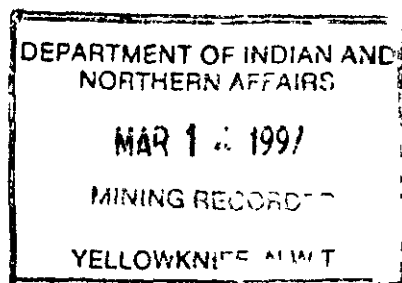


# PT CLAIMS 7, 8 and 22, NWT Geochemical Assessment Report

December 17, 1994 - December 16, 1996



**James River Area**  
**NTS: 76M/2, /3, 76L/14, /15**

**Lat.: 66° 59'N**  
**Long.: 111° 00'W**

**District of Mackenzie**  
**Northwest Territories**

*prepared for*

**BENACHEE RESOURCES INC.**  
**SNOWPIPE RESOURCES LTD**

*prepared by*

**Darren G. Anderson, B.Sc**  
**CANAMERA GEOLOGICAL LTD**  
**650 - 220 Cambie St., Vancouver B.C.**

THIS REPORT HAS BEEN EXAMINED AND  
APPROVED AS TO TECHNICAL CONTENT  
SECTIONS 6 & 7 OF THE CANADA MINING REGULATIONS AND  
March 12, 1997  
VALUED IN THE AMOUNT OF \$20,000.00



DATE: Sept 19/97

**ENGINEER OF MINE'S FOR**  
**CHIEF, NORTH NON-RENEW**  
**RESOURCES BRANCH**

## **Executive Summary**

The property has undergone at least two major episodes of glaciation that scoured the terrain and deposited a layer of till. Exploration for kimberlite pipes has consisted primarily of glacial till sampling in search of a specific assemblage of minerals associated with kimberlites. These samples are processed and examined for traces of chemical composition that distinguishes them as unique to an upper mantle origin. The geographical positions of these indicator minerals in the glacial dispersion train are noted and followed up ice to the kimberlite source.

Exploration on the PT property during the December 17, 1994 - December 16, 1996 reporting period consisted of the collection and processing of 18 till samples – ten located on Claim PT 7, seven located on PT 22, and one located on PT 8.

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## **List of Drawings**

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1 PT Claims - Sample Coverage and Results (1:50,000)	(back pocket)
2 PT Claims - Claim Map (1:50,000)	(back pocket)

**PT Claims 7, 8, and 22, NWT  
Geochemical Assessment Report  
Benachee Resources Inc. / Snowpipe Resources Ltd.  
December 17, 1994 to December 16, 1996**

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## **1. Introduction**

The Slave Structural Province of the Northwest Territories is an Archean segment of the North American Craton. It is underlain by metasedimentary and metavolcanic rocks of the Yellowknife Supergroup and by Archean granites and gneisses. The discovery of diamonds in the Lac De Gras region through the geochemical tracking of kimberlitic indicator minerals provided the impetus for a rush of exploration activity. Many junior companies staked out large land positions and carried out detailed geochemical exploration programs. Benachee Resources Inc. and Snowpipe Resources Ltd. were among the early participants in this activity through the staking of several properties including the PT property.

