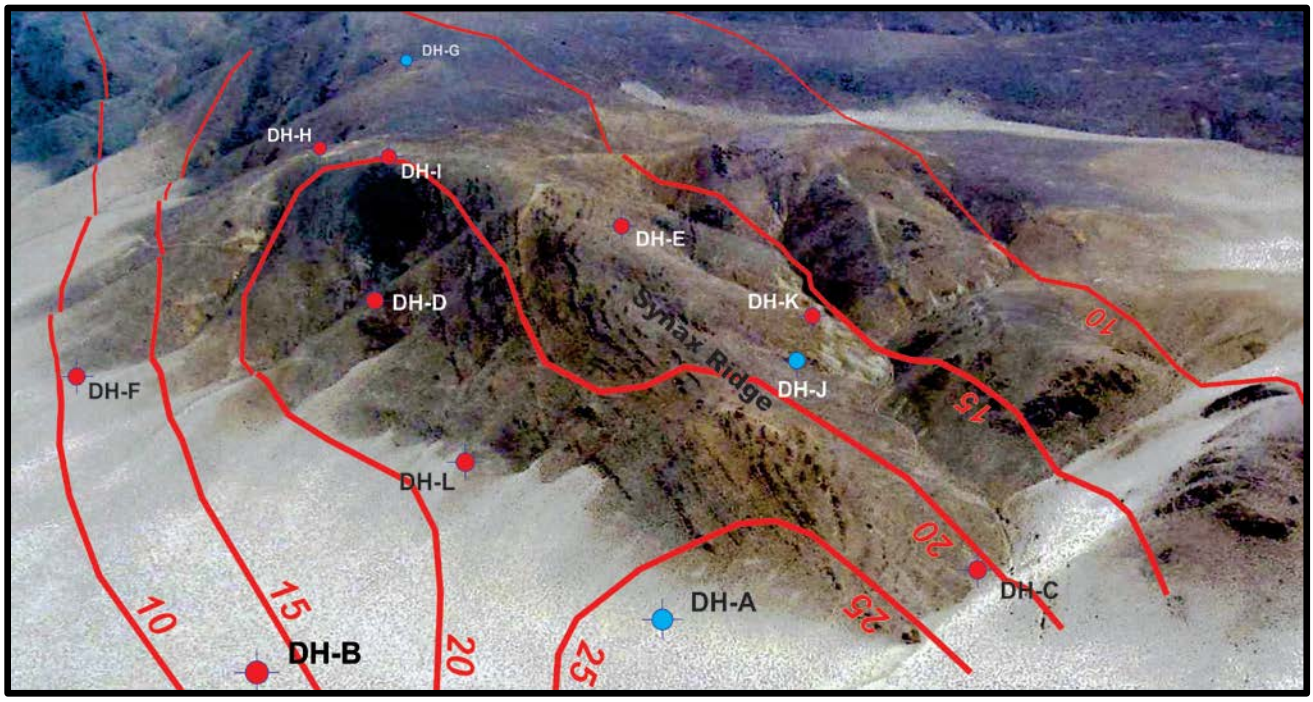
- Phase 1 exploration results and recommendations -

Geology, geochemistry, and geophysics of the Target Four copper-gold prospect

Marietta District, Mineral County, Nevada

- issued in compliance to JORC (2004) reporting standards -



to

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13 August 2012

Executive Summary

Great Western Mining Company's new geological, geochemical, and geophysical data suggest an east-west elongate, buried copper porphyry intrusive occurs at Target Four in the Marietta District, Mineral County, western Nevada. Sulfide copper mineralization is apparently developed within an unseen porphyry and above into hangingwall sediments at Target Four. Copper oxides outcrop at the Double Prospect and other rock chip and soil anomalies at Double South, Synax Ridge, Footwall Gulch and farther east above the axis of the strong IP anomaly traversing Target Four. The IP-indicated buried sulfides, and a mineralized oxide "cap" covered by several soil and rock chip copper anomalies, are stretched over the western and central portions of the 2,500 meter long, 500 meter wide, Target Four IP and magnetic linear. In the lesser prospected eastern portion of the Target Four linear, oxide copper mineralization is spatially associated with sericite-silica-iron oxide alteration and the continuation of the IP and magnetic anomalies.

Work already accomplished on Target Four has: 1) determined character and surface extent of Cu mineralization, 2) identified geologic controls of geophysically-indicated deeper sulfide mineralization and outcrop-indicated potential for shallow copper oxides, 3) developed a working hypothesis adequately explaining all geologic, geochemical and geophysical data gathered during Phase One, and 4) created a Phase Two drill plan to test the thickness of Cu oxides and the character of Cu sulfides at Target Four.

The working hypothesis to be drill-tested at Target Four includes a range of volumes, grades, and copper potentials for both oxide and sulfide mineralization. Estimated potential for near-surface oxide copper mineralization ranges from 19,500 tonnes Cu (42,900,000 pounds Cu) to 243,750 tonnes Cu (536,250,000 pounds Cu). Estimated potential for deeply buried sulfide, porphyry-related copper mineralization ranges from 48,750 tonnes Cu (107,250,000 pounds Cu) to 1,560,000 tonnes Cu (3,432,000,000 pounds Cu) at Target Four.

The goals of the recommended Phase Two program will be to test the oxide and sulfide working hypotheses and discover significant grades and thicknesses of copper oxide mineralization. Nine holes totaling 1,525 meters should be adequate to accomplish this goal. One of the nine holes (DH-D) is also tasked to drill to 425 meters, well into the sulfides indicated by the IP survey.

This paper reports upon all Phase One exploration results at the Target Four Prospect in the Marietta Mining District of Mineral County, Nevada, in compliance with the JORC Code. This report is also intended to be the basis for a shorter public, but still JORC-compliant report. All geology, geochemistry, and geophysical data were collected in accordance with JORC standards.

The Target Four copper-gold prospect is located on the northeast margin of Huntoon Valley in the Marietta District, Mineral County, Nevada, and consists of 455 unpatented lode claims in a block up to 5.5 kilometers wide and 11.7 kilometers long. Great Western Mining Company is 100% owner of the 9,000-acre Target Four claim block.

Permitting with appropriate authorities for surface access should be immediately undertaken, followed by construction of 2.5 km of drill access roads. Access should be ensured by periodic maintenance of the existing 38-km road from Marietta as well as the 28 km "short-cut" past Rattlesnake Summit from the Hawthorne-Mono Lake highway.

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Introduction

Purpose

This paper records Phase One exploration results at the Target Four Prospect (expanded DP Prospect) in the Marietta Mining District of Mineral County, Nevada, and is intended to be the basis for a shorter public report in compliance with updated JORC (2004, sections 1 through 18) standards. All geology, geochemistry, and geophysical data compiled since Great Western's acceptance of the Strachan (29 February 2012) exploration proposal were collected in accordance with the JORC standards.

Work accomplished during Phase One at Target Four was intended to: 1) determine character and surface extent of Cu mineralization, 2) identify geophysical boundaries of deeper sulfide mineralization and consider subsurface potential for shallow copper oxides, 3) develop a geologic hypothesis adequately explaining all geologic, geochemical and geophysical data gathered during Phase One, and 4) create a Phase Two trench and drill plan to test the character and thickness of Cu oxides at Target Four.

Location and property description

The Target Four prospect is located on the northeast margin of Huntoon Valley in the Marietta District, Mineral County, Nevada (Figure 1a). Great Western Mining Company's property consists of 455 unpatented lode claims in a block up to 5.5 kilometers wide in the vicinity of the Target Four prospect, extending 3.7 kilometers south and 8.0 kilometers northeast (Figure 2a and Figure 2b).

Ownership

Great Western Mining Company is 100% owner of the M2-Target Four claim block (Figure 2b). Table 1 summarizes the range of claim names, numbers, serial numbers, and location dates, and the total number of active claims (455) held by Great Western Mining Company. This single claim block encompasses approximately 9,000 contiguous acres.

Table 1 - Summary Table of Claims, Marietta District

Claim	Claim no.	Claim no.	NMC serial numbers		Location Dates		Total
name	from	to	from	to	from	to	claims
GWM	1	136	999684	1008839	09/08/10	06/09/09	74
HUN	1	90	1014678	1014766	09/04/09	09/23/09	89
IWM	1	21	932486	932506	06/15/06	06/16/06	21
IWMM	36	502	961529	999733	05/21/07	09/05/08	84
JS	1	187	1048198	1049822	04/26/11	05/06/12	187
		Total of GWMC claims:					***455***

Workings

Several historic and shallow pits, shafts, and declines comprise the abandoned workings of the historic Double Prospect (expanded to the Target Four Prospect, Figure 3a). Double Prospect is located on the upper slopes and the top of the ridge in the center of the Target Four prospect (Figure 4a).

Drilling

Drilling may have occurred in the 1970's, but records are unknown.

