REPORT ON
BLASTING, STRIPPING
AND ORE RESERVES,
SWARD LAKE AMETHYST MINE,
THUNDER BAY MINING DIVISION
NTS 52 A/10

Balmertown, Ontario
February 9, 1998

Timothy J. Twomey
H.BSc. Geology
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INTRODUCTION

The property contains a past-producing amethyst mine nearby to Sward Lake within the prolific amethyst belt of the north half of McTavish Township in Northern Ontario. It contains high-grade amethyst reserves which are ready to mine.

PROPERTY DESCRIPTION

The property consists of one mining claim, TB 1209542, and contains approximately 16 hectares (40 acres). The legal description is the West Half of the Northwest Quarter of Lot 5 Concession IV in McTavish Township. It was recorded on March 24, 1995, and requires $400 assessment work by March 24, 1999 to remain in good standing. No other taxes are applicable.

LOCATION AND ACCESS

The property is located within McTavish Township, claim map G-175. It is approximately 50 km east of the City of Thunder Bay, Ontario. The property is located 1 km north of Highway 11-17 via No. 5 Road North at Pearl, Ontario. Access to the property is provided by an all-weather gravel road, the Pearl Lake Mine road, which connects five amethyst mines with Highway 11-17. Then, one proceeds on a narrow bush road, controlled by the property, 600m (2000 feet) to the mine-site.

PREVIOUS EXPLORATION

The area was first prospected for silver in the late 1800's. A lead-zinc-silver prospect, the Detroit-Algoma Mine, was discovered in 1871 about 400 m on strike to the northeast of the property. Mineralization there consists of galena and sphalerite in amethystine quartz veins. A shaft was sunk and mill installed in 1910 where development ceased in 1914. That deposit is presently being mined for amethyst on surface by Mr. Clark Noyes. A staking rush for uranium occurred in the area in 1977 upon release of a Federal-Provincial reconnaissance geochemistry survey. Most of the north half of McTavish Township was staked by Saarberg Interplan Corp. and subsequently came open in 1983. Since that time interest in the area has been mainly for amethyst.

The main vein on the property is located near the outflow of Sward Lake and was first uncovered when that area was dammed and a flume built to supply water to the rail stop at Pearl in the late 1800's. The vein was mined for amethyst by the late Mr. Gunnard Noyes and the late Jim Barrett, from the 1970's to the 1980's and has remained idle since then. The property came open for staking in 1994 and was staked by the Author in 1995 where mining has resumed.

Mr. Mark O'Brien, Ministry of Northern Development and Mines conducted a property visit at the mine in 1997 and filed a report on the deposit in their Mineral Deposit File at Thunder Bay.
GENERAL GEOLOGY

Tanton (1931) published Map 214A and described the veins and prospects in the area which experienced a minor exploration resurgence at that time. The township was most recently mapped by McIlwaine (1971) at a scale of 1 inch to 1/4 mile. It was released as an uncoloured preliminary map. McIlwaine mapped Archean-aged basement rocks of migmatitic metasediments and four phases of granitoids. These basement rocks are unconformably overlain by Sibley Group sedimentary rocks consisting of near flat-lying conglomerates, sandstones and limestones. These were deposited in a shallow sea in Proterozoic times. All of the rocks were then intruded by dikes and sheets of diabase.

The north half of McTavish Township contains numerous normal faults derived from basinal downwarping of the Sibley sedimentary rocks. Thus, the faults often define granite/sedimentary rock contacts and strike at 060 to 090. The faults are variably occupied by amethystine quartz veins containing minor amounts of galena, sphalerite and chalcopyrite. The exposed unconformity between the granites and the Sibley sediments in this area is the reason it is an amethyst district.

PROPERTY GEOLOGY

The dominant rock type within the property is coarse-grained to medium-grained granite containing 1 to 2% black biotite, 2 to 4% clear quartz phenocrysts and 94% red and white feldspars. There is a set of relatively vertical joints at 030 and 140 respectively. The granite also contains a minor amount of migmatized biotitic metasediments and are Archean in age. A minor amount of red Sibley sandstone is found along the banks of Pearl Creek.