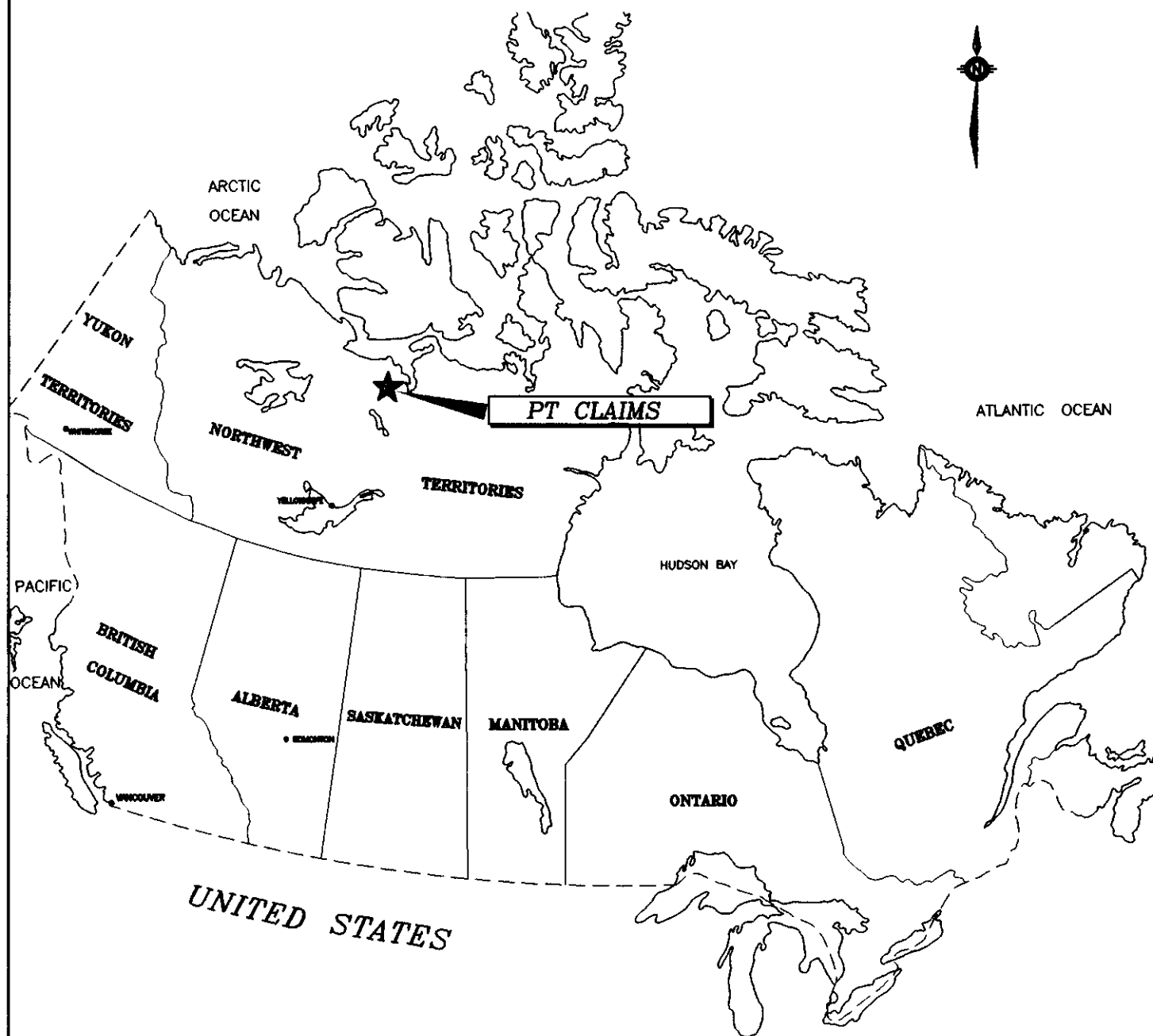
## **2. Location and Access**

The PT claims are a non-contiguous claim block located in the Mackenzie District of the Northwest Territories (Figure 1). The center of the PT claims is located at 66° 59' N, 111°W, about 75 kilometers south of Grays Bay, Coronation Gulf, and 115 kilometers north of Contwoyto Lake. The Property may be located on NTS Sheets 76L/14, and 15 and 76M/2, and 3.

During the winter, the area is accessible by ski-equipped aircraft, while in the summer, lakes suitable for float-equipped aircraft may be used for transportation of men and supplies. Larger aircraft can land on the 6,000 foot gravel runway at the Lupin mine site, approximately 140 kilometers southwest of the claim block center.