Surface exploration

Mapping

Phase One mapping and outcrop sampling was accomplished by a two-man team consisting of the author and his field assistant, Jon Hayes. Topographic base is from the Little Huntoon Valley 7.5-minute USGS quadrangle. Geologic observations were made, and assay samples were taken where appropriate, at GPS-located outcrop stations. GPS-located stations intermediate between outcrops were also established when descriptions of float or subcrop were deemed appropriate to fulfilling project goals. Station locations were assigned UTM NAD83 coordinates. Simple sequential numbers were assigned to each station where geological observations were made but no assay samples were taken. When assay samples were taken, the stations were assigned laboratory tag numbers from sequential sample books (ex: 169408). About 20% of the assay samples were instead assigned sequential date-relative numbers (ex: 120429.01) corresponding to the author's diary-based descriptions. All station numbers, descriptions, and appropriate assay values were entered into the project database.

Geochemistry

Field methods used to accomplish the Phase One goals consisted of outcrop mapping and sampling, grid soil sampling, and a grid magnetometer survey. Data were collected under a regular 10-and-4 day rotation schedule based out of Hawthorne, Nevada. These rotations were accomplished between March 26th and April 27th, 2012.

Sampling techniques

Outcrop and subcrop descriptions included location, sample type (if any), lithology, structure(s), alteration, and mineralization. These descriptions are shown on Figures 3b, 4b, 10, 12, and 14. Assay samples were taken of outcrops, subcrops, pitcrops, and roadcrops to establish presence of Cu or Au and to determine levels of trace elements, including Ag, As, Ba, Bi, Pb, Te, and Zn. Grab samples and rock-chip channel samples were taken at the discretion of the sampler, and noted in the location descriptions. Rock chip samples were assayed and all results reported by 1 June, 2012.

Soil samples were taken in the "B" horizon if present, or else defaulted to the "C" horizon. Many soil samples were taken above hard, mostly impenetrable caliche horizons. Soil data were also entered into the project database, including sample number, location, and assay results. All soil sample numbers were assigned using laboratory tag numbers from sample books (ex: 169475). Soil stations were assigned UTM NAD83 GPS coordinates.

Quality of assay data

The nature, quality and appropriateness of the assaying and laboratory procedures used

Rock chip assay samples were submitted to the Florin Analytical Services (FAS) in Reno between April 5th and 27 April, 2012, where they were prepared by first putting the sample in alpha-numeric order and logging each sample on an inventory sheet. The samples are dried if needed before each is subjected to a 2 stage crush. The first stage utilizes a Marcy 6 inch jaw crusher from which the sample is reduced to 3/8 inch nominal size. In the second stage the entire sample is reduced to a nominal -10 mesh before splitting out approximately 200 grams utilizing a Jones riffle splitter. This 200 gram split is further reduced to 85 % passing -150 mesh, using a BICO shatter box (ring & puck) pulverizer. The sample is rolled on a rolling cloth before returning it to the pulp envelope and submitting them to the fire assay and geo departments.

Each sample is tested for gold utilizing a routine "1-AT" (29.17 grams) fire assay fusion, lead collection with AAS finish, (lab code; 4008). The samples were also tested for silver, (lab code 7048) plus a 22 element ICP scan (lab code; 7045) using a 4-acid digestion to solubilize the metals of interest. A two-acid digestion with ICP finish was used for the determination of Te and Bi (lab code; 7005 & 7038) and solubility tests for Cu (Lab codes; 7015 and 7016).

Soil assay samples were submitted to the Kappes-Cassaday Laboratories in Reno between April 5th and 27 April, 2012, where they were dried and prepared in a similar fashion to the rock sample preparation discussed above but with one distinct difference. Each sample was not split but instead the entire sample was pulverized to a nominal 85% passing -150 mesh (as per Great Westerns verbal instructions) and homogenized by rolling and then subjected to KCL's standard "1-AT" fire assay with AAS finish for Au, (lab code 4008) a four-acid digestion for Ag, (lab code 7048) a two-acid digestion for Te and Bi, (lab code 7005 & 7038) and a four-acid digestion and ICP analysis for 22 elements (lab code 7045) as previously mentioned above." The copper solubility tests were not performed on the soil samples.

Field QA/QC program included insertion, by GWMC's geotechnical field staff, of one certified standard for Te and Au from Shea Clark Smith or one blank sample with every 20 samples sent for assay.

Florin Laboratory's QA/QC program for fire assay included the addition of one of several certified reference materials (CRM, Table 1) with each batch of samples fused (frequency equals 4 %). A reagent blank was included in each batch to check for overall furnace noise as well as any trace background gold associated with the inquart.

Table 2 - Certified Reference Materials (CRM)

Certified Reference Material	Element Grade Reported (g/MT or ppm)
Rock Labs: OXH-97	Gold = 1.289 g/MT
CANMET: MP-1b	Silver = 47.0 g/MT
CANMET: MP-1b	Bismuth = 954 ppm

The QC program incorporated for ICP analyses is similar. Several certified reference material CRM standards were used in the ICP analysis, since one CRM cannot satisfy all the elements of interest. For the Target Four project, Florin Laboratories employed a CANMET CRM MP-1b for base metal comparisons, a NIST CRM for the major elemental constituents and a Geostat CRM for other metals of interest. Replicates were tested at a frequency of 10% and a reagent blank was included with each batch of 20, or at a frequency of 5%.

Remote sensing and geophysics

Du (November 2010) reported results of his Marietta "ASTER" alteration study to GWMC, including an anomaly in the Target Four (expanded DP) prospect area. Ludwig (July 2012) interpreted Zonge's (June 2012) magnetic survey of the Target Four prospect area in light of Zonge's (2011) IP anomaly in the same area. The results of these remote sensing and geophysical studies have been incorporated into the following discussion, conclusions, and recommendations.

Regional Economic Geology – Walker Lane

The best geologic description of the region between Mina and Candelaria, including the Marietta District (Figure 1a), remains the concepts and geologic architecture distilled into a 28-year-old field trip log by Speed (1984). Speed's stratigraphic and structural synthesis is based on regional USGS mapping in numerous adjacent 7.5-minute quadrangles in this part of the central Walker Lane structural province, including the Basalt, Huntoon Valley, Jacks Spring, Little Huntoon Valley, Mina, Moho, Rattlesnake Flat, and Teels Marsh quadrangles.

Five regional-scale, pre-Tertiary, crustal fragments (allocthons), successively younger to the north, are mapped by Speed (1984) in the Central Walker Lane. The oldest consists of Cambro-Devonian rocks of the Roberts Mountain allocthon thrust above Proterozoic basement by early Mississippian time, followed by 2) Mississippian-Permian rocks of the Golconda allocthon emplaced by earliest Triassic time, followed by 3) late Mississippian to later Permian rocks of the Sonomian block (Sonomia) emplaced by late Jurassic time, followed by 4) late Paleozoic to Cretaceous rocks of the Luning allocthon, and finally 5) late Paleozoic to Cretaceous rocks of the Pamlico allocthon. Rocks within each allocthon were likely deformed prior to, during, and after emplacement.

The Roberts Mountain allocthon consists of Cambrian to Devonian cherts, politic slates, thin-bedded organic limestone, sandstone, and submarine basalts. Erosional remnants of auriferous and silicified early Mississippian limestones, conformable to underlying Devonian grits, are pre-Triassic erosional outliers preserved on the upper surfaces of the Roberts Mountain allocthon (Strachan, 1985).

The Golconda allocthon consists of Mississippian to Permian cherts, pelites, turbidites, and mafic submarine volcanics with a blocky, early Triassic, serpentinitic mélange of these same lithologies at its structural base. A geographically limited section of early Triassic marls, limestones and successive early Triassic volcaniclastic siltstones and sandstones, time-equivalent to the basal Golconda mélange, occurs immediately south of the outcrop of the Golconda allocthon's structural sole and unconformably overlies the lithologies of the Roberts Mountain allocthon. This early Triassic depositional outlier is the Candelaria Formation, host to the Early Cretaceous silver-gold mineralization at Candelaria (Stevens, 2001) and also in the western Monte Cristo Range (Strachan, 1985).

The Sonomian block consists of late Mississippian to late Permian lavas, volcanic breccias, intrusions, and Mina Formation mafic volcanoclastic sediments. Sonomia was structurally emplaced by late Jurassic time. The Luning and then the Pamlico allocthons consist of successively younger, but time-overlapping, late Paleozoic to Cretaceous sedimentary and volcanic rocks. In a spatial pattern similar to that of the Candelaria Formation, latest Jurassic to Cretaceous clastic, volcaniclastic, and silicic extrusive rocks were deposited unconformably upon the upper surface of the Sonomian allocthon immediately south of the leading edge of the Luning allocthon.

Felsic to mafic stocks and small plutons were emplaced in the central Walker Lane region and adjacent portions of western Nevada during the Jurassic, Cretaceous, and Early Tertiary. Some of these intrusives are genetically associated with economic copper, tungsten, gold, and/or silver deposits in the central Walker Lane, including those at Candelaria Ag Mine (Stevens, 2001, page 21), Desert Scheelite W Mine, Fondaway Canyon AuW (Strachan, 2003), Hall CuMo Mine, MacArthur CuOx Mine (Rozelle, 2009), Mineral Ridge Au Mine (Lewis et al, 2010, and Strachan, 2005), New York Canyon CuOx deposit (Jardine 2005), Royston CuMo deposit (Seedorf, 1991), Tonopah AgAu Mines (Strachan, 2011), and the Yerington Cu deposits (Einaudi, 1994).

