a plastic bag and the bag secured with a tamper-proof tag; Bagged samples are placed in sealed bags and secured ready for shipping. Bags were shipped from Red Lake to Accurassay lab in Thunder Bay, Ontario facilities by commercial transport. Samples were prepared (crushed and pulverized) at Thunder Bay and the pulps were then analysed there. The pulps and rejects are stored at the Accurassay facility in Thunder Bay.

#### 11.2 Results

Assay results for Au from half-core in this Report are represented by 191 samples. Selected results from drill hole MH1103 can be seen in Table 14-1. The sample quality is adequate and the samples taken by Mega are considered by the author to be representative of the areas tested.

Two areas of interest were identified by assay results in drillhole MH1103. The first is a strongly brown-biotite altered shear zone in basalts containing deformed quartz-carbonate veinlets and minor finely-disseminated pyrite. This returned anomalous gold, up to 291 ppb over 1 metre, from 2262.0 m to 2263.0 m.

The second area returned 1,050 ppb gold from a fine-grained, melanocratic, mafic dyke containing 2% finely disseminated pyrite, from 2695.0 m to 2696.0 m. This dyke intrudes highly-altered Balmer basalts and appears to be similar to a mineralized mafic dyke that is part of the PG70 Zone, within the Goldcorp/Premier Gold Mines Joint Venture property located about 2 km south of the Cochenour Mine (Premier Gold Mines Limited website, press release March 17, 2010).

# 12. SAMPLE PREPARATION, ANALYSES AND SECURITY

## **12.1** Sample Preparation

Core samples analysed in 2013 were prepared at the Accurassay lab in Thunder Bay, Ontario. There samples were logged in their tracking system, then weighed and the entire sample was crushed to approximately 8 mesh (2.38mm). A sub-sample split of 250 to 500 grams from that sample was then pulverized to better than 90% passing 150 mesh (0.104mm). The coarse rejects and pulps prepared by Accurassay are saved until the end of 2013.

## 12.2 Analysis

Analyses performed at Accurassay for 2013 are as follows. Au was assayed using a 50g aliquot split from the pulp. This was then fire assayed and the resultant bead analysed for gold using Atomic Absorption (AA) spectroscopy. Lower detection limits were 5 ppb Au (0.005 gpt Au). For samples that had an initial assay value reported of 10 gpt Au or better, a coarse reject split of 1000g was taken and pulverised to 90% passing 150 mesh. This subsample was screened with two 30.2g aliquots analysed from the pulp fraction and assayed gravimetrically.

## 12.3 Quality Assurance/Quality Control

Standards and blanks were inserted into the sample stream at one per ten samples. This was conducted by various Mega personnel and was supervised by Rory Ritchie, Daana Magi, and the last 300 m of the hole by Joe Magnotta.

## 13. DATA VERIFICATION

## 13.1 Verification of Sample Results

The Author has not resampled any of Mega's core samples from the drillhole.

Table 13-1: Comparison of standard and blanks assays at Accurassay Labs from hole MH1103.

Sample #	Туре	Au_FAA (ppm)
849208	VMS1	0.439
849247	VMS1	0.397
849285	VMS1	0.434
849165	HGS1	3.021
849226	HGS1	2.653
849267	HGS1	2.460
849280	HGS1	2.886
849409	HGS1	2.880
849153	BLANK	<0.005
849197	BLANK	<0.005
849215	BLANK	<0.005
849239	BLANK	<0.005
849256	BLANK	<0.005
849294	BLANK	<0.005
849396	BLANK	<0.01
849420	BLANK	0.04

## 13.3.3 Check Assay Program

Mega has not submitted any samples from its sampling or diamond drilling programs as check samples or duplicates to a second lab. The Author recommends that 5% of all future samples be submitted to a different laboratory, with blanks and standards inserted into the sample stream.

## 13.3.4 Whole Rock Assay Program

Mega has submitted three duplicates at AccurassayLabs of their twenty-one Whole Rock analyses.

## 13.4 Security

All of Mega's chip samples were kept within their sampling facility until shipment to the laboratory. Chip samples were sealed in labelled plastic samples bags and securely packed for shipping. Bags of samples were then shipped by road transport to the Accurassay preparation facility in Thunder Bay.

The core handling and sampling facility is locked when personnel are not present and is considered a secure building. The outside core storage facilility at the same site in Red Lake is not considered secure because it is not completely surrounded by a fence. The Author recommends a secure fence with lockable gate be added to the facility.



Figure 13-1: Outside of Mega's core processing facility in Red Lake, Ontario.

#### 14. AUTHOR'S DATA AND INTERPRETATION

## 14.1 Data Collection and Verification

The Author visited the core shack and examined core on September 25<sup>th</sup>, 2013 with Joe Magnotta, one Mega's personnel who organized the data, logged the core and supervised the drilling.

## **Evaluation of Core**

The bottom part of drillhole MH1103 was examined by the author from 2200 metres downhole to the present end of the hole at 2735 metres.

From 2230 m to 2379 m down-hole, the rocks are variably altered chlorite-magnetite-garnet Balmer Assemblage basalts intercalated with two talcose ultramafic units. Plotting the whole rock geochemistry results from the ultramafic units on a Jensen Plot indicates these are Peridotitic Komatiite (PK) ultramafics.

A strongly-altered shear zone within Balmer basalts was intersected in drillhole MH1103 from 2261 m to 2304 m down-hole. Rotation of fabrics as well as pulled-apart and back-rotated quartz-carbonate veinlets shows this to be a shear zone (fig. 14-1). The fabric is at moderate-to-high-angles to the core axis and indicates this is a regional foliation-parallel shear zone. Pervasive brown-biotite occurs in the wall-rock with low amounts of disseminated pyrite throughout the shear zone. Anomalous gold was returned from 2261 m to 2264 m, up to 291 ppb Au.

