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## PIPER 1&2 AND DASH 1&2 CLAIMS

## THE PIPER DASH PROPERTY

Trapper Lake Area, British Columbia

**Atlin Mining Division** 

N.T.S. 104K/7&10

Latitude: 58°30'N; Longitude: 132°36.6'W

for

Goodgold Resources Ltd. 1100 - 808 W. Hastings St. Vancouver, B.C.

by

Azimuth Geological Incorporated LOGICAL BRANCH 205 - 470 Granville SLEULOGICAL BRANCH Vancouver B.C. ASSESSMENT REPORT



Robert M. Cann, M.Sc., P.Geo. Jim Lehtinen, B.Sc.

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#### SUMMARY

The Piper Dash property comprises four contiguous claims totalling 80 units and is located in northwestern British Columbia, approximately 105 km northwest of Telegraph Creek and 38 km north-northwest of the Golden Bear gold mine. Access is by float plane and/or helicopter.

Claims which largely cover low relief swampy ground, and overlie Upper Triassic Stuhini Group volcanics which are disconformably overlain by Lower or Middle Jurassic Takwahoni Formation sediments. These rocks are folded into a syncline with the axis bisecting the property northwest to southeast.

Current work consisited of reconnaissance soil sampling (78 samples over 6.8 km), prospecting and rock sampling (2 samples) and silt sampling (6 samples). Four soil and two silt samples located a 400m wide zone of arsenic and zinc anomalies. Source of the anomalies is unkown owing to the lack of outcrop in the area. Single station soil anomalies from the current program indicate numerous arsenic anomalies and weak zinc and copper anomalies in the areas surveyed.

Further work should consist of detailed soil sampling, prospecting and mapping on the west side of the Dash 1 claim to evaluate the anomalies encountered.

## INTRODUCTION

At the request of Prime Equities Inc. (on behalf of Goodgold Resources Ltd.) Azimuth Geological Inc. was contracted to evaluate the Piper Dash property using geological and geochemical techniques. The property is located in northwestern British Columbia, 38 km northwest of the Golden Bear mine, in an under-explored but geologically attractive area.

Current work was aimed at developing an understanding of the geological setting, at locating and evaluating any mineralization and at developing potential drill targets.

## LOCATION, ACCESS and PHYSIOGRAPHY

The Piper Dash claim group is located in the extreme northwest corner of British Columbia (Figure 1), 1200 km northwest of Vancouver and 270 km south-southeast of Whitehorse, Yukon Territory (NTS: 104K/7&10). Closest supply towns are Telegraph Creek, 105 km to the southeast; Dease Lake, 150 km to the east; and Juneau, Alaska, 105 km to the west-southwest.

Access to the claim area is possible by float-equipped aircraft to Little Trapper Lake (located on the property), Trapper Lake (3 km west) or to Tatsamenie Lake (18 km southeast). Airstrips for conventional aircraft are located at Tatsamenie Lake, Muddy Lake (38 km southeast) and Tulsequah (57 km west-northwest). Final access would be by helicopter. A private road provides access from Telegraph Creek to the Golden Bear mine-site at Muddy Lake and is available for public use by prior arrangement with Golden Bear Operating Company.

Physiographically, the claims are located in the Tahltan Highland, a moderately rugged transitional zone between the Stikine Plateau and the eastern ranges of the Coast Mountains. The property is dominated by low-relief, poorly drained swampy ground surrounding the northern portion of Little Trapper Lake and Kowatua Creek. Elevations rise on the extreme west side of the property to a maximum of 1240m and range to a low of 720m on the east side of the Piper claims.

Vegetation on the property varies from alder, willow, swamp spruce, pine and fir as well as typical sub-alpine vegetation on the west.

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## **CLAIM STATUS**

The Piper Dash property consists of four contiguous modified grid claims totalling 80 units (Figure 2) located in the Atlin Mining Division. Legal Corner Posts were not located in the field during the course of the 1991 program. Public records indicate all claims are owned by Goodgold Resources Ltd.

Current claim data as shown in public records is compiled below.

#### Table 1. Claim data.

Claim Name	Record Number	Units	Expiry Date <sup>1</sup>
Piper 1	4563	20	April 19, 1994
Piper 2	4564	20	April 19, 1994
Dash 1	4565	20	April 20, 1994
Dash 2	4566	20	April 20, 1994

1: Assuming acceptance of current submission.



#### HISTORY

Although no record remains, it is likely that the general area of the Piper Dash property was prospected in the 1920's and 1930's following discovery of the Tulsequah Chief and Polaris Taku deposits, 63 km to the northwest.

During 1988 the Federal and Provincial governments conducted a regional geochemical silt survey which covered mapsheet 104K. The three samples taken from creeks draining the property returned low values in all elements. Regional geochemical survey sample locations are shown on Figure 4.

The property was staked in 1991 as the Piper 1&2 and Dash 1&2 claims and was acquired by Goodgold Resources Ltd.

## **REGIONAL GEOLOGY**

The Tulsequah map-area was most recently mapped by Souther (1971). Regional geology in the Tatsamenie Lake-Trapper Lake area is shown in Figure 3. Oldest rocks in the area are strongly deformed and regionally metamorphosed Permian and Lower Triassic metasediments and metavolcanics (Units 3 and 4) of the Stikine Assemblage (Monger, 1980) which are intruded by Lower or Middle Triassic foliated quartz diorite (Unit 6). These older rocks appear to be restricted to an area between Trapper and Tatsamenie Lakes.

A major regional unconformity separates older rocks from less deformed Upper Triassic and younger strata. Most widespread of the younger strata are Upper Triassic Stuhini Group basic volcanics and related sediments (Units 7 and 8). In the area of interest these rocks form a southeast-trending syncline enclosing a core of Lower and Middle Jurassic Takwahoni Formation (Laberge Group) sediments and overlying Upper Cretaceous to Tertiary felsic volcanics and related sub-volcanic intrusives of the Sloko Group (Units 11, 14 to 16). According to Souther and current geological mapping, the Piper Dash property overlies the axis of the syncline described above with Takwahoni sediments (forming the core of the syncline) underlain by Stuhini Group volcanics.