## **3. Topography and Climate**

The PT property is located on the treeless tundra of the barren grounds. Rolling rocky hills and ridges with numerous small lakes and low lying swampy muskeg dominate much of the property, especially in the claim blocks. The most southern group of the claim blocks are



083808

**BENACHEE RESOURCES INC.**  
**SNOWPIPE RESOURCES LTD.**

PT CLAIMS  
 LOCATION MAP

SCALE	DATE: JUNE 1996	<b>FIGURE NO.1</b>
APPROVED BY: R.W.A.	FILE: SU-FIG1 DWG	
CANAMERA GEOLOGICAL LTD		



marked by weak to moderately steep slopes (generally <50 metre elevation changes) Northern claim blocks typically show a >50 metre elevation change

Climatic conditions on the barren grounds are extreme Winter temperatures reach -45° Celsius occasionally accompanied by high winds creating extreme wind chill conditions and extensive drifting snow, summer temperatures can reach the high 20's Celsius However, the weather is highly variable and storms can occur at any time of the year Average annual snowfall rarely exceeds one meter, most of which falls during autumn and spring storms During September and June, freeze-up and break-up restrict access to the property to helicopter only

With the onset of summer, black flies and mosquitoes infest all areas of the barren grounds Other local wildlife includes caribou, musk oxen, Arctic wolves, Arctic foxes, barren ground grizzlies, wolverines, Arctic hares and ptarmigan Lake trout and Arctic char abound in the local lakes and rivers