Oligocene to Pliocene intermediate to silicic volcanics and volcaniclastics overly the Paleozoic-Mesozoic terranes, allocthons. All of these Tertiary and pre-Tertiary rocks have been deformed by regional and district-scale vertical to horizontal faults of the 700-km long, 120-km wide, Walker Lane transtensional fault system (Wesnousky, 2005). These Walker Lane structures, especially the district-scale, extensional collapse structures, are genetically related to epithermal and mesothermal gold deposits and prospects in the surrounding region. Some of the more economic, extension-related deposits of the surrounding region include Aurora Au, Borealis Au, Boss Au, Camp Douglas Au, Mineral Ridge Au, Paradise Peak AuAgHg, Pine Grove Au, Sante Fe Au, and Tonopah AgAu.

Lee's (2009) discussion of the "Mina Deflection" (Figure 1b) indicates the Marietta Mining District, and the East-West elongate Target Four copper-gold prospect in particular, are in an anomalous part of the central Walker Lane's extensional "transtensional" zone. North and west of the Target Four Prospect (Figure 1b) are faults with large normal offsets located reflect a district-scale and even regional-scale crustal extension pattern propagating northwest of the Mina Deflection. This northward-propagating structural pattern begins at Marietta and includes the Whiskey Flats collapse (15 km northwest, Figure 1b), then another 30 km farther to Fletcher Basin. Fletcher Basin, a 25-kilometer wide, ovoid crustal collapse (Strachan, 1982) centered 45 kilometers northwest of Target Four, is host to numerous east-west and northeast-striking, high-level epithermal deposits within the Miocene-aged Aurora and Borealis gold districts.

District Geology - Marietta

The information for this chapter is taken from Stewart etal (1984) and Speed (1984) unless otherwise noted. These two publications provided the material for geology maps and legends shown in Figures 3c and 4b. Geologic descriptions with NAD83 UTM coordinates are included in the following paragraphs.

District Stratigraphy

Paleozoic units

Ordovician Palmetto Formation (Op)

The Ordovician Palmetto Formation (Op), the oldest lithologic unit mapped in the Marietta District, consists of bedded chert and sparse fine quartzite. Palmetto (Op) cherts are intruded by rhyolite (TKr), disconformably overlain by Candelaria siltstones (TRc), and overthrust by 22 MY Tertiary tuff (Tt2d). All of these relationships are mapped at UTM 379 kmE and 4,224 kmN in the hills southeast of Jacks Valley, east of the Target Four Prospect (expanded DP Prospect).

Permian Mina Formation (Pm)

The Permian Mina Formation (Pm) consists of interbedded volcanogenic sediments, chert, and igneous breccia with relatively minor, local, syndepositional mafic porphyry intrusions. The sedimentary rocks are thick-bedded, massive and plane-laminated grains of pyroxene-plagioclase with clasts of diorite porphyry, thin-bedded feldspathic turbidite, red mudstone, pebbly volcanogenic sandstone with mudclasts and porphyry fragments, and chert. The igneous breccias are sedimentary with clasts of mafic microporphyry, scoria, and minor mudclasts.

The Mina Formation outcrops in bold, wide bands beneath Dunlap Formation (KJd) and Tertiary andesite (Ta), beginning on the southwest side of Teels Marsh at UTM 377 kmE / 4,226 kmN, then west-southwest into the hills where Pm is host to the "Last" and "O&K" copper-silver prospects and

farther west where Pm is host to the Target Four Prospect (expanded DP Prospect, Figures 3c and 4b). A few large, scattered outcrops appear beneath Tertiary andesite breccia for 3 km south of Target Four before disappearing beneath younger Tertiary volcanic cover (Figure 2b).

Permian Mina volcanics (Pmv)

The Permian Mina Formation (Pmv) consists of interbedded volcanogenic sediments, volcanic breccia, and abundant mafic porphyry intrusions. Pmv is predominantly mudstone, has no chert, has an abundance of "primary igneous rock", but otherwise resembles the underlying Mina Formation. The sedimentary rocks are mainly mudstone, thin-bedded feldspathic turbidite, and minor medium-bedded pyroxene-rich volcanogenic sandstone deposited above the Pm. Pmv occurs north of the Pm outcrops in the vicinity of Target Four Prospect (expanded DP Prospect, Figures 3c and 4b).

Mesozoic units

Candelaria Formation (TRc)

The Candelaria Formation (TRc) in the Marietta District consists of light brown to pale olive brown to dusky brown to yellow brown to greenish grey, micaceous, thin-bedded siltstone to very fine sandstone. Cleavage is conspicuous parallel to and across bedding. Grey chert laminae can be present. With no basal conglomerate in the outcrop 9 km east of the Target Four Prospect (Figures 3c and 4b), the TRc disconformity with the underlying Op is described in subtle terms, except for a normal color change downwards from light brown to black.

Jura-Cretaceous Dunlap Formation (KJd)

Unconformable above Pmv, the Jura-Cretaceous Dunlap Formation (KJd) caps the Pm-Pmv horizon and consists of quartz sandstone, quartz-chert-feldspar sandstone, volcanic and chert clast sedimentary breccia, and red mudstone. Roughly equivalent in age to, and partially older than, the granites of Whiskey Flat (KJwf) and Silver Moon (KJsm), KJd outcrops over much of the higher ridges north of the Pm outcrops at the DP (central Target Four), O&K, and Last copper prospects (Figure 3c). Unfortunately, the contact between the KJd sediments and the KJwf is not described by Stewart etal (1984) and has not yet been observed in the field. The relative age and contact relationships between KJd and the granites are likely to have relevance to the expected character and extent of the anticipated copper mineralization at the Target Four Prospect (expanded DP Prospect, Figures 3c and 4b) and elsewhere along the Pm-Pmv horizon.

Rhyolite (TKr)

Massive, locally flow-banded rhyolite with quartz and feldspar phenocrysts set in an aphanitic matrix. TKr in most cases is intrusive, although it may be as young as Tertiary or as old as Cretaceous. A relatively small TKr (KJr-Stewart etal, 1984) outcrop is located along the KJd/Pmv contact at UTM 372.2 kmE / 4,225.1 kmN (Figure 3b). In larger outcrops at UTM 378.9 kmE / 4,221.9 kmN, TKr intrudes Op, Tabx, and Tt5. TKr intrudes Pm as revealed in three large, bold outcrops distributed over a square km at UTM 371.7 kmE / 4,222.6 kmN, 2.6 km southeast of Target Four Prospect (expanded DP Prospect, Figures 3c and 4b).

Tertiary units

Metallic City Tuff (Tt2d)

Ashflow tuff, dark grey in lower part and light grey in upper part with 14% plagioclase, 3% sanidine, 4% quartz, 3% biotite, 2% rock fragments. Tt2d forms cliffs and is 22 to 24 my old. Tt2d forms the upper thrust plate over Op at UTM 378.7 kmE / 4,222.6 kmN.

Ashflow Tuff (Tt3z)

Very pale orange to grey, ashflow tuff Tt3z is crystal-poor with minor quartz and biotite. Tt3z is a slope-former, is capped by Tt3e and overlies Tt2d, but overthrusts Tt5bx, at UTM 378.2 kmE / 4222.7 kmN.

Tuff of Eastside Mine (Tt3e)

Unwelded to slightly welded, pale orange to pale yellowish brown tuff with 6% plagioclase, 4% sanidine, 3% quartz and 5% lithic fragments to 8 cm, the Tuff of Eastside Mine (Tt3e) is mostly unwelded to slightly welded. Tt3e is a slope-former above Tt3z and is capped by Tt5 and Tabx at UTM 378.1 kmE / 4222.5 kmN.

Andesite breccia lahar (Tt3b)

Andesite breccia lahar (Tt3b) is composed of slightly rounded fragments of mafic lava up to 1 m diameter and a volcanic sand matrix. Tt3b forms a slope beneath Tt5 and overlies Tt3e at UTM 378.0 kmE / 4222.4 kmN.

Candelaria Junction Tuff (Tt5)

Candelaria Junction Tuff (Tt5) is a 22 to 24 m.y., pale red to greyish red ashflow tuff with 4% plagioclase, 4% sanidine, and 6% quartz. Flattened pumice is common. Tt5 is a cliff-former and is capped by Tabx and overlies Tt3e, and covers about a square km of outcrop centered on UTM 378.1 kmE / 4221.8 kmN. A small window of Tt5 is exposed in a drainage beneath Ta at UTM 376.6 kmE / 4227.1 kmN, near outcrops of Pm.