In the northeast corner of the map-area, Upper Triassic limestone (Sinwa Formation: Unit 9) and Lower Jurassic sediments of the Inklin Formation (Unit 10) have been thrust southwestward along the King Salmon Fault to form the Atlin Horst.

Flat-lying Late Tertiary to Pleistocene volcanics (Units 17 and 18) overlie all units along the east margin of the map-area.

Three structural events have been documented in the area (Schroeter, 1986; Oliver and Hodgson, 1990). The oldest mid-Triassic event is typically represented by tight folds with north-trending axial surfaces. Mid-Jurassic deformation resulted from southwest-verging thrust faults which produced broad northwest-trending folds. Youngest structures are Eocene extension faults of apparent random orientation.



Mineralization in the Tulsequah area is dominated by volcanogenic(?) massive sulphide deposits in the Tulsequah district, 60 km west-northwest of the Surefate property, and by shear-hosted precious metal mineralization at and near the Golden Bear deposit. Copper-lead-zinc-gold-silver mineralization at Tulsequah Chief, Big Bull, and Ericksen-Ashby is associated with a contact between Permian felsic pyroclastic rocks and underlying massive andesitic flows (Gunning, 1988; Nelson and Payne, 1983). Most recent (1989) reserves for Tulsequah Chief are given as 5.8 Mt of 1.55% Cu, 1.22% Pb, 6.81% Zn, 2.74 g/t Au, 109.4 g/t Ag. Recent exploration by Cominco Ltd. and Redfern Resources Ltd. is expected to boost this reserve. Across the Tulsequah River at the nearby Polaris Taku property, Suntac Minerals Corporation report probable plus possible reserves of 803,765 tonnes grading 16.1 g/t Au (March 21, 1990 News Release). Mineralization occurs in an arsenopyrite-bearing quartz-carbonate shear zone cutting Permian(?) sediments and tuffs. Grade and geological setting suggest similarities with the Golden Bear deposit.

The Golden Bear deposit, located 38 km southeast of Piper Dash (Figure 3), is being actively mined by Chevron Minerals Ltd. and North American Metals Corp. (Homestake Mining Company) who report (1990 Annual Report) proven plus probable reserves (before mining) of 569,453 tonnes grading 17.60 g/t gold. Mineralization at Golden Bear consists of pyrite-arsenopyrite-scorodite-native gold within a persistent quartz-carbonate altered shear cutting Permian to Lower Triassic(?) limestone and metasediments.

The Thorn property, located 10 km northwest of Piper Dash (Figure 3), is underlain by Eocene Sloko felsic volcanics intruded by a small quartz-feldspar-porphyry stock (Woodcock, 1987). Gold and silver are associated with both linear, east-west trending, pyrite-arsenopyrite-tetrahedrite-bearing silicified zones and with pods and lenses of pyrite-tetrahedrite-enargite. The property was drilled in 1986 by American Reserve Mining Corporation.

#### 1991 WORK PROGRAM

Current work was conducted between June 30 and July 28, 1991 by geologists L. Lyons and W. Taylor with assistance from other personnel. Field work was supported from common camp facilities at Trapper Lake (4 km southwest of Piper Dash) where a contract Bell 206B helicopter supplied by Trans North Air was available for claim access.

Field work consisted of soil sampling at 100m or 25m station intervals (6.8 km of line; 78 samples), 1:5,000 scale mapping and prospecting. During mapping, samples of altered and mineralized outcrop were taken (2 samples). Silt samples were collected where conditions were suitable (6 samples).

## **PROPERTY GEOLOGY**

Current mapping at 1:5,000 scale (Figure 4) was completed by Lyons and Taylor in June and July 1991 using airphotos and topography for control. Mapping generally corroborated regional mapping by Souther (1971). Mapping by Souther indicates a syncline with axis bisecting the property from northwest to southeast. On the southwest corner of the Dash 1 claim, Stuhini Group volcanic flows and volcaniclastic rocks and Takwahoni sediments were mapped during the course of the 1991 program. A fault(?)/contact zone in the southwest corner of the Dash 1 claim strikes 150° and appears to be the northern extension of a fault zone located on the northeast side of Trapper Lake. This fault appears in carbonate altered and brecciated sediments and disrupts the bedding of the sediments locally. Insufficient structural information did not support or disprove the existence of the regional syncline. Two major map units were encountered during the course of mapping and are described below. Bedrock mapping was hindered over large areas by the low-lying swampy ground covering much of the property.

#### Lithologies

#### 4. Volcanic/Volcaniclastic

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Volcanic and volcaniclastic rocks are exposed over a 1.2 square kilometre area in the south section of the Dash 1 claim. The volcanic flows are relatively unaltered, featureless feldspar porphyry and volcaniclastic rocks varying from ash through lapilli tuff to agglomerate. This

volcanic package of rocks has been interpreted by Souther(1971) to be Upper Triassic Stuhini Group.

# 7. Wacke/Siltstone/Conglomerate:

Rocks interpreted to be Lower and Middle Jurassic Takwahoni Formation sediments are exposed on the Dash 1&2 claims in two areas of limited exposure. Rock types include wacke, siltstone, conglomerate and black, bedded, cherty material. A large exposure of sedimentary rocks located on Dash 1 is carbonate altered, commonly brecciated and rusty weathering. Alteration, brecciation and minor faults may be related to the fault(?) contact defined immediately to the south along the northeast shore of Trapper Lake. A single outcrop of conglomerate on central Dash 2 was enconterd during soil sampling. Well bedded siltstone/sandstone was encountered in Kowatua Creek to the north on Dash 2.