MINERALIZATION

A fault is located within the granite which contains an amethystine quartz vein and veinlet zone, nearby to the outflow of Sward Lake. This is the same vein structure as the Detroit-Algoma Mine structure 400 m to the north-east. The structure on the property has been mined intermittently for amethyst since the 1970’s. An open pit measuring 17m long by 6m wide by 3m deep has produced good quality amethyst near the shore of Sward Lake. The pit has been pumped out and good-quality amethyst continues in the floor of the pit. Two other trenches exist on strike on each side of the pit within the same vein system and also contain high-grade amethyst.

STRIPPING

A Wajax MarkV high-pressure water pump was used to conduct stripping of overburden to the northeast of the open pit and west of the trench. The operator was Tim Twomey and the pump was supplied by the MNDM. This was done for one day on July 8, 1997. The stripping exposed
exposed the continuation of the vein fracture system and also contains amethyst. A further 20m
strike length of the vein requires stripping of about 0.3m thickness of sandy till. The open pit
was dewatered during this stripping and rock exposure in the pit revealed high-grade amethyst in
place.

BLASTING

After the pit was dewatered, parts of the vein were blasted with Magnapac water-gel explosives.
This was done mainly to remove broken rock and expose fresh vein for evaluating. Amethystine
veins were seen in the pit wall and floor, at the East Trench and along the granite ledge from the
pit to the shore of Sward Lake to the west.

ORE RESERVES

The amethyst vein was first mined by Gunnard Noyes and then by Jim Barrett from the early
1970's to about 1985. Approximately 333 tons of have been mined from an open pit measuring
18m long by 3m wide by 3m deep (59' x 9.8' x 9.8'). Judging from the waste rock used for road
bed, perhaps half has been sold as amethystine vein ore. A small pit on the east end of the
stripped area measuring 4m long by 1m wide by 1/2m deep (13.1' x 3.3' x 1.6') has excavated 4
ton of high-quality amethyst. Therefore, it is estimated that 169 tons has been sold as
amethystine vein ore. At an average of $0.50 per pound in 1985 Canadian dollars this would
equate to a total value of $169,000.

Remaining reserves occur between the Main Pit eastward to the East Trench. These reserves are
contained in two blocks totalling 37m (120') long by an average of 1.8m (5.8') wide (see
longitudinal section). Surface mining here to a depth of 3.1 m (10') would be at the elevation
of Sward Lake. This would excavate 333.5 tons of rock (using 17 cu. ft. per ton) of which half
is estimated to be amethystine vein ore. At $0.50 per pound for 166.8 tons of ore would equate
to $166,800 in situ value.

CONCLUSIONS AND RECOMMENDATIONS

The vein system that hosts the amethyst is strong and continues past the mined areas. Good
quality amethyst is seen in parts of the veins in these areas as well as in the pits and trenches.
The open pit requires pumping out in order to continue mining. The pumped water is required
to be pumped into the bush rather than into Pearl Creek to filter out particulates. However, the
east trench contains high-grade amethyst and can be mined immediately, westward towards the
main pit. The quickest and cheapest way to mine the deposit is to file for a Quarry Permit with
the Ontario government which charges a royalty of $0.75 per ton mined.
PHOTO 1  Amethyst muck pile at edge of Pearl Creek. Sward Lake Amethyst Mine
Photo 2: Brook trout caught in Pearl Creek, from muckpile at the Sward Lake Amethyst Mine.
CERTIFICATE OF QUALIFICATIONS

I, Timothy J. Twomey, of Box 88, Balmertown, Ontario, P0V 1C0, do hereby certify as follows concerning my Report on Geology and Stripping, Sward Lake Amethyst Mine, dated February 9, 1998:

1. I am a 1983 graduate of Lakehead University, Thunder Bay, Ontario, holding a Bachelor of Science (Honours) degree in Geology.

