ARIS SUMMARY SHEET

| V | | | |
|---|--|--|---------------|
| District Geo | ogist, Nelson | Off Confident | ial: 89.12.14 |
| ASSESSMENT RI | PORT 18560 MINING DI | VISION: Greenwood | |
| PROPERTY: LOCATION: CLAIM(S): OPERATOR(S): AUTHOR(S): REPORT YEAR: COMMODITIES SEARCHED FOR KEYWORDS: | Halifax LAT 49 11 00 LONG UTM 11 5448235 417407 NTS 082E01E Halifax(L.3042) Sumatra Res. Von Einsiedel, C.A. 1989, 26 Pages Lead,Zinc,Silver Paleozoic,Roof Pendant,Lim Sphalerite | 118 08 00 nestone,Mt. Roberts Forma | tion,Galena |
| WORK DONE: Pro PRO RELATED REPORTS: MINFILE: | ospecting OS 0.1 ha 17046 082ESE099 | | |





PROSPECTING REPORT

JOSH CLAIM GROUP

BURNT BASIN JOINT VENTURE GREENWOOD MINING DIVISION SOUTHEASTERN, B.C.

> Latitude = 490 11' Longitude = 118º 08' NTS = 82E1E

> > 1 . .

June Front VX ZO 69 65 Man forma

< ∠

(5)

(and \mathcal{D} Arrest Card

00

Lating CO C) ~ C

Mineral Claims

Ajax Fr., No. 4270; Arlington, No. 4268; Ennismore, No. 4269; Motherlode, No. 4270; Motherlode Fr., No. 4271; Daly, No. 4271; Burnt Basin, No. 4272; Aldeen, No. 4273; Kittie, No. 4274; Jennie Lind Fr., No. 4275; Tunnel, No. 4276; Eva Bell, No. 4277; Golden Age, No. 4445; Halifax, No. 4446; Hastings, No. 4213; Josh #1 Fr., No. 4776; Josh #2 Fr., No. 4777; Josh #3 Fr., No. 4778; Josh #4 Fr., No. 4779; Josh #5 Fr., #4780; Josh, No. 4775

:

Owner: West Rim Resources Inc. **Operator:** Sumatra Resources Inc.

Date Submitted: March 10, 1989 Reported By: C. von Einsiedel, B.Sc.

TABLE OF CONTENTS

Page

| SECTION 1 | - SUMMARY | |
|-----------|----------------------------------|--------|
| 1.1 | Summary | 1. |
| SECTION 2 | - PROPERTY DESCRIPTION | |
| 2.1 | Property Location, Access, Title | 2-2 |
| 2.2 | Previous Exploration | 2-4 |
| 2.3 | Geology and Exploration Model | 2-6 |
| 2.4 | Description of Halifax Zone | 2-10 |

REFERENCES

 \bigcirc

STATEMENT OF COSTS

CERTIFICATE

| FIGURE 1. | Location and Claim Map | 2-1 |
|-----------|--|------|
| FIGURE 2. | Topographic Map | 2-3 |
| FIGURE 3. | Regional Geology | 2-7 |
| FIGURE 4. | Compilation Map Showing Location of Halifax Zone | 2-9 |
| FIGURE 5. | Halifax Trench - Detail Sketch | 2-13 |

LIST OF TABLES

| TABLE 1. | List of Mineral Claims | 2-5 |
|----------|---|------|
| TABLE 2. | Halifax Zone - Rock Sample Descriptions and Assay Results | 2-12 |

SECTION 1

SUMMARY

1.1 Summary

The Burnt Basin Property consists of 15 Reverted Crown Grants and six located claims which cover an area equivalent to roughly 5 square kilometers. The project area consists of a moderate relief plateau (at elevations of between 1,200 and 1,600 meters) accessible by a network of $4 \ge 4$ roads from the No. 3 Highway (forms the eastern boundary at the property).

Government Geological maps show that the claims are underlain by a west-northwest striking sequence of folded metasediments (mainly limestones and argillites) and metavolcanics (tuffs, greenstones) belonging to the Paleozoic Aged Mt. Roberts Formation. More recent felsic intrusive rocks belonging to the Nelson and Coryell Bathloliths are exposed to the north and south of the claim area.