## MINERALIZATION AND ROCK GEOCHEMISTRY

Two rock samples were taken of mineralized or altered outcrop encountered while prospecting or soil sampling. Sample 18899 was taken from a 0.5m, dark matrix, siliceous and carbonate altered breccia zone in carbonate altered sediments near the fault(?)/contact between the sedimentary and volcanic rocks. The breccia zone is very weakly anomalous in silver and arsenic at 0.8ppm and 113ppm and is oriented 000/45°E.

The second sample (No. 18900), located 80m north and uphill from soil Line 1+00E, station 7+00N is a multidirectional fracture zone with minor malachite and azurite hosted in altered sediments. This sample is anomalous in copper(3020ppm), arsenic(419ppm) and weakly anomalous in zinc(496ppm), lead(166ppm) and silver(1.6ppm).

## SOIL AND SILT GEOCHEMISTRY

The soil sampling program was restricted to the west side of the property in the area between Little Trapper Lake and Trapper Lake and extending north-northeast along the east flank of the slopes bounding the west side of the Dash 1&2 claims. All soil samples were taken at 100m spacing with the exception of line 1+00E, from 6+00N to 7+75N which was sampled at 25m spacing below an area of weak mineralization and alteration.

Reconnaissance soil lines were sampled at 100m intervals by sampling the "B" horizon where possible. A total of 78 samples were taken from pits excavated to 35cm in depth, placed in Kraft bags and shipped to Min-En Labs in Vancouver for 31 element ICP and geochemical gold analysis. Analytical techniques are included in Appendix E.

A total of 6 silt samples were collected, where conditions were suitable, during the course of the soil sampling, prospecting and mapping programs. Samples were placed in Kraft bags, shipped to Min-En Labs and analysed in the same fashion as the soil samples. Analytical techniques are included in Appendix E.

Gold and silver geochemical results for all soil and silt samples are shown on Figure 4 along with anomalous copper, lead, zinc and arsenic values. Analytical results for all soil and silt samples are included in Appendix D.

A multiple station soil and silt anomaly along Line 880 from station 6+00N to 10+00N is moderate to strongly anomalous in zinc and arsenic. Values from soils for arsenic range from 128ppm to 530ppm and for zinc from 127 to 656ppm. Coincident with these soil

anomalies are silt anomalies at stations 6+00N and 7+50N. Silt sample at Line 880, station 6+00N returned values of 253ppm zinc and 133ppm arsenic. The highest values obtained on the property is from silt sample Line 880, 7+50N which returned 2988ppm zinc, 1366ppm arsenic, 394ppm lead, 33.3ppm cadmium and 1.5ppm silver. Two additional soil anomalies occur along Line 880 at stations 2+00N and 3+00N where 97ppm and 117ppm arsenic was returned. In addition 224ppm zinc was returned from silt location Line 880, 1+84N. No follow-up of this soil line was conducted and source of the anomalies is unknown.

An area of copper-arsenic soil anomalies was encounterd below known copper mineralization centred on rock sample 18900, a breccia zone with malachite and azurite in altered sediments. Line 1+00 was sampled at 25m intervals from 6+00N to 7+75N in an effort to follow-up mineralization encountered in outcrop. Station 6+25N returned a weak gold-silver anomaly with 60ppb gold, 1.3ppm silver, 307ppm copper and 190ppm arsenic. Station 6+00N was moderately anomalous at 190ppm zinc and 232ppm copper. Geochemical values obtained from soil geochemistry appear to indicate the source of the anomalies is the breccia zones encountered in the altered sediments upslope of the soil line.

Single station arsenic  $\pm zinc \pm copper$  anomalies occur along Lines JM13, WT and LL 13. Values range up to a maximum 205ppm arsenic, 371ppm zinc and 233ppm copper. A single gold anomaly of 95ppb occurs at Line LL 13, station 5+00S. No source for any of the anomalies was determined.

## CONCLUSIONS

The Piper Dash property is largely covered by low relief swampy ground with outcrop restricted to the west side. Regional mapping by Souther(1971) indicates a syncline of Upper Triassic Stuhini Group volcanic rocks enclosing a core of Takwahoni Formation sediments. The axis of the syncline bisects the property from northwest to southeast. Mapping and prospecting suggests that the contact between the volcanic and sediments may be fault controlled. Arsenic, zinc and copper mineralization occurs in fractured, brecciated, carbonate altered sediments near the inferred faulted(?) contact which appears to strike south-southeast on the southwest side of Dash 1.

Widely spaced, reconnaissance soil sampling located a zone of anomalous arsenic-zinc values which was not followed up. Owing to the wide spacing and multiple soil anomalies along the soil line follow up should be accomplished by detailed soil sampling, prospecting and geological mapping.

Single station arsenic, zinc, copper and a weak gold anomaly are also worthy of follow up owing to the broad spacing of sample locations.

#### REFERENCES

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- Woodcock, J.R., 1987, Drilling Report on the Thorn Property, B.C.D.M. Assessment Report 15,897.

## CERTIFICATE

I, Robert M. Cann, of 1260 Silverwood Crescent, North Vancouver, British Columbia hereby certify that:

- 1) I am a consulting geologist with offices at 205-470 Granville Street, Vancouver, B.C.
- 2) I hold a degree of Bachelor of Science (Honours) in Geology from the University of British Columbia, 1976.
- 3) I hold a degree of Master of Science in Economic Geology from the University of British Columbia, 1979.
- 4) I have practised my profession continuously since 1979.
- 5) I am a Fellow of the Geological Association of Canada.
- 6) I am a registered member of The Association of Professional Engineers and Geoscientists of B.C.
- 7) This report is based on work done under my direct supervision.

Dated on this 14th day of February, 1992 at Vancouver, B.C.

Robert M. Cann, M.Sc., P. Geo.

