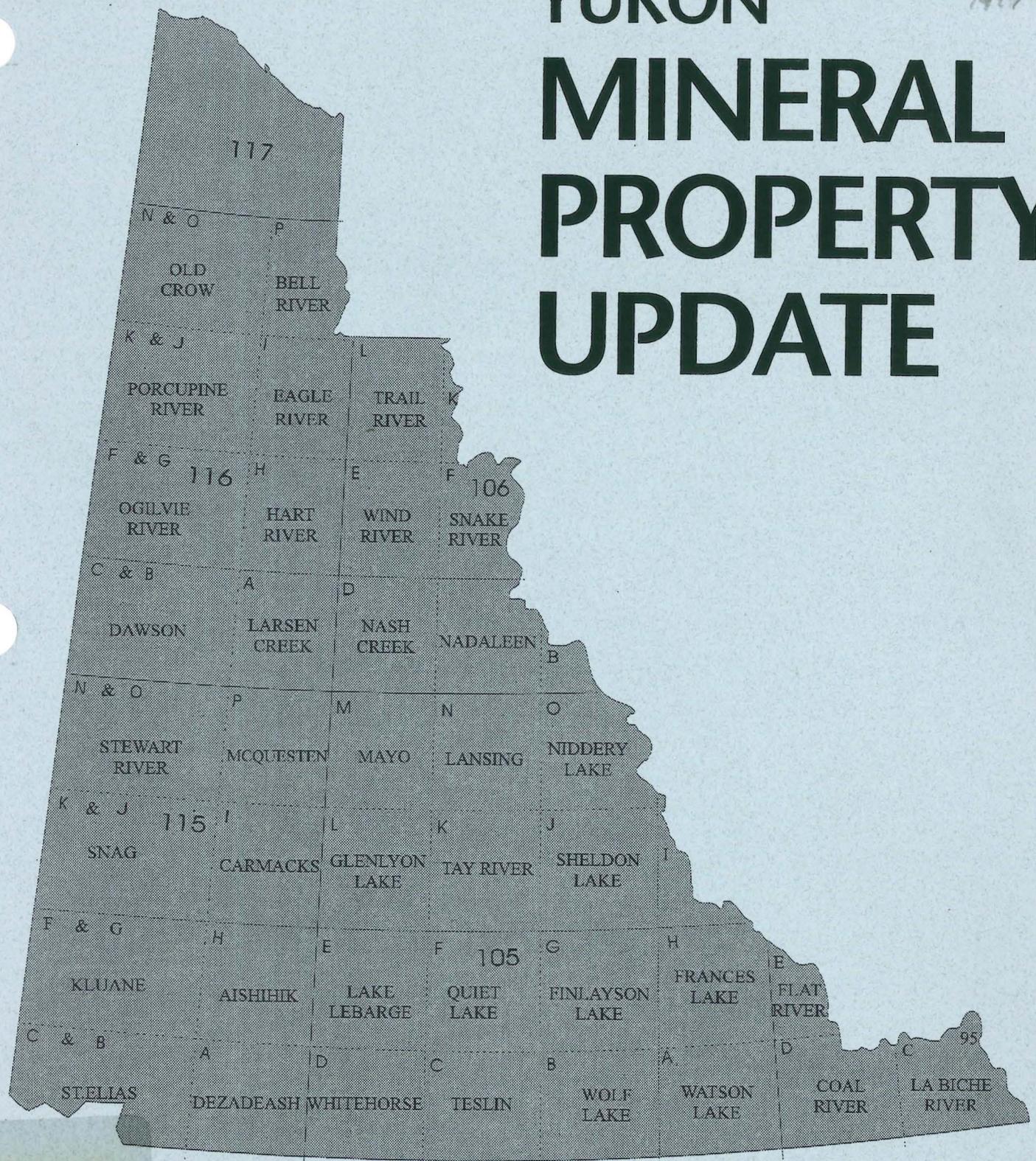


T1027  
Y94  
Y9  
1997

# YUKON MINERAL PROPERTY UPDATE



TN  
.194  
.Y9  
1997

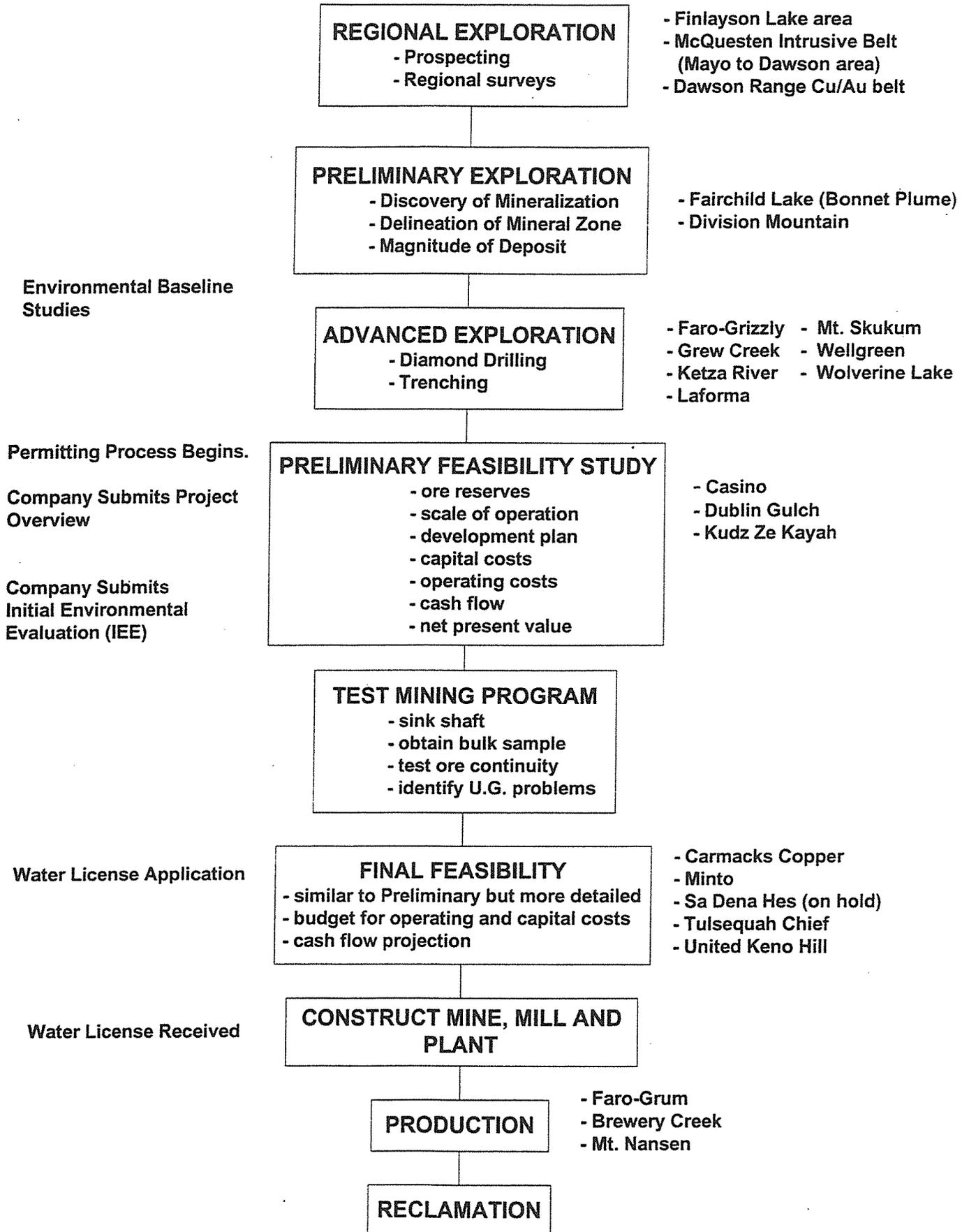
**Yukon**  
Economic Development

**Note:**

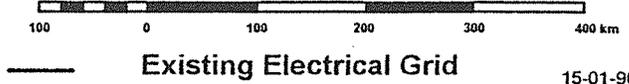
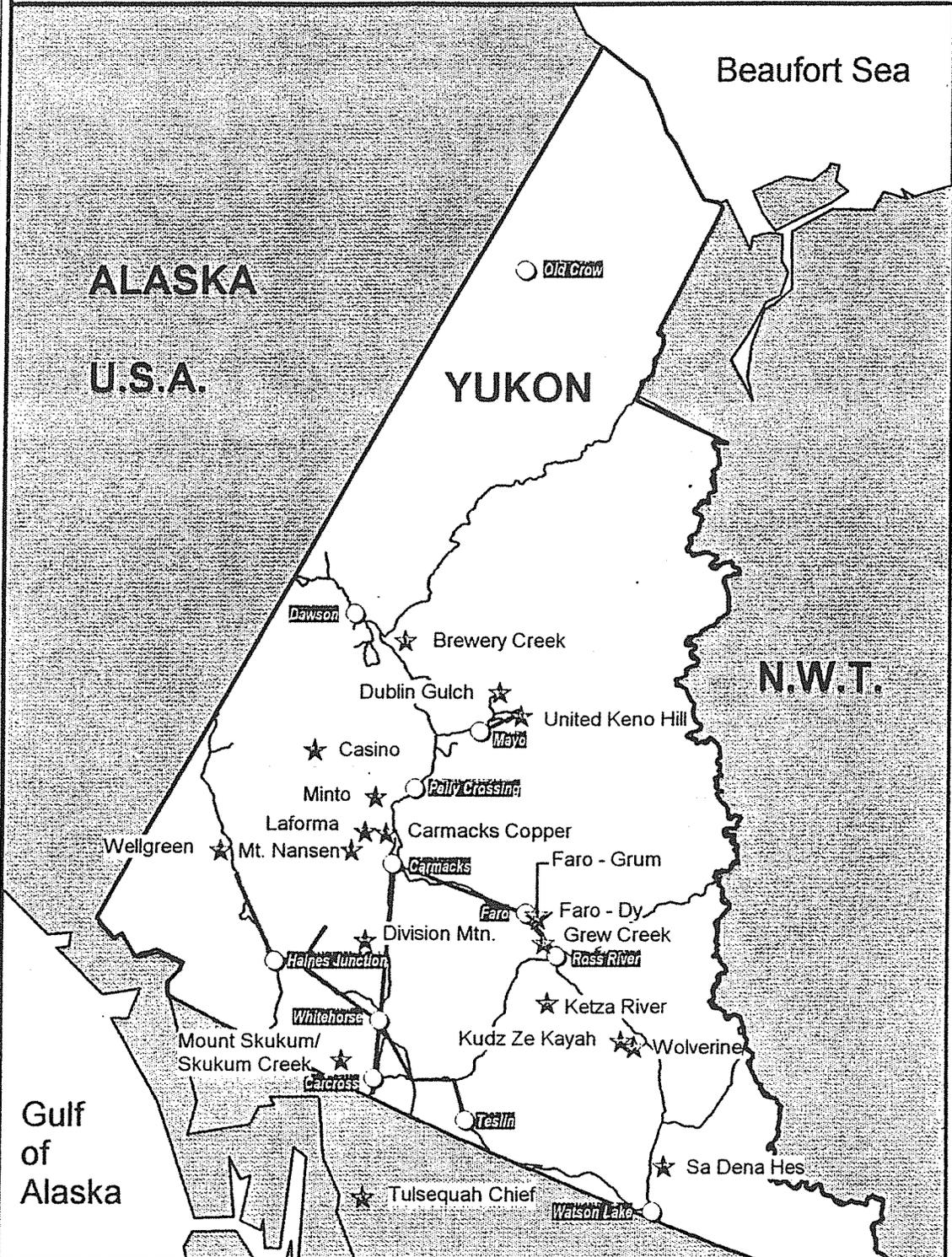
**The following information was compiled by the Department of Economic Development, Mineral Resources Branch.**

**Data was obtained from newspaper clippings, Yukon Minfile, Initial Environmental Evaluations (IEE) and property production records. In some instances, employment and power requirement figures were not available and estimates were used.**

# STAGES OF MINING



# ADVANCED YUKON MINING PROJECTS



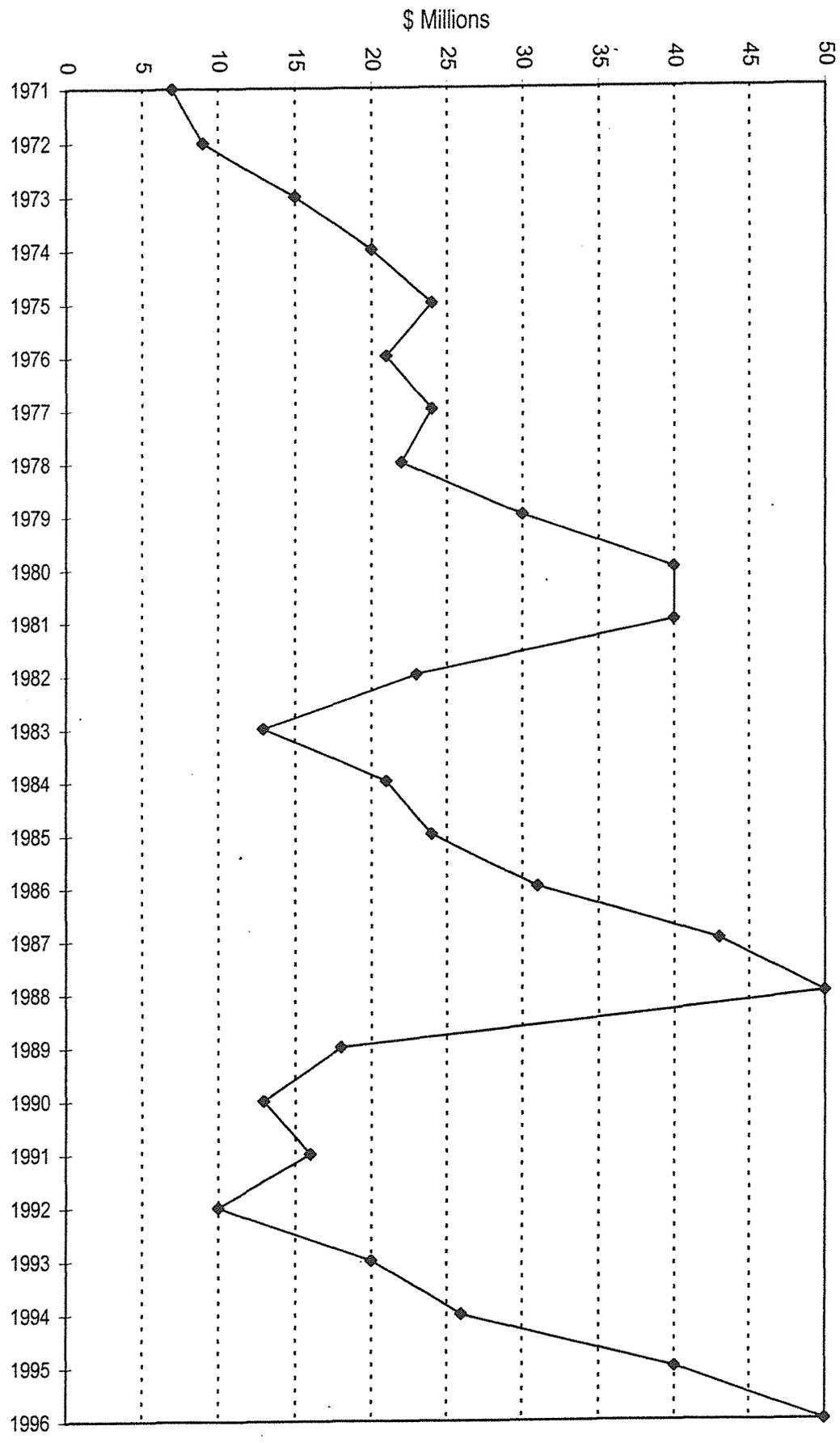
15-01-96

**SUMMARY of YUKON MINING EXPLORATION and DEVELOPMENT EXPENDITURES  
NOT ADJUSTED FOR INFLATION - \$ Millions**

Year	Exploration Expenditures	Development Expenditures
1971	7	-
1972	9	-
1973	15	-
1974	20	-
1975	24	-
1976	21	-
1977	24	-
1978	22	-
1979	30	-
1980	40	-
1981	40	-
1982	23	-
1983	13	-
1984	21	-
1985	24	-
1986	31	-
1987	43	-
1988	50	-
1989	18	-
1990	13	-
1991	16	-
1992	10	-
1993	20	-
1994	26	11
1995	40	57
1996	50	45

Source: DIAND Exploration and Geological Services Division

# Yukon Mining Exploration Expenditures (Not Adjusted for Inflation)



Source: DIAND Exploration and Geological Services Division

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# Brewery Creek Property

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## SUMMARY

The Brewery Creek Project is located 57 km due east of Dawson City. The area being developed is located within a 788 mineral claim group covering 16,000 ha owned by Loki Gold Corporation.