2. Breezy Mountain Amethyst Mines Ltd., of which I am sole owner, has a 100% interest in the Sward Lake Amethyst Mine.

3. This report is based on my own work on the property as well as literature review of Assessment Files, Resident Geologists Office, MNDM, Thunder Bay.

February 9, 1998
Balmertown, Ontario
REFERENCES

Assessment Files, Resident Geologists Office, MNDM, Thunder Bay, Ontario.

McIlwaine, W.H.

Tanton, T.L.
1931: Fort William and Port Arthur, and Thunder Cape Map Areas, Thunder Bay District, Ontario; Canada Department of Mines, Memior 167.
Declaration of Assessment Work Performed on Mining Land

Ministry of Northern Development and Mines

Section of subsections 65(2) and 66(3) of the Mining Act. Under section 8 of the Act, the Recorder, Ministry of Northern Development and Mines, is required to review the assessment work and correspond with the mining land holder.

Instructions:
- For work performed on Crown Lands before recording a claim, use form 0240.
- Please type or print in ink.

1. Recorded holder(s) (Attach a list if necessary)

<table>
<thead>
<tr>
<th>Name</th>
<th>Client Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timothy J. Twomey</td>
<td>203954/2452</td>
</tr>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>Box 88, Balmerstown, ON</td>
<td></td>
</tr>
<tr>
<td>PO Box</td>
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</tr>
</tbody>
</table>

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

<table>
<thead>
<tr>
<th>Work Type</th>
<th>Office Use</th>
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</thead>
<tbody>
<tr>
<td>Geotechnical: prospecting, surveys, assays and work under section 18 (regs)</td>
<td></td>
</tr>
<tr>
<td>Physical: drilling, stripping, trenching and associated assays</td>
<td></td>
</tr>
<tr>
<td>Rehabilitation</td>
<td></td>
</tr>
</tbody>
</table>

3. Person or companies who prepared the technical report (Attach a list if necessary)

<table>
<thead>
<tr>
<th>Name</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timothy J. Twomey</td>
<td>as above</td>
</tr>
<tr>
<td>Address</td>
<td>AS ABOVE</td>
</tr>
</tbody>
</table>

4. Certification by Recorded Holder or Agent

Timothy J. Twomey, do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent: Timothy J. Twomey

Date: Feb. 23/98

Aged Address: Box 88, Balmerstown, ON, P0V 1CO

Telephone Number: 807-735-3450
5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous land must accompany this form.

Work to be recorded and distributed

<table>
<thead>
<tr>
<th>Mining Claim Number</th>
<th>Number of Claim Units</th>
<th>Value of work performed on this claim or other mining land</th>
<th>Value of work applied to this claim</th>
<th>Value of work assigned to other mining claims</th>
<th>Bank. Value of work to be distributed at a future date</th>
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<td>16 ha</td>
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<td><strong>1036</strong></td>
<td>1036</td>
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</table>

1. Timothy J. Twomey, do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing: [Signature]

Date: Feb. 23/98

6. Instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check the boxes below to show how you wish to prioritize the deletion of credits:

- [ ] 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- [ ] 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- [ ] 3. Credits are to be cut back equally over all claims listed in this declaration; or
- [ ] 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.
**Personal Information collected on this form is obtained under the authority of subsection 6(1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.**

---

### Statement of Costs for Assessment Credit

**Transaction Number (office use)**

<table>
<thead>
<tr>
<th>Work Type</th>
<th>Units of Work</th>
<th>Cost Per Unit of Work</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stripping, blasting, report writing</td>
<td>2 1/2 days</td>
<td>$250/day</td>
<td>625</td>
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</table>

**Associated Costs (e.g. supplies, mobilization and demobilization).**

**Transportation Costs**

| Car @ 30 $/km | 1370 km | 411 |

**Food and Lodging Costs**

---

**Total Value of Assessment Work**

1036.

**Calculations of Filing Discounts:**

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

\[
\text{TOTAL VALUE OF ASSESSMENT WORK} \times 0.50 = \text{Total $ value of worked claimed.}
\]

**Note:**
- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 15 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

**Certification verifying costs:**

I, Timothy J. Twomey, do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as recorded holder. I am authorized to make this certification.