## CERTIFICATE

I, Jim Lehtinen, of the City of Vancouver, British Columbia hereby certify that:

- 1) I am a consulting geologist residing at #302 880 West 71st Avenue, Vancouver, B.C.
- 2) I hold a degree of Bachelor of Science in Geology from the University of British Columbia, 1984.
- 3) I have practised my profession continuously since 1984.
- 4) I am a Fellow of the Geological Association of Canada.
- 5) This report is based on work done under my direct supervision.

Dated on this 14th day of February, 1992 at Vancouver, B.C.	
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Appendix A

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# COSTS INCURRED

## COSTS INCURRED - JUNE 30 TO JULY 28

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Mobilization		\$ 1,466.41
Supervision - R. M. Cann/G. Crowe	1.0 @ \$400/day	400.00
Field superv L. Haynes/J. Lehtinen	1.0 @ \$375/day	375.00
Sr. geol L. Lyons	3.0 @ \$350/day	1,050.00
Sr. geol W. Taylor	2.0 @ \$350/day	700.00
Ass't - J. McGregor	2.0 @ \$225/day	450.00
Ass't - H. Culbert	2.0 @ \$225/day	450.00
Food and accom. at Trapper Lk. camp	11.0 @ \$120/manday	1,320.00
Consumable supplies & equip. rental	11.0 @ \$25/manday	275.00
Portable radio rentals		50.00
Helicopter (Trans North)	1.12@ \$750/hr	840.00
Analytical		
Soils (Au+31 element ICP)	78 @ \$12	936.00
Silts (Au+31 element ICP)	6 @ \$12	72.00
Rocks (Au+31 element ICP)	2 @ \$17	34.00
Sample shipment		140.00
Communications		993.00
Maps and Air photos		303.00
Camp Construction - Jempland (propor	tional share)	2,650.00
Report		
Drafting		500.00
Copying/Reproductions		550.00
Writing		 2,500.00
TOTAL		\$ 16,054.41

Appendix B

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# **ROCK SAMPLE DESCRIPTIONS**

SAMPLE	NO.	CLAIM	WIDTH metres	UTM northing	UTM easting	ELEVATION metres	DESCRIPTION
18899		DASH 1	GRAB 0.5m	6486060	637050		Breccia zone in carbonate altered sediments. Approx. 0.5m width 000/45E. Limonitic siliceous zone with dark matrix and spotty pyrite.
18900		DASH 1	GRAB	6486060	637050		Breccia zone in altered sediments(?). Malachite-azurite stain.

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Appendix C

# **ROCK ANALYTICAL RESULTS**

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COMP: AZIMUTH GEOLOGICAL INC.

PROJ: PIPER DASH GGRDD

#### MIN-EN LABS --- ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7N 1T2 (604)980-5814 OR (604)988-4524

FILE NO: 15-0270-RJ4 DATE: 91/08/06

ATTN: GREG CR	OWE/JER	RY BL	ACKWE	LL								(604)	980-58	314 0	r (604	)988-4	524												* R	оск *	(	ACT:F3	51)
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18899 18900	.8 1.6	1700 4820	113 419	13 10	217 35	.4 .6	2	74720 23540	.1 1.9	14 21	68 3020	51000 58560	900 2300	1	39960 13880	4365 2861	1	150 90	1	240 850	37 166	27 839	66 24	1	12 17	38.1 76.5	110 496	1	1 1	1 3	45 38	2	
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Appendix D

# SOIL AND SILT ANALYTICAL RESULTS

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COMP: AZIMUTH GEOLOGICAL

PROJ: PIPER DASH P.O. GGRDD ATTN: G.CROWE/J.BLACKWELL

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#### MIN-EN LABS - ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2 (604)980-5814 OR (604)988-4524 FILE NO: 1S-0352-SJ1 DATE: 91/08/12

\* SILT \* (ACT:F31)

SAMPLE NUMBER	AG AL PPM PPM	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA PPN	CD PPM	CO PPM I	CU PPM	FE PPM	K PPM	LI PPM	MG PPM	MN PPM	MO PPM	NA PP <b>m</b>	NI P PPM PPM	PB PPM	SB PPM	SR PPM	TH PPM	TI PPM	PPI	/ ZN 4 PPM	GA PPM	SN PPM	W PPM F	CR /	W-WET PPB
13 L880 1+84N SILT	.2 5140	144	24	217	.1	2	10480	.1	25	118	64500	1230	10	5870	1315	1	60	7 670	65	17	25	1	134	105.0	5 224	1	1	1	11	5
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COMP: AZIMUTH GEOLOGICAL

#### PROJ: PIPER DASH P.O. GGRDD ATTN: G.CROWE/J.BLACKWELL

#### MIN-EN LABS - ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2 (604)980-5814 OR (604)988-4524 FILE NO: 1S-0352-SJ2 DATE: 91/08/12

\* SOIL \* (ACT:F31)