Little detailed geological information is available, however extensive prospecting and surficial work (circa 1965 to present) has identified several gold, silver and base metal occurrences. These are subdivided into two broad categories including: narrow gold bearing, quartz veins (typified by the Motherlode Prospect in the northwestern part of the claim area); and, skarn or replacement type (possible exhalitive origin) silver-leadzinc occurrences containing variable gold and copper values. The latter type of mineralization is the most widespread and occurs as irregular replacement zones along bedding planes within interbedded limestones and argillites, often along the margins of sills, dykes or tuffaceous units.

Geochemical surveys, geophysical surveys, cat trenching and short hole drill testing by various previous operators (Christina Lake Mines, 1965; Dalex Mines, 1968; Donna Mines, 1972-75; Paulson Mines, 1977; Granges Exploration, 1979; and Westrim Resources, 1986-87) has identified a series of the replacement type occurrences in the southern part of the claim area. These occurrences include (from east to west) the Production and Northwest Zones on the Eva Bell Claim, the Halifax Zone and the Ennismore Zone and together form a belt roughly 1,500 meters long.

Trench sampling of the Eva Bell-Northwest Zone (Dalex Mines, 1968) returned grades of up to: 8.42 oz/ton silver, 2.28% copper, 1.52% lead and 2.30% zinc across a sample width of 7.0 meters. Select samples collected from this zone assayed up to: 23.0 oz/ton silver, 12.20% copper, 0.04% lead and 9.10% zinc.

Bulk samples shipped from the Eva Bell-Production Zone (Donna Mines, circa 1972) indicate an average grade of: 0.017 oz/ton gold, 6.50 oz/ton silver, 7,8% lead and 16.50% zinc. In 1972 Donna Mines completed two short holes (DDH 72-04 and 05) to test the down dip extent of this zone and reported a 5.2 meter true width of mineralization grading 4.0 oz/ton silver, 5.40% lead and 8.80% zinc followed by a similar width of lower grade mineralization.

Trench sampling of the Halifax zone (Dalex Mines 1968) returned a grade of 3.2 oz/ton silver, 0.20% copper, 7.50% lead and 12.70% zinc across a 1.9 meter wide, steeply dipping mineralized zone.

Later sampling by Christopher, 1986 confirmed these results however channel sample assays were somewhat lower than those reported by Dalex Mines Ltd. A sample across 3 meters assayed 0.50 oz/ton silver, 1.87% zinc and 0.56% lead.

The objective of the 1988 work program was to determine if the mineralization exposed in the Halifax Zone is in fact related to the mineralization developed at the Eva Bell Production Zone. To accomplish this objective the author cleaned out and mapped the Halifax trench and collected several samples for detailed petrographic and mineralogical study.

This report summarizes technical data concerning the Halifax Zone (for additional details see Magrum and von Einsiedel, 1988) and includes detailed descriptions of samples collected from exposed mineralization.

Respectfully Submitted,

C. A. von Einsiedel, B.Sc. Geologist

SECTION 2 PROPERTY DESCRIPTION

(

, ŧ



2.1 Property Location, Access, Ownership

The Burnt Basin Claim Group is situated approximately 13 kilometres northeast of Christina Lake, roughly 25 kilometres west of Trail in southeastern B.C. The centre of the claim group is located at Latitude 49°11'N and Longitude 118°08'W.

Access to the property is via Highway No. 3 from either Grand Forks or Castlegar to the Paulson Bridge. A 4×4 track extends from the Paulson Bridge along the eastern side of the claims and then extends across the southern part of the property. A continuation of this road traverses Josh Creek to the northwestern part of the claim area. Topographic relief on the property is not extreme, although a few localized steep slopes are present. Elevations range from 1,189 m along Josh Creek to 1,624 m at the highest point on the property.

Title to the property is recorded on Mineral Title Reference Map No. 82E1E, Greenwood Mining Division as shown in the accompanying Table 1.



2.2 Previous Exploration

The Burnt Basin claim area was originally prospected during the late 1800's, however, much of this information was not recorded.