From 2279 m down-hole to the end of the hole at 2735 m, the rocks are strongly altered to silica-andalusite +-sericite. Units have been logged as "bleached basalt", silicified ultramafics and altered rhyodacite (see Appendix 3), although the precursor to these units is difficult to discern. From whole rock geochemistry, the cations Ca, Na, Mg, Fe and K have been removed so that the rocks are essentially Si-Al. Some of the units contain fine-grained, round quartz "eyes" and have been logged as rhyodacite. Other units contain low amounts of medium-grained red garnets and are likely derived from basalt or "Campbell-Dickenson Diorite" (fig. 14-2). Regardless of the precursor, these are highly altered Balmer Assemblage rocks equivalent to the thick, aluminous-altered units found deep in Goldcorp's Red Lake Mine below 1,600 m from surface in the hangingwall of the HGZ.

An area further down-hole returned 1,050 ppb gold from a fine-grained, melanocratic, mafic dyke containing 2% finely disseminated pyrite, from 2695.0 m to 2696.0 m. This dyke intrudes highly-altered Balmer basalts and appears to be similar to a mineralized mafic dyke that is part of the PG70 Zone, within the Goldcorp/Premier Gold Mines Joint Venture property located about 2 km south of the Cochenour Mine (Premier Gold Mines Limited website, press release March 17, 2010).

Table 14-1: Selected Core Sample Results from Headway drillhole MH1103.

1						
Sample Number	From	То	Interval	Au_FAA (ppb)	Description	
849263	2261.2	2262.0	0.8	100	Biotite altered basalt, qtz veinlets	
849264	2262.0	2263.0	1.0	291	Biotite altered basalt, qtz veinlets	
849265	2263.0	2264.0	1.0	125	Biotite altered basalt, qtz veinlets	
849293	2321.5	2321.8	0.3	271	Biotite alt'd, qtz veinlets, 2% diss. py	
849398	2695.0	2696.0	1.0	1,050	Mafic dyke, 2% diss. py	

## 14.2 Whole Rock Analyses

The Whole rock sampling program from MH1103 entailed samples of sawed core. A total of 21 samples were analysed.

## 14.3 Mineral Resources and Other Matters

The Headway Property does not have a mineral resource and subsequently does not have any mining prefeasibility or feasibility studies. The Property is accessible by road and the power, labour and access infrastructure in the area is considered good.

The author has not independently researched title, environmental or permitting regulations for the Property; instead I have relied on information provided by lawyers hired by Mega for matters relating to property titles, surface rights, permitting and environmental matters. The author is not aware of any mining, metallurgical, infrastructure, environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant issues which might materially affect exploring the Property.



Figure 14-1: Strongly altered and sheared zone in Balmer basalt at 2268 m, MH1103.

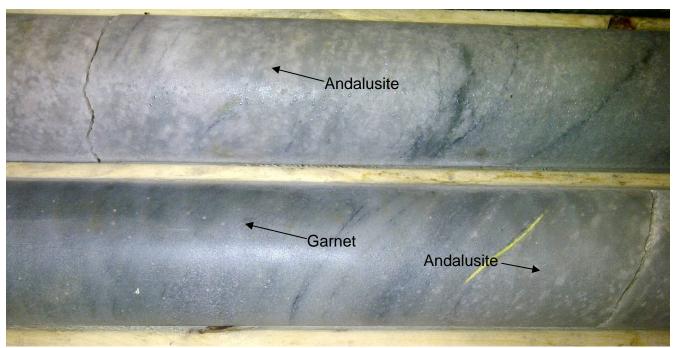
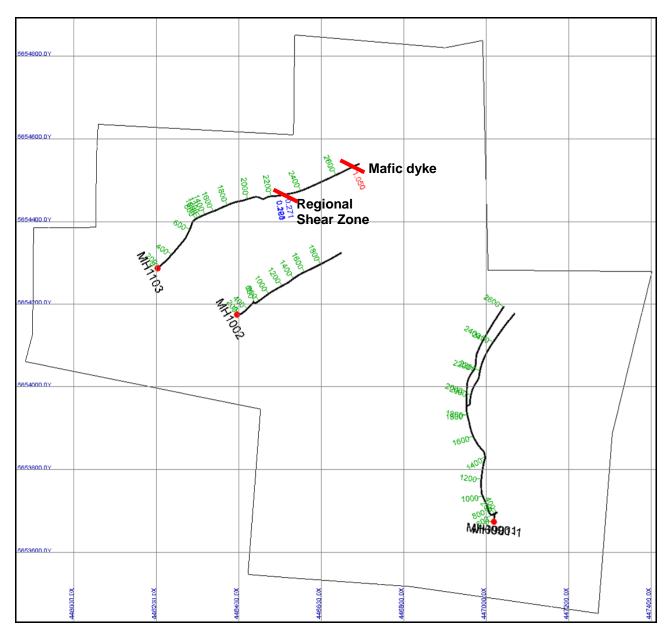


Figure 14-2: "Bleached basalt", strongly-altered Balmer Assemblage basalt or "Campbell-Dickenson Diorite" around 2644 m, MH1103.



**Fig. 14-3: Plan view of diamond drillholes at Headway Property,** showing down-hole distances in metres (green text) and on the opposite side of the holes, gold assays above 0.200 g/t. Grid is in UTM Zone 15 NAD87 co-ordinates

## 15. OTHER RELEVANT DATA AND INFORMATION

## **15.1 Outstanding Issues**

To the author's knowledge, there are currently no known environmental, permitting, legal, title, taxation, socio-economic, or political issues that adversely affect the Property. There is no long term agreement between Source and local First Nation stakeholders.

## 15.2 Mining and Infrastructure

The Property is accessible by road and within a km of power lines. The infrastructure in the area is considered to be very good. Mining methods would be determined after a preliminary assessment, prefeasibility or feasibility study and would depend on the success of future exploration.