SAMPLE NUMBER	AG AL PPN PPN	AS PPM	B PPM	BA PPN	BE B	I CA M PPM	CD PPM	CO PPM P	CU	FE PPM	K PPM	LI PPM	MG PPM	MN PPM	MO NA PPN PPN	NI PPM	P PPN	PB PPM	SB PPM	SR PPM F	TH PPM	TI PPM	V PPN	ZN PPM	GA PPM	SN PPM I	W PPN I	CR A	U-WET PPB
LL 13 1+00S LL 13 2+00S LL 13 3+00S LL 13 4+00S LL 13 5+00S	2.1-17930 1.3 13560 .1 36780 .9 14250 1.1 14200	158 102 21 14 1	19 12 11 7 4	244 477 66 70 32	.3 .1 .1 .1 .1	2 4730 3 8260 6 3960 6 4430 3 4060	· .1 · .1 · .1 · .1	21 18 18 13 3	81 90 78 46 14	54790 53190 73640 50260 10340	1780 1980 970 960 510	18 12 25 4 2	6070 7510 10970 4030 1350	977 904 685 796 116	2 80 1 140 1 440 1 110 1 460	19 15 1 1	870 750 1060 1490 260	125 69 21 22 11	12 7 1 1	13 25 8 16 16	1 1 1 1 1 1	199 515 1260 1424 551	119.3 138.5 320.3 203.5 66.8	261 167 57 61 19	1 1 3 1 3	1 1 1 1	2 3 4 4 1	29 37 17 34 10	5 5 5 95-
LL 13 6+00S LL 13 7+00S LL 13 8+00S LL 13 9+00S LL 13 10+00S	.5 20700 .3 17490 .3 24300 .1 35080 .1 15250	4 13 8 20 20	5 5 4 7 4	123 59 194 474 111	.5 .3 .4 .3 .3	3 3420 2 4060 2 4540 2 5420 1 4870	.1 .1 .1 .1	37 1 11 15 24 1 14	67 37 65 40 67	40560 40120 43350 82640 48990	620 1100 640 1440 1210	8 17 17 29 18	2110 5790 6210 5900 5570	3288 376 909 1442 465	1 500 1 350 1 430 1 50 1 60	10 16 16 1 15	2670 840 770 700 910	45 18 23 18 17	1 1 1 4	13 12 16 10 12	1 1 1 1	235 407 520 59 117	73.6 101.4 127.1 197.8 116.5	75 123 80 82 131	1 1 2 1	1 1 1	23422	16 40 63 14 31	5 5 10 5
LL 13 11+00S LL 13 12+00S LL 13 13+00S LL 13 14+00S WT 13 1+00S	.7 13300 1.1 17690 .1 29550 .9 23000 1.0 14080	1 42 10 6	33632	83 175 322 113 91	.1 .1 .1 .1	2 5610 5 10150 6 8750 5 5530 3 4330	· .1 · .1 · .1 · .1 · .1	8 10 39 1 10 5	27 32 27 40 20	24860 28970 80200 27060 15400	980 850 740 790 550	8 14 32 9 3	4030 7710 5740 8300 2910	210 475 11171 286 123	1 100 1 150 1 690 1 140 1 130	9 19 14 26 8	400 430 2540 290 450	11 16 41 21 14	1 1 1 1 1	17 34 21 21 19	11111	594 1061 466 904 556	91.8 96.1 196.9 111.5 66.6	47 85 211 45 30	13143	1 1 1 1	24342	25 50 24 47 26	5 5 5 20
WT 13 2+00S WT 13 3+00S WT 13 4+00S WT 13 5+00S WT 13 6+00S	.3 19840 .8 14180 .1 14870 .3 20280 .1 12620	20 4 13 13	5 2 4 7 5	83 79 107 168 169	.1 .1 .1 .1 .1	4 5110 3 4280 2 3850 4 5540 1 5230	· .1 · .1 · .1 · .1 · .1	17 6 17 16 15	25 25 68 69 58	56610 28130 54510 51650 58520	1290 580 1240 1700 2380	17 2 12 16 9	6080 1860 2540 5990 1470	730 258 862 990 1059	1 360 1 490 1 530 1 570 1 310	1 2 1 14	630 390 810 1310 1000	15 16 16 20 15	1 1 1 4	16 16 10 16 7	1 1 1 1	989 707 360 548 96	141.5 106.0 151.6 112.7 70.9	69 38 68 76 51	2 2 1 2 1	1 1 1 1	3 2 2 3 1	22 22 15 36 10	5 5 5 5 5 5 5
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COMP: AZIMUTH GEOLOGICAL INC.

PROJ: PIPER DASH GGRDD

#### MIN-EN LABS - ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

ATTN: GREG CROWE/JERRY BLACKWELL

(604)980-5814 OR (604)988-4524

FILE NO: 1S-0270-SJ1 DATE: 91/08/07

\* SILT \* (ACT:F31)

SAMPLE	AG AL PPN PPN	AS	B PPM F	BA B PPM PP	E BI M PPM	CA PPN F	CD C PPM PP	O CU	FE PPN	K PPN	LI MG PPM PPM	MN PPM	MO NA PPM PPM	NI PPM	P PE PPM PPH	SB PPM	SR PPM F	TH T PPM PP	I V M PPN	ZN PPM	GA PPM	SN PPM P	W C PM PF	CR AU	I-WET PPB
L880 23+50N L880 18+50N L880 10+25N L880 7+50N L880 6+00N	.1 11270 .1 11110 .1 6510 1.5 5610 .2 8440	11 8 32 1366 133	13 1 11 7 7 6 5 1	91 . 263 . 222 . 530 . 174 .	8 1 7 1 6 1 3 1 5 1	7580 11080 12310 9320 33 7080	.1 1 .1 1 .1 1 5.3 1 .1 1	6 75 1 52 3 60 6 102 2 48	41000 27400 34260 41840 30180	1200 1730 1460 880 670	20 5730 19 5440 6 4100 5 3670 15 5310	633 798 464 1679 828	2 110 2 520 3 410 4 350 1 100	31 1 47 57 98 38	090 21 980 13 980 23 790 394 630 45	1 1 22 1	30 57 42 33 39	2 6 1 10 1 2 1 6 1 18	6 70.2 5 46.3 6 46.5 2 45.6 5 59.6	148 123 186 2988- 253	1 1 1 1	1 1 1 1 1 1	2 2 1 2 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2	25 22 20 29 26	5 5 5 10
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COMP: AZIMUTH GEOLOGICAL INC. PROJ: PIPER DASH GGRDD

#### MIN-EN LABS - ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 1S-0270-SJ2+3 DATE: 91/08/07

ATTN: GREG CROWE/JERRY BLACKWELL

(604)980-5814 OR (604)988-4524

\* SOIL \* (ACT:F31)