Since 1965, several operators have explored known showings on the property and direct shipped small quantities of ore mainly from the Eva Bell claim. The following table is a chronological summary since 1965:

- 1965 Christina Lake Mines geological, geochemical and magnetometer surveys were completed. Some diamond drilling - data not available.
- 1968
- Dalex Mines an induced polarization survey and considerable stripping and trenching on Burnt Basin and Nally Gibson Claim (L1509). Geochemical survey, trenching and stripping and seven holes totalling 2,142 feet.
- 1972-75 Donna Mines, reports by E.O. Chisholm and H. Shear, line cutting and magnetometer surveys on the Eva Bell and Halifax, and five short diamond drill holes on the Eva Bell, cat trenching and percussion drilling. Shipped a total of 1,488 tons to Trail, H.B. Mine, Re-Mac Mines and Kam-Kotia.
- 1975-76 Alvija Mines Ltd. produced 1,750 tons from the Halifax claim and shipped 535 tons yielding 3.1 oz. Ag/ton, 4.45% Pb, 6.75% Zn with 21.5% magnetite to the H.B. Mine at Salmo.
- 1977 Paulson Mines Ltd. completed 1,500 feet of diamond drilling on the Halifax claim and published intercepts of up to 6' grading 12.4 oz. Ag/ton, 19.7% lead and 14.9% zinc. (* Note: Details not available).
- 1978 Oliver Resources completed a Vector Pulse E.M. Surevey, I.P. Survey and Magnetometer Survey with about 10 km completed.
- 1979 Granges Exploration Ltd. completed 291 m of diamond drilling on the Eva Bell and BP No. 2 (adjoins Eva Bell to the east).
- 1986-87 West Rim Resources completed 420 meters of diamond drilling at the Motherlode Prospect and carried out extensive soil geochemical surveys in the Halifax-Eva Bell area.

TABLE 1

BURNT BASIN JOINT VENTURE - GREENWOOD MINING DIVISION

LIST OF MINERAL CLAIMS, RECORD NUMBERS, EXPIRY DATES, OWNERSHIP AND OPTION TERMS

| | No. OF | RECORD | | | |
|-----------------|--------|--------|-------------------|--|--|
| CLAIN NAME | UNITS | NUMBER | EXPIRY DATE | OWNERSHIP | OPTION TERMS |
| HASTINGS | 1 | 4213 | NOVEMBER 1990 | WEST RIM RESOURCES INC. | OPTION TO FARM 48% INTEREST BY INCURRING |
| ARI INGTON | 1 | 1213 | Mancy 08 1001 | | SYDLOGATIONN EXEMPLITURES OF \$240,000 |
| ENVIOUS | • | 4200 | Manau 09 1007 | n an | EXPLORATIONN EXPENDITORES OF \$240,000. |
| NOTION | 1 | 4209 | MARCH U8, 1991 | ** | |
| MOTHERLODE | | 4270 | MARCH U8, 1991 | - | |
| MOTHERLODE FR. | 1 | 4271 | March 08, 1991 | | |
| AJAX FR. | 1 | 4270 | March 08, 1991 | n de la construcción de la constru La construcción de la construcción d | |
| DALY | 1 | 4271 | March 08, 1991 | 1 | |
| BURNT BASIN | 1.1 | 4272 | MARCH 08, 1991 | 1 | |
| ALDEEN | 1 | 4273 | March 08, 1991 | Ħ | |
| Kittie | 1 | 4274 | March 08, 1991 | | |
| JENNIE LIND FR. | 1 | 4275 | March 08, 1991 | n an | |
| TUNNEL | 1 | 4276 | March 08, 1991 | | |
| EVA BELL | 1 | 4277 | MARCH 08, 1991 | n an tha an t | |
| GOLDEN AGE | 1.000 | 4445 | SEPTEMBER 26, 199 | 0 " | |
| HALIFAX | 1 | 4446 | September 26, 199 | 0, , , , , , , , , , , , , , , , , , , | |
| Josh ∦1 Fr. | t | 4776 | DECEMBER 15, 1989 | WEST RIM RESOURCES INC. | OPTION TO EARN 48% INTEREST BY INCURRING |
| JOSH #2 FR. | 1 | 4777 | DECEMBER 15, 1989 | 17 | EXPLORATION EXPENDITURES OF \$240,000. |
| Josh #3 Fr. | 1 | 4778 | DECEMBER 15, 1989 | 11 A. | |
| Josh #4 Fr. | 1 | 4779 | DECEMBER 15, 1989 | 11 | |
| JOSH #5 FR. | 1 | 4780 | DECEMBER 15, 1989 | n | |
| Josh | 16 | 4775 | DECEMBER 15, 1989 | n | |

*Note: West Rim ownership subject to terms of Option Agreement with John W. Carson: see Prospectus for Details.

