



31M13NW0021 63.5878 CATHARINE

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63.5878

OPAP REPORT OP90-326

S. A. (Sue) Gamble  
70 First Street  
Kirkland Lake, Ontario  
P2N 1N3

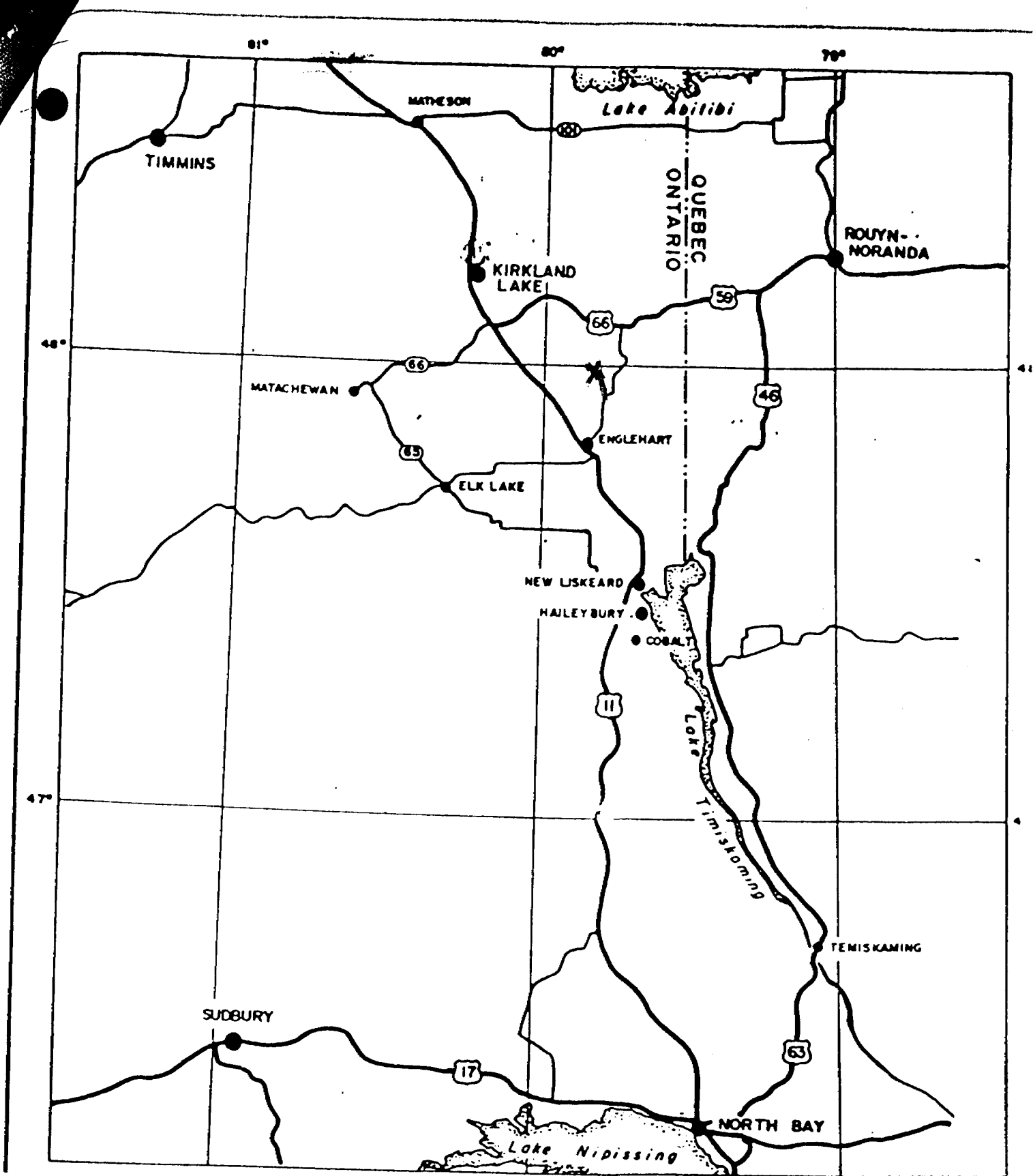
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112074	112081	112080	112075	112079	111489	111460	112137	112136	112135	111948
714667	714666	714665	714663	714503	714246	714232	667860		667852	667079
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TOWNSHIP OF  
**CATHARINE**  
DISTRICT OF  
TIMISKAMING  
LARDER LAKE  
MINING DIVISION

7 6 5 4  
ARTER TP

SKEAD TP

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COOK-GAMBLE PROPERTY  
CATHARINE TOWNSHIP  
LARDER LAKE MINING DIVISION

**REPORT ON GEOLOGICAL MAPPING**

INTRODUCTION

This report covers the results of geological mapping carried out under OP90-326 on Mining Claims L532869, L 893843, L 893844, and L 893845 in September, October, and November 1990. The mapping was carried out by S. A. Gamble during the months of September, October, and November, 1990 with the aid of B. G. Cook. For results of the surface mapping see the map accompanying this report.