SAMPLE	AG	AL	AS	В	BA	BE	BI C	A CD	CO	CU	FE	ĸ	LI	MG	MN	MO	NA	NI	P	PB	SB	SR	TH	TI	v	ZN	GA	SN	W	CR A	U-WET
NUMBER	PPM	PPM	PPM	PPM	PPM	PPM	PPN PP	N PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	710	PPM	PPM	21	PM P	PM	PPM	PPM	PPM	PPN	PPN	PPM	PPB
L1+00E 7+75N L1+00E 7+50N L1+00E 7+25N L1+00E 7+00N	.1 10 .1 10 .1 10	880 040 830 800	2 2 18	0423	186 154 151	.3 .4 .2	1 2426 1 2133 1 1881	0.1	23 33 29 26	168 158 189	45270 71250 65010 60290	2640 3300 2950	10 9 11 5	13230 10270 5490	1829 1721 1964	1	60 60 380	20 1 1	820 1190 1000	14 15 20	10 7 19	51 36 53	11	35 1 43 1 89 1	73.5 60.1 08.7	90 86 92	1	1	4332	26 35 11	555
L1+00E 6+75N	.1 11	100 330	23	4	270	.4	1 1962	0.1	29	188	70000	3240	10	6180 4770	2192	1	<u> </u>	<u> </u>	1210	24	19	<u>38</u>	1	30 1	24.9	105	1	 1	2	25	10
L1+00E 6+25N L1+00E 6+00N L1+00E 5+00N L1+00E 5+00N L1+00E 4+00N	1.3 7 .2 8 .1 5 .1 11	760 340 750 660	190 92 1	1 1 1	199 131 300 495	.1 .2 .3 .5	1 1385 1 1915 1 1316 1 1310	0.1 0.1 0.1	95 57 30 24	307 232 139 220	76390 75990 39510 56780	1850 2230 2040 3070	22 21 1 5	4070 5710 2290 4310	2200 2578 2753 1826	1	50 50 380 460	1 1 4 8	1730 1930 1770 2330	104 56 29 13	28 20 6 12	38 37 28 29	1 1 1 1 1	16 21 96 1 02 1	54.7 63.9 101.1 172.0	80 85 59 96	1 1 1	1 1 1	1 1 2 3	8 8 14 22	60 - 30 5 5
L1+00E 3+00N L1+00E 2+00N L1+00E 1+00N L1+00E 0+00 L880 25+00N	.1 6 .1 8 .1 34 .1 12	440 730 130 910	7 3 1 19	1 1 1 1 1	82 176 528 276 163	.3 .2 .7 .1 7	1 491 1 720 2 1033 1 535 2 755	0.1 0.1 0.1 0.1	9 14 26 19 13	130 147 189 140 73	40140 37100 69360 71370 34620	2160 1610 4040 2770 1390	1 2 24 5 16	1010 2550 18940 2660 6340	202 475 1348 1646 576	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	430 380 380 60 190	4 12 26 1 24	1750 980 1780 2660 1020	6 9 7 11 13	8 3 1 10	14 27 32 17 36	1 11 14 11	92 107 163 151 179	135.5 19.9 217.0 244.1 81.1	69 41 115 125 91	1112	11111	22442	30 27 66 41 29	5 5 10 5
L880 24+00N L880 23+00N L880 23+00N L880 22+00N L880 21+00N L880 20+00N	.6 24 .1 17 .1 18 .1 23	660 200 800 180 830	14 14 4 17 13	1	342 283 116 240 203	.6 .2 .1 .9	3 1250 2 548 3 249 3 1242 2 404	0 .1 0 .1 0 .1 0 .1	9 12 11 14	71 46 41 79 56	28540 38530 47490 37530 54680	1090 1360 1380 1370 1950	30 10 6 36 18	6390 3470 3190 7250 7310	513 572 1753 1923 737	1	560 400 500 520 580	21 8 4 38 18	1830 960 2590 2350 2960	16 18 19 20 18	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	71 26 16 72 22	1315	544 546 580 525 590	83.9 124.3 143.5 96.1 138.0	126 125 81 195 117		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	33333	35 28 34 51 49	55555
L880 19+00N L880 18+00N L880 17+00N L880 16+00N L880 15+00N	.1 37 .1 18 .4 10 .1 15 .1 25	880 220 380 200 880	2 22 29 26 47	7 1 1 1	277 267 85 245 190	1.2 .4 .1 .3	2 409 2 508 2 156 1 367 4 549	0.1	16 13 8 11	50 51 59 84 50	42210 40210 38270 40960 47790	7930 2010 1440 2120 1590	31 16 1 2 31	9580 4960 1170 2140 5720	523 1126 192 532 890	1 2 1 1	600 570 990 810 670	4 39 14 30 59	640 1110 3120 5500 850	15 21 21 19 41	1 1 1 1	15 20 18 33 29	1 1 1 3 1 4 1 3 1 6	77 548 75 507 594	81.9 108.2 104.8 93.1 150.7	86 160 80 126 276	4 2 3 1 2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	23234	31 44 42 55 57	5 10 5 5 20
L880 14+00N L880 13+00N L880 12+00N L880 11+00N L880 10+00N	.1 25 .5 7 .8 17 .1 12 .1 7	750 720 540 930 470	45 9 55 52 128	1 1 1 1	218 212 119 143 227	.1 .2 .2 .4 .2	2 209 1 254 2 382 1 470 1 271	0 .1 0 .1 0 .1 0 .1 0 .1	16 4 11 13 16	48 48 51 61 68	57970 15090 41400 42930 41620	2080 1070 1450 2730 1510	16 1 5 4 1	6230 650 3720 3250 850	1225 75 872 451 395	1 1 1 4 1	690 2100 740 520 840	27 25 18 41 138	2590 1940 4030 1580 1730	31 16 35 40 16	1 1 1 2	22 21 24 18 14	1 3 1 1 1 5 1 1	57 167 570 126 69	161.0 28.6 110.7 87.9 49.6	168 46 104 198 127	3 1 2 1	1 1 1 1	5 1 3 2 2	69 27 45 35 42	10 5 5 30 5
L880 09+00N L880 08+00N L880 07+00N L880 05+00N L880 04+00N	.1 9 .1 17 .1 23 .6 13 1.3 9	230 7620 5030 5040 7380	530 265 46 19 17	21 13 16 7 5	209 256 365 267 334	.6 .7 .8 .5	1 203 2 159 1 230 1 615 1 1825	i0 .1 10 .1 10 .1	19 13 25 10	73 53 58 83 62	47900 46370 50420 32680 18090	1730 2090 3460 2090 1500	4 11 14 2 3	950 2770 4420 1210 2490	254 899 2093 789 338	1 6 1 1	1020 1790 1150 1770 1530	155 53 123 3 9	1070 1470 1890 710 890	60 44 27 18 22	5 1 1 1	9 7 11 18 56	1 1 1 1 1	85 104 75 21 12	75.6 114.1 99.6 79.9 34.6	645 656 268 75 68	-1111	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 3 4 1	41 55 66 16 12	5 10 5 20
L880 03+00N L880 02+00N L880 01+00N L880 00+00	.7 14 1.4 8 .1 12 .3 16	910 3340 2720 5440	117 97 41 13	7 8 8 10	236 236 119 278	.5 .6 .3 .6	1 333 1 511 1 320 1 1370	0 2.2 0 5.3 0 .1	2 16 5 13 1 13 27	72 104 78 192	52180 42880 54250 59250	2590 2600 2930 3170	11 3 5 12	1880 1270 1460 7010	769 806 265 1984	1 1 1	1460 2320 110 2010	4 9 1 1	370 2000 1160 1310	42 96 16 42	1 10 6 9	13 21 10 31	1 1 1 1	51 53 61 213	119.5 77.1 133.1 154.1	198 173 137 149	1 1 1	1 1 1	2 1 1 4	20 14 12 33	10 5 10
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COMP: AZIMUTH GEOLOGICAL PROJ. TRAPPER LAKE