Exploration to date has outlined oxide ore in eight different zones - Blue, Canadian, Foster, Golden, Kokanee, Lucky, Moosehead, and Pacific. Gold mineralization is hosted within porphyritic quartz monzonite, hornblende monzonite, interbedded sandstones and greywackes and fine-grained ash tuffs and pyroclastics. Gold primarily occurs as submicron size particles with arsenopyrite and pyrite as growth bands around larger sulphide grains. Since most of the gold is concentrated in the outer rim, limited oxidation is required to liberate it from the other other sulphide minerals.

Loki Gold is developing a bulk tonnage, low grade, heap leachable gold deposit. The 8 year project will involve open pit mining at a production rate of 2.3 million tonnes of ore per year. The mine will develop eight shallow and largely oxidized gold deposits along a seven kilometer corridor. Between 90 and 110 personnel will be employed during operations. Current geological reserves of leachable ore are 19.28 million tonnes at 1.53 g/t containing 948,361 ounces of gold. Diluted mineable reserves total 17.14 million tonnes grading 1.45 g/t containing 799,101 ounces of gold.

Ore processing employs a sodium cyanide, heap leach of run-of-mine gold ore, a technology new to Yukon, but proven in comparable cold climates elsewhere in North America. The operation is seasonal, working 24 hours a day for approximately 280 days per year from early March to mid December. The leach circuits operate year round. Gold recovery from pregnant leach solutions is by activated carbon adsorption and pressurized caustic solution desorption followed by electrowinning onto steel wool and on-site smelting to gold bullion.

Mine site infrastructure includes a 3 MW power plant, water supply systems, and mine service buildings. Mine service buildings include a two bay maintenance shop, mine offices, warehouse and cold storage, and ambulance garage.

## HISTORY

The property was discovered in 1987 by Noranda Exploration as a result of following up an anomaly identified in a regional geochemical survey funded by the MDA. The project advanced to a drilling and trenching stage in 1989. Loki optioned an interest in the project in June, 1990 and had earned 40% of the equity by August, 1991. Norex remained as project operator until late 1991 when title was changed to related Hemlo Gold Mines Inc.

In July, 1993 Loki purchased 100% of Hemlos interest and took over as operator. At that time the project focus changed from exploration to development. A total of \$17 million was spent on the property prior to the start of construction.

The 1994 work program consisted of road up-grading, construction camp installation, geotechnical drilling, and stripping and site preparation for the leach pad. Loki submitted the IEE to the RERC and a final mine feasibility was completed by Cominco Engineering Services in 1994.

The company conducted a \$2 million exploration program during 1995. A 12,000 metre drill program

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# Brewery Creek Property

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## HISTORY

began in August to further delineate last year's discoveries, test geochemical targets and further define the known zones. The company also completed some preparation work on the heap leach pad site, prepared the foundations for the process buildings, started construction on the haul roads, and worked on the access road. Loki Gold spent \$10 million on development during 1995. A mobile construction camp capable of housing 122 persons has been mobilized to the site.

Loki Gold's Class A Yukon Water License was signed on August 9, 1995 by the Minister of Indian and Northern Affairs and construction began on August 10, 1995. Loki obtained the financing required for development and construction of the mine in 1995. The Company raised more than \$20.16 million (Cdn) through a private placement and N.M. Rothschild and Sons Ltd. have underwritten a US\$26,500,000 loan for the development of the project.

Loki Gold Corp. and Baja Gold Inc. shareholders approved a merger with Viceroy Resource Corporation in May, 1996. As a result of the merger Viceroy owns 100% of Brewery Creek.

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# Brewery Creek Project Summary

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- Location:** 57 km east of Dawson City
- Ownership:** Viceroy Resource Corporation
- Commodity:** Gold
- Ore Type:** Oxide
- Geological Resource:** 19,279,000 tonnes  
Gold: 1.53 grams per tonne
- Mineable Reserve:** 17,141,000 tonnes  
Gold: 1.45 grams per tonne
- Mining Method:** Open Pit, 280 days per year
- Processing Method:** Heap Leach, Carbon adsorption/desorption/recovery, 365 days per year
- Mine Life:** 8 years
- Employees:** 143
- Housing:** Dawson City
- Power:** 2 MW, On Site Diesel
- Expected Start up:** 1996
- Status:**
- Brewery Creek poured their first bar of gold on Friday November 15, 1996. Viceroy expects the annual gold production at Brewery Creek to be about 85,000 ounces.
  - Approximately 2,000,000 tonnes of ore containing close to 85,000 ounces of gold was placed on the pad during August, September and half of October, 1996. In excess of 600,000 tonnes will be placed under leach during the winter of 1996/97. Gold production for the balance of the winter will total 10,000 to 15,000 ounces. In 1996, 85% of the workforce was Yukon-based and should be 100% in 1997.
  - Operation has continued uninterrupted despite extremely low temperatures through Decemer 1996 and January, 1997.
  - For 1997, abut 2,300,000 tonnes of ore are scheduled to be placed on the pad. With the existing inventory on the pad, gold production for 1997 is expected to exceed 100,000 ounces. The winter hiatus will permit the company the opportunity to complete the first reserve and resource update in two years and will facilitate the planning of an exploration program. The company's objective is to increase the oxide reserve base to support extended mine life and/or an increased production rate.
  - Metallurgical work has started on the sulphide mineralization as well as the resource evaluations of the sulphide mineralization.

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# Brewery Creek Project Summary

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**Status:**

- Loki has concluded negotiations with the government, under the auspices of the Yukon Industrial Support Policy, for \$2,479 million in financial assistance toward upgrading the Old Ditch portion of the mine access road. Approximately 15% of the work was completed in 1995 with the remainder being finished during 1996.
- Viceroy is working with the Dawson City community, First Nations, and YTG to initiate and assist in providing suitable housing in the Dawson City area.
- An agreement has been reached on a Socio-Economic Agreement with the Tr'on dek Hwech'in (Dawson First Nation). The agreement encompasses such areas as job training and scholarships, contracting opportunities for the purchase of goods and services, environmental monitoring, trapper compensation, and opportunities for expanding the land base for a joint-venture exploration program.

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# Carmacks Copper Property

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## SUMMARY

The Carmacks Copper Project is located 35 kilometres northwest of Carmacks, which in turn is 175 kilometres north of Whitehorse, Yukon. The property proposed for development is located within a mineral claim group covering 1,000 ha owned 50% by Western Copper and 50% by Thermal Exploration Company. Archer, Cathro & Associates retain a 3.0% NSR royalty to a maximum of C\$2.5 million.

The property was originally staked in the late 1960's and subsequent exploration located fourteen copper mineralized zones. The Carmacks Copper deposit, as presently defined, is the No. 1 Zone only. The zone extends in trench exposures and drill intercepts over a 700 m strike length. The acid soluble copper mineralization is primarily malachite with lesser azurite, cuprite, tenorite (copper limonite), digenite, covellite and djurleite. The total geological resource at a cutoff grade of 0.20% total copper is 20,715,596 tonnes at 0.98% copper. The open pit mineable reserve, diluted @10%, is 14,109,800 tonnes averaging 1.01% total copper at a 0.35% total copper cutoff. The reserves are all classified as proven plus probable. The open pit mine plans prepared have a stripping ratio of 4.25 tonnes of waste to 1 tonne ore. The project will treat on average 1,763,700 tonnes of oxide ore per year, to produce 14,310 tonnes of copper cathodes per year, at a recovery rate of 80%.

Crushing and pad loading will only take place during 200 days of the year (early summer to late fall). Leaching of ore will be year round with solution heating during winter operation. The mine operation will be carried out with used mining equipment operated by Carmacks Copper employees.

Copper will be recovered from the oxide ore by sulfuric acid heap leaching of crushed minus 19 mm, agglomerated ore. Pregnant leach solution (PLS) will be treated in a solvent extraction plant to purify and concentrate the weak leach solution to a more concentrated solution suitable for electrowinning. High purity copper cathodes will be produced in an electrowinning plant for shipment from the ice-free port of Skagway, Alaska. They will then be shipped by ocean to market. The process facilities, ultimate leach pad, open pit and waste dump will occupy an area of approximately 100 ha.

In addition to the mining and process facilities the site facilities will include: water and power distribution services, propane storage and distribution, fire protection, diesel fuel storage, sewage treatment, and communications; trailers for offices, changehouse, operations camp, gatehouse/first-aid; and pre-engineered buildings for warehouse/shops, laboratory, water supply and distribution pumphouses. The following off-site infrastructure has been included: 13 km of property access road; 45 km of 138 kV overhead transmission line from the Yukon Electric Company sub-station in Carmacks to a 138 kV/4.16 kV substation at the plant site (under review); and, 10,000 tonnes of acid storage facilities at Skagway to accommodate ocean shipping schedules and transportation to site.

## HISTORY

The Carmacks Copper deposit was staked in 1970 by G. Wing of Whitehorse. The Dawson Range Joint Venture (Straus Exploration Inc., Great Plains Developments of Canada Ltd., Trojan Consolidated Minerals Ltd., and Molybdenum Corporation of America) optioned the property and conducted reconnaissance prospecting and geochemical sampling. Archer, Cathro and Associates Limited acted as Manager and earned the right to acquire abandoned properties. The G. Wing

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# Carmacks Copper Property

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## HISTORY

residual interest was acquired by A. Arsenault in 1971 and 100% of the Arsenault interest is held under an Option Agreement to Archer, Cathro.

In 1989, the property including the rights to the Arsenault Option was optioned to Western Copper Holdings Ltd. who farmed-out a 50% interest to Thermal Exploration Co. Western Copper Holdings and Thermal Exploration are currently reviewing plans to consolidate the ownership of Carmacks Copper. A total of 12,900 m of diamond drilling in 80 holes and 11 reverse circulation drill holes has been completed on the property including zones other than No. 1. In addition several kilometres of surface trenching has been carried out across the deposit.

A controlling interest in Western Copper Holdings was purchased by Prime Equities International Corp. in 1995.

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# Carmacks Copper Project Summary

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**Location:** 35 km NW of Carmacks

**Ownership:** Carmacks Copper Ltd.

**Commodity:** Copper, Silver, Gold

**Ore Type:** Oxide

**Geological Resource:** 20,715,596 tonnes  
Copper: 0.98 %

**Mineable Reserve:** 14,109,800 tonnes  
Copper: 1.01%  
Gold: 0.51 grams per tonne

**Mining Method:** Open Pit, 300 days per year

**Processing Method:** Solvent Extraction Electrowinning (SXEW), 365 days/year

**Mine Life:** 8 years

**Employees:** 90

**Housing:** Carmacks

**Power:** 7 MW, Grid Extension or On-site Diesel

**Expected Start up:** 1997

- Status:**
- The property is in the final final stages of the permitting process. Additional geotechnical work was completed in 1995 and 1996. Advanced engineering studies, financial structuring and final permitting are nearing completion. A production decision is expected during 1997 with construction to follow. A Yukon Water License is expected to be granted this fall with production commencing in the third-quarter of 1997.
  - The boards of Western Copper and Thermal Exploration have approved a merger proposal and the new company will be called Carmacks Copper Ltd.
  - An Economic Development Agreement is nearly finalized with the Little Salmon Carmacks First Nation.
  - Western Copper is consulting with YEC regarding energy supply options (grid extension or on-site diesel) and discussions are ongoing.
  - The pilot test plant which operated from Oct. 1993 to Feb. 1994 was partially funded under the Mineral Development Agreement. Results from the test plant were positive.

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# Casino Property

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## SUMMARY

The Casino copper-gold-molybdenum porphyry deposit is located about 303 km northwest of Whitehorse and 113 km south of the Klondike goldfields. It comprises 795 claims which encompass an area of 132 square kilometers. Casino is 100% owned by Pacific Sentinel Gold Corporation.

The deposit is hosted by the Casino Complex, a suite of igneous intrusive rocks with an intense hydrothermal alteration overprint. The deposit area has not been glaciated and mineralization is found in three different zones - oxide leached zone, supergene zone, and hypogene zone. The uppermost zone is an oxide gold-bearing leached zone from which copper has been largely carried away by descending groundwater. The leached zone is underlain by a copper enriched supergene gold-copper zone where dissolved copper has been redeposited. Below the supergene zone is the hypogene zone, which contains primary gold and copper mineralization that has not been affected by surface weathering or supergene enrichment. Current diamond drilling has indicated that the deposit measures 1100m north-south and 1600m east-west with the deposit open to the north and east. Primary hypogene mineralization below the supergene zone has been drilled to a depth of 798m and is open to depth within most areas. Geological reserves are estimated to be 675 million tonnes grading 0.246% copper, 0.48 grams per tonne gold, and 0.02% molybdenum.