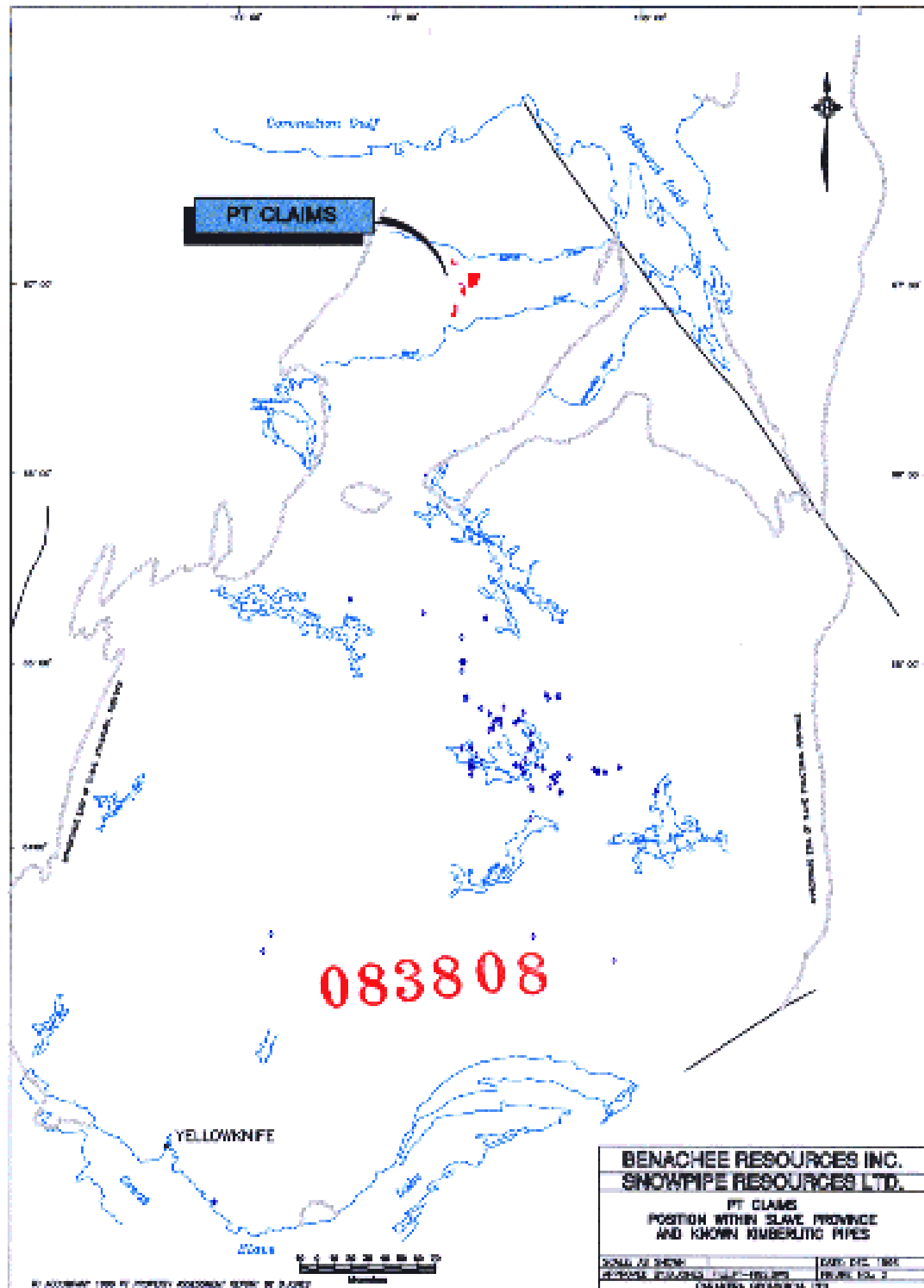
#### **4. Claim Status**

The PT property is comprised of 12 claims totaling 12,493 70 acres (Figure 1, Appendix B, Drawing 2, back pocket) The claims are jointly held by Benachee Resources and Snowpipe Resources of 501 - 700 West Pender Street, Vancouver, BC, V6G 1V8 The claims were staked in 1994, this is the first Assessment Report to be submitted by Benachee / Snowpipe on the property The statement of exploration expenditures is listed in Appendix A A complete list of claim information is attached in Appendix B

#### **5. Geology**

##### **5.1 Introduction**

The PT property is situated within the Slave Structural Province of the N W T The Slave Structural Province (Figures 2 and 3) is an Archean granite-greenstone terrain containing belts of 2 70 to 2 67 Ga metasedimentary and metavolcanic rocks that were intruded



A substantially increased oncogenic risk of the *Slc5a10* locus derived in Adh2KO