#### MIN-EN LABS - ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE NO: 15-0267-5J2 DATE: 91/08/07

-	ATTN: G.CROWE/J.BLACK	WELL									(60	4)980-5	5814 C	)R (6	04)988	-4524											1	* SOI	LT	(ACT:F31)	1
	SAMPLE NUMBER	AG PPM	AL PPM	AS PPM	B PPM	BA PPM	BE PPM	B I PPM	CA PPM	CD PPM I	CO CU PPM PPM	FE PPN	K PPM	LI PPM	MG PPM	MN PPM	MO I PPM PI	NA I Pm pi	NI I P <b>m p</b> pi	> PB 4 PPM	SB PPM	SR PPM P	TH PM	TI PPM	V PPM	ZN PPM	GA PPM	SN PPM f	W C	AU-WET	
*	NO. 1 NO. 2 NO. 3 NO. 4 NO. 5																														
	L "WT" 16+00N L "WT" 15+00N I "WT" 14+00N	.2	22970 10290 33780	26 137 7	6	67 149 158	.4	3 1	4890 10550 8650	.1	12 57 15 101 24 233	35300 95830 47510	1110 1430 1080	15 2 17	9530 1700 8380	349 1217 3238	1 1	90 50 40	37 82 1 244 42 166	0 14 0 45 0 21	1 15 1	18 24 24	1 1 1	600 42 460	24.9	77 371 174	3 1 1	1 1 1	4 6	5 5 5 15 5 10	ĺ
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AZIMUTH GEOLOGICAL INC.

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#### MIN-EN LABS - ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2 (604)980-5814 OR (604)988-4524 FILE NO: 1S-0305-SJ2+3 DATE: 91/08/10

• SOIL \* (ACT:F31)

J:	TRAPPER	LAKE	ADL	TL
ATTN:	GREG CRO	WE/JEF	IRY	BLACKWELL

	SAMPLE NUMBER	AG PPM	AL PPN	AS PPM	B PPN	BA PPM	BE PPN 1	B1 PPN	CA (	CD PM P	co PN P	CU PPM	FE PPN	K PPH	LI PPM	MG PPM	MN PPM P	MO PN	NA I PPM PI	NI Pm pi	P PM P	PB S PM PI	B S M PP	R TH M PPM	T PPI	V I PPH	ZN PPM	GA PPN	SN PPM	W PPN	CR	AU-WET PPB
HCX/	L JN 00+00S L JN 01+00S L JN 02+00S L JN 03+00S L JN 04+00S	.2 1.1 .2 .3	13090 18440 12960 19850 2840	90 34 205 45 19	127655	178 255 92 83 263	.1 .6 .1 .1	2 4 4 13 1 2 5 4 1 26	670 770 660 900 540	.1 .1 .1 .1	21 1 14 1 11 16	17 78 53 62 51	62550 30450 49050 59500 23900	1540 2250 1060 880 210	8 16 3 18 3	4420 12820 1170 7710 2580	741 496 300 607 234	11711	110 350 60 130 890	3 8 25 12 1 9 16 30 4 12	50 20 70 20	43 37 35 22 14	0 1 1 4 5 1 1	1 1 4 1 9 1 6 1	21 41 14 82	145.2 75.5 148.8 158.7	148 103 131 90	1 3 1 2 1	1	23241	23 42 18 57	5 10 5 5
ורבר	L JN 05+00S L JN 06+00S L JN 07+00S L JN 07+00S L JN 08+00S L JN 09+00S	.2 .2 .3 .3 .7	19530 14710 19850 13210 2260	3 10 8 21 9	22325	209 223 343 146 118	.3 .3 .4 .3 .1	3 5 4 4 5 6 4 6 2 24	360 240 680 550 080	.1 .1 .1 .1 .1	6 11 13 8 2	13 15 15 11 20	21800 27250 28870 22140 6680	850 510 770 800 230	13 20 13 8 2	3050 4230 7460 4380 1770	202 669 450 524 518	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	70 110 170 170 960	5 3 9 8 22 13 13 4 4 6	10 20 00 80	11 18 16 22 10	1 1 1 1 1 2 1 2 1 8	5 1 5 1 2 1 2 1 3 1	14 40 62 46	63.1 80.0 86.6 80.6 80.6	59 112 111 123 123	24531		1 2 3 2 1	13 24 47 32 7	10 5 10 5 5
ſ	L JM 10+00S L JM 11+00S L JM 12+00S	.92	4490 17050 29180	12 20 193	435	160 129 137	.1 .2 .3	1 29 4 4 7 10	6505 70 680	.7 .1 .1	3 11 37 1	55 44 91	6780 37540 65770	430 1030 1100	2 6 18	2810 2590 9780	320 781 1531	1 1 1	950 420 650	12 12 2 14 21 12	70 50 30	11 30 27	1 7	4 1 5 1 4 1	9 51 113	12.9 100.5 125.8	78 98 110	132	1	1 2 3	12 23 51	555