Breccia (Tt5bx)

The Tt5bx Breccia is composed of fragments of Tt5 to several meters across. Tt5bx is faulted against underlying pre-Tertiary rocks and overlain by Tt2d and Tt3z at UTM 378.2 kmE / 4223.1 kmN. Tt5bx appears to be older than Tabx and may be a tectonic breccia.

Andesite breccia lahar (Tabx)

Andesite breccia lahar (Tabx) forms much of the caprock south of Target Four Prospect (expanded DP Prospect, Figures 3c and 4b) on the east side of Huntoon Valley, as well as a strip 3 km wide and 8 km long extending northeasterly from Huntoon Valley.

Andesite flows (Ta)

Extensive andesite flows (Ta) cover Tabx south of Target Four Prospect (expanded DP Prospect) and west of Huntoon Valley (Figures 3c and 4b). Large Ta outcrops are preserved as erosional remnants throughout the high ridges of Jura-Cretaceous sediments and intrusives northeast of Target Four Prospect for more than 10 km.

Tuff of Jack Spring (Ttjs)

The Tuff of Jack Spring is a crystal-rich ashflow, with abundant sanidine and biotite. A dark vitrophere commonly occurs at the base of Ttjs. All outcrops occur well south of the Target Four Prospect (Figures 3c and 4b). Ttjs is 11.1 to 11.7 my old.

Welded tuff (Tw)

Welded tuff, undivided (Tw) is a cliff-former and directly overlies KJd northeast of the Target Four Prospect (Figures 3c and 4b), where it is capped by Tb (Figure 2b).

Basalt flows (Tb)

Basalt flows cap most of the rocks south and west of the Target Four Prospect (Figures 3c and 4b) and Huntoon Valley, and occur as large, often tectonically tilted erosional remnants.

District intrusions

Granite of Whiskey Flat (KJwf)

Light to pinkish grey, the Jura-Cretaceous Granite of Whiskey Flat (KJwf) is a medium to coarse-grained, porphyritic biotite granite that weathers to a coarse, sandy grus. Mineral composition averages 26% anhedral quartz to 4 mm, 31% subhedral potassium feldspar to 15 mm, 37% subhedral plagioclase feldspar to 4 mm, and 3% subhedral biotite to 4 mm and lesser hornblende. Magnetite, hematite, sphene, apatite, and zircon can aggregate as much as 3% of the rock. Biotite is locally chloritized.

KJwf outcrops extensively northeast of Great Western Mining's (GWMC) claims, northwest of Teels Marsh, in the hills northwest across Little Huntoon Valley from GWMC's claims, and forms a 2-km long dome at the northern corner of Huntoon Valley, 2.7 km northwest of "Cow Camp". The False Pine Crow workings, as well as the Defender tungsten workings, may be within KJwf granite (Figure 2b).

Granite of Silver Moon (KJsm)

The Jura-Cretaceous Granite of Silver Moon (KJsm) is a medium to coarse-grained, leucocratic granite with 30% quartz, 36% potassium feldspar, 31% plagioclase, and 3% mafic minerals. KJsm forms 2,000 vertical feet of cliffs and steep slopes along the west side of Teel's Marsh. KJsm is host for the Westinghouse Adit at Cabin Rock, and the Bass Lower Adit, are both driven on the northeast-striking Ming Toy Fault in the midst of the KJsm block. The Bass Mine is also mapped in KJsm, but 300 meter's into the footwall of the Ming Toy Fault.

Granodiorite of Huntoon Valley (KJwf)

Light grey to grey, the Jura-Cretaceous Granodiorite of Huntoon Valley (KJhv)

Diorite of M2 (TKdM2)

Dark grey to black, the Cretaceous-Tertiary Diorite of M2 (TKdM2) consists of black, fine to coarse crystalline diorite with variable percentages of white euhedral feldspars. Flow and breccia textures, and marginal cooling textures, may sometimes be discerned in rare fresh diorite outcrops within the M2 prospect (Strachan, 17 July 2012, page 12) located six kilometers north of the Target Four Prospect. TKdM2 is intimately associated with copper mineralization at M2.

District structure

Paleozoic and Mesozoic compressive folds, thrust faults, and tectonic breccias dominate Marietta's geologic structure. All of these regional, district, and prospect-scale structures are best understood within the context Speed's (1984) five regionally allocthonous tectonic plates (above). Subsequent Late Cretaceous through Quaternary extensional and transtensional faults and block

rotations have increased porphyry and epithermal structural opportunities throughout the central Walker Lane and especially the Marietta Mining District (Figure 1b).

Lee etal's (2009) structural discussion of the central Walker Lane and his reiteration of the district-scale "Mina Deflection" from Oldow (1992) places the Marietta Mining District and the East-West elongate Target Four copper-gold prospect in an anomalous part of the central Walker Lane's extensional "transtensional" zone. Faults with large normal offsets located immediately southwest, northwest, and northeast of the Target Four Prospect (Figure 1b) reflect a district-scale and even regional-scale crustal extension pattern propagating northwest of the Mina Deflection.

Deep-set normal faults associated with copper and copper-gold mineralization, like those at Target Four and at M2 (Figure 1b and Strachan, 17 July 2012), appear to be extensional hydrothermal and perhaps even porphyry intrusive pathways. The Huntoon Valley and Teels Marsh collapse features, and the Black Mountain horst, appear to be large, first-order components of northwest-propagating crustal extension. The individual Target 4 and M2 faults, and their copper-gold mineralized and inferred intrusives, are either second-order features associated with the Huntoon-Teels-Whiskey Flats crustal extension or they are older features revealed by the North Marietta block faulting.

District alteration

Du (November 2010) interpreted sericite-kaolin-chlorite clusters from ASTER data covering several areas in the Marietta Mining District. In relationships that may be typical of these areas, the surficial alteration clusters at Target Four are aligned along district-scale East-West trends parallel to the strike of bedding, faults, and ground magnetic and IP anomalies (Figures 3 and 4).

Prospect Geology - Target Four

Lithologies at Target Four

Lithologies observed at Double Prospect workings (Figure 3c) and in outcrop and float within the surrounding Target Four Prospect (Figure 4b), are primarily laminar to thin-bedded greywacke siltstone. Moderate thicknesses of thin-bedded fine greywacke sandstone are represented in float and in rare outcrops. A few bold and linear jasperoid outcrops coursing through the Mina siltstone exposures appear to have been medium to thick beds of fine, calcite-cemented sandstone.

Andesites and andesitic basalt flows, agglomerates, and small necks and dikes or sills occasionally appear as fairly continuous "horizons" within the Mina siltstones where they are designated as "Pmv" (Figures 10a, 12a, and 14a). These same volcanic lithologies are also mapped by Stewart etal (1984) as "Pmv" immediately north of the Mina siltstone section, where they outcrop along east-west strike for 2.5 kilometers (Figures 3b and 4b). All of these greywackes and intermediate volcanics are mapped by Stewart etal (1984) as the Permian Mina Formation (Pm), the oldest rocks exposed at the Target Four Prospect.

Tertiary volcanic units unconformably overly the Mina Formation north and south of the Target Four Prospect as defined by the IP contours above of the exposed, east-west elongate Permian core (Figures 3b and 4b). On the north flank of the Permian core, a pale pink, welded crystal tuff (undivided Tw) rests unconformably on Mina volcanics (Pmv). Further uphill to the north, the undivided welded tuffs (Tw) are draped with unconsolidated basal rubble capped by basalt flows (Tb). The basal Tb rubble incorporates abundant unaltered Tw fragments

To the south of the Permian core, cobbles and boulders of andesite and basaltic andesite flows are sprinkled liberally over the crest and southern sides of Target Four's highest elevations. This volcanic debris, representing the basal fringe of the Tertiary andesite breccia unit (Tabx), thickens and consolidates downdip for more than two kilometers to the south (Figures 3b, 4b, and 14a).

Structure at Target Four

Structural features observed during the initial February 2012 visit consisted of bedding, folding, fractures, multiple fracturing, shearing, and brecciation in trenchcrops and historic workings, and bedding contacts in outcrop. Subsequent surface observations during the March and April surveys revealed large scale folds in the western part of the Target Four Prospect, including two parallel synclines separated by a subparallel normal fault striking N80°E and dipping 45°S. This fault was mapped by Stewart etal (1984) and reproduced in Figure 4b. Axial traces of the two, nearly east-west oriented synclines are approximately 500 horizontal meters apart.

A second fault striking subparallel to the first fault and dipping 60°S appears to occupy the axial plane of the northernmost syncline the Target Four Prospect. This second fault bisects and offsets the apparent axial plane of this northernmost syncline (Figure 12a) between UTM 369,319E and 370,519E (Figure 4b). Latest movement on both faults is normal as indicated by slickensides. The two faults may converge beneath west beneath the eolian sands of Huntoon Valley. Additional faults with strikes and dips similar to the two described above are mapped within the Permian Mina Formation further east beyond UTM 372,000E (Figures 3b and 4b).