---

**Signature**

Date: Feb 23, 98
May 27, 1998

TIMOTHY J TWOMEY
P.O. BOX 88
BALMERTOWN, Ontario
P0V-1C0

Dear Sir or Madam:

Submission Number: 2.18292

Subject: Transaction Number(s):

W9840.00240 Deemed Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Steve Beneteau by e-mail at benetest@epo.gov.on.ca or by telephone at (705) 670-5855.

Yours sincerely,

[Signature]

ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section
## Work Report Assessment Results

**Submission Number:** 2.18292  
**Date Correspondence Sent:** May 27, 1998  
**Assessor:** Steve Beneteau  

<table>
<thead>
<tr>
<th>Transaction Number</th>
<th>First Claim Number</th>
<th>Township(s) / Area(s)</th>
<th>Status</th>
<th>Approval Date</th>
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<tbody>
<tr>
<td>W9840.00240</td>
<td>1209542</td>
<td>MCTAVISH</td>
<td>Deemed Approval</td>
<td>May 26, 1998</td>
</tr>
</tbody>
</table>

**Section:**  
10 Physical PSTRIP  
10 Physical PTRNCH

**Correspondence to:**  
Resident Geologist  
Thunder Bay, ON

**Recorded Holder(s) and/or Agent(s):**  
TIMOTHY J TWOMEY  
BALMERTOWN, Ontario

Assessment Files Library  
Sudbury, ON

BREEZY MOUNTAIN AMETHYST MINES LTD.  
THUNDER BAY, ONTARIO
REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

S.R.-SURFACE RIGHTS  M.R.-MINING RIGHTS

REOPENED MINING AND SURFACE RIGHTS WITHDRAWN FROM OBTAINING ORDER WTB 26/83

POSSIBLE TOWER SITE APPLICATION REQUEST PENDING UNDER SECTION 31(b).

MINING ACT R.S.O. 1980.

REFERENCES

LAND UNDER WATER OF LAKE SUPERIOR WITHDRAWN FROM STAKING BY ORDER IN COUNCIL DATED APR. 1, 1912

DATE OF ISSUE MAY 20, 1982

PROVINCIAL RECORDING OFFICE-SUDbury


NOTICE: The information that appears on this map has been compiled from various sources, and accuracy is not guaranteed. Those wishing to stake mining claims should consult with the Mining Recorder, Ministry of Northern Development and Mines, for additional information on the status of lands shown hereon.

LEGEND

HIGHWAY AND ROUTE NO.
OTHER ROADS
TRAILS
SURVEYED LINES
TOWNSHIPS, BASE LINES, ETC
LOTS, MINING CLAIMS PARCELS, ETC
UNSURVEYED LINES
LOT LINES
PARCEL BOUNDARY
MINING CLAIMS ETC
RAILWAY AND RIGHT OF WAY
UTILITY LINES
NON PERENNIAL STREAM
FLOODING OR FLOODING RIGHTS
SUBDIVISION OR COMPOSITE PLAN
RESERVATIONS
ORIGINAL SHORELINE
MARSH OR MUSKEG
MINES
TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT SYMBOLE
PATENT, SURFACE AND MINING RIGHTS-S.R.Q
SURFACE RIGHTS ONLY-S.R.
MINING RIGHTS ONLY-M.R.
LEASE, SURFACE AND MINING RIGHTS-L.B
SURFACE RIGHTS ONLY-L.B.S.R.
MINING RIGHTS ONLY-L.B.M.R.
LICENSE OF OCCUPATION-T
ORDER IN COUNCIL-OC
RESERVATION-R
CANCELLED-C

SCALE: 1 INCH = 40 CHAINS

TOWNSHIP MCTAVISH
MINING DIVISION THUNDER BAY
LAND TITLES/REGISTRY DIVISION THUNDER BAY
Ontario Ministry of Land Natural Resources
APRIL, 1982

4TH ISSUE FEB. 24, 1985

G-675