BENACHEE RESOURCES INC.  
BENACHEE RESOURCES LTD.PT CLAIMS  
REGIONAL GEOLOGY

1993-1994, 1995-1996, 1997-1998, 1999-2000, 2001-2002, 2003-2004, 2005-2006, 2007-2008, 2009-2010, 2011-2012, 2013-2014, 2015-2016, 2017-2018, 2019-2020, 2021-2022, 2023-2024, 2025-2026, 2027-2028, 2029-2030, 2031-2032, 2033-2034, 2035-2036, 2037-2038, 2039-2040, 2041-2042, 2043-2044, 2045-2046, 2047-2048, 2049-2050, 2051-2052, 2053-2054, 2055-2056, 2057-2058, 2059-2060, 2061-2062, 2063-2064, 2065-2066, 2067-2068, 2069-2070, 2071-2072, 2073-2074, 2075-2076, 2077-2078, 2079-2080, 2081-2082, 2083-2084, 2085-2086, 2087-2088, 2089-2090, 2091-2092, 2093-2094, 2095-2096, 2097-2098, 2099-2100, 2101-2102, 2103-2104, 2105-2106, 2107-2108, 2109-2110, 2111-2112, 2113-2114, 2115-2116, 2117-2118, 2119-2120, 2121-2122, 2123-2124, 2125-2126, 2127-2128, 2129-2130, 2131-2132, 2133-2134, 2135-2136, 2137-2138, 2139-2140, 2141-2142, 2143-2144, 2145-2146, 2147-2148, 2149-2150, 2151-2152, 2153-2154, 2155-2156, 2157-2158, 2159-2160, 2161-2162, 2163-2164, 2165-2166, 2167-2168, 2169-2170, 2171-2172, 2173-2174, 2175-2176, 2177-2178, 2179-2180, 2181-2182, 2183-2184, 2185-2186, 2187-2188, 2189-2190, 2191-2192, 2193-2194, 2195-2196, 2197-2198, 2199-2200, 2201-2202, 2203-2204, 2205-2206, 2207-2208, 2209-2210, 2211-2212, 2213-2214, 2215-2216, 2217-2218, 2219-2220, 2221-2222, 2223-2224, 2225-2226, 2227-2228, 2229-2230, 2231-2232, 2233-2234, 2235-2236, 2237-2238, 2239-2240, 2241-2242, 2243-2244, 2245-2246, 2247-2248, 2249-2250, 2251-2252, 2253-2254, 2255-2256, 2257-2258, 2259-2260, 2261-2262, 2263-2264, 2265-2266, 2267-2268, 2269-2270, 2271-2272, 2273-2274, 2275-2276, 2277-2278, 2279-2280, 2281-2282, 2283-2284, 2285-2286, 2287-2288, 2289-2290, 2291-2292, 2293-2294, 2295-2296, 2297-2298, 2299-2300, 2301-2302, 2303-2304, 2305-2306, 2307-2308, 2309-2310, 2311-2312, 2313-2314, 2315-2316, 2317-2318, 2319-2320, 2321-2322, 2323-2324, 2325-2326, 2327-2328, 2329-2330, 2331-2332, 2333-2334, 2335-2336, 2337-2338, 2339-2340, 2341-2342, 2343-2344, 2345-2346, 2347-2348, 2349-2350, 2351-2352, 2353-2354, 2355-2356, 2357-2358, 2359-2360, 2361-2362, 2363-2364, 2365-2366, 2367-2368, 2369-2370, 2371-2372, 2373-2374, 2375-2376, 2377-2378, 2379-2380, 2381-2382, 2383-2384, 2385-2386, 2387-2388, 2389-2390, 2391-2392, 2393-2394, 2395-2396, 2397-2398, 2399-2400, 2401-2402, 2403-2404, 2405-2406, 2407-2408, 2409-2410, 2411-2412, 2413-2414, 2415-2416, 2417-2418, 2419-2420, 2421-2422, 2423-2424, 2425-2426, 2427-2428, 2429-2430, 2431-2432, 2433-2434, 2435-2436, 2437-2438, 2439-2440, 2441-2442, 2443-2444, 2445-2446, 2447-2448, 2449-2450, 2451-2452, 2453-2454, 2455-2456, 2457-2458, 2459-2460, 2461-2462, 2463-2464, 2465-2466, 2467-2468, 2469-2470, 2471-2472, 2473-2474, 2475-2476, 2477-2478, 2479-2480, 2481-2482, 2483-2484, 2485-2486, 2487-2488, 2489-2490, 2491-2492, 2493-2494, 2495-2496, 2497-2498, 2499-2500, 2501-2502, 2503-2504, 2505-2506, 2507-2508, 2509-2510, 2511-2512, 2513-2514, 2515-2516, 2517-2518, 2519-2520, 2521-2522, 2523-2524, 2525-2526, 2527-2528, 2529-2530, 2531-2532, 2533-2534, 2535-2536, 2537-2538, 2539-2540, 2541-2542, 2543-2544, 2545-2546, 2547-2548, 2549-2550, 2551-2552, 2553-2554, 2555-2556, 2557-2558, 2559-2560, 2561-2562, 2563-2564, 2565-2566, 2567-2568, 2569-2570, 2571-2572, 2573-2574, 2575-2576, 2577-2578, 2579-2580, 2581-2582, 2583-2584, 2585-2586, 2587-2588, 2589-2590, 2591-2592, 2593-2594, 2595-2596, 2597-2598, 2599-2600, 2601-2602, 2603-2604, 2605-2606, 2607-2608, 2609-2610, 2611-2612, 2613-2614, 2615-2616, 2617-2618, 2619-2620, 2621-2622, 2623-2624, 2625-2626, 2627-2628, 2629-2630, 2631-2632, 2633-2634, 2635-2636, 2637-2638, 2639-2640, 2641-2642, 2643-2644, 2645-2646, 2647-2648, 2649-2650, 2651-2652, 2653-2654, 2655-2656, 2657-2658, 2659-2660, 2661-2662, 2663-2664, 2665-2666, 2667-2668, 2669-2670, 2671-2672, 2673-2674, 2675-2676, 2677-2678, 2679-2680, 2681-2682, 2683-2684, 2685-2686, 2687-2688, 2689-2690, 2691-2692, 2693-2694, 2695-2696, 2697-2698, 2699-2700, 2701-2702, 2703-2704, 2705-2706, 2707-2708, 2709-2710, 2711-2712, 2713-2714, 2715-2716, 2717-2718, 2719-2720, 2721-2722, 2723-2724, 2725-2726, 2727-2728, 2729-2730, 2731-2732, 2733-2734, 2735-2736, 27