Veins occur in within sericite and sericite-quartz altered Mina siltstone and sandstone. They are usually narrow, white, and grouped in wide-spaced sheets or stockworks. The most prominent sheeted veins and fractures are centered at UTM 370,200E/4,224,600N. These veins and fractures dip steeply northeast, and strike northwest downhill and away from the Double Prospect workings for 300 meters until disappearing beneath talus and finally eolian sands (Figure 4b).

Other quartz veins, fractures, and even shear planes at UTM 369,870E/4,225,600N are near vertical and strike northeast at the foot of northwest-facing slopes below and west of Double Prospect. A half-kilometer east of Double Prospect, additional veins are associated with a prominent set of east-striking normal faults.

Alteration at Target Four

Hydrothermal alteration

Hydrothermal alteration at Target Four has been described by Cohan (2011), who includes descriptions of hydrothermal minerals from the Target Four (expanded DP) Prospect, and by Du (November 2010) who describes chlorite-clay-sericite (propylitic, argillic, and sericitic) alteration distributed along easterly structural and stratigraphic trends within the Permian Mina Formation at Target Four. From late March into May of 2012, this author observed chlorite-clay-sericite-silica hydrothermal alteration at numerous sites throughout Permian Mina Formation.

Propylitic alteration, consisting of fine chlorite-calcite disseminated within fine-grained andesite and/or greywacke, was observed along faults at Site #169469 along UTM 370805E, Site #169473 along UTM 369826E (Figure 4a), and Sites #168052 and #168053 (Figure 3a). At #169469, traces of CuOx are disseminated within a chlorite-bearing shear. At #169473, propylitic alteration affects the hangingwall and footwall of a small vein. At Sites #168052 and #168053, siltstones are propylitized near probably faults with CuOx on bedding planes and in small calcite-quartz veins.

Chlorite also occurs locally at a contact between black, fissile basalt (Pmv? TKb?) and a rhyolite sill (TKr) at Site #169415 along UTM 372899E. Chlorite detected by Du (November 2010) appears to be finely disseminated, suggesting the Mina Formation is variably propylitized all along its strikelength throughout the core of the Target Four Prospect.

Argillic hydrothermal alteration, clays, are also recognized by Du (November 2010) in his ASTER data throughout the Mina Formation at Target Four. Clays are concentrated for 500 meters in weathered Mina greywacke subcrops in the footwall of the southernmost normal fault (UTM 369800E/4224000N, Figures 4b and 12b).

Sericite and sericite-quartz alteration, accompanied by variable amounts of fine iron oxide, is disseminated in varying degrees throughout much of the outcropping Mina greywackes at Target Four. Some greywackes occurs with minor chlorite and calcite(?) in propylitic alteration. Local areas of abundant sericite flooding also occur in siltstone and fine greywacke sandstone (Pm) outcrops and subcrops, including a relatively large area north and west of the DP workings (Figure 4b). In at least one area 200m to 500m southwest of the DP workings (Figures 3c, 4b, 12b), sericite alteration appears constrained to greywacke clastics stratigraphically below Mina flows and agglomerates (Pmv[P] and PmGnst). Quartz veins and veinlets are common in strongly sericite-altered sediments.

Jasperoids form prominent, brownish linear outcrops where silica has preferentially replaced medium to very thick beds for tens to hundreds of meters along strike in the central Target Four Prospect. These jasperoidal beds appear to be silicified, thick to very thick greywacke sandstone beds, appear to have once had calcareous cement. Hydrothermal acid leaching, collapse, and replacement by silica appear to be responsible for the breccia textures seen occasionally within the jasperoid horizons.

Supergene alteration

Vuggy supergene silica replaces Mina sediments throughout the workings at the highest elevations (2,028 m; 6,655 ft; Figure 4b) of the Double Prospect, a relatively small area centered on UTM 370225E 4224415N Zone 11 NAD83. Remnant and remobilized silica in these uppermost workings has formerly been labeled “sinter”, but this interpretation is likely erroneous. Hot spring hydrothermal venting does not appear likely here. Supergene leaching by acid derived during weathering of concentrated sulfides under Pleistocene acid soil conditions is the likely cause. This siliceous “cap” decreases in intensity with decreased elevation in surface workings to the west and north. Quartz-sericite-FeCuOx alteration is better preserved with decreasing elevation to the northwest (Figure 4b), as are the total Cu assay values (Figure 4c).

Mineralization at Target Four

Cohan’s (2011) descriptions and assays in the Marietta District (Appendix A) and this author’s observations (Figure 4b) in the workings and outcrops of Target Four are the source for the following descriptions. Only iron and copper oxide minerals have been observed at Target Four to date. Limonite, goethite, chrysocolla, and rare hematite occur as fracture coatings and disseminations in altered siltstones and in quartz veins.

Sulfides have been completely leached from the vuggy silica in the Double Prospect workings, (Figure 3a) but some oxide minerals remain. Iron and copper oxide mineralization occurs sporadically to the east along faults and shears in outcrops and small pitcrops (Figure 4b). IP data indicate sulfide mineralization may come within 125 meters of the surface along more than 2,500 meters of strikelength at Target Four (Figure 12c, and Ludwig, 2011, pages 12-13).

Geochemistry at Target Four

The Phase One geochemical sampling program at Target Four consisted of 79 rock chip samples, 490 soil samples, 11 standards, and 12 blanks (Appendix B). All blanks and standards gave results within expected tolerances.

Rock geochemistry at Target Four

Two historic, near-horizontal, trenches located 68 and 113 meters northwest of the Double Prospect silica cap provided 16 representative rock samples in late January 2012. The lower trench is 14 meters long, oriented 005°, and centered at UTM 370,127E/4,224,513N and 1,985 meters (6,510 feet) elevation. Eight evenly-spaced, continuous, vertical, representative chip samples (120128.01 to .08, Figure 7a) taken across the mineralized structural grain ranged from 1.3m to 1.6m long. Total copper averaged 3,043 ppm Cu and acid-soluble copper averaged 2,271 ppm Cu for a recovery ratio of 74.6%. Gold averaged 39 ppb Au with a high of 48 ppb Au in the lower trench.

The upper trench is 35 meters long, oriented 045°, and centered at UTM 370,178E/4,224,500N and 2,005 meters (6,575 feet) elevation. Eight evenly-spaced, continuous, five-meter, horizontal, representative chip samples (120129.01 to .08, Figure 7a) were taken across the mineralized structural grain. Total copper averaged 1,320 ppm Cu and acid-soluble copper averaged 856 ppm Cu for a recovery ratio of 64.8%. Gold averaged 145 ppb Au with a high of 643 ppb Au in the upper trench.

Four high-graded samples (120129.09-.12, Figure 7a and Figure 4a), centered at UTM 370,228E/4,224,459N and 2,005 meters (6,645 feet) elevation, were taken from four sites in historic workings at the highest elevations of Double Prospect. Total copper averaged 14,707 ppm Cu and acid-soluble copper averaged 13,587 ppm Cu for a recovery ratio of 92.4%. Gold averaged 873 ppb Au with a high of 3,193 ppb Au in the uppermost workings. The recovery ratio of Double Prospect's siliceous caprock may decrease when more representative samples are taken.

The remaining 59 rock chip samples were taken during reconnaissance outcrop mapping of the Target Four Prospect. Almost all of these samples were taken from rocks with visible fractures, veins, strong alteration, and almost always visible mineralization in Permian Mina Formation rocks. More than 1,000 ppm Cu were returned from 18 of the 59 samples (Appendix B). Within these 18 samples with significant values, total copper averaged 9,570 ppm Cu and acid-soluble copper averaged 8,614 ppm Cu for a recovery ratio of 90.0%. Gold averaged 340 ppb Au with a high of 3,193 ppb Au in the 18 samples with more than 1,000 ppm Cu.

Soil geochemistry at Target Four

The 490 soil samples taken at 50x100 meter spacings within the Target Four soil grid boundaries were run for Au and Ag (Fire/AA), Bi and Te (4-acid ICP), and 22 trace elements (2-acid ICP). Sampling of the "B" soil horizon (defaulting to "C" horizon) was done without regard to the underlying geology. Useful patterns developed from the spatial distribution of the soil Cu (Figure 4c) and soil Bi (Figure 4d) assay values, and perhaps from distribution of the soil Au assay values (Figure 4f). All of the Cu and Bi soil anomalies were in Permian Mina sediments and volcanics.

Cu in soils

The largest Cu soil anomaly is centered on the Double Prospect (UTM 370,200E/4224500N), extending 300 meters east and 200 meters west along structural and stratigraphic strike, but only showing a slight spatial affinity for the outcropping, northwest-striking sheeted veins. A second parallel

+150 ppm Cu soil anomaly is centered 125m south, extending for 400m east-west, parallel to strike of the bedding. Both soil anomalies are truncated by the basal Tbax rubble unit (Figure 4c).

Two more well-defined Cu soil anomalies cover much of the argillic-sericitic altered area between the two east-striking, south-dipping faults discussed above. Exceptional spatial correspondence occurs between the elongate +150 ppm Cu soil contour in this area and the previously-mentioned footwall argillic alteration of the southernmost normal fault at UTM 369,875E/4,224,000N (Figure 4c).