#### 16. INTERPRETATION AND CONCLUSIONS

Deep drilling on the Headway Gold Property by Mega Precious Metals Inc. has confirmed their geologic model that altered and deformed Balmer Assemblage rocks occur within the property and are the same rock types that occur within Goldcorp's Red Lake Mine to the north of the Property. Mega's drilling has encountered rocks that exhibit similar alteration and deformation as those that host gold deposits at the Red Lake Mine.

The presence of pervasive brown-biotite in the wall-rock with low amounts of disseminated pyrite, contains anomalous gold from 2261 m to 2264 m in drillhole MH1103, up to 291 ppb Au. This indicates that the shear zone was an active structure during auriferous fluid migration. The style and intensity of alteration and structure is similar to the HW Shear and HW7 Shear associated with the HGZ at the Red Lake Mine.

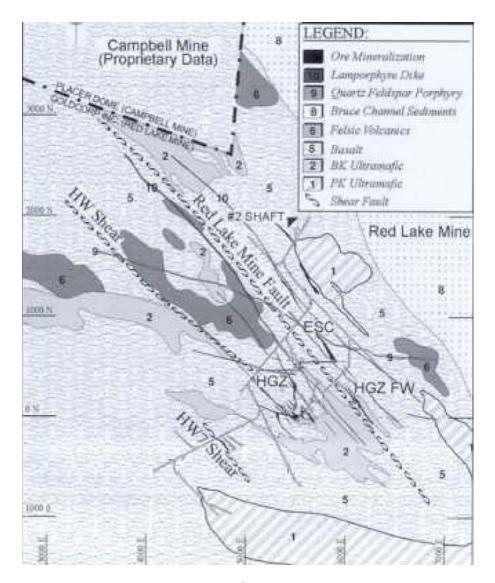
#### Discussion of Goldcorp's Red Lake Mine deep exploration

The HW Shear is a regional foliation-parallel structure striking 130° and dips 70° southwest. It is composed of deformed quartz-carbonate veinlets within sheared basalt and was mined within the HGZ from the 30<sup>th</sup> level (1400 m below surface) to the 37<sup>th</sup> level (1800 m below surface). The HW Shear contains brown-biotite with disseminated pyrite and variable anomalous gold as an alteration halo around the ore zone. This proximal alteration in the HW Shear occurred within 300 m around the ore body (Cadieux, A.M.; Dube, B; Williamson, K.; Malo, M. and Twomey, T., 2006).

The HW7 Shear is also known as the Kovala Fault and is a regional foliation-parallel structure striking 130° and dips 60° southwest (see Fig. 16-1). It is composed of deformed quartz-carbonate veinlets within sheared basalt, contains brown-biotite, and the shear offsets basalts with ultramafic rocks as well as felsic volcanics. This structure is associated with the NXT Zone, which is a series of parallel mineralized zones, west of the HGZ, which contain ore-grade drillhole intercepts such as 0.87 oz/ton gold over 10.0 feet (29.81 gm/T over 3.0 m) and 2.42 oz/ton gold over 4.5 feet (82.91 gm/T over 1.4 m) as shown in Appendix 2. The HW5 portion of the HGZ is the highest-grade part of the HGZ and mining has averaged more than 2.00 oz/ton gold. This HGZ zone spatially links the HW shear in it upper elevation with the HW7 Shear at its lower elevation. The deepest drilling underground on this zone intersected high-grade gold in the hangingwall of the HW7 shear and returned 4.31 oz/ton gold over 4.8 feet in a "historic intercept" and is adjacent to a "New Intercept" of 17.24 oz/ton gold over 4.5 feet, attributed to the NXT Zone as shown in fig. 16-2. (See also Appendix 1 sourced from www.goldcorp.com: Scotia Mining Conference Presentation; November 27, 2012).

Deep development of the access ramp for mining the HGZ below the 47<sup>th</sup> level at the Red Lake mine is progressing in the hangingwall of the ore, southwest of the HGZ. The ramp has encountered a new gold-mineralized zone called "New zone intersected in 4699

Ramp" (fig. 16-2). The New Zone appears to have a strike direction that is parallel to regional fabric but nothing else has been released publicly on this discovery.



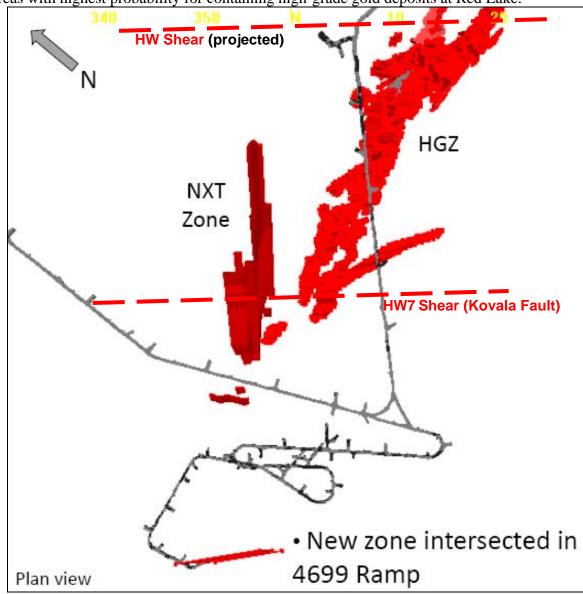
**Figure 16-1:** Geology Plan of 34<sup>th</sup> level, Red Lake Mine, showing locations of HW Shear and HW7 Shear (Kovala Fault) in relation to HGZ (Twomey and McGibbon, 2004).