The Casino deposit contains a mineable reserve of 178,200,000 tonnes of supergene sulphide and hypogene sulphide ore at an average grade of 0.376 grams gold/tonne, 0.303% copper and 0.028% molybdenum, based on a net smelter return cutoff value of Cdn \$7.00/tonne. Current mine planning calls for an overall waste to ore ratio of 1.06:1 after the prestripping and stockpiling of 50.6 million tonnes of predominantly lower grade oxide material which will expose the sulphide ore for sustained mining.

Direct mining from this open pit will provide mill feed for 19 years to a 25,000 tonne per day (9.125 million tonnes/year) concentrator. During the course of mining 50.7 million tonnes low grade sulphide material will be stockpiled to provide an additional six years of mill feed after pit operations have ceased.

Extensive metallurgical testing of several possible process options for the mineral zones has now been completed. Conventional, low cost, flotation processing of supergene and hypogene sulphide ores is the optimum ore processing method for the Casino project. Conventional crushing, grinding and flotation of sulphide ore on average recovers 72% of gold, 80% of copper and 62% of molybdenum.

## HISTORY

The Casino area has been actively explored for placer gold since 1912 and for silver-lead-zinc vein systems since the 1930's. However, the massive porphyry deposit lay unrecognized until 1967 due to poor surface exposure and the deeply weathered nature of the rock. At that time a soil geochemical survey conducted by Casino Silver Mines Ltd. returned widespread copper and molybdenum values over an intensely altered intrusive complex which measures over 4 square miles. During the period 1967-1973 several different property operators completed 18,023 m of drilling which confirmed a several hundred million ton gold-copper-molybdenum resource. The property then became inactive due to low metal prices. Notably during this period, gold was not systematically assayed for and

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# Casino Property

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## HISTORY

reserve calculations did not consider the gold content of the Casino deposit:

In 1991, exploration activity resumed when Big Creek Resources Ltd. and Archer Cathro and Associates (1981) Ltd. optioned the property from Casino Silver Mines Ltd. (NPL). They commenced a drill program with an objective of establishing the gold content of the deposit. Drilling of 4,729 m of large diameter core in 21 vertical holes was completed in the central portion of the known mineral inventory. Due to the larger sample size, better core recovery, and improved assaying methods their drilling verified significant gold, copper and molybdenum grades for the area drilled.

In late 1992, Pacific Sentinel's management identified the Casino Project as an exceptional development opportunity. In early 1993, by completing merger arrangements with Big Creek and Casino Silver and by renegotiating the Archer Cathro management contract, Pacific Sentinel acquired a 100 per cent interest in the property.

In 1994, Pacific Sentinel completed a delineation drilling program consisting of in-fill drilling for final mine planning purposes and continued step-out drilling to determine the overall size of the Casino deposit. The program comprised 16,800 m of large diameter holes. The Casino deposit area has been systematically grid drilled and the overall resource has been defined for the purpose of detailed open pit mine planning. The in-fill drilling program confirmed the continuity of the deposits. The \$4.5 million 1994 program also included metallurgical, environmental, and engineering studies.

No exploration was carried out on the property in 1995 or 1996, however, environmental baseline studies continued.

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# Casino Project Summary

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**Location:** 303 km NW of Whitehorse

**Ownership:** Pacific Sentinel Gold Corporation

**Commodity:** Copper, Gold, Molybdenum

**Ore Type:** Oxide and Sulphide

**Geological Resource:** 675,000,000 tonnes

Copper: 0.25 %

Gold: 0.48 grams per tonne

Molybdenum: 0.02 %

**Mineable Reserve:** 178,200,000 tonnes

Copper: 0.30%

Gold: 0.38 grams per tonne

Molybdenum: 0.03%

**Mining Method:** Open Pit, 365 days per year

**Processing Method:** Conventional Milling, 365 days per year

**Mine Life:** 19 years

**Employees:** 500

**Housing:** Camp

**Power:** 38 MW, On-site Diesel

**Expected Start up:** ?

**Status:**

- A prefeasibility metallurgical and mine planning program has been completed.
- The company now plans to advance the Casino project by assessing recently developed recovery and mill processes; investigate power, transportation and other government incentive programs; monitor commodity price and foreign exchange rate movements; and introduce the project to major mining companies for financing and acquisition.
- Geotechnical, infrastructure, environmental and socio-economic programs have been completed.
- Permitting process not yet underway.

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# Division Mountain Property

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## SUMMARY

The Division Mountain coal deposit is located 90 km north-northwest of Whitehorse, Yukon. Access is by a 31 km, four-wheel drive road leaving the Klondike Highway at Braeburn. The main area of exploration interest lies 20 km west of the Klondike Highway and the Yukon electrical transmission grid which follows the highway. Territorial Coal Exploration Licences encompassing the Division Mountain area were acquired by Cash Resources Ltd. in October 1992.

Exploration to date has focussed on outlining sufficient reserves suitable for a thermal power generation plant and/or an export market. In all, 45 diamond drill holes totalling 6119.5 m have been drilled. An excavator trenching/diamond drill program during the 1994 field season explored a 3100 m long southeasterly extension of previously known coal-bearing strata along the east limb of the northerly-plunging Cairnes Syncline. The intersections through the east limb yielded an average aggregate, raw coal, true thickness of 19.6 m in the southern part narrowing to 11.3 m in the north. Approximately 1500 m of strike length along the west limb of the syncline were later traced yielding an average aggregate, raw coal, true thickness of 17.1 m. Coal-bearing strata in both limbs of the syncline are open to the north.

Results of coal quality analyses suggest Division Mountain coal is ideally suited for thermal power generation with characteristics comparable to Alberta High Volatile Bituminous coals used to generate over 90% of the power needs of that province. Raw analyses average 2.42% residual moisture, 28.45% ash content, 25.79% volatile matter, 43.18% fixed carbon and 0.43% sulphur with a calorific value of 5216 cal/g. Drill indicated undiluted mineable reserves to date total 31.7 million tonnes with a stripping ratio of 3.36 bank m<sup>3</sup>/tonne.

## HISTORY

In 1907, D.D. Cairnes of the Geological Survey of Canada mapped and sampled three coal seams which outcrop in the Teslin Creek cut, 2 km north of Division Mountain. An additional coal occurrence was located by Cairnes near the base of the eastern flank of Red Ridge, approximately 5 km northwest of the Teslin Creek showings.

In 1970, Arjay Kirker Resources Ltd. excavated seven pits in the vicinity of the Cairnes coal outcrop. A sample was sent to the Loring Laboratories Ltd. of Calgary, Alberta for proximate analyses. The coal was classified as low sulphur, high volatile bituminous, a rank suitable for thermal power generation. In 1972, Arjay Kirker completed a drill program.

The Division Mountain coal property is held under Territorial Coal Licences obtained by W4 Joint Venture in April 1990 and acquired by Cash Resources Ltd. in August 1992. Cash Resources acquired three additional licenses in December 1993.

The 1993 field program, including linecutting, geophysics, hydrological surveys and diamond drilling, was funded by Cash Resources Ltd. and managed by Archer, Cathro & Associates (1981) Ltd. In 1994, Cash completed an extensive trenching program and drilled 4054m in 26 diamond drill holes.

A 2,000 metre, eight-hole, large diameter diamond drilling and excavator trenching program was completed in the spring of 1995. Additional exploration development is being carried out on the

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# Division Mountain Property

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## HISTORY

property during the summer and fall. Environmental, archaeological and sociological studies are also being carried out. The 1995 spring drilling and trenching program outlined additional open pittable geological reserves of 13.3 million tonnes for a combined total of 45 million tonnes. Geological mapping and trenching continued on the property. To date, Cash Resources has explored only 750 hectares or 0.3% of the property.

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# Division Mountain Project Summary

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**Location:** 31 km SW of Braeburn

**Ownership:** Cash Resources Ltd.

**Commodity:** Coal

**Ore Type:** High Volatile Bituminous B Coal

**Geological Resource:** 45,000,000 tonnes

**Mineable Reserve:** 31,700,000 tonnes

**Mining Method:** Open Pit, 365 days per year

**Processing Method:** Washing Plant, 365 days per year

**Mine Life:** 0 years

**Employees:** 0

**Housing:** Camp

**Power:** 2 MW, Grid

**Expected Start up:** ?

- Status:**
- Cash Resources is proposing to supply coal for a generating facility in Yukon and possibly entering the export market.
  - The company has stated that their reserve target for an export market is an estimated 80 to 100 million tonnes. Additional financing towards identifying an 80-100 million tonne resource is contingent upon identification of an export market.
  - Environmental, archaeological and sociological studies have been carried out in preparation for permitting.
  - Cash Resources is discussing the coal project with major thermal power generating companies and Yukon Energy Corp., and has been approached by four coal producing companies with a view to exploiting the Pacific Rim thermal export market.
  - Cash Resources has been granted a 100% interest in an additional 18 coal exploration licenses giving the company exploration rights to a large area which contains a number of other coal occurrences associated with the same sedimentary units that host the Division Mountain coal. Cash Resources has also obtained coal licenses on some lignite coal reserves in the Watson Lake area.

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# Dublin Gulch Property

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## SUMMARY

First Dynasty Mines Ltd. of Denver, Colorado have acquired the Dublin Gulch property, a large tonnage gold deposit located approximately 40 km northeast of Mayo, Yukon. Although inferred reserves indicate that a large open pit mine with well over 100 million tonnes may be possible, the current concept is to initially develop a higher grade core of approximately 50 million tonnes grading 1.19 grams/tonne gold or better.

The mine would consist of an open pit in the Eagle Zone mined at 20,000 tonnes per day producing 10,000 tonnes per day mine waste rock. Based on 50 million tonnes of reserve, the mine would have a life expectancy of approximately 10 years. Ore would be crushed and conveyed or trucked to a cyanide heap leach pad. Pregnant solution would be processed using an adsorption desorption gold recovery (ADR) method and the resulting gold collected would be poured into dore bars on site. In total, this would provide direct employment for approximately 100 to 150 people.

Baseline environmental studies were initiated in 1993 and included hydrology, water quality, meteorology and wildlife monitoring. In order to prepare the IEE, fisheries, wildlife, vegetation, benthic macroinvertebrates and periphyton studies were initiated in 1995. Socioeconomic studies, public and First Nation consultations were underway during 1995. In order to complete the impact assessment, additional geotechnical studies, mine waste rock characterization and feasibility level mine planning will be required.

## HISTORY

Placer gold was discovered in Haggart Creek below Dublin Gulch in 1895. Placer gold was also discovered in Dublin Gulch and the Klondike area in 1898. Scheelite was identified in the Dublin Gulch placers in 1904 and lode gold was discovered in 1907.

The history of lode investigations in Dublin Gulch is complex. A subsidiary of Placer Dome Inc. explored the ground in 1970, primarily looking for lode gold deposits in the intrusive rocks. Queenstake Resources Ltd. entered the area in 1977 and ultimately optioned their holdings to Ivanhoe Goldfields Ltd. in 1991. During its 1991 exploration program, Ivanhoe discovered the intrusive hosted porphyry gold deposit. The 1991 trenching program found that the porphyry gold deposit was mostly restricted to the pluton, and it contained a possible inventory in excess of 2,000,000 ounces of gold.

In September 1991, Ivanhoe granted an option to Amax Gold Inc. to earn a 50% interest in the Dublin Gulch property by reimbursing Ivanhoe's acquisition, staking and exploration costs and incurring additional exploration expenditures at U.S. \$15,000,000 by December 31, 1995. Shortly thereafter Amax assumed control of the exploration program and completed 2,410m of diamond drilling in 16 holes and mapping of the trenches at 1:100 scale.

In 1992, Amax drilled 46 reverse circulation holes totalling 5,651m, conducted extensive soil and rock chip geochemical sampling and a geologic mapping program. Late in 1992 Amax decided not to maintain its rights under the option and the property was returned to Ivanhoe.

Ten reverse circulation holes were drilled during the 1993 field season totalling 2,078 m. Baseline environmental studies were initiated in 1993 and included hydrology, meteorology, water quality and

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# Dublin Gulch Property

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## HISTORY

wildlife monitoring.

In 1994, Ivanhoe Goldfields Ltd., which owns 100% of the Dublin Gulch Property, became a wholly owned subsidiary of First Dynasty Mines Ltd.

The 1995 program included 24,400m of drilling (151 holes), metallurgical testing to prove the viability of heap leaching, several additional engineering studies, and economic evaluations of various project alternatives. Total expenditures on the project are estimated at US\$3.2 million (US\$2.7 on drilling).

Ivanhoe Goldfields, a wholly owned subsidiary of First Dynasty Mines Ltd., changed its name to New Millennium Mining Ltd. in May, 1996.

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# Dublin Gulch Project Summary

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**Location:** 40 km N of Mayo  
**Ownership:** New Millennium Mining Ltd.  
**Commodity:** Gold, (Tungsten)  
**Ore Type:** Gold in Quartz Veins  
**Geological Resource:** 98,884,800 tonnes  
Gold: 1.19 grams per tonne  
**Mineable Reserve:** 47,500,000 tonnes  
Gold: 0.91 grams per tonne  
**Mining Method:** Open Pit, 150 days per year  
**Processing Method:** Heap Leach, 365 days per year  
**Mine Life:** 10 years  
**Employees:** 179  
**Housing:** Camp  
**Power:** 4 MW, Grid or On-site Diesel  
**Expected Start up:** 1998

- Status:**
- Scoping studies to determine recoveries, capital costs, operating costs and economics of a large tonnage open pit mine and a heap leach facility are nearing completion. Rescan Engineering is preparing a bankable feasibility study and it is expected to be completed in late February, 1997.
  
  - The company's independent consultant, Mineral Resources Development Inc., of California, has reported that results of the 1996 drilling program show that the Eagle orebody on the Dublin Gulch property contains 1.51 million ounces of gold in the proven and probable category. Dublin Gulch is expected to produce about 100,000 ounces of gold annually.
  
  - During 1996, the company completed 11,418 metres of reverse circulation and diamond drilling, 380 metres of exploration trenching, 233 geotechnical testpits and 700 soil samples. A legal survey of the critical claims on the property was completed and further environmental baseline data was collected. The Olive, Shamrock and Steiner Zones have been identified as containing similar gold mineralization. A full 1997 summer season will allow construction of the leach facilities and loading of the heap leach pad with ore. The company could pour gold in the fourth quarter of 1997 providing permitting and construction goes as planned.
  
  - Permitting for the Dublin Gulch project is in progress and an addendum to the IEE was submitted to RERC and the public in December, 1996. The environmental screening, public hearing and licensing process is expected to be completed in the first half of 1997.

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# Dublin Gulch Project Summary

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**Status:**

- First Dynasty has been consulting with federal and territorial government authorities, the Village of Mayo and the Nacho Nyak Dun First Nation to ensure the project is developed in a sound environmental and socioeconomic manner.