LOCATION AND ACCESS

The property is reached by travelling north from Englehart on Highway 624 for approximately 14 miles to where a bush road leaves Highway 624 to the northwest. This bush road can be followed for approximately 2 miles to where another bush road leaves this one to the south. This bush road leads approximately 1 mile to the mine property, and is accessible by hiking or ATV. The area is generally becoming better used due to mining exploration and moose hunting. During the fall of 1990 many hunters were in the area, although generally not on the these four claims.

TOPOGRAPHY AND VEGETATION

Topography varies from rugged outcrop to wet swampy ground. The variation can occur at short intervals. Mapping presents a challenge of variability from blow down to beaver dams to black muck to rugged rock outcroppings. Vegetation consists of mixed deciduous forest with some areas of mostly jackpine. A great variety of vegetation exists in this area with no species appearing to dominate.

FIELD METHODS

The mapping was carried out by following a pre-existing grid which was established by the present owners over their involvement with the property. Size and shape of outcrops were established by visual inspection. Pace and compass methods were employed to tie outcrops to the existing grid. A toposil measurement was also used for greater accuracy where necessary. Field notes were taken continually.

Rock samples were taken during the mapping process. All sample locations were marked in the field with orange flagging tape bearing the sample number. See assay report for assay results and sample descriptions.

## REGIONAL GEOLOGY

The property is underlain by the uppermost formation of the Catharine Group of Volcanics and is known as the Catharine Formation (S. L. Jackson & R. M. Harrap, Summary of Field Work and Other Activities, OGS MP# 146, 1989 pp.125-131). This formation consists of amygdaloidal, pillowed and massive basalt flows (or sills). Variolitic basalts are reported to be present near the top of the formation and may be spatially correlated with the north-west trending Catharine Fault and related structures. This fault zone is characterized by intense fracturing, shearing, and quartz veins (plus or minus sulphides, plus or minus tourmaline); carbonate alteration (plus or minus fuchite); and gold mineralization. The gold occurs primarily in sulphide bearing quartz veins that are enclosed in carbonate altered and pyritized country rocks. In addition to the variolitic basalts, there are also small gabbroic and felsic intrusive rocks commonly associated with this fault zone. The structure is well developed in central Catharine Township.

## PROPERTY GEOLOGY

The geology of the claim group consists of three main rock types: 1) andesite to basalt flows, 2) quartz feldspar porphyry, and 3) quartz veins.

### 1) Andesite to Basalt Flows

The property is predominantly underlain by a thick mafic volcanic sequence consisting of massive (1m) to pillowed (1p) green andesite to basalt flow rocks. Variations of the massive andesite to basalt flow rocks include fine to medium grained textures and weak to moderately feldspar porphyritic textures. Weak to moderate sausseritization (epidote) of the feldspars occurs locally. The andesite-basalt pillow flows include vesicular, amygdaloidal, and pillow breccia textural variations. The pillow shapes tend to be small and irregular and therefore poorly defined for pillow top determinations. The general orientation of the flow sequences strikes east-west to southeast-northwest. From increased vesicle content on the east and north sides of the individual pillows the top determination for these pillow flows appears to be to the northeast. Pillow selvages tend to be narrow and thin, 1/4" to 1" in size, and may contain quartz, epidote, pyrite and trace chalcopyrite locally.

The andesite-basalt sequence locally contains trace to 1% disseminated pyrite as discrete isolated euhedral cubes and also along fractures and joints.

### 2) Quartz Feldspar Porphyry

The mafic volcanic sequence is intruded by an episode of quartz-

feldspar porphyritic dikes (2). These dikes occur in the northeast quarter of the map area. The dike orientations vary from a predominant east-west strike to minor north striking orientations. These dikes are generally steep to vertical dipping and vary from 2 feet to 36 feet thick (eg the "North Zone" area).

The quartz-feldspar porphyry dikes are generally pale green in colour with a fine grained ground mass and contain 2-5 mm porphyritic white feldspar and quartz phenocrysts. Trace to 1% disseminated pyrite occurs locally. The quartz-feldspar porphyry dikes are also significantly altered to a buff tan colour in areas where silicification occurs, ie in the "North Zone" and "Central Zone" areas.

The concentration of quartz-feldspar porphyry dikes south of the "North Zone" and west of the "Central Zone" may represent fingers from a larger QFP stock at depth. These dikes may also link up on surface under the overburden.