#### **Implications for Exploration at the Headway Property**

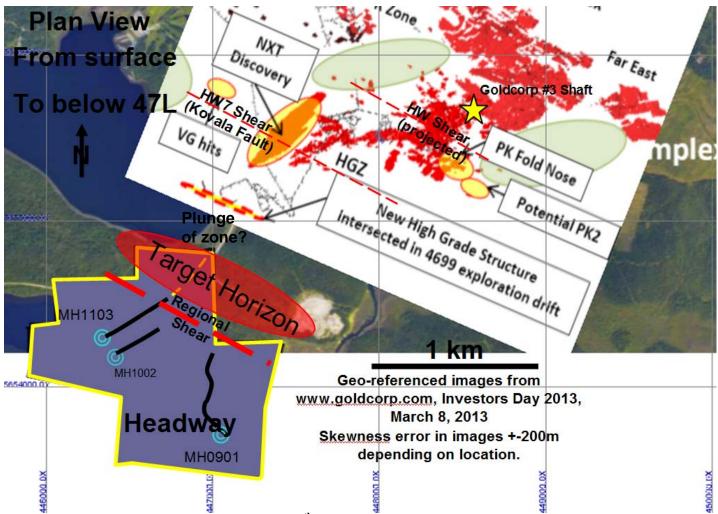
This New Zone discovery in the 4699 ramp, as well as the NXT Zone, both demonstrate that the hangingwall rocks to the HGZ have excellent exploration potential for high-grade gold mineralization. The intersection of a regional Shear Zone in MH1103 that was open to auriferous fluids has similarities to ore-bearing structures at the adjacent Red Lake Mine. This suggests that this regional Shear Zone has good potential for higher gold-

grades within the Headway Property. Also, any regional structures between this one and the HGZ to the northeast have excellent potential to host economic gold mineralization.

The most effective exploration for these types of high-grade orebodies is a first phase, widely spaced drill program that tests for the presence of regional foliation-parallel structures. Second phase drilling at tighter spacing, then tests for the presence of any contrasting rock type that has contacts at high angles to the regional fabric. Intersections of oblique structures and rock contacts with regional foliation parallel shears are historically the areas with highest probability for containing high-grade gold deposits at Red Lake.



**Figure 16-2: Plan View of HW part of Red Lake Mine below 47 Level** (1,800 m below surface) showing new zones being explored by Goldcorp with the Author's interpretation of shear zones. From Goldcorp Inc Website: Investors Day Presentation, March 8, 2013.



**Figure 16-3: Conceptual plan view below 47<sup>th</sup> level of Red Lake Mine** in relation to Headway drillholes. Image of NXT Zone and "New zone intersected in 4699 Ramp" from Investors Day Presentation, March 8, 2013, www.goldcorp.com.

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## 17. RECOMMENDATIONS

Based on the results of exploration on the Property thus far as well as Goldcorp's recent successes at deep exploration in the hangingwall of the HGZ, it is the author's opinion that deep diamond drilling should continue at the Headway Property northward to the boundary of the Red Lake Mine. Drillhole MH1103 should be extended northward to the boundary of the Red Lake Mine, in order to explore for other regional foliation-parallel shear zones in Balmer basalt (fig.16-3).

Daughter holes that branch off MH1103 should also be designed to intersect the regional Shear Zone 300 m away from the original MH1103 parent hole intercept, to test for any other rock contacts at high angles to regional fabric as well as attempt to vector towards higher gold grades within the regional structure.

Table 17-1 Recommended Budget for Work on the Headway Property.

Contingency @ ~10%	\$39,000
Wedging	\$100,00
Geological, core sawing and support @ \$45/m x 1,000 m	\$45,000
Drillcore assays 1,000 @ \$15/sample	\$15,000
Diamond drilling 1,000 m @ \$230/m	\$230,000

This drilling program can begin as soon funding permits in order to focus on exploring closer to the Red Lake Gold Mines property boundary.

## 18. REFERENCES

- Cadieux, A.M.; Dube, B; Williamson, K.; Malo, M. and Twomey, T., 2006: Characterization of hydrothermal alteration at the Red Lake mine, northwestern Ontario. Geological Survey of Canada, Current Research 2006-C2, 14 p.
- **Dube, B; Williamson, K., McNicoll, V., Malo, M. Sulski, T.; Twomey, T. and Sanborn-Barrie, M**. 2004: Timing of gold mineralization at the Red Lake, northwestern Ontario, Canada: new constraints from U-Pb geochronology at the Goldcorp High-grade Zone, Red Lake mine, and at the Madsen mine, Economic Geology, v. 99, p. 1611-1641.
- **MacGeehan, P.J.; Sanders, T; and Hodgson, C.J.**, 1982: Meter-wide veins and a kilometer-wide anomaly: wall-rock alteration at the Campbell Red Lake and Dickenson gold mines, Red Lake District, Ontario. Canadian Institute of Mining, CIM Volume 75, No. 841, pp.90-102
- **Twomey, T. and McGibbon, S.;** 2001: The geological setting and estimation of gold grade of the High-grade Zone, Red Lake mine, Goldcorp Inc.; Exploration and Mining Geology, Volume 10, No. 1, CIM p.19-34.

www.goldcorp.com: Scotia Mining Conference Presentation; November 27, 2012

## 19. CERTIFICATE OF QUALIFICATIONS

#### TIMOTHY JAMES TWOMEY

- I, Timothy James Twomey, B.Sc., P.Geo., of Thunder Bay, Ontario, do hereby certify that as the author of the report entitled "Report on Drillhole MH1103, Headway Au Property, Red Lake, Ontario, Prepared For Mega Precious Metals Inc." and dated November 4<sup>th</sup>, 2013, I hereby make the following statements:
- 1. I am a Consulting Geologist residing at 335 Gorevale Road, Thunder Bay, Ontario, P7G 2H4.
- 2. I am a graduate of Lakehead University, Thunder Bay, Ontario, Canada, 1983 with a B.Sc. Honours Geology degree.
- 3. I am a Practising Member of the Association of Professional Geoscientists of Ontario (#1825).
- 4. I have practiced my profession in mineral exploration continuously since graduation. I have over 25 years of experience in mineral exploration, production or consulting.
- 5. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a "qualified person" for the purpose of NI 43-101.
  - 6. I am responsible for the preparation of this Report.
- 7. I am independent of Mega Precious Metals Inc. as described in Section 1.4 National Instrument 43-101.
- 8. I was previously employed by Goldcorp Inc. at their Red Lake Mine from 1994 to 2008 and was part of the Geological Team that discovered, delineated and brought the High-Grade Zone discovery into production.