) i

2.3 Geology and Exploration Model

(Please refer to figure No.s 3 and 4)

Geologically, the project area covers the central part of an elongate roof pendant composed of mixed, Paleozoic aged sediments and volcanics bordered to the north and south by granitic intrusive rocks belonging to the Nelson and Coryell Batholiths.

The pendant consists mainly of limestones and argillaceous limestones interbedded with andesitic volcanics collectively termed the Mt. Roberts Formation. Various authors note the presence of felsic dykes and sills within these rocks however, in a report by Granges Exploration dated October 1979, it is concluded that some or all of these intrusives may actually be concordant, metamorphosed tuffaceous beds.

Rocks within the pendant strike roughly northwest (320° to 340°), dip shallowly to steeply east and are crosscut by north trending shear zones.

Limestones and argillites are generally grey to black in colour and relatively unaltered, (referred to as unit Ms). Volcanic rocks are typically dark green (referred to as unit Mv) and "intrusive dykes and sills" are typically light coloured. Figure No. 3 shows the approximate distribution of the various rock units.

This type of environment is typical of areas which host both skarn and secondary vein type deposits. Within the claim area over 20 precious and base metal occurrences have been identified most important of which are the Halifax-Eva Bell Prospects. Previous operators (Dalex Mines, Donna Mines etc.) concluded that known mineralization is a type of skarn occurrence however, observations made by Granges Exploration suggests a possible volcanogenic origin.



LEGEND





 \mathbf{O}

LEGEND CENOZOIC Kgr Coryell Intrusions, syenite, MISSOZOIC Kgd Nelson intrusives, granodiorite, granite, diorite Kd Dyke rack (reported in literature). PALEOZOIC MSV MI, Roberts Formation, greywocks greenstone, limestone paragnetiss, undifferentiated. MV Metevolcanie, darb graan andenite. Ms Metesediments interbedded grey orgillite and tuff. Mt Tuffaceous unit SYMBOLS Geochemical anomaly, 1986/87. (values for zinc in ppm) Area of extensive cal trenching, rock sampling. (refer to table 2 for rock sample descriptions and assay results). DDH eren 1 Diamond drill hole, reference number. 70 Approximate strike of bedding,dip. W Fault, approximate. LOGICAL BRANCE ESSMENT REPOR 8N 11 11 EVA BELL PRODUCTION ZONE 1000 NOTE - Contour Inte SUMATRA RESOURCES INC. - BURNT BASIN JOINT VENTURE -GREENWOOD MINING DIVISION - BRITISH COLUMBIA , # COMPILATION MAP - - FIG. No. RAM EXPLORATIONS LTD. DWN. BY TH

2.4 Description of Halifax Zone

The Halifax-Eva Bell prospects include the Eva Bell Production and Northwest zones, the Halifax zone and the Ennismore zone (refer to Figure 4 for locations). These prospects form an east-west belt roughly 1500 metres long, portions of which have been explored by previous operators.

The Halifax zone lies approximately 400 metres east of the Eva Bell-Northwest zone, located at grid reference 5+50W and 8+25N (shown in Figure 4). Previous exploration within this zone includes several trenches and short drill holes that have partially delineated parallel, 1.0 to 2.5 metre wide zones, comprised of galena and sphalerite mineralization grading approximately 3.0 oz/ton silver, 7.0% lead, and 12.0% zinc (Dalex Mines, 1968). Chip sampling by P.A. Christopher in 1986, also confirms the earlier results as well as values in gold (refer to Table 2).