### 3) Quartz Veins

The property consists of an extensive series of quartz veins varying in width from less than one foot to forty foot zones that cut all lithologies. These veins are erratically distributed in the eastern half of the property between 9+00S to 9+00N, an across strike zone of some 1800 feet. The orientation of these veins vary from a primary orientation of the east-west striking "North Zone" and the "No. 14 Zone", to the northwest striking "Central Zone", to the northeast striking "No. 12 Zone". Strike lengths are traceable for up to 350 feet, and can be inferred for up to 1400 feet. These veins are moderately to steeply dipping to the south and can vary to vertical. It should also be noted that these quartz vein structures also approximate east-west striking, vertically dipping foliation fabrics and small shears, as well as joint sets of NW-SE and NE-SW orientations as seen elsewhere on the property in the volcanics. In addition quartz veinlets and stringer zones also occur within and proximal to the major quartz vein structures.

The quartz veins vary from milky bull white with little or no visible sulphide mineralization (Vein on L893845, L7+00S, L4+00W) to dirty white or grey veins exhibiting pyrite, chalcopryrite, hematite, specularite, limonite, malachite and epidote. Visible gold and/or chalcopryrite is seen in some places. Most veins exhibit extensive alteration along their contacts with the country rocks.

Extensive rusty carbonate alteration is seen in the "Central Zone" after stripping (see geological map L2+00N, L8+00E). Rusty well developed carbonate alteration is present flanking the veins in this area and serves to illustrate the type of alteration seen elsewhere on the property. Fuchite is present as stretched blebs in the altered andesite country rocks in the "Central Zone" as well. Disseminated pyrite is present in the vein material as well as in

the altered host rocks.

Some veins exhibit what appears to be different generations of silica injection. This is particularly evident in the Number 14 vein, where a white section of vein is present for about 10 to 14 feet near the upper or south contact of the vein. A grey translucent section is present in about the middle of the vein. The lower north contact again exhibits the opaque white quartz. sulphide mineralization is present in greater abundance in the grey quartz section although it is present throughout the entire vein structure. This evidence is well displayed in the drill core section, (DDH 90-01, 233' to 270.5'; OP90-325 ) and can also be observed on the surface. The Number 14 vein also exhibits a blackish mineralized and silicified upper contact zone in the altered andesite on surface.

#### STRUCTURE

Using data from DDH 90-01, (OP90-325), and the old plans of the underground development, a major structure, a vertical fault and fault breccia zone, approximately 10 feet wide (509' -519' down hole footage) is confirmed. The fault breccia zone on either side of the fault gouge spans 96 feet (from 482.5'- 578.5' down hole footage). Its location is shown on the map prepared for this report, and on the drill section submitted with OP90-325. It also corresponds with a VLF conductor.

#### CONCLUSIONS

The Cook-Gamble property consists of a thick mafic volcanic massive flow, and pillowed flow sequence that has been subjected to quartz feldspar porphyry intrusive dikeing, and cut by late stage quartz veining. A major east-west trending fault cuts the property between the No.12 and No. 14 veins. Pyrite, chalcopryite, and gold are associated with the vein structures which also exhibit strong envelopes of rusty carbonate alteration.

In conclusion the detail mapping carried out under OP90-326 provided the property owners with an excellent base map from which to initiate further exploration activities.



S. A. Gamble  
January 21, 1990

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COOK-GAMBLE PROPERTY  
CATHARINE TOWNSHIP  
LARDER LAKE MINING DIVISION

REPORT ON STRIPPING (OP90-326)

The stripping took place from September 18, 1990 to September 22, 1990 on Mining Claims L 532869 and L 893843. The work was performed by a D-7 Cat belonging to Teck Northern Roads Limited and a wide pad D-6 Cat belonging to Heath and Sherwood Drilling(1986) Ltd. The operator for Teck Northern Roads was Cliff Kant, and the operator for Heath and Sherwood was Cameron Dudgeon. The areas to be stripped were determined and supervised by S. A. Gamble in consultation with B. G. Cook. Roads and trail access were refurbished with the wide pad Cat in order that the heavier D-7 could access the areas for stripping with as little difficulty as possible. The D-7 was used to do the heavy stripping because of its narrow pads and greater power which enabled it to perform better on rugged uneven bedrock. Stripping on these claims presents a challenge as the ground varies from swampy and wet to outcrops that are uneven and rugged.

See the geological map prepared under OP90-326 accompanying this report for location of stripped areas, as well as the separate map showing dimensions of stripped areas attached to this report.

Stripping was performed along the #14 Vein, the #12 Vein, the North Zone, along L8E North, between L4E and L6E at approximately L7N, and near L10E north of the Baseline.