Date: November 4<sup>th</sup>, 2013

"Original Document, signed and sealed by Timothy J. Twomey, P.Geo."

Tim Twomey Consulting, P.Geo.

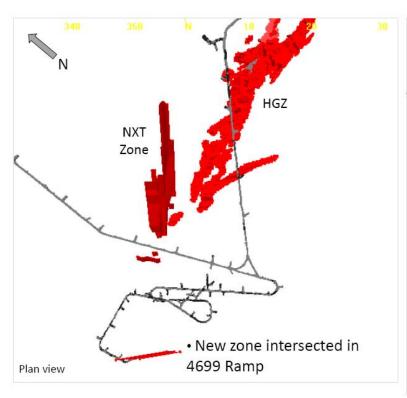
Tim Twomey Consulting

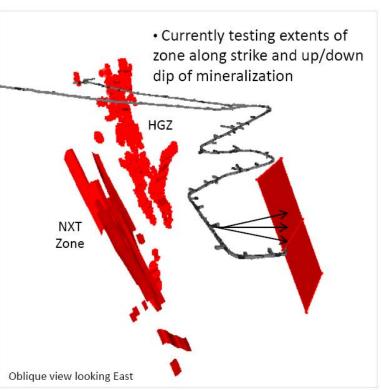
## APPENDIX 1

Excerpts from Goldcorp Inc Presentation

# **RED LAKE - Deep Target**

## **New Shear Zone**

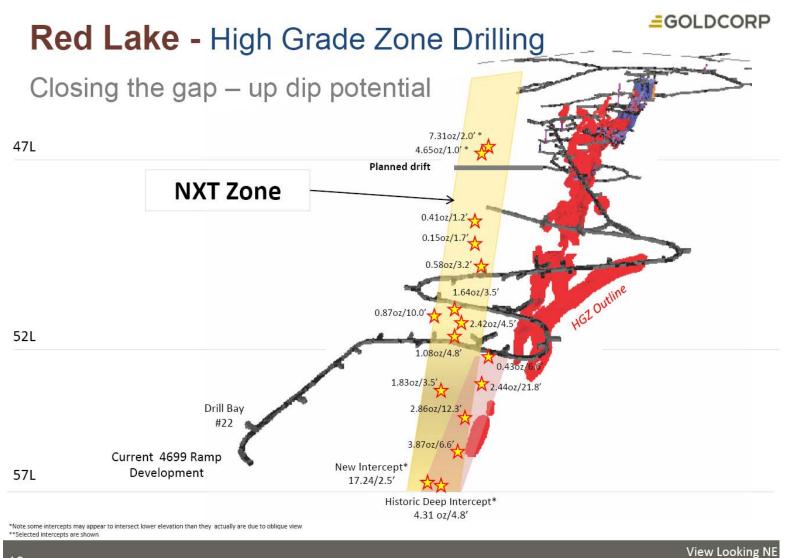




**\_GOLDCORP** 

From Goldcorp Inc Website: Investors Day Presentation, March 8, 2013

Mega Precious Metals Inc. Report on Drillhole MH1103, November 4, 2013



From Goldcorp Inc Website: Scotia Mining Conference Presentation; November 27, 2012.