And finally, a group of three single or double-point +100 ppm Cu soil anomalies along with four rock chip anomalies occurs on, and in the immediate hangingwall of, a projected east-striking fault at UTM 371,400E/4,224,500N (Figure 4c). The three +100 ppm Cu soil anomalies immediately to the south may also deserve further prospecting.

Bi in soils

The best-defined +40 ppm Bi soil anomaly within the Target Four grid corresponds, and is elongate parallel, to the faulted, east-northeast striking synclinal axis discussed in the "Structure at Target Four" section above. The east-northeasterly fault, synclinal axis, Bi soil anomaly, and topographic ridgeline all show remarkable spatial correspondence centered on UTM 369,700E/4,224,150N (Figure 4d).

A second, fairly well-defined, and large +40 ppm Bi soil anomaly occurs at UTM 369,600E/4,223,800N. This second anomaly is surrounded by a persistent, multi-point, +30 ppm Bi anomaly, in turn surrounded by a continuous, multi-point +20 ppm Bi anomaly. A third anomaly is worth mentioning, since it is a well-defined +30 ppm Bi anomaly directly on the axis of Ludwig's (2011) linear IP anomaly (Figure 4d).

Geophysics at Target Four

Under the instigation of Bill Cohan and Great Western Mining Company, Du (2010) evaluated the northern Marietta District, including the Double Prospect (DP) and the surrounding Target Four vicinity, using the ASTER satellite technology. ASTER wavelengths allow identification of chlorite, jarosite, kaolinite, montmorillonite, pyrophyllite, sericite, and smectite. Relative amounts of iron oxide and silica are also reported by ASTER. Much of the east-west axis of Target Four's greywackes and siltstones were found to be hydrothermally affected.

IP and ground magnetometer surveys have revealed a continuous east-west linear zone of magnetite-destructive alteration (Figure 4e and Ludwig, 2012) and strong IP anomaly (Zonge, 2010; Ludwig, 2011) over 2.5 kilometers long and a fairly consistent 500 meters wide. Contours shown on Figure 4 represent IP values at 300-meter depths (Ludwig, 2011, page 2). The IP and magnetic anomalies enjoy excellent axial and spatial correspondence.

Discussion – Target Four exploration

Geology discussion

Lee etal's (2009) structural discussion of the central Walker Lane and his reiteration of the district-scale "Mina Deflection" concept from Oldow (1992) may aid discovery of buried copper, copper-gold, and gold deposits at Marietta. The Mina Deflection is a parallel pattern of strike-slip faults striking northeast through the southern half of the Marietta District (Figure 1b). These faults are temporally, spatially, and genetically linked to the Walker Lane, a northwest-striking structural province active since the late Cretaceous. Overall offset along the southern margin of the Mina Deflection is

right-lateral about 70 km, although individual parallel movements in the center and northern Mina Deflection "pattern" are left-lateral (Figure 1b).

Interactions between the northeasterly Mina Deflection faults and main northwesterly Walker Lane faults have spawned numerous extensional faults north of the central Marietta District (approximately at location M5 on Figure 1b). One of these secondary features appears to be a set of east-west normal faults with moderate dip. Sericite-quartz and argillic of the Permian Mina Formation greywackes occur below and between these normal faults over much of Target Four's 2.5 km strike of concordant high IP and low magnetic anomalies. Bedding strikes are generally parallel to this same trend, although locally contorted as fault drag. The normal faults are occasionally accompanied by east-west parallel and northwesterly cross-cutting oxide copper-bearing vein trends as at the Double Prospect (Figure 4b).

Copper-bearing sulfides appear to be the hydrothermal precursors of copper oxides in altered and mineralized outcrops of Mina sediments at Target Four. Along the ridgetop at Double Prospect, intense weathering of sulfides generated strong soil acids, destroying primary rock fabrics and leaving an oxidized silica cap. At lower elevations at the Double Prospect, mineralized rocks exposed in two historic trenches (Figure 7a) are jasperoidal and quartz-sericite flooded greywacke sandstones and siltstones. Elsewhere along strike of Target Four, mineralized outcrops were observed and sampled within silicic and/or sericitic veins or wallrocks associated with the moderately-dipping east-west faults (Figure 4b).

Geochemical discussion

Rock chip geochemical discussion

High-graded rock chips, representative rock chips, and gridded soil samples taken during Phase One characterize the tenor of surface mineralization at Target Four. High-graded rock chip samples were taken from workings in the Double Prospect's silica cap and from various fault-related outcrops where found throughout Target Four. Representative rock chip samples were taken from the Double Prospect's two historic trenches (see Rock Geochemistry, above). Soil samples were taken on a 50x100m grid over the entire Target Four area, including the Double Prospect (see Soil Geochemistry, above).

Rock chip assay values and copper recoveries from the Double Prospect workings vary with sampling methods and alteration types. The four high-graded silica caprock samples yielded 8,784 ppm average total Cu, a copper recovery ratio of 91.5%, and 507 ppb average Au with a high of 3,193 ppb Au, and 20 ppm average Bi with a high of 43 ppm Bi. The area of the upper and lower historic trenches is characterized by parallel northwest-striking quartz veins (Figure 4b), siliceous and sericitic alteration (Figure 7a and Figure 12b), a large Cu soil anomaly (Figure 4c), and chrysocolla and amorphous green oxide mineralization with minor malachite and rare azurite. The upper trench yielded 1,320 ppm average total Cu, a copper recovery ratio of 64.8%, 145 ppb average Au with a high of 643 ppb Au, and 35 ppm average Bi with a high of 56 ppm Bi. The lower trench yielded 3,043 ppm average total Cu, a copper recovery ratio of 74.6%, and 39 ppb average Au with a high of 48 ppb Au, and 13 ppm average Bi with a high of 41 ppm Bi.

Soil geochemical discussion

Gridded copper (Figure 4c) and bismuth (Figure 4d) soil values define several geologically, and perhaps economically, significant anomalies at Target Four (Soil Geochemistry). All three of the multipoint +100 ppm Cu anomalies are parallel to bedding, faults, veins, and the IP-mag signatures.

Double Main and Double South Cu soil anomalies

The largest copper anomaly, the "Double Main" anomaly, is centered on the Double Prospect. Relatively high Cu rock chips occur along strike for 1,000 meters east of the Double Prospect, and directly on, or up to 100 meters north of, the axis of the Target Four IP anomaly. Most of these easterly Cu-bearing rock-chip samples were taken along a single mapped fault striking east and dipping moderately north (Figure 4c). The southern portion of the Double Prospect Cu anomaly, the "Double South" anomaly, shows strong, steeply south-dipping stratigraphic control by a sericitic and quartz-sericitic altered siltstone horizon (Figure 4b) with up to 1,437 ppm Cu in outcrop (Figure 4c).

Soil Bi values over the Double Main copper soil anomaly (Figure 4d) are anomalous but low (+20 ppm Bi) and discontinuous, indicating most minerals contributing Cu to the main portion of the anomaly are supergene remobilized. Soil Bi values are moderately higher (+30 ppm Bi) over the Double South copper anomaly, indicating a higher primary igneous component for minerals contributing Cu. Copper-bearing minerals at Double South have likely been subjected to less leaching and less metal remobilization than Double Main.

Synax Ridge Cu-Bi soil anomaly

Copper soil (+100 ppm Cu) contours mimic the line of Synax Ridge and the faulted axial trace of the underlying syncline expressed by siliceous and jasperoidal greywacke sandstones and interbedded sericite-altered siltstones of the Permian Mina Formation (Figure 4c). Bismuth soil contours (+40 ppm Bi) delineate these northeasterly topographic and structural lines (Figure 4d) more determinedly than do the copper contours, firmly establishing the hydrothermal aspect of the Synax Ridge mineralization.

No rock chip samples were taken along Synax Ridge during Phase One mapping activities, but the geologic context observed during first-pass reconnaissance (Figure 4b) suggests brecciated hydrothermal silica or quartz-calcite cemented breccias are very likely along the faulted synclinal axis of Synax Ridge (Figure 12a).

Footwall Gulch soil anomaly

Copper soil (+150 ppm Cu) contours along the upstream (eastern) axis of Footwall Gulch (Figure 4c) follow thick argillic (after sericitic-sulfide?) footwall alteration observed in subcrop along the trace of the Bench Fault. Bismuth soil contours (+30 ppm Bi) mimic the Cu soil anomaly in Footwall Gulch, strongly suggesting a hydrothermal nature of the alteration and geochemical anomalies developed in favorable greywacke, siltstone, and greenstone horizons. One rock chip sample (#169473, Figure 4a) taken from a small quartz vein with propylitic wallrock alteration, in or in the hangingwall of the Bench Fault (Figure 4b) and above the footwall alteration assayed only 53 ppm Cu, less than a third of what the soils assayed just across the fault .