The results of stripping are as follows:

- 1)The #14 Vein was further exposed and cleaned. A new vein was discovered in this area as well as the #14 was traced to L10E where it seems to die out. It is not possible to trace it to the west because of swampy ground conditions.
- 2)The #12 vein was opened up to either side, exposing the wall rocks; and along strike exposing an area between pits that had never been seen before. Good rusty alteration is noted in this area. The muck piles along the #12 vein were spread out making available new material for examination and sampling.
- 3)In the North Zone a new area of well mineralized altered vein material was exposed near where sampling in 1989 gave a geochem result of over 3000 ppb. over 18". A quartz vein was uncovered in this area, and an area exposing malachite was also observed. Good rusty alteration was also uncovered in this area.
- 4)A large area of feldspar porphyry was uncovered at approximately L7N, between L4E and L6E, which had not been known before. The



porphyry is cut by quartz stringers and shows minor pyrite.

5)The area expanded and further stripped along L8E showed very heavy rusty alteration. Blebs of fuchite were also found as a result of the stripping. (see geological map accompanying this report).

6)The area at approximately L1N, L10E was opened up exposing a new quartz vein that has considerable strike length (see geologic map OP90-326). This vein displays alteration in the wall rocks, and pyrite mineralization.

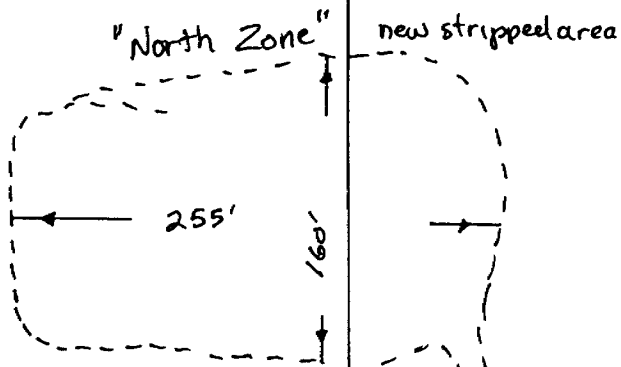


S. A. Gamble

L4 E

L6 E

L8 E



expanded area

N 30° 130'

L 8 9 3 8 4 3

"Central Zone"

new stripped area

100'

350'

Sketch Showing Dimensions of  
 Areas Stripped and/or Expanded  
 For OP90-326

Scale: 1" = 100'

Also see Geology Map OP90-326

Catherine Twp District of Timiskaminga



8+000

7+000

6+000

5+000

4+000

3+000

2+000

L 893E4.3

L6E

L8E

L10E

B1

15

23

3+005

4+005

5+005

6+005

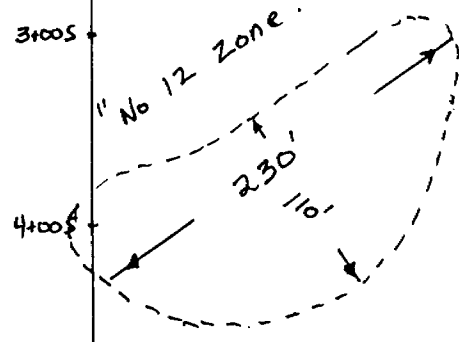
7+005

8+005

9+005

10+005

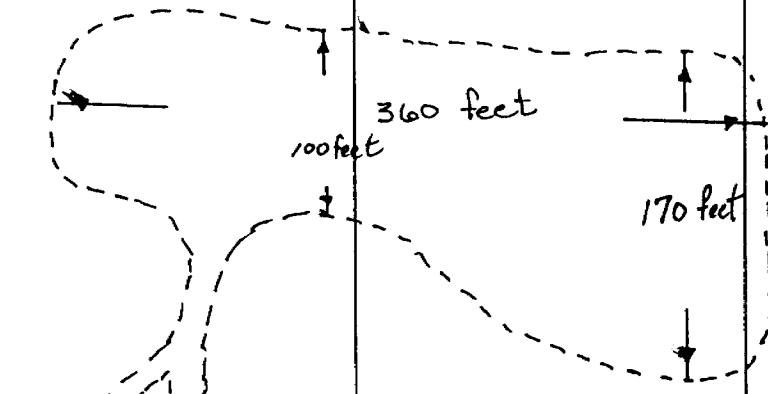
"No 12 Zone"



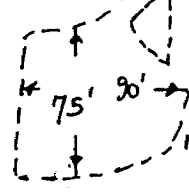
new stripped area

L 532869

"No 14 Zone"



expanded area



new stripped area

Sketch Showing Dimensions of Areas Stripped or Increased For DP90-326

Scale: 1" = 100'



COOK-GAMBLE PROPERTY  
 CATHARINE TOWNSHIP  
 LARDER LAKE MINING DIVISION

REPORT ON ASSAYS (OPAP-326)

This report gives the results of rock samples only. Core sample results were given in the report covering the results of drilling with OP90-325.