Tim Twomey Consulting

## APPENDIX 2

Author's Notes on Headway diamond drill hole log

					Me	ga Pre	cious Me	tals	Inc.																		$\overline{}$
DDH Number		MH1103			IVIC		OND DRILL I					Page		1	of									+		_	
Project		Headway										· ugu			-												
Length						REFLEX	SURVEY TE	STS				Logged	Ву	R. Ritch	ie												
Started		Feb.14/11		Depth	Azimuth	Dip	Depth A	zimuth	Dip			Grid Coo	r'd														
Completed				2336	80.6	-67.4						Claim No															
Easting												Target(s	)														
Northing												Contract															
Elevation	_						$\vdash$					Comme			Christense		0		<u>.                                    </u>								 
UTM										4					ng began co	0								_			
											Sample		and onv	vard	A., 544												
From	То		Description (Litho	/Altn/Sulp	phides/V	eining/S	tructure)				Number	From	To	Interva	Au_FAA (ppm)	Tim's Co	mments										
2223.60	2332.87	Baln	er Mafic Volcanics	<b>.</b>							849228	2235.00	2235.50	0.5	<0.005												
											849229	2235.50	2236.50	1.0	<0.005												
			green to grey green,								849230	2236.50	2238.00		0.0075												
			t'n, locally. Chlorite al					phides	through	out, blebby	849231	2248.50	2250.00		0.008												
			r contact is sharp at .0 - 2230.5 2% po as					blobo			849232 849233	2250.00 2251.50	2251.50 2253.00		0.028									-			 
		2220	.u - 2230.5 2% po as	s ionatoriii	veiniets/i	epiaceme	nts, 0.5% py	DIEDS	associa	lea.	849234	2253.00	2254.50		0.009									-			 
	······································	2231	.8 - 2246.5 Qtz-carb	veined zo	ne, typica	ally foliafo	rm, both ank	and ca	I, 2mm-3	30cm. Foliation	849235	2254.50	2256.00		0.010									+		-	+
			40-45 TCA. Wal										T	·		"											
											849236	2117.20	2118.00		<0.005	"											
		2234	.0 - 2235.0 Dark gre					c dyke	e. Conta	cts 50 TCA,	849237	2118.00	2119.50		0.015												
			foliation 35 TCA.	Tracecpy	as a fev	v sporadio	small blebs				849238	2119.50	2121.00	1.5	<0.005												
	<b></b>	22.40	.0 - 2256.0 Intermitte	nt bandad	no contra	nemont 2	39/ 01/07 004	re inte-	rual Ma	fic volcanies	849239 849240	BLANK 2121.00	2122.50	1.5	<0.005		-										 _
		2240	mod grt-mgt alt'd		po repiac	sement, 2-	3% over ent	re inter	vai. Ma	ne voicanies	849241	2122.50	2124.00		<0.005 <0.005	<mark></mark>								-			 
			mod gri-nigi dica								043241	2122.50	2124.00	1.0	VU.003												
		2257	.9 - 2260.4 Pale grey	, mod cal	alt'd fine o	grained in	termediate	dyke.	Foliatio	n 45 TCA, contac	ts 849242	2264.90	2265.40	0.5	0.01												
			40 TCA. Trace p								849243	2265.40	2266.50	1.1	<0.005												
											849244	2266.50	2268.00		0.007												
		2261	.0 - ongoing Strongly							rallel to foliation.	849245	2268.00	2269.50		0.006												
		good structures!	Wallrock weakly	to locally s	strongly s	silica-bt alt	'd, no visible	sulphid	les.		849246 849247	2269.50 VMS1	2271.00	1.5	<0.005	2261-2304	4 = strong	altered ar	nd sheare	d zone in	Balmer b	asalt		-			
			om 2265.4 - 2284.5	V. strongt	lv atz-car	b veined a	and mod to lo	cally st	ronaly s	heared	849248	2271.00	2272.50	1.5	0.397												
		<b>3</b>								d mgt alt'n locally.	849249	2272.50	2274.00		0.005												
			Shear t	foliation an	d colliforn	m and ofte	n boudinnag	ed qrz-	carb ve	ins 40 TCA.	849250	2274.00	2275.50	1.5	0.005												
										ccia up to 15cm.	849251	2275.50	2277.00														
			Strong	bt-silica W	/R alt'n as	sociated	with stronge	shear	ing and	vein breccias.	849252	2277.00	2278.50		<0.005												 
			2265.4 - 2269.0	Zone of v	etropo	ilion bt alt	o wio walle	ok oor	within	brecois	849253 849254	2278.50 2280.00	2280.00		<0.005 <0.005												
			2203.4 - 2203.0	Zuile ui v	. Sirving S	silica-bi ali	II WIII Wallic	CK, CSL	J. WILLIIII	DI ECCIA.	849255	2281.00	2282.00		<0.005												 
			2281.4 Small rub	obly fault v	vithin stro	ngly shea	red and carl	-chlat	t'd mafic	volcanics.	849256	BLANK	LLUL.00	1	<0.005												_
			40 TCA								849257	2282.00	2283.00	1.0	<0.005												
											849258	2283.00	2283.60		<0.005												
			2283.6 - 2284.1	<del></del>			alt'd, v. we	ak silica	a alt'd zo	ne. Foliation	849259	2283.60	2284.50		0.007					-							 
	<b>.</b>		and qtz	-carb vein	ing 40 fC	A.	ļ				849260 849261	2284.50 2285.50	2285.50 2286.40		<0.005 <0.005		-		-	-				-			-
			2284.1-2288.3 A	As above h	but slight	v less alte	red: still stro	naly bt-	carb alt	howerver	043201	2203.30	2200.40	0.5	<0.005	"								+		-	 
	<b> </b> -		moderately to str		<del>.</del>	, unt	. 34, 3tm 3tm	.9., 01-	Jaro uit		849262	2260.60	2261.20	0.6	0.017												+
											849263	2261.20	2262.00														
			2288.3-2293.4 L	ess altered	d, singl st	rongly sh	eared. Garne	ts com	mon loca	ally.	849264	2262.00	2263.00	1.0	0.291			rown bio						d Lake	Mine		
											849265	2263.00	2264.00					us to bein									
			2293.4-2305.25	Strongly s	sheared, s	strongly b	t-carb altered	i. Folai	ition and	veining still at	849266	2264.00	2264.90	0.9	0.055		Yes - pr	resense o	f garnet+	-magnetit	e indicate	s basalt r	ather tha	an BK			 
			40 TCA.				<del> </del>				849267	2286.40	2287.30	nο	0.006									-		-	 
			2304-2308.73: C	arbonate v	veinina. 1-	-20 mm th	ick. 45 TCA	rare at:	z. Veins	+	849269	2287.30	2288.30		< 0.005											_	_
			227 . 2000.70. 0		J9, 1		,,			T	849270		2289.00				+						1				+
			2308.41-2308.45	: 5% pyrrł	hotite, 2%	pyrite ve	in filling				849271	2289.00	2290.50	1.5	0.006												
											849272	2290.50	2292.00														
			2311.10-2311.26			2313.86-	2313.94: the	rock in	these in	itervals is	849273	2292.00	2293.40		<0.005												 
			fracturing paralle	I ICA into	discs.		ļ				849274	2293.40 2293.90	2293.90 2295.00		0.005									-			 
		2317	.31-2322: Sulphides t	hroughout	tall 3% n	vrite tr P	vrhotite tr C	halcon	vrite	+	849275 849280	4CS1	2285.00	1.1	2.886									-		-	
[		2311	In one interval of							eakly altered with	849281	2307.97	2308.33		2.886 <0.005											_	+
			chlorite and biotit								849282	2308.33	2308.57		<0.005												
		····	Carbonate veinin							·	849283	2308.57	2309.00		<0.005												
	I			g prosent,	, but they	are mrege	nur Snupes.				849284																