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# Faro - Grizzly Property

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## SUMMARY

The Grizzly deposit is owned by Anvil Range Mining Corporation and is located about 21 km southeast of the Faro concentrator. Grizzly is one of the five major synsedimentary, stratiform lead-zinc deposits located in an arcuate belt along the south flank of the Anvil Batholith.

Cyprus Anvil Mining Company discovered Dy (renamed Grizzly during 1996) in 1976. During the next five years, CAMC drilled 52 holes and developed a preliminary interpretation and mineral inventory. Curragh acquired the property in 1985 and, between 1989 and 1991, drilled a further 21 holes. Curragh's interpretation shows that there are two main mineralized horizons, the "A", which is relatively lead-enhanced and the "B", which is relatively zinc-enhanced, the two horizons jointly being referred to as the "AB Zone". The internal structure of the deposit is poorly understood but the current thinking is that the structural complexity known to exist at Vangorda and Grum will be exhibited at Grizzly.

Geological reserves have been calculated by various parties at various times. The most recent determination by Curragh, by means of a polygonal method, suggests that the Grizzly deposit has probable and possible reserves of 21.3 million tonnes grading 5.54% lead, 7.33% zinc, 81.1 g/t silver, and 0.87 g/t gold using a 9% Pb+Zn cutoff grade.

These resources lie between approximately 500 and 850 metres below surface and mining would be by underground methods. Additional exploration is required before this deposit would be mined. Capital costs are estimated at about \$45 million.

## HISTORY

Cyprus Anvil Mining Company discovered Dy in 1976. During the next five years, CAMC drilled 52 holes and developed preliminary interpretations and a mineral inventory. Curragh acquired the property in 1985 and, between 1989 and 1991, drilled a further 21 holes. In 1991, three holes were drilled to test a fault in the Dy deposit, and five holes were drilled to test the path of a proposed decline. Ten holes were drilled through overburden to test the proposed portal site.

The Dy deposit was renamed as the Grizzly deposit by Anvil Range Mining Corporation during 1996.

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# Faro - Grizzly Project Summary

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**Location:** 19 km to Faro  
**Ownership:** Anvil Range Mining Corporation  
**Commodity:** Lead, Zinc, Silver, Gold  
**Ore Type:** Sulphide  
**Geological Resource:** 21,356,000 tonnes  
Lead: 5.54 %  
Zinc: 7.33 %  
Silver: 81.10 grams per tonne  
Gold: 0.87 grams per tonne  
**Mining Method:** Underground,  
**Processing Method:** Conventional Mill,  
**Mine Life:** 8 years  
**Employees:** 250  
**Housing:** Faro  
**Power:** 12 MW, Whitehorse - Aisihik Grid  
**Expected Start up:** 2002

**Status:**

- The Grizzly deposit is at the advanced exploration stage. The AB Zone within the Grizzly deposit has not been fully delineated and an underground exploration program would be required before production would commence. It is expected that the development of the Grizzly deposit would require a period of at least two years and cost about \$40 million.
  
- The Grizzly deposit is similar to the other deposits in the Faro area as it is a multi-layered, polydeformed, sediment hosted sequence of exhalative, massive and disseminated pyritic sulphides.
  
- The Grizzly deposit lies at considerable depth and would be mined exclusively by underground methods. This would reduce current production levels at Faro.

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# Faro-Grum Property

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## SUMMARY

The Grum deposit is located about 19 road kilometres north of Faro. Faro is approximately 335 km by road from Whitehorse and 500 km from the ice-free port of Skagway, Alaska. Grum is one of five known stratiform sedimentary exhalative deposits within the Faro area. From northwest to southeast they are Faro, Grum, Vangorda, Grizzly and Swim. The entire property consists of 2300 mining claims and 67 mineral leases which form a contiguous land package with a total area of 41,500 hectares. All five of the deposits are owned by Anvil Range Mining Corporation. The Faro and Vangorda deposits have been mined out.

The Grum deposit has been extensively explored by surface drilling, supplemented by a certain amount of underground development and drilling. The diluted, mineable reserve at a cutoff of 3% Pb + Zn is 24.8 million tonnes grading 4.54% zinc, 2.74% lead, 46.0 grams per tonne silver, and 0.87 grams per tonne gold. Mineralogically, the dominant sulphide is pyrite, with the economic minerals being sphalerite and galena. Minor amounts of pyrrhotite and chalcopyrite are present. Barite is a significant constituent of massive sulphide mineralization.

Waste rock stripping began at the Grum deposit in 1990. As of January 31, 1996, about 928,000 tonnes of till and 120.2 million tonnes of rock remained to be stripped at Grum.

The conventional flotation mill will treat on average 4.2 million tonnes of ore per year or 11,500 tonnes per day. Overall projected recoveries are 76% for lead and 75.3% for zinc. Milling will produce about 335,000 tonnes of zinc concentrate at a grade of 50% and 175,000 tonnes of lead concentrate at a grade of 60% lead per year. The Grum operation has an expected mine life of about 6 years.

Concentrates are dried to approximately 7% moisture before being loaded into specially designed shipping containers for trucking to the port of Skagway, Alaska. The lead and zinc concentrates are loaded separately into pots which have a capacity of 11-12 tonnes of concentrate. Four pots can be carried on a tractor trailer unit. Concentrates are transferred to a storage building prior to loading onto vessels for shipment to smelters in Europe and Japan.

Power requirements for the Grum project, 22 MW, is provided from the Whitehorse - Aishihik - Faro Grid.

After negotiating with DIAND, Anvil has created a Reclamation Security Trust, which will fund its environmental closure liabilities. These liabilities comprise decommissioning and reclamation of mining and related activities on the Vangorda and Grum properties as well as the former Faro mine on an ongoing basis. There is a \$100 million cap on the fund and contributions will be funded by a net smelter return royalty. The rate of the fund will be determined on a graduating scale based on prevailing zinc prices.

Anvil Range temporarily suspended mining operations at Grum on December 20, 1996. Anvil is continuing to process stockpiled ore at 50% capacity during the first three months of 1997 and operations will be reviewed during that period.

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# Faro-Grum Property

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## HISTORY

The Grum deposit was discovered in 1973 while testing a gravity anomaly. Pre-stripping of overburden for open pit production began in 1990. Full-scale stripping of the Grum deposit commenced in April 1992, exposing the tip of the orebody late in the year, but all of Curragh's operations in the Faro area ceased in April 1993 due to low metal prices. At October 1991, the total waste requiring stripping from Grum as 193.2 million tonnes for a stripping ratio of 6.70:1. After removing 21.4 million tonnes, Grum stripping was suspended in December, 1992.

Anvil Range Mining Corp. purchased the Faro operation from Curragh Resources in November, 1994 for \$27 million and sent its first truckload of concentrate to Skagway in mid-August, 1995. Lomak North Trucking has the contract for concentrate transport. The first scheduled concentrate shipments to customers in Asia was sent in mid-September, 1995.

Anvil secured long-term contracts with two international smelters including Korea Zinc, who will each take 100,000 tonnes each of lead and zinc concentrate per year, and Australia Zinc, who will take 125,000 tonnes of zinc. Anvil has discussions underway with Spanish zinc producer Asturiana de Zinc SA on supplying it with concentrates. If successful Asturiana would receive 125 K mt/yr concentrates. All production for the next 6 to 7 years has been sold ahead.

Cominco Ltd. will be marketing the Faro lead and zinc concentrates in Europe for Anvil Range Mining Corporation. Cominco currently markets concentrate in Europe from its Red Dog Mine in Alaska and its Polaris Mine in the NWT.

Anvil was investigating the feasibility of building a crushing and grinding unit adjacent to the Grum site and transporting the ground ore by slurry pipeline to the mill. Anvil Range made significant improvements to the milling and concentrating facilities. Two 40 ft high column cells were added (the largest in the Western world), a Provox custom digital control system was installed, and improvements to the regrind circuit have increased recovery.

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# Faro-Grum Project Summary

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**Location:** 19 km north of Faro

**Ownership:** Anvil Range Mining Corporation

**Commodity:** Zinc, Lead, Silver, Gold

**Ore Type:** Sulphide

**Geological Resource:** 41,635,610 tonnes

Lead: 3.10 %

Zinc: 4.95 %

Silver: 51.48 grams per tonne

Gold: 0.80 grams per tonne

**Mineable Reserve:** 24,760,000 tonnes

Lead: 2.74%

Zinc: 4.54%

Silver: 46.00 grams per tonne

Gold: 0.87 grams per tonne

**Mining Method:** Conventional open pit: drill, 365 days per year

**Processing Method:** Conventional Mill, 365 days per year

**Mine Life:** 6 years

**Employees:** 440

**Housing:** Faro

**Power:** 22 MW, Whitehorse Aishihik Faro Grid

**Expected Start up:** 1997

**Status:**

- Anvil Range Mining Corp. temporarily suspended mining operations at Grum on December 20, 1996. Anvil Range is continuing to process stockpiled ore at 50% capacity during the first three months of 1997 and operations will be reviewed during that period.

- Weak zinc and lead prices, the strengthening Canadian dollar and below production levels, were cited as reasons behind the mine's closure.

- On February, 1997, Anvil Range Mining Corp. announced the closing of a private placement of 4.1 million common shares for a total of \$9.4 million with Cominco Ltd. After the issue of shares, Anvil Range has outstanding 20.5 million common shares, of which approximately 28% are owned by Cominco and approximately 20% are owned by Hyundai Corporation.

- Anvil Range appointed Strathcona Mineral Services and established a committee of independent directors to review the decision to close Grum. Strathcona completed its review of the Faro operations in December, 1996 and agreed with the decision of Anvil to temporarily suspend mining operations. Strathcona has reported its findings to the committee of independent directors and to the Board of Directors. The Board of Directors has confirmed its decision

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# Faro-Grum Project Summary

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**Status:**

of November 20 to temporarily suspend mining operations commencing December 20, after which time all applicable factors, including base metal prices will be reviewed.

- A Socio-Economic agreement has been signed between the Ross River Dena Council and Anvil Range which includes contracting opportunities, training, employment, apprenticeships, and trapline compensation.
- Anvil Range is discussing with the federal government a comprehensive abandonment plan for the project.
- Anvil started a \$5.9 million exploration program on the property during 1996.

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# Grew Creek Property

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## SUMMARY

The Grew Creek property is located approximately 35 kilometers west of Ross River, and one kilometer from the Robert Campbell Highway and the Whitehorse Power Grid. The property consists of 332 claims and is owned by Al Carlos.

Gold and silver mineralization of the Main Zone occurs in stockwork quartz veins and hydrothermal breccias. Mineable reserves are estimated to be 261,000 tonnes grading 13.99 gram/tonne gold and 38.2 grams/tonne silver.

YGC was proposing to mine the Grew Creek ore and truck it 98 kilometres to the Ketz River mill for processing. The Ketz River mill is a 320 tonne per day carbon-in-pulp (CIP) milling complex. The Ketz River mine operated from 1988 to 1990 and produced 100,000 ounces of gold from oxide ore.

## HISTORY

The original claims were staked by Whitehorse prospector Allen Carlos in 1984. The claims were optioned by Hudson's Bay Mining and Smelting, who did extensive exploration work from 1984 to 1986, then dropped its option.

In 1987 the claims were optioned by Noranda, who subsequently signed a joint-venture agreement with Golden Nevada Resources and Brenda Mines. Results of the 1987 program triggered a flurry of claim-staking and exploration activity in the area. A large-scale exploration program continued in 1988. In 1989 Golden Nevada changed its name to Goldnev Resources, and renegotiated the joint venture agreement giving it a 100% interest in the property.

In 1992 Wheaton River Minerals took an option to conduct an underground development program. This program was expected to confirm grade, continuity of mineralization and ground conditions, and would be an important step in preparing the deposit for production.

Wheaton River Minerals approached the Yukon Government for financial assistance in developing the Grew creek orebody in April, 1992. The Department carried out a review of the information provided by Wheaton River and there were several issues for which additional information and analysis was required in order to properly assess the near-term economic viability of the Grew Creek deposit and the potential life of the deposit. Wheaton Rivers' proposal for conducting underground exploration was not funded and they subsequently dropped their option.

YGC Resources Ltd. optioned the property in 1992. Wheaton River Minerals have sold the Ketz River mine assets and known reserves through Ketz River Holdings to YGC Resources. Ketz River Holdings is a 100% owned subsidiary of Wheaton River Minerals and was formed to cover the assets of the Ketz River Mine.

YGC completed a \$150,000 drilling program at Grew Creek in 1995 and a 17 diamond drill hole program in 1996. YGC terminated their option agreement with Al Carlos in January, 1997.

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# Grew Creek Project Summary

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**Location:** 35 km W of Ross River

**Ownership:** Al Carlos

**Commodity:** Gold, Silver

**Ore Type:** Oxide

**Mineable Reserve:** 261,000 tonnes

Silver: 38.20 grams per tonne

Gold: 13.99 grams per tonne

**Mining Method:** Open Pit, 365 days per year

**Processing Method:** Conventional Mill, Dore Bar, 365 days per year

**Mine Life:** 0 years

**Employees:** 0

**Housing:** Camp

**Power:** 3 MW, On-site Diesel Generation

**Expected Start up:** ?

**Status:** - During 1996, YGC Resources completed an infill drilling program of 17 diamond drill holes to further test the open pit portion of the Main Zone deposit. The drilling returned a number of good gold intersections, however, subsequent analysis demonstrated the economics of processing the Grew Creek material at Ketz River to be marginal at best.

YGC Resources have terminated its option agreement with Al Carlos covering the Grew Creek property and have agreed to settle its obligations arising from the termination of the option agreement by paying Mr. Carlos \$25,000 and issuing him 63,500 shares.

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# Ketza River Property

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## SUMMARY

The Ketza River property is a former gold producer and is located about 50 km south of Ross River. The Ketza River Mine operated from 1988 to 1990 and produced over 100,000 ounces of gold.

The Ketza River property hosts a sulphide deposit containing 189,605 tonnes grading 11.31 grams/tonne gold.

The property is currently being explored by YGC Resources Ltd. A new oxide zone, the Fork Zone, was discovered between two mined out orebodies.

## HISTORY

Exploration activity began in the Ketza River district in 1947 with the discovery of silver-lead veins on the nearby Iona property by Hudson Bay Mining and Smelting Company Limited. On the Ketza property to the west, gold was discovered in 1954 and 1955 by prospectors working for Conwest Exploration Company Limited. Conwest explored the Ketza River sulphide gold deposit with trenching and 59 drill holes from 1955 until 1960 and outlined 75,000 tonnes grading 12 g/t Au. Work completed by Conwest was conducted frequently under harsh conditions, often involving a two-day sled dog or packhorse trip to and from the site for supplies. Packhorses were also used for drill moves. Given a \$35 gold price and difficulties in working in this remote location, the project was mothballed.