These samples were collected during the mapping of Mining Claims L 532869, L 893843, L893844, L893845. See the geological map produced for OP90-326 for sample locations. All sample locations were marked in the field with flagging tape and permanent felt marker. The assay results were requested in ounces/ton Au, however the last samples were determined by geochem. and given in ppb's. Only gold was determined. Assay certificates attached in Appendix A.


Assays are in ounces per ton unless otherwise specified.

Sample	Type	Rock Type	Mineralization	Assay(Au)
7031	grab	andesite(pillowed)	trace pyrite	Nil
7032	grab	fsp.porphry	1% pyrite	Nil
7033	grab	fsp.porphry	1% pyrite	Nil
7034	grab	andesite	5% pyrite	Nil
7035	grab	andesite (sheared)	1-2% pyrite	Nil
7036	grab	qtz vein	cpy,tr-2% pyrite	0.003
7037	grab	qtz vein	cpy,tr-2% pyrite	Nil
7038	dump grab	qtz vein	cpy,tr pyrite	Nil
7039	chip	6'qtz vein	tr pyrite	Nil
7040	chip	6'qtz vein	tr pyrite	Nil
7041	chip	6'qtz vein	tr - 1% pyrite	Nil
7042	grab	andesite, qtz vein	5-10% pyrite,tr tr malachite,cpy	0.002
7043	chip	12'qtz vein	tr- 2% pyrite	0.003
7044	grab	qtz vein	tr- 1% pyrite	0.002

7045	grab	qtz vein	5% pyrite	0.002
7046	grab	qtz vein	1-3% pyrite	0.002
7047	grab	qtz vein	3% pyrite	0.039
7048	grab	altered andesite	ep,qtz,carb,tr cpy,py	Nil
7049	grab	altered andesite	1% pyrite	0.002
7050	chip	2'qtz vein	tr-2% pyrite	Nil
7051	grab	altered andesite,	carb, tr-5% pyrite	Nil
7052	dump grab	qtz vein,	3% pyrite	0.004
7053	dump grab	altered andesite	5% pyrite	0.004
7054	dump grab	qtz vein	2-5% pyrite	0.012
7055	dump grab	qtz vein	2-5% pyrite	0.002
7056	grab	qtz vein	5-10% pyrite	0.004
7057	dump grab	qtz vein	5% pyrite	0.002
7058	grab	altered andesite	10% pyrite,carb,hem	0.002
7059	grab	altered andesite	1-3% pyrite	0.002
7060	grab	qtz vein,alt'r and.	carb, 5%pyrite	0.003
7061	grab	qtz vein,alt'r and.	carb, 5% pyrite	0.005
7062	grab	qtz vein,alt'r and.	carb. 5% pyrite	0.002
7063	grab	qtz vein,alt'r and.	carb. 5% pyrite	0.002
7064	chip	5'qtz vein alt'r and.	hem,tr-3%pyrite	0.004
7065	chip	5'qtz vein,alt'r and.	hem,tr-3% pyrite	0.002
7066	chip	6"qtz vein, alt'r and.	hem, 5% pyrite	0.002
7067	chip	5'qtz vein	tr-5% pyrite,hem,	Nil
7068	chip	5'qtz vein alt'r and.	tr-5% pyrite, hem	Nil
7069	chip	5'qtz vein alt'r and.	tr-5% pyrite, hem	Nil
7070	chip	6'qtz vein alt'r and.	tr-5% pyrite, hem	Nil
7071	chip	6"qtz strgs,alt.fsp.porph.		Nil

7072	chip	8"qtz vein	ep. tr pyrite	Nil
7073	chip	10'qtz vein	5% pyrite, spec.hem	Nil
7074	chip	10'qtz vein,alt'd	5% pyrite, spec hem,	0.004
7075	grab	altered andesite	5-10% pyrite	0.002
7076	grab	qtz vein	1-5% pyrite	0.002
7077	grab	qtz vein	1-5% pyrite	0.002
7078	grab	qtz vein	1-5% pyrite	0.002
7079	grab	qtz vein	5% pyrite	0.002
7080	grab	qtz vein	5% pyrite	0.002
7081	grab	qtz vein	5% pyrite	0.002
7082	grab	qtz vein	1% pyrite,cpy,	0.002
7083	chip	5'qtz vein	1% pyrite	0.002
7084	grab	qtz vein	5% pyrite	0.002
7085	chip	1'qtz vein	10% pyrite	0.004
7086	chip	6'qtz vein	10% pyrite	0.002
7087	grab	qtz vein	5% pyrite	0.002
7088	grab	malachite,chalco		0.007
7089	chip	1'qtz vein	tr-3% pyrite	0.003
7090	grab	qtz vein	10% pyrite	0.005
7091	dump grab	qtz vein	15-20% pyrite	0.005
7092	chip	1'qtz vein	cpy,3-5% pyrite	0.002
7093	dump grab	qtz vein	10% pyrite	0.005
7094	dump grab	qtz vein	5%cpy,30% pyrite	0.042
7095	grab	qtz,alt'd and.	5% pyrite	0.007
7096	grab	fsp.porph.qtz strgs.	2% pyrite	0.002
7097	grab	qtz vein alt'n	5% pyrite	0.014
7098	grab	qtz vein,alt'n	5%pyrite,1% cpy	0.058