From	То		Description (Litho/Altn/Sulphides/Veining/Structure)	Sample Number	From	То	Interval	Au_FAA (ppm)	Tim's Comments
			Whole Rock Sample: 792499 (2309.22-2309.41)	849289	2318.38	2319.00		0.011	
			Whole Rock Sample: 792500 (2326.40-2326.54)	849290	2319.00	2320.00	·····	0.015	
2332.87-2338.88		IIm	Talc Rich Mafic Volcanic			2321.00			PK ultramafic? Check WR
2002.01-2000.00			rate wear marie volcame	849292	2321.00	2321.53	<b>.</b>	0.074	PR did amanic: Creek WK
			This unit is composed of 30-40% Talc which is fracture filled in a matrix of a mafic? Volcanic.	849293	2321.00	2321.81		0.03	
			The unit is dark black, and soft and brittle. A strong foliation is present throught, 45 TCA.	849294	BLANK			<0.005	
			The lower contact is sharp and 45 TCA.			2322.58		0.036	
			The lower contact is sharp and 45 TCA.	849296	2321.01	2323.00	ļ		
				049290	2322.30	2323.00	<b>.</b>	0.008	
		check	Whole Rock Sample: 844246 (2336.55-2336.75)	849301	23/3.00	2374.00			
				849302	2374.00	2375.00		<u> </u>	
2338.88-2363.45			Balmer Mafic Volcanics	849303	2375.00	2376.00			
			Primarily basalt all throughout the unit, and is moderatly chloritized throughout. Biotite increases a						
			great deal farther downhole starting at 2353.66 and continues to the lower contact. Rare carbonate						
			veining present in the unit ranges from 75-85 TCA. The first 2 m of the unit are very carbonate rich						
			with thick carbonate veins. The lower contact is sharp and 45 TCA. The unit is massive.						
			2353.66-2363.45: Biotite rich basalt, 30%, subhedral, 1 mm				Ī		
T							Ī		
·			Whole Rock Sample: 844247 (2350.82-2351)						
						••••••		†	
2363.45-2373.25		IIm	Talc Rich Mafic Unit			••••••		†	PK ultramafic? Check WR
2303.43-2313.23		0111	Tale Net male one				l		PR did affaire; Creek WR
			This unit is rich in talc and therefore is very brittle. The foliation throughout the unit is 45 TCA.				<b></b>	·	
			Appears that there is a mafic dyke present in the unit from aprox. 2369-2371.50, very difficult				ļ		
			to see where the contacts are as the drill as made it not possible to see where the contacts are.						
			Sections of the unit are rubbly The lower contact is not visible as the rock there is rubble.				<u> </u>		
			Sections of the unit are rubbly the lower contact is not visible as the rock there is rubble.						
			2369-2371.50: Chloritized Mafic Dyke, the dyke is strongly chloritized and both the upper				ļ		
							ļ		
			and lower contacts are not visible. Not exactly sure if this is a dyke or just part of the				ļ		
			talc mafic unit that has just been strongly altered. The dyke is massive.				ļ		
							ļ	.	
			Whole Rock Sample: 844248 (2367.20-2367.34)					<u> </u>	
								<u> </u>	
2373.25-2379.33			Balmer Mafic Volcanics						
			This unit of balmer mafic volcanics is interesting as it appears to be the transition between the						
			bleached mafic volcanics below. Most of the rock has been chloritized and is very rubbly.						
			As going downhole the rock slowly begins to be bleached and silicified. As well there are garnets						
			(red) present in the unit now, they are 1-2 mm and euhedral as well as irregularly shaped. The lower						
			contact is sharp and 50 TCA.						
			2373.25-2378.27: Moderatly chloritized balmer mafics, very rubbly						
							[		
			2376.67-2378.30: Red garnets present, 1-2 mm, euhedral				[		
							Ī		
			2378.27-2379.33: Moderatly silicified and bleach mafic volcanics				İ		
·····					•••••		İ	·	
			Whole Rock Sample: 844249 (2378-2378.15)		•••••		<b>†</b>		
						<del>†</del>	ļ	t	
2379.33-2380.07			Bleached Balmer Mafic Volcanics			+		<del> </del>	
2318.33-2300.07			DICACHER DAILUET MATIC VOICATIICS				ļ		
							ļ	ļ	
			Dark grey-white, with subhedral white garnets Possible black line faults present though they might				ļ	ļ	
			be just be bioite, mm thick, 60-65 TCA. Middle section of the unit has not garnets present, just the				ļ		
			veins/faults?				ļ		
			Whole Rock Sample: 844250 (2379.41-2379.54)						