The Ketza River Property was optioned by Pacific Trans-Ocean Resources in late 1983. Pacific Trans-Ocean and Canamax entered a joint venture agreement to explore and develop the property in early 1984, with Canamax the operating partner. After three years of aggressive exploration an oxide reserve totalling 495,800 tonnes at 18 grams gold per tonne was established. A sulphide reserve of equal size but lower grade was delineated. A production decision based solely on the oxide reserve, was approved early in 1987. Facilities for a 320 tonne-per-day mining and milling operation were constructed in 1987. The first gold bar was poured on April 28, 1988 and the mine was officially opened on July 21, 1988. In April 1989 Canamax Resources Inc. purchased Pacific Trans-Ocean's share of the property and became 100% owner of the Ketza River Mine.

The mine operated from July, 1988 until October, 1990 when the oxide reserves were depleted. The mine produced over 100,000 ounces of gold.

In 1992, Wheaton River Minerals Ltd. purchased the property and equipment of the former Ketza River mine. Responsibility for all operations at the Ketza River site shifted to Wheaton River on August 24, 1992 with the formal closing of the agreement in late November, 1992. In August 1993, Wheaton River Minerals optioned the Shamrock zone of the Ketza River mine property to Hemlo Gold Mines. Wheaton River Minerals (WRM) formed Ketza River Holdings (KRH), a 100% owned subsidiary, to cover the assets of the Ketza River Mine. WRM sold KRH to YGC Resources Ltd. for shares.

The company conducted a diamond drilling program in 1995 during which additional oxide gold mineralization was identified. Exploration and a reinterpretation of the property geology at Ketza River led to the discovery of two new oxide zones, the Fork Zone and the McGiver Zone, and an extension to the B-Mag Zone. The company spent close to \$500,000 on the property during 1995.

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# Ketza River Project Summary

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**Location:** 50 km S of Ross River

**Ownership:** YGC Resources Ltd.

**Commodity:** Gold, Silver

**Ore Type:** Sulphide

**Mineable Reserve:** 189,605 tonnes  
Gold: 11.31 grams per tonne

**Mining Method:** Undetermined,

**Processing Method:** Conventional Mill,

**Mine Life:** 0 years

**Employees:** 0

**Housing:** Camp

**Power:** 3 MW, On-site Diesel

**Expected Start up:** ?

**Status:** - The Ketza River property is a past producer and is currently being re-examined by YGC Resources.

- YGC drilled 21 widely-spaced diamond drill holes on the Shamrock Zone during 1996. The holes were drilled over a strike length of 1,300 metres, across a width of 700 metres and over a vertical interval of 750 metres, with the objective of defining controls to gold mineralization within a large, coincident gold-in-soil, magnetic and visual colour anomaly. Assay results and observed styles of mineralization are consistent with YGC's exploration target of a bulk tonnage, low grade disseminated and stockwork deposit within a portion of the large anomalous area.

- An intensive program of prospecting and mapping was completed in 1996 to investigate a number of other gold geochemical and coincident geophysical anomalies on the Ketza property.

- Exploration for additional mantle oxide reserves in the vicinity of the existing mill continued during the fall with a program of detailed mapping and relogging of holes drilled by previous operators. This reinterpretation of property geology has enabled YGC to project favourable structurally prepared stratigraphic horizons between drill holes, and, to identify potential mineralized zones.

- A large drill campaign is planned for 1997 to define reserves at the Fork, B-Mag, McGiver and Hoodoo zones, and test several new targets.

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# Kudz Ze Kayah Property

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## SUMMARY

The Kudz Ze Kayah property, host of the ABM mineral deposit, is owned by Cominco Ltd. and located 110 air km southeast of Ross River, Yukon. The gently-dipping sheet-like ABM deposit lies below a U-shaped valley, covered by 2 to 10 metres of glacial overburden. An unnamed north-flowing tributary to Finlayson Creek, locally called "Geona Creek" drains beaver ponds which in part overlie the deposit. Finlayson Creek drains into the Finlayson River which forms part of the Upper Liard system draining to the Beaufort Sea.

Exploration work in 1994 delineated the approximate extent of the ABM deposit, roughly estimated to contain 13 million tonnes grading 1.0% copper, 1.3% lead, 5.5% zinc, 125 g/t silver and 1.2 g/t gold. The deposit is a massive sulphide hosted by metamorphosed volcanics and sediments. A mine may be feasible based initially on an open pit, followed by an underground operation.

Results from the 1995 exploration program will determine the feasibility of a mine project in terms of mineable ore reserves, metallurgical process and the engineering of major site facilities. The exploration program included construction of a tote road from the Robert Campbell Highway, diamond drilling, sampling, and engineering and environmental studies. A 50 person camp was constructed on site. If, during the summer of 1995, the key issues are resolved with a positive outcome, a mine project will be advanced for an operational start in 1997. This would result in a mine/concentrator operation producing about 175,000 tonnes per year of lead, zinc and copper concentrate over a 10-12 year period.

## HISTORY

In late 1993, Cominco discovered mineralized float from the ABM deposit on the Kudz Ze Kayah property while following up stream sediment anomalies from a government regional geochemical survey.

Approximately 3,728 claims have been staked covering a large area south and west of the Campbell Highway between Frances Lake and Big Campbell Creek. In many cases, staking was done right up to the boundary of R blocks (Ross River First Nation).

The initial discovery hole was drilled in April 1994. A large regional airborne electromagnetic and magnetic survey was flown and a total of 8500 m in 52 diamond drill holes were completed in 1994 in a helicopter supported, low impact exploration program.

The 1995 exploration program included construction of a tote road from the Robert Campbell Highway (approximately 20 km), 15,000 metres of diamond drilling in 120 holes, sampling, and engineering and environmental activities. The purpose of the drilling was to define the ore reserve, assess mining methods and confirm the absence of important mineralization under possible locations for mill, tailings, and waste rock sites. Drilling commenced in early April and was completed in the fall, 1995. Cominco spent \$3.5 million during 1995 on advanced exploration and \$800,000 on grassroots exploration.

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# Kudz Ze Kayah Project Summary

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**Location:** 115 km SE of Ross River  
**Ownership:** Cominco Ltd.  
**Commodity:** Copper, Lead, Zinc, Silver, Gold

**Ore Type:** Sulphide

**Geological Resource:** 13,000,000 tonnes  
Copper: 1.00 %  
Lead: 1.30 %  
Zinc: 5.50 %  
Silver: 125.00 grams per tonne  
Gold: 1.20 grams per tonne

**Mineable Reserve:** 11,300,000 tonnes  
Copper: 0.93%  
Lead: 1.52%  
Zinc: 5.89%  
Silver: 133.00 grams per tonne  
Gold: 1.34 grams per tonne

**Mining Method:** Open Pit, 365 days per year

**Processing Method:** Conventional Mill, 365 days per year

**Mine Life:** 11 years

**Employees:** 200

**Housing:** Camp

**Power:** 8 MW, On-site Diesel

**Expected Start up:** 1998

**Status:**

- A feasibility study is expected in 1997 with a production decision to follow.
- Cominco completed an exploration program during 1996.
- Metallurgical testing, engineering and cost studies, and environmental permitting activities are underway or have been completed.
- Cominco and the Ross River Dena Development Corp. signed a socio-economic participation agreement in May, 1995. A management advisory committee comprising representatives from Cominco and the Ross River Kaska Dena will be established to implement the terms of the agreement, which covers contracting opportunities, employment, training, temporary land use interruption and environmental management with respect to the Kudz Ze Kayah project.

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# Laforma Property

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## SUMMARY

The Laforma Gold Mine property is located 50 kms northwest of Carmacks on the southern flank of Mt. Freegold in the Seymour Creek watershed. Laforma is a past underground gold producer and is currently being explored by Redell Mining Corp.

The mineable reserve on the property is estimated to be 152,261 tonnes at a cut grade of 5.6 grams/tonne gold.

H.A. Simons completed a study in 1995 and the results indicated there was a large discrepancy between the cut and uncut gold grades from the ore. Because of this discrepancy, H.A. Simons recommended that Redell Mining Corp. conduct a bulk sampling program on the ore.

Redell Mining Corp. is proposing a bulk sampling program to: verify and confirm the gold grade within the Laforma mineralized system; determine the best recovery rate of free gold by utilizing the gravity concentration process and continuous vat leaching or a combination of both processes; determine the optimum method of comminution and liberation of free gold in both low and high grade; determine the recoverable silver content in the system; ascertain the cold water operational efficiency of both recovery systems; and, determine the most efficient and environmentally secure method of mining, gold recovery and reclamation for the Laforma Gold Mine and adjacent properties.

Redell is planning to conduct a small scale test of gravity - based gold recovery from known geological reserves while it completes necessary engineering, geological, economic and environmental studies in preparation for an application for a Type "A" Water Licence for full scale production.

The bulk testing program has two phases. The salient features of Phase 1 of the bulk test are as follows: all of the ore (44,803 tonnes grading 9.74 g/t gold) will be mined from the development of existing underground workings (Adit levels 2,3, and 4); approximately 86 tonnes of ore per day will be crushed, screened and ground for gravity separation of gold through centrifugal concentrators; all water to be used in this process will be pumped from existing adit level 4; water will be recirculated in the mill circuit; all tailings will be deposited underground and used as stope backfill; there will be no surface deposit of wastes; and the mill will be removed upon closure.

The company anticipates that the results of Phase 1 will enable Redell to have a better understanding of the grade, mining, and processing methods at Laforma.

## HISTORY

Gold was discovered in black magnetite rock on Mount Freegold by Fred Guder in the 1930's. The G-3 orebody was initially staked in 1931 and the No. 1 adit was developed at elevation 1188 m for a total of 8.5 m in the winter of 1932-33.

Underground mining activities began in mid 1939 with a 9 ton per day mill beside No. 2 adit at elevation 1110 m. Level 2 was developed for a distance of 437.4 m.

By 1940, a third adit #3 on the G-3 orebody was developed at elevation 1080 m for a distance of 367.6 m and a short adit was driven on the Alpha vein to the east of the G-3 orebody.

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# Laforma Property

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## HISTORY

Limited surface work was carried on between 1946 and 1958. The G-3 orebody was explored with additional underground workings and drilling including the No. 4 adit at elevation 1025 m. Level 4 was developed for a distance of 769.6 m as well as raises totalling 590 m between level 4 and surface. Selective high-grade underground mining of the G-3 orebody supplied a 100 tpd mill for a brief period in the mid 60's. Teck Explorations Ltd in 1982/83 and Tally-Ho Explorations Ltd in 1987 carried out underground diamond drilling including the driving of the No 5 adit at elevation 950 m for a total of 609.9 m. None of the above openings (adits) on the property are presently in use.

Over the past 50 years or more, ten thousand tons of ore has been processed as well as 2083 m of underground development and 6797.6 m surface and underground diamond drilling (including the 1994 Phase I diamond drilling).

Redell carried out development exploration activity on the property in the 1994 season. Diamond drilling of 2012 m in 23 holes was carried out by Main Street Mining on the G-3 orebody. The results from this program were then combined with historical information from the surface and Levels 2 and 3 underground workings data, to develop a geological model of the G-3 orebody.

During the 1995 exploration program, Redell completed surface drilling of eight holes for geotechnical purposes on the G-3 system, two water wells, and a trenching and drilling program (14 holes) on the G3 and G3 extension systems. Trenching on this system produced the Gold Pit and Gold Pit 1. Main Street Mining, a Whitehorse based mining contractor, rehabilitated the #2 and #3 levels of the G3 adit during 1995 and completed an exploration/production adit towards the G3 extension. A new zone, called the White Zone, was discovered and assay results are encouraging. Developmental work for the test stope on the #2 levels has been initiated.

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# Laforma Project Summary

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**Location:** 50 kms NW of Carmacks  
**Ownership:** Redell Mining Corporation  
**Commodity:** Gold  
**Ore Type:** Oxide  
**Geological Resource:** 260,000 tonnes  
Gold: 9.56 grams per tonne  
**Mineable Reserve:** 152,261 tonnes  
Gold: 5.62 grams per tonne  
**Mining Method:** Underground, 270 days this year  
**Processing Method:** Gravity Separation, 270 days this year  
**Mine Life:** 0 years  
**Employees:** 30  
**Housing:** Camp  
**Power:** 0 MW, On-site Diesel  
**Expected Start up:** ?

**Status:**

- Redell Mining Corp. was suspended by the VSE as of June 4, 1996 prompted by concerns over the company's disclosure concerning its Mt. Freegold properties. Redell has responded to these concerns by commissioning an independent report on the Laforma Mine from Ash & Associates Consulting Ltd. of Vancouver. Redell has received this report and the authors recommend an ongoing diamond drilling program to complete in-fill drilling and sampling and to investigate additional mineral resources. The company is making submissions to the VSE with a view to having trading in its shares reinstated.
- The company has received a Class "B" Water License for a 100 ton/day bulk test. The bulk test will use gravity separation to test the recovery of the free gold mineralization within the G-3 system. The water license is for three years, allowing the completion of full engineering, environmental impact and baseline studies which may lead to a production type "A" license.
- Redell Mining Corp. has secured ownership of the property from Main Street Mining Ltd. and raised \$2.15 million in three way financing for the test milling. Redell opened an office in Carmacks and has had positive discussions with local businessmen and First Nations people.

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# Marg Property

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## SUMMARY

The Marg property is located 42 km northeast of Keno City and owned by NDU Resources. NDU Resources conducted a large diamond drilling program on the property from 1987 until 1990. No exploration was conducted on the property from 1991 until 1995. The company is currently conducting a diamond drilling program on the property to increase reserves.

The Marg deposit consists of four stacked massive sulphide lenses hosted by Devonian-Mississippian felsic metavolcanic rocks. Based on 1988 and 1989 diamond drilling, reserves are estimated at 2.9 million tonnes grading 1.62% copper, 2.25% lead, 4.17% zinc, 55.9 g/t silver, and 0.89 g/t gold. The calculated reserves occur in a block 503 m long, 6.1 m thick and with a down-dip extent of 305 m.

From bottom to top, the sulphide lenses are designated A, B, C and D, with the upper, or "D" Zone being the most continuous, and also the thickest (up to 23 m). The sulphide lenses strike east-northeast, dip southeast, and are elongated in a down-dip direction. Along strike, they grade into massive carbonate.

## HISTORY

The Marg property was first staked by Canadian Superior Exploration Ltd. in 1965 on a GSC stream sediment anomaly and explored with soil sampling, mapping, and hand trenching in 1965 and 1966 in a joint venture with United Keno Hill Mines Limited. Canadian Superior performed additional trenching and detailed geochemistry in 1967.