7099	grab	qtz vein,alt'n	5% pyrite	0.010
7100	grab	qtz vein	5% pyrite	0.005
7101	grab	qtz vein	5% pyrite	0.002
7102	grab	qtz vein	5% pyrite	0.002
7103	grab	qtz vein	mal, cpy	0.002
7104	grab	qtz vein	5% pyrite, alt'n	0.002
7105	grab	qtz vein	5% pyrite	0.003
7106	grab	qtz vein	5% pyrite	0.011
7107	grab	qtz vein	5% pyrite	0.004
7108	grab	qtz vein	5% pyrite	0.014
7109	dump grab	magnetite,no qtz	50% mag, 10%cpy	0.052
7110	dump grab	qtz vein,alt'r and.	8%pyrite 2%cpy	0.008
7111 0kj.007	grab	qtz vein,alt'r and.	5% pyrite,2%cpy	
7112	grab	alt'r fsp porph.	tr-1%cpy,2%pyrite	0.002
7113	dump grab	qtz vein	10% pyrite,1%cpy	0.005
7114	grab	qtz strg	1%cpy	161ppb
7244	grab	alt'r andesite	fuchite	319ppb
7245	grab	altered andesite	2% pyrite	93ppb
7246	grab	qtz vein	no pyrite	nil
7247	grab	qtz vein,alt'r and.	1%cpy, 3%pyrite	1646ppb
7248	grab	qtz vein	tr pyrite	96ppb
7264	grab	qtz vein	3% pyrite	137ppb

  
 S. A. Gamble  
 January 21, 1991

APPENDIX A.





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# Swastika Laboratories

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Assaying - Consulting - Representation

Page 2 of 2

## Assay Certificate

0W-1495-RA1

Company: **SUE GAMBLE/B.G. COOK**

Date: OCT-09-90

Project:

Copy 1. 70 FIRST STREET KIRKLAND LAKE, ONT.

Attn:

We hereby certify the following Assay of 41 CORE samples submitted OCT-04-90 by .

Sample Number	Au oz/ton	Au check oz/ton
7231	Nil	
7232	0.002	
7233	Nil	
7234	0.002	
7235	Nil	
7238	Nil	Nil
7239	Nil	
7240	Nil	
7241	Nil	
7242	Nil	
7243	Nil	

Au was determined using 1 AT fusions

Certified by \_\_\_\_\_

G. Lebel / Manager

P.O. Box 10, Swastika, Ontario P0K 1T0

Telephone (705) 642-3244

FAX (705) 642-3300



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# Swastika Laboratories

A Division of Assayers Corporation Ltd.

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Page 1 of 2

## Assay Certificate

0W-1495-RA1

Company: **SUE GAMBLE/B.G. COOK**

Date: OCT-09-90

Project:

Copy 1. 70 FIRST STREET KIRKLAND LAKE, ONT.

Attn:


We hereby certify the following Assay of 41 CORE samples submitted OCT-04-90 by .

(See UP90-325)

Sample Number	Au oz/ton	Au check oz/ton
7201	Nil	
7202	Nil	Nil
7203	Nil	
7204	Nil	
7205	Nil	
7206	Nil	
7207	Nil	
7208	0.002	
7209	0.002	
7210	Nil	
7211	0.005	
7212	0.002	
7213	0.002	
7214	0.002	Nil
7215	0.002	
7216	Nil	
7217	Nil	
7218	0.002	
7219	Nil	
7220	0.002	
7221	Nil	
7222	Nil	
7223	Nil	
7224	0.003	
7225	0.002	0.002
7226	Nil	
7227	Nil	
7228	0.002	
7229	Nil	
7230	Nil	

Au was determined using 1 AT fusions

Certified by

  
G. Lebel / Manager

P.O. Box 10, Swastika, Ontario P0K 1T0  
Telephone (705) 642-3244. FAX (705) 642-3300



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## Assay Certificate

0W-1628-RA1

Company: **GAMBLE/COOK**

Date: **OCT-29-90**

Project:

Copy 1. S.A. GAMBLE /B.G. COOK 70 FIRST ST K.L.