From	То	Description (Litho/Altn/Sulphides/Veining/Structure)	Sample Number	From	То	Interval	Au_FAA (ppm)	Tim's Comment	s								
		2613.2-2613.7 m: Crystal Tuff: Medium-grained, medium grey, Strongly foliated at 55 TCA. 0.25%															
		pyrite dissem throughout.			ļ												
		2631.7-2633.05 m: Mafic Dyke: Medium grey, fine-grained mafic dyke. Wallrock is strongly bleached		ļ	ļ		ļ										
		and depleted. Sharp contacts at 90 degrees TCA. Fine grained pyrite, 0.5%, disseminated		<b>-</b>	<del> </del>		<b>-</b>										
		throughout.			<del> </del>												-
		un oughou.		<b>†</b>	<del> </del>		<b>-</b>										
2642.4-2652.1		Bleached Balmer Volcanics with Rhyodacite		<b>†</b>	†		<b>†</b>	2644-2645 minor	f.g. garne	s in massive andalı	isite rock	= Dickenson	Diorite pho	to #8			
	·····	Alternating beached balmer basalt with less altered rhyodacite. Intervals up to 2 m wide each. Balmer						2659 same									
		volcanics are pale buff-grey with andalusite present medium-grained, weakly foliated. Rhyodacite															
		is weak to moderately silicified ad weakly chloritic. Foliation is moderate at 55 TCA. Contacts between															
		units are sharp. 1% quartz-tourmaline veining present (foliaform)															
		2637.85-2638.0 m: Mafic dyke. Sharp contacts at 80-90 degrees TCA. Fine grained, medium grey,															
		massive.															
2652.1-2684.3		Andesite/Basalt (Possibly previously called Rhyodacite)	849351	2653.00	2654.00		Not vot oo	et to lob									
2032.1-2004.3		Unit appears very much like an metabasalt/andesite. Massive unit, medium grey-green, locally silica-	849352	2654.00			Not yet se	III to lab									-
		altered, minor patchy weak bleaching. Foliation is moderate at 55 to CA and consistent. Minimal quartz		2655.00			•										
		veining (1-2%). Up to 5% localized andalusite associated with strongly bleached patches.	849354	2656.00	2657.00		•										
			849355	2657.00	2658.00		• • • • • • • • • • • • • • • • • • • •										
		2658.1-2658.3 m: Mafic dyke. Sharp contacts approx. 60 degrees TCA. 0.5% py-po along contacts.	849356	Blank													
			849357	2658.00													
		2659.4-2659.65 m: Mafic dyke. Sharp contacts approx. 60 degrees TCA. 0.5% py-po along contacts.	849358	2659.00													
			849359	2660.00	2661.00												
2684.3-2700.8	no	Ultramafic (K0) Possibly Serpentinite	849360	2661.00	2662.00					resent, vfg aphanit			overprinting	andalusite			
		Medium green-grey, strongly silicified serpentinite? Heavily fractured/faulted and brittle. Up to 3%	849361	2662.00	2663.00			some	areas of f	g qtz-eyes = felsic	dyke(?) o	volcanic					
		localized andalusite, patchy throughout. Approx. 5% of fracture surfaces contain talcy, pearlescent serpentine as a coating. 0.25 % bright green serpentine present as smears along core, associated	849362 849363	2663.00 2664.00	2664.00 2665.00	<u> </u>											
		with fractures. Very-fine grained trace arsenopyrite is disseminated throughout unit. Intermittent	849364	2665.00		<b></b>											
		mafic dykes present. Strong silica, weak to moderate sericite.	849365	2666.00	2667.00												
			849366	2667.00			•	1									
	······		849367	2668.00			•										
	yes	2690.6-2691.3 m: Mafic Dyke. Sharp contacts 80 degrees TCA. Upper contact marked by chlorite-	849368	VMS1													
		quartz vein. 1% disseminated py+po.	849369	2669.00													
			849370	2670.00				2693	photo :	#6 and #7							
	yes	2695.6-2695.8 m: Mafic dyke. Sharp contacts, 90 degrees TCA. 2% py-po disseminated throughout.	849371	2671.00													
		2007.0.2700.0 Character for the district of	849372	2672.00													
	yes	2697.9-2700.8 m: Strongly faulted. Lower contact of unit. Fractures roughly 80 degrees to CA.	849373 849374	2673.00 2674.00	2674.00 2675.00	<u> </u>											
2700.8-ongoing		Andesite/Basalt (Possibly previously called Rhyodactie)	849375	2675.00													
2700.0-ongoing		Strongly, locally moderately silicified, weak chlorite, patchy andalusite up to 5% overall. Locally faulted		Blank	2070.00		•	2703 fo rou	nded atz (	yes in sericitic matr	riv overori	nted by ma	andalueita l	e enft – no	eilicification	nhoto #/	
		Moderately foliated at 60 degrees TCA. Intermittent mafic dykes present.		2676.00	2677.00		•	2704 as ab		yes in serioue man	L OVER PI	inted by mg	andalasite.	3 3011 - 110	Silicinication	photo #5	
				2677.00			• • • • • • • • • • • • • • • • • • • •	2.0.1								pinete ii	any cont
	·····	2706.0-2706.6 m: Moderately faulted at 65 degrees TCA		2678.00			• • • • • • • • • • • • • • • • • • • •										
				2679.00													
		2708.3-2708.8 m: Mafic dyke. Dark grey. Sharp contacts at 60 TCA. Cross-cutting quartz vein, 12mm	849381	2680.00													
		wide, contains 10% chorite and 3%po+py as clusters up to 5mm wide.		2681.00													
		2744 4 2745 25 Hafe data Data 4 2 24 5		2682.00	2683.00											-	
		2714.4-2715.25 m: Mafic dyke. Dark green-grey, fine-grained. 1-2 % disseminated py+po. Sharp	849384	HGS1 2683.00	2604.00												
		contacts at 85 TCA. Host rock is strongly bleach at contacts.		2684.00													-
	yes	2724.0-2724.7 m: Mafic dyke. Dark green-grey, fine-grained. 0.5% disseminated py+po. Sharp	849387	2685.00				2724 mafic	dyke mas	sive, mesocratic, 25	5% f.n.da	rk-green am	nphibole 2%	diss nv o	ontacts @ 8	30 den to C	A
		contacts at 75 TCA.		2686.00						- looks like dykes s						209 10 0	photo #2
				2687.00				anomic and	gold								7210 112
	yes	2725.15-2726.15 m: Mafic dyke, dark grey, fine-grained, med-grained dissem po+py up to 1%		2688.00	2689.00												
		concentrated around contacts. Contacts sharp at 80 TCA.	849391	2689.00													
				2690.00			<0.01										
	yes	to 2735 at EOH	849393	2691.00	2692.00		<0.01	2734 strong	ly alumino	us altered (basalt?)	vfg serio	itic matrix w	ith mg over	rowth of	andalusite	photo #1	and #3