SC#E: #5 SHOWN	MTS:	DATE: DEC. 1995
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APPROVED BY: B. JONES	FILE: PYSCHN.DWG	FIG. NO.: 3
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CANAMERA GEOLOGICAL LIMITED

extensively by syn- to post-volcanic granitic plutons between ca 2 70 and 2 58 Ga (Relf 1992) Proterozoic rocks underlie approximately 65% of the property

## **5.2 Archean Geology**

Archean rocks within the Slave Structural Province are located between Great Slave Lake to the south and Coronation Gulf to the north The Archean rocks are overlain by Proterozoic strata of the Wopmay Orogen on the west Along the eastern edge, the province is roughly delineated by the early Proterozoic Thelon deformation and metamorphic zone, the western edge of the Proterozoic deformation between the Bathurst and McDonald faults, and the eastern limit of Archean migmatites (Fyson and Padgham 1993)

Rocks within the Slave Structural Province are assigned to three lithotectonic assemblages identified as an early assemblage of gneisses, granitic rocks and quartz arenites, Yellowknife Supergroup greywackes, mudstones, volcanic rocks and synvolcanic intrusions, and a younger sedimentary-plutonic assemblage of clastic sediments and granitic rocks Approximately two-thirds of the province is underlain by post-Yellowknife Supergroup granitic rocks Deformation and greenschist to amphibolite facies metamorphism affect all volcanic and sedimentary rocks (Fyson and Padgham 1993)

### **5.2.1 Early Pre-Yellowknife Supergroup Assemblage**

The early assemblage of pre-Yellowknife Supergroup rocks generally occurs west of 112° W – along the western edge of the Yellowknife supracrustal domain and between Point Lake and Coronation Gulf The assemblage contains two groups granites and gneisses of variable composition (tonalitic gneiss to potash granite), and a quartz arenite-felsic volcanic group The quartz arenite-felsic volcanic association also includes distinctive magnetite iron formations and ultramafics and appears to be intimately tied to granitic basement rocks (Fyson and Padgham 1993)

### **5.3 Yellowknife Supergroup**

The Yellowknife supracrustal-plutonic assemblage consists of three distinct assemblages: granite and gneisses, volcanic and metasediments, and interbedded turbidites. In the Point Lake – Contwoyto Lake area, the Yellowknife Supergroup is comprised of five formations: two distinct belts of metavolcanic rocks known as the Point Lake Formation and the Central Volcanic Belt, metaturbidites of the Contwoyto and Itchen formations, and conglomerates and related clastic sedimentary rocks of the Keskarrah Formation.

#### **5.3.1 Subvolcanic Rocks**

This subdivision consists of foliated gabbroic, granitic and gneissic rocks and have a field relationship which infers that older rocks may be included within this group. There are, however, radiogenic ages (2.7 to 2.65 Ga) suggesting that part of the group is synvolcanic with supracrustal rocks included with the Yellowknife Supergroup (Fyson and Padgham 1993).

#### **5.3.2 Metavolcanic Rocks**

Volcanic belts within the Yellowknife Supergroup display a wide variation in composition – basaltic to rhyolitic. Dikes, sills and larger bodies (gabbroic and felsic) have intruded the volcanics. Volcanogenic sandstones, conglomerates, and iron formations occur as thin sedimentary units within the volcanics (Fyson and Padgham 1993).