The property was restaked as Flash in July 1977 by Mountaineer Mines Limited and Welcome North Mines Limited and as Tudl in 1982 by ZX Joint Venture (Chevron, SMD Mining and Enterprise Exploration Limited), which explored with mapping, geochem sampling and trenching in 1982 and 1984. In 1986, All North Resources Ltd. optioned a 66-2/3% interest in the property and performed soil sampling, hand trenching and VLF, mag, Max-Min and IP surveys. The remaining 33-1/3% interest is held by SMD Mining which changed its name to Cameco in 1989.

The All-North interest was sold to NDU Resources Ltd. in 1987, which staked additional claims and explored by prospecting, mapping, Max-Min and pulse-EM surveys, airstrip construction, road building and 6037.5 m of diamond drilling (33 holes in 1988). Exploration in 1989 consisted of mapping, VLF, mag and pulse-EM geochem surveys and 5 drill holes. NDU added more Marg claims in 1990 and drilled 10 holes totalling 4119.4 m.

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# Marg Project Summary

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**Location:** Mayo  
**Ownership:** NDU Resources Ltd.  
**Commodity:** Copper, lead, zinc, silver, gold

**Ore Type:** Sulphide

**Geological Resource:** 5,527,002 tonnes  
Copper: 1.76 %  
Lead: 2.46 %  
Zinc: 4.60 %  
Silver: 62.70 grams per tonne  
Gold: 1.00 grams per tonne

**Mining Method:** Not Determined,

**Processing Method:** Conventional Milling,

**Mine Life:** 0 years

**Employees:** 0

**Housing:**

**Power:** 0 MW,

**Expected Start up:** ?

**Status:**

- NDU conducted an exploration and 26 hole drilling program on the property during 1996. Two drills were working on the property. One drill extended reserves on the D horizon and underlying A, B, and C horizons. The second drill explored targets elsewhere on the property.
- Diamond drilling in 1996 has more than doubled the area of previously defined mineralization. The results demonstrate remarkable lateral continuity over a 1,200 metre strike length and up to 700 metres down dip. Both the D Horizon and the C Horizon are open to expansion along strike and down dip.
- NDU has sufficient funds in the treasury to finance a 10,000 m proposed 1996-97 drill program. Drilling, which terminated for the winter on October 3, will resume in May 1997 with the two drills left on site.

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# Minto Property

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## SUMMARY

Minto Explorations Ltd. is proposing to develop the Minto Property located approximately 240 km northwest of Whitehorse, Yukon, on the west side of the Yukon River. The property has mineable reserves of 7.2 million tonnes grading 2.13% copper, 0.51 g/t gold and 7.54 g/t silver. The orebody is located in the upper reaches of the Minto Creek watershed, approximately 10 km upstream of the Yukon River confluence, at an elevation 2,660 to 2,900 ft. The property is currently accessible by helicopter or boat across the Yukon River.

The proposed Minto Project would entail an open pit and underground operation, waste rock stockpiles, a tailings storage facility, ore crushing facilities and a conventional copper flotation mill. These facilities will occupy an area of approximately 141 ha. The mill will be designed to process 1,360 tonnes ore per day for 350 days per year (476,000 tonnes per year). Ore will be treated by conventional flotation to produce copper concentrate containing from 33% to 38% copper. The tailings impoundment will be located within the Minto Creek valley, approximately 850 m east of the mill and has a capacity of 9,979,200 tonnes. Concentrate will be trucked on a daily basis, to Whitehorse, weather permitting.

The Minto project will employ 76 people. Approximately 70% of the positions are expected to be filled by residents of Whitehorse, 15% by residents of Carmacks/Little Salmon Carmacks First Nation, 10% by residents of Pelly Crossing/Selkirk First Nation and 5% by residents of Faro.

The Minto Project is situated on traditional Selkirk First Nation Land and considerable consultation has taken place to ensure that their needs and concerns are addressed. Equal opportunity will be available for employment and business opportunities with the Minto Mine. Minto Explorations Ltd. will provide training opportunities to all First Nation peoples (Selkirk First Nation, Little Salmon Carmacks First Nation, etc.) seeking employment with the mine.

## HISTORY

Anomalous copper concentrations were first detected during a program of stream sediment sampling in the Minto area in 1970.

The MINTO claim group was staked by Asarco Inc./Silver Standard Mines Ltd./Silver Standard Mines Ltd. (The Dawson Range Syndicate) in 1971 (now 100% owned by the Company). The DEF claim group was staked to the north of and adjoining the MINTO claim group by an exploration consortium managed by United Keno Hill Mines Ltd., also in 1971 (now 100% owned by Falconbridge Ltd.). The two claim groups cover an area of approximately 10 square miles.

Both properties were explored from 1972 to 1974. The first significant drill intersection was made in July 1973 and subsequent extensive diamond drilling outlined an ore deposit which is divided into approximately equal parts by the common claim boundary. The proven and probable ore reserve for the deposit is 6,549,984 tonnes with grades of 1.87% copper, 0.65 g/t gold and 9.61 g/t silver.

A Feasibility Study was completed under the joint direction of Asarco Inc. and United Keno Hill Mines Ltd. in 1976. The planned mill throughput was 1,814 tonnes per day using contract mining. Design of the facilities and cost estimates were completed by, or coordinated by, Wright Engineers Ltd. of

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# Minto Property

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## HISTORY

Vancouver. The project did not proceed due to poor indicated financial returns.

Further drilling programs were conducted in 1984 and 1985 by United Keno Hill Mines.

Minto Explorations Ltd. was incorporated in April 1993 specifically for the acquisition of the Minto property interests held by Asarco Inc. and Teck Corp. ( the MINTO claims and leases) and by Falconbridge Limited (the DEF claims and leases) and for the further exploration and development of the Minto property. Teck Corp. and Asarco each sold their interest in the MINTO claims to Minto Explorations for shares in the company, and provided initial working capital of \$375,000 by purchasing further shares.

An agreement was signed with Falconbridge Ltd. for the acquisition of the DEF claims and leases on June 9, 1993. The essence of the agreement is that a cash payment of \$1 million will be made to Falconbridge Ltd. after a production decision has been made and project financing secured. The agreement has a term of 30 months.

The 1995 exploration program included a 425 metre diamond drilling program which tested the western edge of the property, a 147 m condemnation hole drilled north of the proposed mill location, and drilling and sampling to determine geotechnical parameters for the final design of the tailings dam. No new mineral zones were identified by this program. A recent detailed interpretation of 1993 magnetic data identified six exploration targets in areas on the property that had not been previously explored.

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# Minto Project Summary

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**Location:** 80 km NW of Carmacks

**Ownership:** Asarco Inc.  
Minto Explorations Ltd.

**Commodity:** Copper, Silver, Gold

**Ore Type:** Sulphide

**Geological Resource:** 7,980,000 tonnes  
Copper: 1.76 %  
Silver: 7.54 grams per tonne  
Gold: 0.51 grams per tonne

**Mineable Reserve:** 7,200,000 tonnes  
Copper: 2.13%  
Silver: 7.54 grams per tonne  
Gold: 0.51 grams per tonne

**Mining Method:** Open Pit and Underground, 350 days per year

**Processing Method:** Conventional Mill, 365 days per year

**Mine Life:** 13 years

**Employees:** 76

**Housing:** Camp

**Power:** 2 MW, Diesel Generation on Yukon River

**Expected Start up:** 1998

- Status:**
- Asarco Inc. have acquired a 70% interest in Minto in consideration for providing up to \$34 million for project development. Minto will retain a 30% interest in the project and will be the operator.
  - Minto as operator is responsible for maintaining the property in good standing, obtaining permits and licences, conducting ongoing exploration and exercising the underlying property option. All necessary permits to construct the plant and mine have been applied for with approvals expected to be received in time to start property work before the end of 1996.
  - The company has completed a feasibility study and it is expected that a production decision will be made shortly. Environmental permitting is underway and the company applied for a Water License in January, 1996. It is expected that environmental approvals and a Water License can be secured and that a mine and mill can be developed on the property over a period of about 18 months.
  - Minto began construction on the road and the bridge across Big Creek during 1996.

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# Mount Nansen Property

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## SUMMARY

B.Y.G. Natural Resources Inc. (BYG) is currently developing its Mount Nansen property as an open pit mine with start-up in 1996. The site is located approximately 60 km west of Carmacks, Yukon. The Mount Nansen claim group consists of 257 mineral claims and 30 mineral leases with a total area of 5,300 hectares.

A series of anastomosing veins occur in a 6 km long by 2.5 km wide belt extending the length of the property. The Brown-McDade Zone lies at the southeasterly end of the belt. It is 500m long by 200 metres wide and consists of quartz veins and associated feldspar porphyry dykes. Supergene weathering has converted near surface sulphide minerals to limonite and other oxides. The total mineral inventory for the Mt. Nansen property, including the Brown-McDade, Webber, Heustis and Flex zones along with the dumps and tailings, is 1,009,403 tonnes grading 7.38 g/t gold and 148 g/t silver. The mineable reserve is estimated to be 648,370 tonnes grading 6.67 g/t gold and 132 g/t silver. The mineable reserve is comprised of ore from the Brown-McDade and the Webber deposits as well as the dumps and tailings.

BYG plans to mine approximately 300 tonne of gold bearing oxide ore per day using open pit mining methods and to process this ore in an on-site mill using the Carbon-in-Pulp (CIP) process. Proven reserves from the Brown-McDade zone allow for a project life of about four years, including one year of preproduction work. It is expected that the three year operating life of the project will be extended by the discovery of additional oxide ore in the other deposits on the property (Webber and Flex). Extension of mine life could also result if viable metallurgical processes are developed for potential sulphide ore on the property (Heustis). There is a geological sulphide reserve on the property of 599,247 tonnes grading 8.88 grams/tonne gold and 190 grams/tonne silver. Gold production of 50,000 ounces is expected for the first year of operation.

## HISTORY

Placer operators were the first to work around the Brown-McDade area. Hardrock exploration started in the period of 1930 to 1943, and the first recorded discovery of gold on the current site was by prospectors Brown and McDade in 1943.

The first underground work was conducted on the Brown-McDade zone in 1947. This was followed by underground mining on the Heustis and Webber zones in 1964 to 1969. Production from stoping activities on the Heustis zone was carried out from 1968 to 1969. The mine was returned to production in 1975 and 1976. Ore was treated in a 272 tonne/day flotation mill during that period.

In all, over 4,572 metres of underground development has been completed on the three veins. Approximately 22,680 tonnes of ore was treated in the flotation mill in 1975 and 1976.

B.Y.G. Natural Resources Inc. (BYG) acquired the properties and combined them with additional claims to form the current property in 1984. BYG then carried out an exploration program in conjunction with Chevron Minerals during the period of 1985 to 1989. Over \$5 million was expended on exploration during this time-frame, resulting in the discovery of significant oxide reserves in the Brown-McDade and Flex zones. BYG currently owns 100% of the Mount Nansen project, subject to royalties.

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# Mount Nansen Property

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## HISTORY

The company has reported that diamond drilling on the property during 1995 has indicated that two of the four gold-silver deposits have extensions along strike and that at least one mineralized zone has possible extension to depth. Infill drilling at the Flex, one of the four proposed for production has confirmed earlier estimates of grade and tonnage. Drilling on the property will continue in 1996.

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# Mount Nansen Project Summary

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**Location:** 60 km W of Carmacks  
**Ownership:** B.Y.G. Natural Resources Inc.  
**Commodity:** Gold, Silver  
**Ore Type:** Oxide and Sulphide  
**Geological Resource:** 1,077,826 tonnes  
Silver: 166.92 grams per tonne  
Gold: 7.64 grams per tonne  
**Mineable Reserve:** 386,337 tonnes  
Silver: 75.09 grams per tonne  
Gold: 5.17 grams per tonne  
**Mining Method:** Open Pit and Underground, 365 days per year  
**Processing Method:** Conventional Mill, 365 days per year  
**Mine Life:** 4 years  
**Employees:** 65  
**Housing:** Camp  
**Power:** 2 MW, On-site Diesel Generation  
**Expected Start up:** 1996

- Status:**
- Gold production from surface oxide ores commenced during the week of October 18, 1996 and the company poured their first bar of gold on November 23, 1996. The company expects to produce about 50,000 ounces of gold in the first year of operation. Expansion of mining and milling operations is anticipated in 1997.
  - A high grade gold vein was uncovered while clearing a site for road gravel. The significance of this gold occurrence is that it is on a geochemical anomaly that runs parallel, for an estimated 3 km, to the geochemical anomaly which hosts the Brown-McDade open pit mine. The Company commenced diamond drilling in October, 1996 to test the vein at depth and ascertain the optimum placement of an underground decline that would access both the Brown-McDade and this parallel gold system. This discovery increases the potential to expand reserves on the property.
  - The Company has successfully raised \$7 million in the form of a gold loan to complete the mine and plant. BYG recently arranged a \$2.5 million loan with Gerald Metals.
  - A socio-economic agreement between BYG and Little Salmon Carmacks First Nation was signed in May, 1996. This agreement provides the framework for a partnership on several proposed ventures in the region.

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# Mount Nansen Project Summary

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**Status:**

- B.Y.G. Natural Resources has signed a letter of intent for a custom milling agreement with Redell Mining Corp. to process La Forma ore and have acquired an option to purchase Aurchem Exploration Ltd. Aurchem properties are on strike with Mt. Nansen deposits.
  
- BYG applied for a land lease of 600 acres on the old Whitehorse Copper site within the city limits of Whitehorse. The site will be used for the construction of the Company's custom milling pressure oxidation plant used to process sulphide ores, as well as its mining service facilities. A final feasibility study is underway to examine the mining of gold sulphide ores from the Skukum Creek Mine, the Huestis Mine, the Webber Mine, the Brown-McDade and the Arctic Mine.
  
- Trumpeter Yukon Gold Inc., a subsidiary of BYG Natural Resources, has qualified for listing its shares on the Alberta Stock Exchange. Trumpeter Yukon is an exploration company whose principal mandate is to finance the exploration and development of the properties of Omni Resources Inc., to develop its wholly-owned Arctic Mine, and to participate in the joint venture exploration of the Tawa property located north of Mt. Nansen.

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# Mt. Skukum/Skukum Creek Property

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## SUMMARY

The Mount Skukum and Skukum Creek deposits are located approximately 65 km southwest of Whitehorse at the termination of the Annie Lake Road. Both of these properties are 100% owned by Omni Resources Ltd.

The Mt. Skukum property was discovered in 1981 by AGIP. Mineralization on the property is restricted to gold within quartz-carbonate veins. Underground mine production began on the Main Cirque ore body in 1986 at a rate of 300 tonnes per day and continued until August 1988 when that orebody was exhausted. Approximately 223,400 tons of ore was mined and 77,796 ounces of gold were recovered. The mineral processing facility remains on site and was a conventional Merrill-Crow crushing, grinding, cyanidation, zinc precipitation circuit with cyanide destruction using the Inco SO<sub>2</sub> system. It is estimated that about 98,885 tonnes of oxide ore grading 14.75 g/t gold remains at the Lake Zone.