Attn:

We hereby certify the following Assay of 83 ROCK samples submitted OCT-22-90 by .

Sample Number	Au oz/ton	Au check oz/ton
7031	Nil	
7032	Nil	
7033	Nil	
7034	Nil	
7035	Nil	
7036	0.003	0.002
7037	Nil	
7038	Nil	
7039	Nil	
7040	Nil	
7041	Nil	
7042	0.002	
7043	0.003	
7044	0.002	
7045	0.002	
7046	0.002	
7047	0.022	0.039
7048	Nil	
7049	0.002	
7050	Nil	
7051	Nil	
7052	0.004	
7053	0.004	
7054	0.010	0.012
7055	0.002	
7056	0.004	
7057	0.002	
7058	0.002	
7059	0.002	
7060	0.003	

Certified by Donna Gardner



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Page 2 of 3

0W-1628-RA1

## Assay Certificate

Company: **GAMBLE/COOK**

Project:

Attn:

Date: **OCT-29-90**

Copy 1. S.A. GAMBLE /B.G. COOK 70 FIRST ST K.L.

We hereby certify the following Assay of 83 ROCK samples submitted OCT-22-90 by .

Sample Number	Au oz/ton	Au check oz/ton
7061	0.005	0.003
7062	0.002	
7063	0.002	
7064	0.004	
7065	0.002	
7066	0.002	
7067	Nil	
7068	Nil	
7069	Nil	
7070	Nil	
7071	Nil	
7072	Nil	
7073	Nil	
7074	0.002	0.003
7075	0.002	
7076	0.002	
7077	0.002	
7078	0.002	
7079	0.002	
7080	0.002	
7081	0.002	
7082	0.002	
7083	0.002	
7084	0.002	
7085	0.004	
7086	0.002	
7087	0.002	
7088	0.006	0.007
7089	0.003	
7090	0.005	

Certified by Donna Gardner



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## Assay Certificate

0W-1628-RA1

Company: **GAMBLE/COOK**

Date: **OCT-29-90**

Project:

Copy 1. S.A. GAMBLE/B.G. COOK 70 FIRST ST K.L.

Attn:

We hereby certify the following Assay of 83 ROCK samples submitted OCT-22-90 by .

Sample Number	Au oz/ton	Au check oz/ton
7091	0.005	
7092	0.002	
7093	0.005	
7094	0.042	0.042
7095	0.007	
7096	0.002	
7097	0.014	
7098	0.053	0.058
7099	0.010	
7100	0.005	
7101	0.002	
7102	0.002	
7103	0.002	
7104	0.002	
7105	0.003	
7106	0.011	
7107	0.004	
7108	0.014	
7109	0.045	0.052
7110	0.008	
7111	0.007	
7112	0.002	
7113	0.005	

Certified by *Dorinda Anderson*



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## Geochemical Analysis Certificate

0W-1822-RG1

Company: **GAMBLE & COOK**

Date: NOV-23-90

Project:

Copy 1. 70 FIRST ST KIRKLAND LAKE P2N 1N3

Attn:

We hereby certify the following Geochemical Analysis of 7 ROCK samples submitted NOV-21-90 by .

Sample Number	Au ppb	Au check ppb
7114	161	
7244	319	
7245	93	
7246	N11	
7247	1587	1646
7248	96	
7264	137	123