Rehabilitation and detailed mapping in 1988 of the main trench area in the Halifax zone exposed massive magnetite mineralization within a grey to black siliceous limestone unit localized along the contact with a brown weathering pyroclastic(?) unit. Dense, massive pods of brown sphalerite and galena occur within the magnetite-rich limestone adjacent to this contact. The pods range up to 25 X 75 centimetres across. The contact strikes approximately east-west and dips between 50 to 75 degrees north. The contact zone is extremely oxidized with extensive rusty limonitic and black manganese staining.

Previously, the brown weathering pyroclastic(?) unit described above was thought to represent andesite dykes intruded into the limestone. However, there is no indication of chilled margins along the contact with the limestone and numerous pyroclastic debris fragments occur within the brown weathering unit. Therefore, it is considered to represent a conformable tuffaceous unit deposited within the limestone. These relationships are similar to those observed at the Eva Bell Production zone.

Silver-lead-zinc mineralization comprised of massive to disseminated galena, sphalerite, magnetite and pyrrhotite also occurs within the irregularly bedded limestone.

Sampling of the massive magnetite shows patchy, steely grey, very fine grained magnetite grading to finely disseminated magnetite within the limestone host. Sphalerite occurs as pale brown, fine sugary grains intergrown with fine to medium grained crystalline galena. Pyrrhotite and minor chalcopyrite occur with disseminated magnetite in the limestone.

Three samples of the massive magnetite mineralization were collected and cut into slabs for detailed descriptions. No samples were assayed.

The samples have each been slabbed and polished to illustrate textural relationships. Descriptions are as follows:

| SAMPLE NUMBER | SAMPLE DESCRIPTION |
|---------------|---|
| HFX-395 | Dark grey, siliceous limestone with minor epidote and chlorite along fractures hosting disseminated magnetite and pyrrhotite throughout, trace chalcopyrite as scattered blebs, scattered patches of fine grained sphalerite with no visible galena. (similar to Christopher's 1986 sample B395). |
| HFX-396 | Massive sphalerite / galena; collected from a 20 x 50cm. mineralized pod in floor of trench; comprised of approx. 70% sphalerite and galena with 30% magnetite (similar to Christopher's 1986 sample B396) |
| HFX-397 | Sample from pod or lens of massive steely grey magnetite containing minor pyrrhotite? and |

Sample from pod or lens of massive steely grey magnetite containing minor pyrrhotite? and chalcopyrite near contact with tuffaceous / pyroclastic unit (Mt)

| (PLEASE REFER | TO FIGURE ! | 10.5 FOR | SAMPLE LOCAT | TIONS) | • | • | |
|---------------------|-------------------|----------------|--------------|------------|-----------|------------|--|
| | | | | | | | |
| Assay Ref • No • | FIELD Ref. No. | Au oz/st | Ac oz/st | Cu (\$) | Рв (≴) | Zn (\$) | DESCRIPTION |
| HALIFAX ZONE | • | | | | | | |
| (REPORTED BY | DALEX MINES | , 1968) | | | | | |
| 15093 | 15135C | - | 3.20 | 0.20 | 7.50 | 12.70 | CHIP SAMPLE ACROSS 1.90 HETER WIDE SHEAR ZONE CONTAINING ABUNDANT COARSE GALENA, SPHALERITE |
| 15094 | 15136C | - | 0-10 | - | - | 2.45 | CHIP SAMPLE ACROSS 2.55 METER WIDE SHEAR ZONE (SEPARATED FROM 15135C BY A 1.30 METER WIDE ANDISITE DYKE) |
| 15095 | 151370 | - | 2.40 | 0.07 | - | - | CHIP SAMPLE ACROSS 1.60 METER WIDE SHEAR ZONE (PARALLEL TO 15136C) |
| (REPORTED BY | CHRISTOPHE | , 1986) | | • | • | | |
| 15096 | B - 395 | 0.004 | 0.39 | | 0•57 | 1.83 | CHIP SAMPLE ACROSS MINERALIZED ZONE (3 METER WIDTH INDICATED ON DETAIL SKETCH) |
| 15097 | B - 396 | 0.008 | 7.55 | · • | 9.90 | 11.30 | GRAB SAMPLE - COARSE GRAINED SULFIDES: GALENA SPHALERITE |

TABLE 2



REFERENCES

C

 $\left(\right)$

REFERENCES

The following maps, publications and reports were noted by Christopher in a report prepared in 1986. Those references marked with an asterist were used in the compilation of this study.