Bench soil anomaly

A strong Bi soil value (+40 ppm Bi) surrounded by multiple moderate Bi values (+30 ppm Bi) superimposed on scattered individual (+100 Cu) soil anomalies occur on The Bench and in bounding drainages to the east and west (Figure 4c and Figure 4d). The character and alignment of the Cu and Bi anomalies, and their topographic situation, suggest the underlying rocks continue to be Permian sediments, but the anomalous Bi also imply they are underlain by a relatively shallow, igneous hydrothermal source.

Geophysical discussion

Du's (November 2010) ASTER data produced striking, apparently stratigraphic, alteration trends passing through the Double Prospect surficial copper mineralization, confirming some of Cohan's 2009 to 2011 field observations (Appendix A). The 2010 IP survey at Target Four confirmed a potentially mineralized east-west linear exceeding 2.5 kilometers in strikelength (Figure 3a).

Ludwig's (2011, page 13) interpretation of the linear IP anomaly as a "buried disseminated sulfide source" and possibly "buried copper porphyry" suggests copper mineralization has at least a 2.5 km strike-length at Target Four. The magnetite-destruction implied by Target Four's consistent and magnetic "low", and its co-linearity with a strong IP anomaly (Figure 3c and Figure 4e), add credence to the interpretation of a linear sulfide-bearing intrusive body haloed by additional disseminated sulfides in the sedimentary wallrock above.

Conclusions – Target Four exploration

Working hypothesis

Great Western Mining Company's new geological, geochemical, and geophysical data suggest an east-west elongate, buried copper sulfide-bearing porphyry intrusive occurs at Target Four in the Marietta District, Mineral County, Nevada. The sulfides are capped by copper oxide mineralization at Target Four. Exploration potential for near-surface oxide copper ranges from 19,500 tonnes Cu (42,900,000 lbs Cu) to 243,750 tonnes Cu (536,250,000 lbs Cu, Table 4).

Target Four's outcropping copper mineralization is centered upon well-defined, 500 meter wide, 2,500 meter long, correlative IP and ground magnetic anomalies projected through a suspected buried porphyry and thick, altered, hangingwall sediments (Figures 3 and 4). Copper geochemical anomalies spatially associated with the Target Four geophysical anomalies include Double Prospect, Double South, Synax Ridge, Footwall Gulch, and 750 meters of the Spikey Fault west of the Hogback (Figure 4c).

Moderate Bi soil anomalies and rock chip anomalies (Figure 4d) in the same areas as the Cu soil anomalies strengthen the working hypothesis for intrusive-related mineralization. Experience has shown Bi values in this type of geologic situation are indicative of the igneous-related primary copper mineralization. Copper in soils and outcrops at Target Four are likely to be derived from an igneous intrusion at depth. The spatial characteristics of the accompanying IP and magnetic anomalies support this hypothesis.

The internal characteristics of the 2,500-meter long Target Four IP anomaly (Figure 3a) in the vicinity of Figures 10d, 12d, and 14d indicate two things concerning the potential for copper mineralization: 1) primary sulfides seem to extend to several hundred meters depth, and 2) near-surface secondary oxides were likely derived by weathering of primary sulfides. Target Four magnetic patterns indicate magnetic materials have been consistently destroyed over a width of approximately 500 meters and a length of at least 2,500 meters long. This magnetite destruction is co-linear with the IP anomaly and probably results for mesothermal replacement of magnetic iron minerals by pyrite or other sulfides. Given the plethora of copper minerals at the surface, hydrothermal chalcopyrite mineralization may be expected to have accompanied pyrite mineralization at Target Four.

Economic implications

This working hypothesis anticipates a 2,500-meter long and 500 meter wide primary sulfide body extending east and west through Target Four. Also included is the possibility of a copper-oxide

"cap" with potential for secondary copper oxide mineralization at shallow depths. A Pleistocene weathering profile seems responsible for known copper oxide mineralization at the Double Prospect (Figure 4c). This copper-bearing, near-surface profile at Double Prospect corresponds with millirad lows capping the three IP sectional models in Figures 10d, 12d, and 14d. If these capping IP-lows are due, at least in part, to secondary oxidation of primary copper and iron sulfides, then potential exists for recoverable oxide copper over the strikelength represented by these three IP sectional models at Target Four and eastward to the area of the Hogback (Figure 4c).

Range of potential deposit sizes for Copper Oxide

The potential size range of Target Four's surficial oxides and deeper sulfides may be estimated, assuming a range of thicknesses, grades, and percent mineable volumes respectively above and within the 2,500-meter by 500-meter Target Four geophysical anomaly. Near-surface copper oxide deposits appear to be scattered above the sulfide mineralization throughout this 2,500m by 500m area, having been precipitated from groundwater under favorable structural, chemical, and source rock conditions, and perhaps most importantly, preserved from erosion.

If 10% to 30% of the Target Four surface area is underlain by mineable volumes ranging in grade from 0.30% Cu to 0.45% Cu over a range of 20 to 50 meters average thickness, assuming a density of 2.6 tonnes per cubic meter, there would be from 6,500,000 to 48,750,000 tonnes available for leaching containing between 19,500 tonnes Cu (42,900,000 pounds Cu) to 243,750 tonnes (536,250,000 pounds) of copper (Table 4).

Table 4 - RANGE of near-surface Oxide Copper exploration potential at Target Four, Marietta

Surface area with CuOx potential in square meters	RANGE of thicknesses in meters	RANGE of % mineable volumes	Tonnes per cubic meter	RANGE of tonnes for leaching	RANGE of average grade % Cu	RANGE of Cu potential in tonnes	RANGE of Cu potential in pounds
1,250,000	20	10%	2.6	6,500,000	0.30%	19,500	42,900,000
1,250,000	50	30%	2.6	48,750,000	0.50%	243,750	536,250,000

Range of potential deposit sizes for Copper Sulfides

The buried copper sulfide may be continuous throughout Target Four's east-west elongate, 2,500m by 500m, co-linear IP and ground magnetic anomalies (Figure 4e). This linear zone of potential sulfide mineralization may be aligned along or above a buried, copper-mineralized, porphyry intrusion.

If 10% to 30% of the Target Four porphyry target is underlain by mineable volumes ranging in grade from 0.30% Cu to 0.80% Cu over a range of 50 to 200 meters average thickness, assuming a density of 2.6 tonnes per cubic meter, there would be from 16,250,000 to 195,000,000 tonnes available for milling containing between 48,750 tonnes Cu (107,250,000 pounds Cu) to 1,560,000 tonnes (3,432,000,000 pounds) of copper (Table 5).

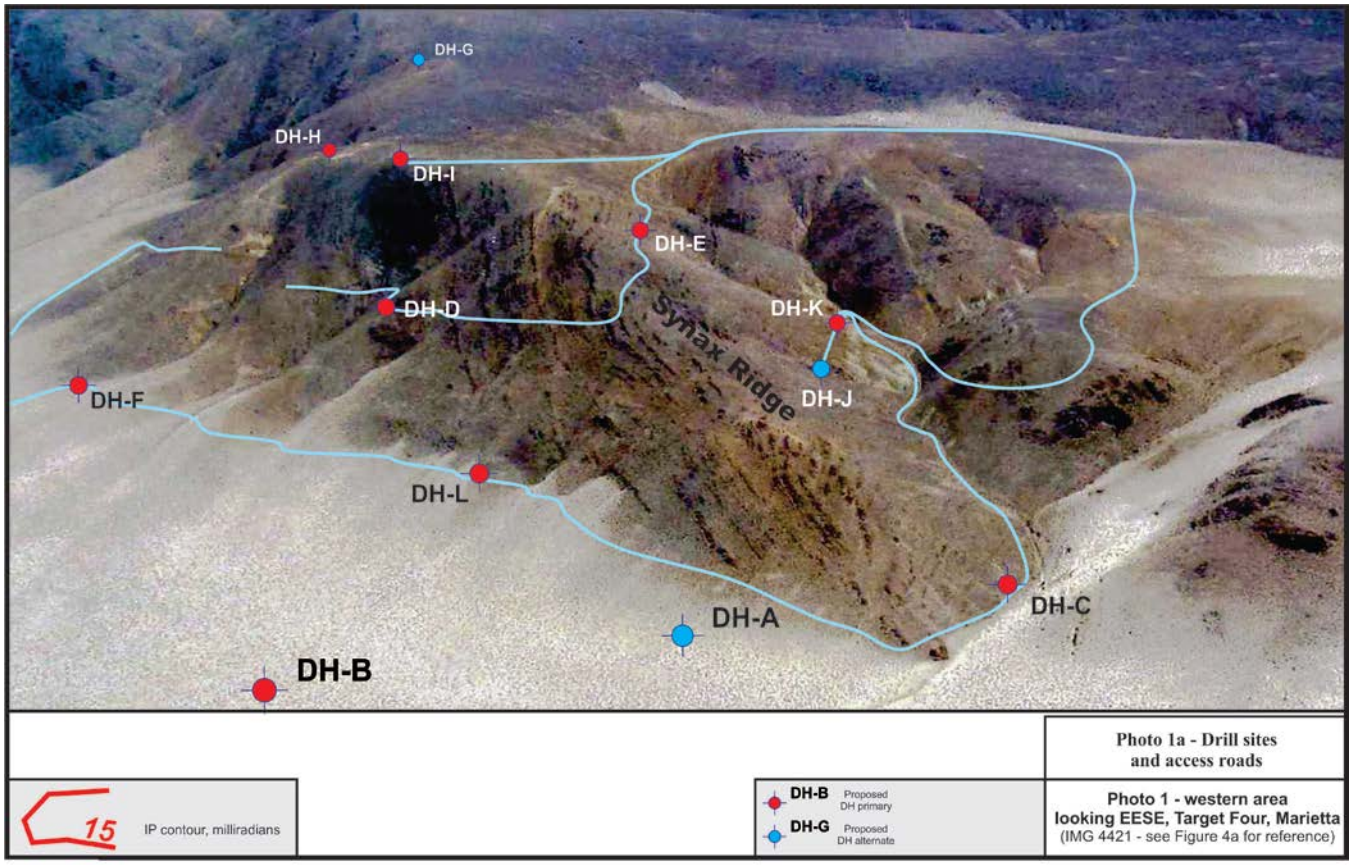
Table 5 - RANGE of Sulfide Copper exploration potential at Target Four, Marietta