Appendix E

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# ANALYTICAL PROCEDURES

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ANALYTICAL PROCEDURE REPORT FOR ASSESSMENT WORK: PROCEDURE FOR TRACE ELEMENT ICP

> Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Sr, Th, U, V, Zn, Ga, Sn, W, Cr

Samples are processed by Min-En Laboratories, at 705 West 15th Street, North Vancouver, employing the following procedures.

After drying the samples at 95 C, soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized on a ring mill pulverizer.

0.50 gram of the sample is digested for 2 hours with an aqua regia mixture. After cooling samples are diluted to standard volume.

The solutions are analyzed by computer operated Jarrall Ash 9000 ICAP or Jobin Yvon 70 Type II Inductively Coupled Plasma Spectrometers.



ANALYTICAL PRECEDURE REPORT FOR ASSESSMENT WORK: PROCEDURE FOR WET GOLD GEOCHEMICAL ANALYSIS

Samples are processed by Min-En Laboratories, at 705 West 15th Street, North Vancouver, employing the following procedures.

After drying the samples at 95 C, soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized on a ring mill pulverizer.

5.00 grams of sample is weighed into porcelain crucibles and cindered @ 800 C for 3 hours. Samples are then transferred to beakers and digested using aqua regia, diluted to volume and mixed.

Further oxidation and treatment of 75% of the above solution is then extracted for gold by Methyl Iso-butyl Ketone.

The MIBK solutions are analyzed on an atomic absorption spectrometer using a suitable standard set.

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PHONE: (604) 980-5814 (604) 988-4524 TELEX: VIA USA 7601067 FAX: (604) 980-9621



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	nd Lawround	LEGEN	ID	<i>.</i>	
		LITHOLO	<u>GIES</u> d TERTIARY	,	
	Probably	genetically	y related to eldspar porr	10 bhyry	
	12 Mediu biotite-	im to coal hornblenc	rse grained, le quartz mo	pink, onzonite	
	SLOKO G rhyolite, d pyroclasti	ROUP Lig lacite and c rocks al	ght green, pi trachyte flov nd derived s	urple and white ws, ediments	,
	JURASSI Post Mide	C AND/O dle Juras	R CRETACI sic	EOUS	
	9a Hornbl 9b Biotite	lende-biot -hornblen	ite granodio de quartz di ite: 0d Augit	rite; orite; :o diorito	
	JURASSI	C Middle			
	LABERGE	E GROUP	(7/8)		
	TAKWAH chert peb sandstone	ONI FORM ble congli e, siltstone	MATION: Gra omerate, gra e, shale	anite boulder cor eywacke, quartzo	nglomerate, ose
	INKLIN F( siltstone a	ORMATIO and silty s	N: Well bed andstone, p	ded greywacke, ebbly mudstone,	graded
	limy pebb	le conglo	merate, lime	stone	
	SINWA FO	assic ORMATIO	N: Limeston	e; minor sandsto	one,
	argiilite, c STUHINI	GROUP (4	4/5)		
	KING SAL greywack and shale	MON FO e, conglo ; minor a	RMATION: 1 merate, muc ndesitic lava	hick bedded da Istone, siltstone , volcanic brecci	rk a,
	Mainly vo	lone, limy	snale; local ks; andesite	and basalt flows	S,
	tuff; minor	r volcanic	sandstone,	a ayyiomerate, la greywacke and	apını siltstone.
	Fine to m	edium gra	ained, strong	Jly foliated diorite	e,
	TRIASSIC	C AND EA		Lionie, aye unce	
	Fine grain rocks, larg jasper, or	ied clastic gely altere eywacke	: sediments ed to greens limestone	and intercalated tone and phyllite	volcanic ; chert,
	PERMIAN	1(?)	-		
	May not a small irreç	all be of th gular bodi	e same age es of gabbro	. Peridotite, serp o and pyroxene	entinite, diorite
	Diorite gn	eiss, amp	hibolite, mig	matite; age unkr	nwor
~	A	SILT SAI SOIL GE SOIL SA GEOLOO BEDDIN JOINTIN FOLIATIO SHEAR/I SHEAR/I COSSAN LEGAL O RGS / A BBREVIA	MPLE EOCHEM LIN MPLE SITE GICAL CONT G ATTITUDE G ON FAULT N CORNER PC 298 - Reg Surr TIONS	IE Auppb Ag FACT ST (L.C.P.) Vonal Geoche Vey Sample A	ppm Location
	CB C CB(Fe) C CP C EP E GN G HM H LM L MA M MO M PO P PY P QZ C SI S SP S TT T	arbonate arbonate halcopyri pidote alena lematite imonite falachite falachite falachite folybdenit yrrhotite yrite uartz ilica/silicee phalerite etrahedrit	(Iron) te e ous e		
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J.,	J.E.	MIN	ALF · · ·		FIGURE
0CT.,	1991	RE	VISED :		4