Alvija Mines Ltd. June 5, 1974.

Alvija Mines Ltd. Sept. 3, 1976 - Report to Shareholders.

- British Columbia Minister of Mines Annual Report 1901; p. 106, 1904; p. 299.
- British Columbia Ministry of Mines, Geology and Exploration in B.C. 1909 - 311, 1973 - 36.

Brock, E.W., 1902. Abstract B.C.D.M.

Brock, E.W., 1903. Summary Report p. 90-134 G.S.C. *

Burnt Basin Mines Ltd. Magnetometer Survey Plan'1":=200'.

Chaplin, R.E., 1965. Examination Report for Christina Lake Mines Ltd. April 1965.

Christina Lake Mines Ltd., Reconnaisance Geology Plan 1"=200'.

Christopher, P.E., 1986. Geological, Geochemical and Geophysical * report on the Burnt Basin claim group. West Rim Resources Prospectus.

Chisholm, E.O., 1972. Report on Donna Mines Ltd. August 1972.

Dolmage, V., 1965. Examination Report for Christina Lake Mines * Ltd. September 1965.

Little, H.W., 1957. Kettle River (East Half). G.S.C. Map 6 -1957.

Mauritsen, S.A., 1968A. Geological Report on Burnt Basin Property * for Dalex Mines Ltd., September 20, 1968.

Mauritsen, S.A., 1968B. Geophysical Report on I.P. Survey, Burnt Basin Property for Dalex Mines Ltd., September 20, 1968.

Oliver Resources Ltd., November 20, 1978 New Release.

Osacaff, K., 1965. Geochem Survey Plan. 1"=200'. July 1965.

- Paulson Mines Ltd. Report to Shareholders; June 15, 1977, Aug. 5, 1977.
- Renshaw, R.E., 1964. Geological Report on Halifax, Geochem Survey Plan. Christina Lake Mines Ltd. July 1964.
- Ruzicka, S., Misc. Field notes and records made available to the writer. 1986.
- Shear, H.H., 1973. Progress Report on Donna Mines. November * 1973.
- H.H. Shear, 1979, Report on Diamond Drilling Program, Burnt Basin * Property, Granges Exploration ABA.
- von Einsiedel, C. A. and Magrum, M. P.Eng., Summary Report and Proposed * Exploration Program for the Burnt Basin Claim Group. May 15, 1988. Sumatra Resources corporate files.

, P

STATEMENT OF COSTS

C

 \bigcirc

C

STATEMENT OF COSTS

(

| 1. | Personnel | |
|----|--|------------------|
| 1 | Geologist (C. von Einsiedel) -4 man days @ \$225 | 900.00 |
| | Technical assistant (B. Stafford) -4 man days @ \$150 | 600.00 |
| 2. | Vehicle Rentals / Travel expense | |
| | Vehicle rental -4 days @ \$45 -1,380 km. @ \$0.20 | 180.00 276.00 |
| | Accommodation -8 man days @ \$55 per day | 440.00 |
| 3. | Technical Report | |
| | Geologist (C. von Einsiedel) -0.5 days @ \$225 | 112.50 |
| | Petrographic (rock cutting) | 30.00 |
| | Secretarial, printing | 63.25 |
| | | · |

Total

\$ 2,601.75



. \$

CERTIFICATE

I, Carl A. von Einsiedel of the City of Vancouver in the Province of British Columbia, certify that:

- I am a consulting geologist with offices located at 210 470 Granville Street, Vancouver, B.C
- 2. I am a graduate of Carleton University in Ontario in Geological Sciences with a degree of BSc.
- I have been employed in the field of mineral exploration since 1980 and have made application to the Fellowship of the Geological Association of Canada.
- 4. This report is based on: results of several personal examinations of the subject property; results of geochemical surveys and diamond drilling carried out under my supervision; and on the results of extensive research regarding local mineral deposits.
- 5. I have no interest, either directly or indirectly, in the properties or securities of Sumatra Resources Inc.

Dated this 10th day of March 1989 at Vancouver, British Columbia.

Carl von Einsiedel, BSc. Consulting Geologist