Surface area with CuSx potential in square meters	RANGE of thicknesses in meters	RANGE of % mineable volumes	Tonnes per cubic meter	RANGE of tonnes for milling	RANGE of average grade % Cu	RANGE of Cu potential in tonnes	RANGE of Cu potential in pounds
1,250,000	50	10%	2.6	16,250,000	0.30%	48,750	107,250,000
1,250,000	200	30%	2.6	195,000,000	0.80%	1,560,000	3,432,000,000

Recommendations – Target Four exploration

Phase Two – Discovery drilling

Goal, Phase Two - to discover significant grades and thicknesses of shallow copper oxide mineralization in one or more drill holes. Nine holes totaling 1,125 meters should be adequate to accomplish this goal. At least one of the proposed nine holes (DH-D) should be drilled well into copper-bearing sulfides. Locations of the nine proposed holes and 3 alternate drill sites are plotted in Figure 4g and Photo 1a, while their intended targets are shown in cross section in Figures 10, 12, and 14. In each case, the primary target is shallow oxide copper mineralization. Most of them, however, offer the optional opportunity to drill deeper into substantial, IP-indicated, sulfide mineralization. Individual drillhole parameters are shown in Table 6 (below).



Permitting, Phase Two – Approximately 2.5 km of drill access roads should be constructed according to the plan laid out in Figure 4g. The first priority roads should be accessible to service trucks from Cow Camp in northern Huntoon Valley.

District access, Phase Two – Maintain the existing 38-km road from Marietta through Jack Springs Canyon and Huntoon Valley alkali flat to Cow Camp. The 22-km road from Marietta to Cow Camp should also be upgraded and maintained, as well as the "short-cut" directly south from Hawthorne to Cow Camp.

Table 6 - Nine proposed drill holes (DH) and three alternates (ADH)								
Exploration Phase Two, Target Four, Marietta NV								
Proposed	*Location UTM NAD83*		*Angle*	*Azimuth*	*Minimum*	*Maximum*	*Minimum*	*Maximum*
Drill	*East*	*North*	*in*		*down-hole*	*down-hole*	*vert. depth*	*vert. depth*
Hole	*meters*	*meters*	*degrees*	*degrees*	*meters*	*meters*	*meters*	*meters*
ADH-A	369,319	4,224,250	90	360	90	200	90	200
DH-B	369,319	4,224,500	60	180	150	250	114	217
DH-C	369,319	4,223,975	60	360	125	300	109	261
DH-D	369,919	4,224,404	90	360	425	425	70	425
DH-E	369,919	4,224,154	75	180	150	350	145	338
DH-F	369,919	4,224,697	60	360	150	250	114	217
ADH-G	370,519	4,224,319	90	360	100	370	100	370
DH-H	370,219	4,224,333	60	360	150	250	114	217
DH-I	370,115	4,224,363	60	20	150	250	114	217
ADH-J	369,723	4,224,045	60	330	150	250	114	217
DH-K	369,812	4,223,981	60	20	150	250	114	217
DH-L	369,620	4,224,330	90	360	70	300	70	300
	Totals for the nine primary holes				1,520	2,625		

Surface surveys, Phase Two – infill and extensional rock chip sampling and alteration mapping in subcrop and float should be continued. Of special interest will be the altered and mineralized area immediately southwest of the Phase 1 grid. Centered at UTM 369,000 mE/4,223,500 mN (Figure 4c), this additional area of apparently mineralized outcrop (about 0.5 km^2), and its extensions beneath Quaternary blow sand and alluvium to the west, should also be subjected to detailed geologic mapping, a rock chip and grid soil sampling program, and another north-south IP survey line. Other Permian Mina Formation "windows" should also be investigated further to the south as well (Figure 3b).

Phase Three – Drill to infer oxide tonnage and expand sulfide discoveries

Approximately 4,000 meters of drilling during Phase Three will be necessary to create an inferred oxide copper resource upon the foundation of a successful Phase Two. A minimum of 3,000 meters will be necessary for a sulfide discovery drill program at Target Four.

Budget and timing - Phase Two

The estimated field exploration budget for Phase Two at Target Four is $526,185. Permitting should take 45 days. Drill road and site preparation, a nine-hole (1,525 m) drilling program, and contemporaneous assaying, logging, outcrop and soil sampling should be completed within 45 days. Additional assaying, logging, data compilation, and reporting should conclude after an additional 55 days. Total time estimated from start to completion of a full report on Phase Two is 145 days.

Table 7 - 2012 Phase Two field crew and exploration drill budget, Target Four project, Marietta, Nevada

Task	no. of units	Unit Cost USD	Time in days	Task or contract USD	Sr. Geo $800 mn-dy	Geo $450 mn-dy	Geotch $300 mn-dy	Vehicles $100 veh-dy	Fuel $50 veh-dy	Room $60 mn-dy	Board $70 mn-dy	Shed $50 days	
Permit consult.	-	-	45	$30,000	10	-	-	-	-	-	-	-	
Permit bond	-	-	-	$100,000									
Road constr.	10	$1,300	10	$13,000	10		10	10	10	20	20	10	
Drilling (m)	1,525	$120	35	$183,000	10	25	35	35	35	70	70	10	
Drill assay (smpl)	1,525	$40	-	$61,000	-	-	-	-	-	-	-	-	
OC assay (smpl)	300	$40	-	$12,000	10	5	15	15	15	30	30	10	
Soil assay (smpl)	300	$40	-	$12,000	10	5	15	15	15	30	30	10	
Logging (addtl)	-	-	20	-	15	5	20	20	20	20	20	15	
Compilation	-	-	20	-	20	-	-	-	-	-	-	20	
Reporting	-	-	15	-	15	-	-	-	-	-	-	15	
Phase 2 - subtotal			145	$411,000	$80,000	$18,000	$28,500	$9,500	$4,750	$10,200	$11,900	$4,500	
Contingency	10%			$41,100	$8,000	$1,800	$2,850	$950	$475	$1,020	$1,190	$450	**Total**
Phase 2 - Totals				$452,100	$88,000	$19,800	$31,350	$10,450	$5,225	$11,220	$13,090	$4,950	**$636,185**

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Certificate of Author

I, Donald G. Strachan, residing at 1260 Jodi Court, Gardnerville, Nevada 89460, USA, do hereby certify that:

1. I am a Consulting Geologist.

2. I am a graduate of the New Mexico Institute of Mining and Technology, having received a Masters of Science in Geology in 1976. I also graduated in 1973 from California State University, Fresno with a Bachelors of Arts in Geology.

3. I am a Certified Professional Geologist (CPG-10376) under the auspices of the American Institute of Professional Geologists. I am also a Fellow of the Geologic Association of Canada, a Member of the Society of Economic Geologists, and a Member of the Geological Society of Nevada. I am currently applying for acceptance as a member of the Association of Professional Engineers and Geoscientists of BC.

4. I fulfill the requirements of a Qualified Person by reason of experience and education, as set out in JORC (2004) standards, to act as a consulting geologist for advancement of the Target Four copper property.

5. I have read the JORC (2004, sections 1 through 18) standards. This report has been prepared in accordance with generally accepted mining industry practice, is in compliance with the JORC (2004) standards, is a statement of material facts and opinion, and may be used by Great Western Mining Company (GWMC) and its advisors in support of their further evaluation Target Four or their related properties and for other public documents.

6. As of the date of this certificate, I am not aware of any changes in fact or circumstances as regards the subject matter of this report that materially affects the content of the report or the conclusions reached. I developed essential information related to the Target Four copper property in 2012.

7. I consent to and authorize the use of the attached report and my name to a statement of material facts and other public documents.

10 August, 2012

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Appendices

Appendix A – Cohan (2011) reconciled sample descriptions

Appendix B – Master sample list, Marietta M2 and Target Four

Appendix C – Figures for Target Four