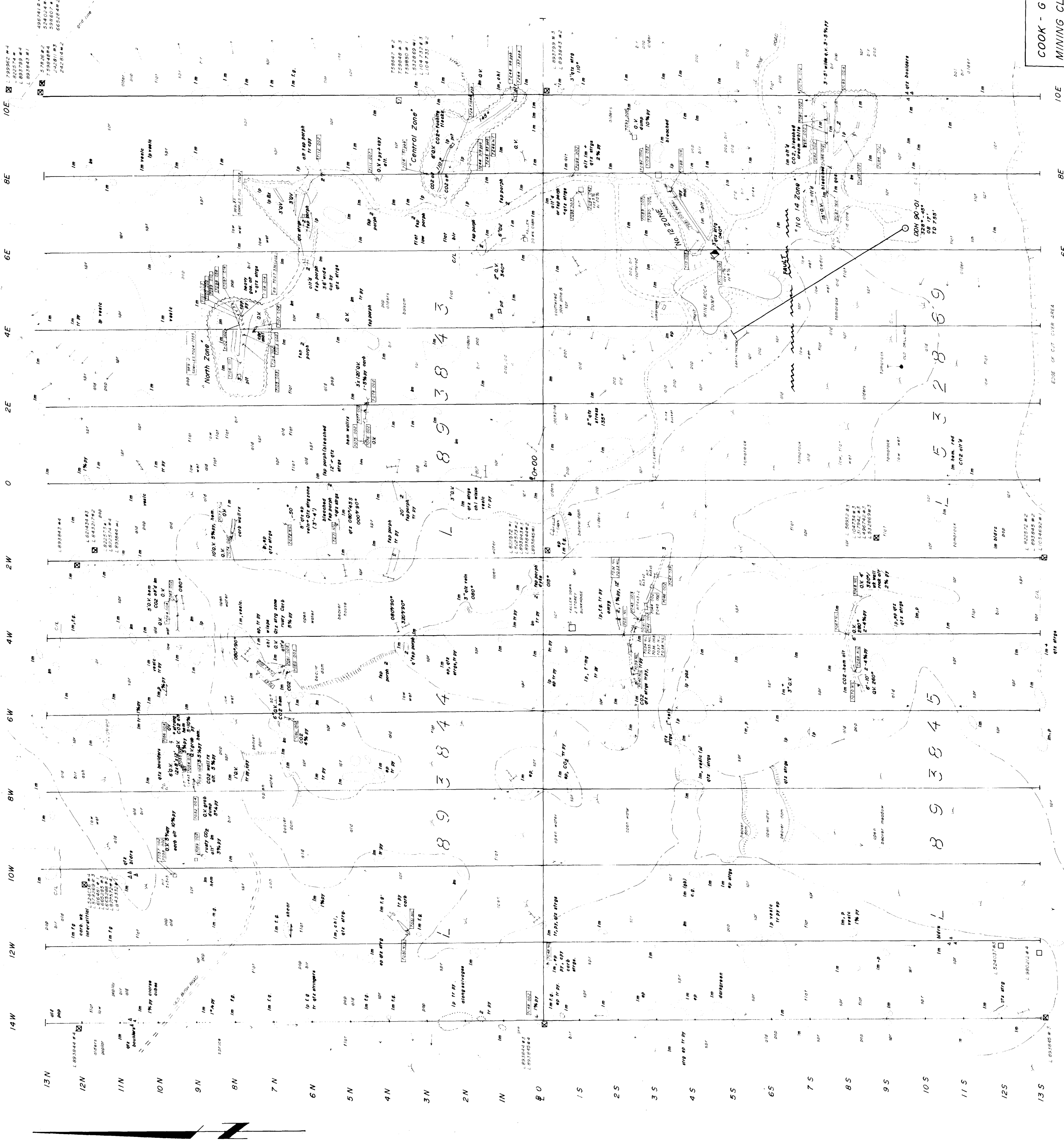
Certified by Donna Gardner

P.O. Box 10, Swastika, Ontario P0K 1T0

Telephone (705) 642-3244

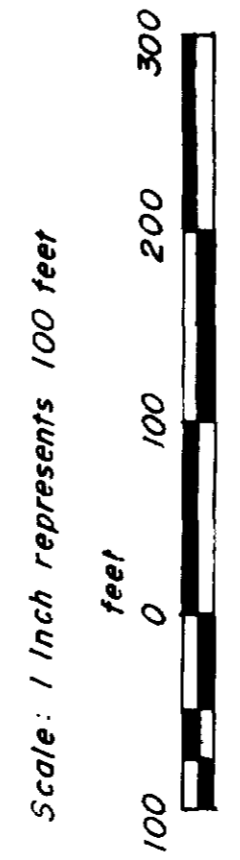
FAX (705) 642-3300

COOK - GAMBLE PROPERTY  
 MINING CLAIMS L 532869,  
 L 893843, L 893844, L 893845  
 CATHARINE TOWNSHIP



**LEGEND**  
**LITHOLOGIES**  
 3 QUARTZ VEIN  
 2 FELDSPAR PORPHYRY  
 1 ANDESITE SEQUENCE  
 m massive  
 p pillow, p Br pillow breccia  
 fp feldspar porphyritic

**MINERALIZATION & ALTERATION**  
 carb carbonized  
 chl chloritized  
 py pyritized  
 ep epidote  
 cpy chalcopyrite  
 hem hematite  
 mal malachite



**SYMBOLS**

- outcrop
- strike and dip
- foliation strike and dip
- fractures strike and dip
- road
- swamp
- claim post
- shaft
- french
- stripped areas
- diamond drill hole
- sample location (all samples grab)
- assay in oss/ton
- spruce
- birch
- alder
- poplar
- down slope
- boulders

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 S.A. SUE/GAMBLE  
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