The Skukum Creek property was originally staked in 1922 and obtained by Omni Resources in 1984. Exploration and development proceeded quickly on the property from 1985 to 1988. The program, financed largely through flow-through share funding, included more than 24,000 m of surface and underground diamond drilling and 2200 m of underground development on the 1300 and 1350 levels. The Skukum Creek orebody includes the Rainbow and Kuhn sulphide-rich veins which contain moderate gold and significant silver values. Several tries to bring the property into production have failed.

There has been no development or exploration on Mt. Skukum since 1989. The Goddell vein, part of the Skukum Creek property, was drilled during 1995 and 1996.

## HISTORY

The Wheaton River District first received attention in the early 1890's when prospectors discovered gold-bearing quartz-stibnite veins while on route to the Klondike area. With the completion of the White Pass and the Yukon Route Railroad in 1903, the area became more accessible to prospecting and numerous other gold and silver occurrences were located between that year and 1906. Stibnite mineralization was discovered approximately 14 km east of Mount Skukum at Goddell Gully in 1909 and gold-silver mineralization was discovered on the southeast side of Skukum Creek approximately 7 km southeast of Mount Skukum in 1922.

Exploration activity slowed with the beginning of World War One and did not resume until the 1960's when activity increased and stibnite veins in the Goddell Gully, Wheaton River and Skukum Creek areas were re-examined. During the 1970's, most of the exploration activity in the Wheaton River District was carried out in search of copper, molybdenum and uranium.

Exploration activity peaked in the Wheaton River District in 1981 due to an increase in the price of gold and the discovery of gold-bearing quartz-carbonate veins in the Mount Skukum volcanic complex by AGIP. The project became the site of the Mount Skukum Gold Mine which mined 223,439 tons of ore and recovered 77,796 ounces of gold by underground methods from 1986 to 1988. In 1985, Omni Resources Inc. reported geological reserves of 745,000 tonnes grading 7.9 g/tonne gold and 305 g/tonne silver on their Skukum Creek property which is contiguous with claims forming the southeast

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# Mt. Skukum/Skukum Creek Property

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## HISTORY

corner of the Mount Skukum property. From 1985 to 1988, Berglynn Resources Inc. carried out an exploration program on their Goddell Gully property located at the southeast corner of the Mount Skukum Property and adjoining ground held by Omni Resources Inc. This program led to the intersection of high-grade gold mineralization in drill core. The Omni, Berglynn and Mount Skukum Gold Mine properties have been dormant since 1989.

The company completed a drill program on the Goddell Gold project in 1995. The five hole, 2820m diamond drill program confirmed a large, well mineralized shear zone. The shear zone is open to extension in depth and length.

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# Mt. Skukum/Skukum Creek Project Summary

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**Location:** 40 km W of Carcross  
**Ownership:** Omni Resources Inc.  
Arkona Resources Inc.

**Commodity:** Gold, Silver

***Ore Type: Oxide - Mt. Skukum***

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**Mineable Reserve:** 98,885 tonnes  
Gold: 14.75 grams per tonne  
**Mining Method:** Underground,  
**Processing Method:** Conventional Mill,

***Ore Type: Sulphide - Skukum Creek***

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**Geological Resource:** 725,760 tonnes  
Silver: 243.09 grams per tonne  
Gold: 7.68 grams per tonne  
**Mineable Reserve:** 465,394 tonnes  
Silver: 274.00 grams per tonne  
Gold: 7.54 grams per tonne  
**Mining Method:** Underground,  
**Processing Method:** Conventional Mill,

**Mine Life:** 4 years  
**Employees:** 80  
**Housing:** Camp  
**Power:** 3 MW, On-site Diesel Generation  
**Expected Start up:** ?

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# Mt. Skukum/Skukum Creek Project Summary

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**Status:**

- Omni Resources completed a 620 meter decline in December, 1996 at the Goddell Shear. A 20 hole diamond drill program, with all holes collared within the adit, is underway to test a swarm of andesite dykes west of the 50 metre wide Goddell Shear. Five holes were drilled during January, 1997 near the end of the decline and returned some half ounce intersections. The Goddell Shear project is under option from Arkona Resources Inc.
  
- Omni is conducting a fifteen hole drill program on the Skukum Creek Property. Drill results have doubled the size, increased the width and improved the overall grade of the Rainbow zone. The company is also driving a 100 metre crosscut from the existing adit.
  
- Initial expenditures for the rehabilitation project are about \$3 million with a further \$4.5 million to follow. The company is expected to spend a minimum of \$650,00 during 1996 on drilling.
  
- A final feasibility study will be completed during February, 1997 for mining Omni's Skukum Creek deposit. Production rates are anticipated at 500-700 tons per day. Omni expected to make a production decision on the Goddell Gold project and the Skukum Creek project in late 1997.
  
- In April 1996, Omni entered into an agreement with Trumpeter Yukon Gold whereby Trumpeter would finance Omni through equity over one year to earn a 50% joint interest in Omni's holdings. Trumpeter Yukon Gold Inc. is a company controlled by BYG Natural Resources of Vancouver. The agreement further provides the opportunity for Trumpeter to enter into a 50/50 joint venture with Omni on the Mt. Skukum properties provided all the warrants in the agreement are exercised within the 12 months, to June 1997.

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# Sa Dena Hes Property

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## SUMMARY

The Sa Dena Hes lead-zinc mine is located approximately 45 km north of Watson Lake and is owned by Teck Resources (25%), Cominco (25%), Korea Zinc (40%) and Samsung (10%). The property covers approximately 5,600 hectares.

Production began at the Sa Dena Hes mine in August, 1991 and ceased operations in November, 1992 due to low zinc prices. During the fourteen months of operation the mine produced 607,500 tonnes of concentrate containing 374,400 tonnes of payable zinc and 290,200 tonnes of lead. Infrastructure on site includes the underground mine, ore handling facilities, a 1,500 tonne per day conventional mill, loadout facilities, tailings and reclaim system, shops, warehouse, security and first aid office, a 200 person camp, administration building, and a 6.2 MW power plant.

The mineable reserve on the property is estimated to be 1.75 million tonnes grading 3.47% lead, 12.1% zinc, and 52 g/t silver. An exploration program was completed early in 1995 to identify additional mineable reserves.

Cominco has basically mothballed the mine, however, production may commence in 1996 with continued strong zinc prices and identification of additional reserves.

## HISTORY

Mineralization was discovered on the Sa Dena Hes property in 1962 by the Frances River Syndicate. The property was worked on at various times by Atlas Explorations, Cima Resources, and Canamax Resources. Curragh Resources (80%) and Hillsborough Resources Limited (20%) as joint venture partners acquired the property in 1989 from Canamax Resources. The Joint Venture spent a further \$5.3 million between April, 1989 and August, 1990 on a field program of geological exploration and diamond drilling. Following completion of the detailed geological assessment, the Joint Venture decided to proceed with construction of the project and work commenced in October, 1990.

In early 1991, a socio-economic agreement was signed by the Joint Venture, the Kaska Dena First Nation, the Town of Watson Lake and the Government of Yukon. The objective of the agreement was to ensure that business and employment opportunities were available to local residents on a preferential basis. In addition, there was an agreement between the Joint Venture and Kaska which extended to the Kaska business, employment, and training opportunities and an option to purchase a 10% interest in the mine.

The Sa Dena Hes mine began production in August, 1991 and ceased operations in December, 1992. Production was halted because of low metal prices.

In September, 1993, the Ontario Court appointed Coopers & Lybrand as the interim receiver acting for the Bank of Nova Scotia for the Sa Dena Hes and Stronsay (Cirque) assets.

The Sa Dena Hes and Stronsay (Cirque) lead-zinc properties were bought by Teck (25%), Cominco (25%), Korea Zinc (40%) and Samsung (10%) in December, 1993. The four partners paid an estimated \$43 million for the Sa Dena Hes and the Stronsay (Cirque) properties. There has been no production at Sa Dena Hes since closure in 1992.

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# Sa Dena Hes Project Summary

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**Location:** 50 km NE of Watson Lake

**Ownership:** Cominco Ltd. (25%)  
Teck Resources (25%)  
Korea Zinc (40%)  
Samsung (10%)

**Commodity:** Lead, zinc, silver

**Ore Type:** Sulphide

**Geological Resource:** 3,200,000 tonnes  
Lead: 3.70 %  
Zinc: 12.90 %  
Silver: 57.00 grams per tonne

**Mineable Reserve:** 1,756,564 tonnes  
Lead: 3.40%  
Zinc: 12.10%  
Silver: 52.00 grams per tonne

**Mining Method:** Underground, 365 days per year

**Processing Method:** Conventional Mill, 365 days per year

**Mine Life:** 4 years

**Employees:** 81

**Housing:** Camp

**Power:** 6 MW, On-site Diesel Generation

**Expected Start up:** ?

**Status:** - Cominco has mothballed the mine and production will not resume until metal prices increase.

- Production may commence with continued strong zinc prices and the identification of additional reserves.

- An exploration program was completed in 1995 to confirm mineable reserves.

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# Tulsequah Chief Property

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## SUMMARY

The Tulsequah Chief project, 100% owned by Redfern Resources Ltd. (Redfern), is a former base and precious metals producing mine hosting copper, lead, zinc, gold and silver mineralization. The project site is located in the British Columbia Coastal Mountain Range near the Alaska border, some 64 km northeast of Juneau, Alaska.

The Tulsequah Chief property is predominantly underlain by folded, faulted and metamorphosed pre-Permian, volcanic-dominated rocks of the Mount Eaton Group as well as intrusive rocks of the Coast Plutonic belt. The Tulsequah Chief property contains Kuroko-type volcanogenic massive sulphide deposits which are believed to have precipitated on the sea floor adjacent to fumaroles associated with felsic submarine volcanism. Sulphide mineralization consists of thin-banded to massive pyrite with lesser amounts of sphalerite, chalcopyrite and galena. The mineable ore reserve is estimated to contain 7,900,000 tonnes grading 1.27% copper, 1.18% lead, 6.35% zinc, 2.42 grams/tonne gold, and 100.91 grams/tonne silver.

Underground mine production is estimated at 2,466 tonnes per day over a 9 year mine life. The proposed milling plan involves gravity concentration within the grinding circuit, followed by differential flotation to recover free gold and to produce separate copper, lead, and zinc concentrates.

Access to the project is currently by helicopter or fixed wing from Atlin or Juneau. Redfern is proposing a 160 km access road to be constructed from the minesite to the existing road near Atlin and operated as a restricted access road under the B.C. Mining Right-of-Way Act. The project will employ about 200 people. Power requirements are estimated to be 12 MW.

Redfern has completed all environmental baseline studies begun in May, 1994 and shortly will receive the specifications for filing a project report under the B.C. Environmental Assessment Act. The company expects to file the report, compiled by Rescan Environmental, early in 1996. A ministry decision is expected later in the year following completion of final public consultation and government and stakeholder reviews.

## HISTORY

In 1923, W. Kirkham of Juneau, Alaska discovered the Tulsequah Chief deposit while prospecting in the Tulsequah River valley. The initial discovery of a highly mineralized showing located above the present 6500 level adit (400 m above sea level) initiated a wave of prospecting activity in the area. The ensuing years of intensive prospecting efforts culminated in the 1929 discovery of the Big Bull deposit some seven kilometers to the south. In the same year, discoveries were also made at the Sparling, Banker and Polaris-Taku deposits.

The Tulsequah Chief and Big Bull deposits were acquired by Cominco in 1946 and were put into production by 1951. For six years, both deposits were mined at an average rate of 482 tonnes/day. In 1957, Cominco was forced to close its operations with substantial reserves in place due to low metal prices. From 1957 until 1971, the mine site lay dormant and unexplored.

During operations in the 1950's, the Tulsequah Chief deposits were considered to be shear-zone controlled. In 1971, re-examination of the local geology by Cominco geologists led to identification of

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# Tulsequah Chief Property

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## HISTORY

volcanogenic massive sulphide (VMS) mineralization. Ten years passed before the next wave of exploration commenced. In 1981, 1:250,000 and 1:50,000 mapping was conducted. This work was followed in 1982 by airborne Dighem and Questor Input AEM geophysical surveys conducted by Cominco and Redfern Resources Ltd., respectively. The 1:50,000 mapping work was originally published in 1984 and then in 1987 it was further refined and re-published for Cominco.

In 1987, ongoing discussions between Cominco and Redfern led to an agreement whereby Redfern acquired the right to earn up to a 40% interest in the Tulsequah Chief deposits. Since that time, exploration has continued every year to date with concurrent negotiations resulting in Redfern's present 100% ownership of the property.

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# Tulsequah Chief Project Summary

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**Location:** 100 km S of Atlin  
**Ownership:** Redfern Resources Ltd.  
**Commodity:** Copper, lead, zinc, gold, silver

**Ore Type: Sulphide**

**Geological Resource:** 8,930,000 tonnes  
Copper: 1.31 %  
Lead: 1.24 %  
Zinc: 6.61 %  
Silver: 107.56 grams per tonne  
Gold: 2.53 grams per tonne

**Mineable Reserve:** 7,910,000 tonnes  
Copper: 1.27%  
Lead: 1.18%  
Zinc: 6.35%  
Silver: 100.91 grams per tonne  
Gold: 2.42grams per tonne

**Mining Method:** Underground, 343 days per year

**Processing Method:** Conventional Mill, 365 days per year

**Mine Life:** 9 years

**Employees:** 199

**Housing:** Camp

**Power:** 12 MW, On-site Diesel

**Expected Start up:** 1997

**Status:**

- The Tulsequah Chief deposit is located in northwestern British Columbia and will be permitted through the British Columbia system.
- Redfern Resources is currently planning to fly their crews from either Vancouver, Smithers or Whitehorse. They will reside in a 200 person camp on site.
- A positive feasibility study was completed by Rescan Engineering.
- The company filed a project report for the environmental assessment process, compiled by Rescan Environmental, in mid 1996. Final public consultation and Government reviews will follow submission of the report, and Redfern could receive the Project Approval Certificate by February 1997 if the review process is completed within the guidelines set forth under the Environmental Assessment Act.
- Redfern has been meeting with smelters in Asia and North America seeking buyers for the copper and zinc concentrates from the Tulsequah project and

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# Tulsequah Chief Project Summary

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**Status:** concurrently have been reviewing options for project financing. Letters are in hand from smelters in Japan and Canada expressing an interest in buying 100% of the bulk copper-lead, plus precious metal concentrates.

- Proposals have been received from financial and banking groups with offers to provide assistance in arranging the \$155 million financing package required to place the Tulsequah project in production. Redfern is also conducting discussions with certain operating mining companies which have expressed an interest in participation, either through joint venturing or via corporate merger.
- Metallurgical studies continued in 1996 with the two-fold objective of reducing the lead in the bulk-copper lead concentrate, and concurrently producing a saleable lead concentrate.
- Redfern Resources is proposing construction of a year-round 160 km access road to be constructed from the minesite to the existing road near Atlin, B.C. From here concentrate would be hauled to port facilities in Skagway, Alaska. The access road would be operated as a restricted access road under the B.C. Mining Right-of-Way Act.
- Redfern has spent \$16.8 million on exploration, delineation drilling, metallurgical testing, environmental work, engineering design and feasibility studies on the property since 1987.

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# United Keno Hill Property

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## SUMMARY

The United Keno Hill property is located in Elsa, approximately 354 km north of Whitehorse. The property is owned by United Keno Hill Mines Limited and comprised of several underground and open pit silver-lead-zinc mines in the Keno Hill-Galena Hill area. The Elsa operations have been in production since the initial discovery of silver in 1906. Between 1947 and 1989, United Keno Hill Mines produced 148 million ounces of silver, 482 million pounds of lead, 330 million pounds of zinc and 4 million pounds of cadmium from the Elsa operations.

More than 65 mineral deposits and prospects have been identified within the Keno Hill district. All of the mineable silver veins to date occur in an area 26 km long and 1 to 6.4 km wide. The deposits consist of mineralized vein faults 0.3 to 30 m wide in the Keno Hill quartzite. Current measured, indicated and inferred resources on the property are estimated at 388,735 tonnes grading 1169.14 grams/tonne silver, 7.86% lead and 5.27% zinc.

United Keno Hill Mines Ltd. has been conducting surface and underground exploration with the goal of increasing existing reserves to support an initial five year mine life at a historic average grade of approximately 1300 grams/tonne silver. The company hired Watts, Griffis and McQuatt Ltd. of Toronto to oversee the 1994-1995 exploration programs. The underground program was halted in April, 1995 to compile and assess the data and plan the next step.

The 1996 program will investigate the down-dip continuation of the mineralized zones at the Bellekeno, Silver King and Husky Southwest Mines. If the exploration program is successful, United Keno Hill proposes to resume commercial production in late 1996 at the Bellekeno and Silver King mines.

## HISTORY

Silver and lead mineralization was first discovered on the property in 1903. Treadwell Yukon Company Limited had acquired the better showings in the area and began shipping hand-cobbed ore in 1921. Treadwell operated the mine from 1921 to 1941 and it produced 1.5 billion grams of silver.

In 1945, Frobisher Exploration Company Ltd. and Conwest Exploration Company Ltd. formed Keno Hill Mining Company Ltd. United Keno operated the mine from 1946 until 1988. A strike from September 1980 to May 1981 severely curtailed production. Low silver prices forced the mine to close from July, 1982 to August, 1983. In January 1989, the mine was closed due to low silver prices. From 1946 to 1988 about 5.08 billion grams of silver were produced from the Hector-Calumet, Galkeno, Bellekeno, Elsa, Keno (No. 3 & 9), Lucky Queen, Silver King, Sadie-Ladue and Husky Mines.

In 1990, Archer, Cathro and Associates mined over 100 tonnes of high-grade ore from open pits on the Lucky Queen, Keno #3 and Keno #9 veins.

In July, 1990 BLM Mines Inc., a unit of Bharti Laamanen Mining Inc. of Sudbury, Ontario, purchased the 44.8% interest in United Keno Hill Mines Ltd. formerly held by Falconbridge Ltd. In 1991, Romith Investments and Stephen Powell each acquired directly or indirectly, 50% of the issued and outstanding common shares of BLM.

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# United Keno Hill Property

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## HISTORY

In September, 1993, United Keno Hill retained mine engineers Watts, Griffis and McOuat Ltd. (WGM) of Toronto to undertake a complete review of its Elsa area properties, geological reserves and mine plans. A surface drilling program was completed in the Silver King, Husky SW and Bellekeno areas during the summer of 1994.

From mid-October 1994 to April 1995 an underground drilling and rehabilitation was conducted on the Bellekeno and Silver King mines. The company spent \$5-8 million underground drilling program and they received a Type B Water License from the Water Board for this work. Assessment of the results and planning for the next phase of work is underway. This program has increased the reserves at the Bellekeno Mine and Silver King Mine.

Water treatment facilities were constructed in the fall, 1994 for three of the mine sites, and the Bellekeno and Silver King mines are now substantially rehabilitated. New 5 kV lines and transformers provide a modern electrical system in each mine, and new compressors and re-engineered ventilation deliver the necessary underground working environment.

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# United Keno Hill Project Summary

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**Location:** Elsa

**Ownership:** United Keno Hill Mines Ltd.

**Commodity:** Silver, lead

**Ore Type:** Sulphide

**Geological Resource:** 838,758 tonnes

Lead: 4.58 %

Zinc: 3.76 %

Silver: 1022.06 grams per tonne

**Mining Method:** Underground, 365 days per year

**Processing Method:** Conventional Mill, 365 days per year

**Mine Life:** 5 years

**Employees:** 170

**Housing:** Camp

**Power:** 3 MW, Grid

**Expected Start up:** 1997

**Status:**

- In April 1996, the company resumed the underground exploration and development program on the Bellekeno and Silver King Mines in an effort to increase reserves and establish mineable ore reserves. Environmental fieldwork and background data gathering also continued.
  
- Rescan Engineering completed a feasibility study on the property in October, 1996. The feasibility study supports the Company's view that it can reduce costs and increase efficiency. The effectiveness of the proposed mining methods and mine development strategies has been confirmed and the Feasibility Study suggests substantial improvement over historic operating costs and recoveries.
  
- United Keno Hill Mines is adopting the recommendations of the feasibility study and, based on its conclusions, is implementing a program of rehabilitation and development intended to permit the recommencement of commercial production from Elsa early in 1997.
  
- The two mines will produce between 4 - 5 million ounces of silver per year. A bus-in and out operation on a rotational schedule with on-site bunkhouse accomodation is contemplated.
  
- The First Nation of Na-cho Nyak Dun have given conditional environmental approval to the draft operating and closure plans prepared by United Keno Hill Mines in connection with its plan to resume commercial production of silver from Elsa.

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# Wellgreen Property

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## SUMMARY

The Wellgreen platinum group metal (PGM) rich, copper-nickel project is located in the southwestern Yukon, approximately 317 km north-west of Whitehorse. Northern Platinum and J. P. Sheridan have optioned the property from All-North Resources, the owners of the property. The Wellgreen property consists of 91 claims held under a renewable 21 year Mining lease which expires December 5, 1999. Limited mining was carried out in 1972 and 1973 by Hudson-Yukon Mining Company Ltd.

Mineralization on the Wellgreen property occurs within a variably serpentinized, 20 km long ultramafic body, known as the Quill Creek Complex, that intrudes Permian sedimentary and volcanic rocks. Three main zones of PGM enriched copper-nickel mineralization have been outlined on the Wellgreen property, the East zone, the West Zone and the North Zone. Proven and probable reserves are estimated to be 50.03 million tonnes grading 0.35% copper, 0.36% nickel, 0.54 grams/tonne platinum, and 0.34 grams/tonne palladium.

A 1989 preliminary feasibility report by Watts, Griffis and McOuat proposed: open pit mining at 10,000 tonnes per day (3.65 million tonnes per year) at an average stripping ratio of 3.5:1; processing by conventional mill producing a concentrate with approximately 15% combined copper and nickel as well as PGMs and the cobalt, gold and silver in the ore; and, a Noranda reactor type smelter to reduce the shipping cost. The smelter would produce a 40% copper-nickel matte on site. Capital costs were estimated at \$228 million and operating costs were thought to be about \$18.61 per tonne ore. The power requirements are expected to be about 35 MW and the project should employ 400 to 500 people.

Northern Platinum did not conduct any exploration on the property during 1995.

## HISTORY

The Wellgreen deposit was discovered in 1952 by the Yukon Mining Corporation Limited and optioned to Hudson Bay Mining and Smelting Ltd. Hudson Bay explored with 4,267 m of drifting and raising from 4 levels, 2 internal shafts and 19,815 m of surface and underground drilling from 1952 to 1955. The property was transferred in 1955 to Hudson-Yukon Mining Company Ltd. They conducted a Turam survey in 1968, drilled 762 m and prepared a feasibility study in 1969, and arranged a marketing agreement with Sumitomo in 1970. Due to underground problems, initial production from the 544 tonne/day mill was delayed from September 1971 to May, 1972, and was suspended in July, 1973 after treating only 171,652 tonnes. Total production was 33,853 tonnes of concentrate grading 7.4% nickel and 6.6% copper.

The property was optioned in June 1986 by Kluane Joint Venture which carried out grid soil sampling, mapping, prospecting, bulldozer trenching and test geophysical surveys. Hudson-Yukon was purchased by Galactic Resources Ltd. in June 1986 and merged with All-North Resource Ltd. in November 1986. Additional soil sampling, bulldozer trenching, geophysical surveys, underground rehabilitation and 4,932m of diamond drilling in 45 holes was carried out in 1987. In 1988, the 4250 level was rehabilitated and 34 underground holes were drilled totalling 5,500 m. On surface, bulldozer trenching and 37 holes totalling 6,073 m were drilled. Metallurgical tests and a preliminary feasibility study were carried out in 1988 and 1989.

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# Wellgreen Property

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## HISTORY

J.P. Sheridan and Northern Platinum optioned the property in June 1994 from the owner All-North Resources. All-North Resources granted an option to earn an 80% interest to Sheridan in return for \$80,000 cash and a commitment to spend \$4 million on exploration by November 30, 2002. Sheridan, in turn, assigned the option to Northern Platinum, retaining back-in rights for half of that company's interest at the feasibility stage. Sheridan is a director of Northern Platinum.

No exploration was conducted on the property during the summer of 1995.

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# Wellgreen Project Summary

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**Location:** 125 km NW of Haines Junction

**Ownership:** Northern Platinum Ltd.

**Commodity:** Copper, nickel, platinum, palladium

**Ore Type:** Sulphide

**Geological Resource:** 50,032,466 tonnes

Copper: 0.35 %

Nickel: 0.36 %

Platinum: 0.54 grams per tonne

Paladium: 0.34 grams per tonne

**Mining Method:** Open Pit, 365 days per year

**Processing Method:** Conventional Mill, On-site Smelter, 365 days per year

**Mine Life:** 12 years

**Employees:** 400

**Housing:** Camp

**Power:** 35 MW, Grid?

**Expected Start up:** ?

**Status:**

- Drilling started on the property May 15, 1996 and to the end of June ten holes have been completed. The current drilling is to test the mineralization near the proposed pit. A second drill is to be added later in the season. Drilling is expected to continue throughout the summer and fall.

- A mining scenario that may be contemplated would involve a 10,000 tonne/day operation with on-site smelting to produce a copper-nickel concentrate, exported at Haines.

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# Wolverine Property

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## SUMMARY

The Wolverine property is located approximately about 130 km southeast of Ross River and 20 km east of Cominco's Kudz Ze Kayah project. The property is owned by Atna Resources Ltd. and was optioned by Westmin Resources Ltd. Westmin spent more than \$3 million on the project during 1995 and now have a 60% interest in the property.

The property was staked by Atna Resources in 1993. The property was previously drilled in 1973-74.

The copper-lead-zinc-silver-gold mineralization is hosted within a thick sequence of felsic volcanic rocks interbedded with argillaceous and epiclastic sedimentary rocks of the Yukon Tanana Terrane. A geological resource has not yet been determined for the Wolverine property.

A Phase 1 program consisting of mapping, prospecting and geophysical was completed in July, 1995. Diamond drilling commenced in early August on the Wolverine Zone and other targets and was completed in late November, 1995. Based on the 1995 drilling, the property has a geological reserve of 3,052,400 tonnes grading 1.27% copper, 1.43% lead, 12.99% zinc, 350.2 grams per tonne silver and 1.87 grams per tonne gold.

A 1996 joint venture exploration program of roughly \$5.5 million is planned to expand the size of the deposit, test for additional deposits along strike, and define reconnaissance targets for testing. Drilling resumed in mid-March.

## HISTORY

Staked as Fetish claims in July, 1973 by Finlayson JV (Chevron Canada Limited, Union Oil Company of Canada Limited, and Marietta Resources International Limited), which conducted grid soil sampling, mapping and trenching later in the year and drilled 2 holes, performed more soil sampling and added more Fetish claims in August, 1974.

Restaked as Kink claims in September, 1982 by Archer, Cathro and Associates and optioned briefly to Esso Minerals Limited, which conducted airborne and geophysical surveys later in the year.

Restaked as the Foot 1-20 claims in July, 1993 by Atna Resources which explored with prospecting, geological mapping, and soil and silt geochemistry in September, 1993. The current Wolverine property is comprised of the Pak, Toe and Foot claims.

Approximately 6500 metres of diamond drilling in 24 holes, airborne magnetometer and EM surveys, mapping, prospecting, and ground geophysics were completed by Atna Resources and Westmin Resources during 1995. Westmin managed and funded the 1995 exploration program and spent over \$3 million.

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# Wolverine Project Summary

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**Location:** 130 km SE of Ross River  
**Ownership:** Westmin Resources Ltd.  
Atna Resources Ltd.  
**Commodity:** Copper, lead, zinc, silver, gold

**Ore Type:** Sulphide

**Geological Resource:** 5,311,000 tonnes  
Copper: 1.41 %  
Lead: 1.53 %  
Zinc: 12.96 %  
Silver: 359.10 grams per tonne  
Gold: 1.81 grams per tonne

**Mining Method:** Undetermined,

**Processing Method:** Undetermined,

**Mine Life:** 0 years

**Employees:** 0

**Housing:** Undetermined

**Power:** 0 MW, Undetermined

**Expected Start up:** ?

**Status:**

- The 1996 field program commenced with construction of an air strip near the Wolverine deposit. Drilling started in mid-March and was completed in October. The drilling program expanded the known Wolverine Zone to the northwest, discovered the Lynx Zone, and included regional work such as the Fisher Zone and the Toe Claims.
- The 1996 drilling program has significantly expanded the area of mineralization at Wolverine and brought the number of massive sulphide intersections from 15 in 1995 to 49 to the end of the 1996 program. The new Lynx Zone, which was discovered late in the season is open to the west, north and south.
- Expenditures for the 1996 joint venture program on the Westmin-Atna lands are estimated at \$6 million with more than half being spent testing the Wolverine horizon. Westmin will fund 60% and Atna 40% of program expenditures. Systematic geological and geochemical evaluation of the numerous airborne geophysical targets on the remainder of the large claims package started in mid-June.
- Environmental and engineering studies are in progress.
- Planning for the 1997 program is underway. Exploration along the Wolverine horizon will continue.

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# Wolverine Project Summary

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**Status:**

- Discussions with the Ross River Dena Development Corp. have been initiated to enter a socio-economic agreement with members of the local First Nations community.