In the Point Lake – Contwoyto Lake region, a dominantly mafic metavolcanic assemblage, and related intrusion referred to as the Point Lake Formation have mid-ocean-ridge basaltic affinities. Intermediate volcanoclastic rocks similar to those found in modern island arc settings are assigned to the Central Volcanic Belt. In the Contwoyto Lake – Point Lake area, plutonic rocks, of which the Wishbone monzogranite is the largest body, were intruded between 2,667 and 2,650 million years ago. This intrusive, outcropping approximately 20 kilometers southwest of the Lupin mine, has been interpreted as a synvolcanic intrusion related to the Central Volcanic Belt (Relf 1992).

### **5.3.3 Metasedimentary Rocks**

Interbedded greywackes, siltstones and mudstones, which have been interpreted as turbidites, make up the largest areal extent of supracrustal rocks in the Province. Included within this group of turbidites are two formations located between Contwoyto Lake and Point Lake which are distinguished by the presence of interbedded iron formation (Contwoyto Formation), and the absence of iron formation (Itchen Formation) (Bostock 1980).

Other sedimentary rocks within this sequence include locally prominent conglomerates which have been derived from nearby volcanic rocks or from older granitic rocks (Point Lake area). A synvolcanic association is inferred in areas where greywackes and mudstones are interlayered with thin felsic and mafic volcanics. This assemblage also includes auriferous iron formations interbedded with fine grained siltstones and mudstones. Thinly bedded carbonates are associated with felsic volcanics in the Back River area (Fyson and Padgham 1993).

### **5.3.4 Post-Yellowknife Supergroup Assemblage**

Post-Yellowknife Supergroup granitic rocks of varying composition (diorite, tonalite, granodiorite, K-rich granite) underlie a large part of the province. Conglomerates and feldspathic sandstones within or adjacent to volcanic belts also contain clasts of post-volcanic granites (Fyson and Padgham 1993).

## **5.4 Proterozoic Geology**

Proterozoic metasedimentary cover rocks, having limited areal extent in the Slave Structural Province, are located near Rockinghorse Lake and northeast of Contwoyto Lake, straddling the Burnside River, and extending to Bathurst Inlet. These rocks comprise the Goulburn and Epworth groups and represent cratonic and marginal geosynclinal environments that lie unconformably on Archean basement (Bostock 1980).

Regionally, four swarms of Proterozoic diabase dikes are recognized. Two belts of diabase dikes belonging to the Mackenzie dike swarm occur in the Point Lake – Contwoyto Lake

region. One belt occurs north of Contwoyto Lake, the second belt is located 60 kilometers to the west between Point Lake and Itchen Lake. The dikes are up to 150 meters thick, generally steeply dipping and strike north-northwesterly. The rocks are coarse grained, dark grey to green in color (Bostock 1980) and form areas of local positive relief where they intrude easily eroded lithologies such as the metaturbidites and negative relief in areas where they are juxtaposed with granites and gneisses.

### **5.5 Structural Geology**

Several structural elements are noted in the Slave Structural Province. Folding is most evident in sedimentary sequences, while narrow volcanic belts along the margins of these sedimentary domains appear as steep homoclines dipping towards the sediments. Felsic centers (Back River area) are relatively broad and tend to have shallower dips. Folds tend to be steeply inclined and align parallel to contacts with volcanic and granitic rocks. They are truncated and deformed by younger intrusions indicating a syndeformational association. The last generation of large scale folds trend northward (Fyson and Padgham 1993).

The alignment of volcanic belts or belt segments illustrate the structural trends. Lineaments formed by the volcanic belts change from northwestward in the eastern part of the province to north-northwest and northeast in the area north of 66° N. Sharp contrasts in the structural trend occurs in the southwestern part of the Province where volcanic belts and intrusion margins which trend northwest, northeast, and north are juxtaposed and develop an angular pattern. This angular orientation of volcanic belts suggests control of volcanism and structure by an underlying system of crustal-scale fractures (Padgham and Fyson 1992).

Foliation in migmatitic metasediments tends to parallel bedding. Foliation in granites is variable. Cleavage / schistosity is steeply inclined and generally oblique to the axial traces of large scale earlier folds.

Major shear zones are recognized as zones of high strain ductile deformation largely restricted to rock boundaries of contrasting competency. Movement along the McDonald and

Bathurst faults occurred mainly during the Proterozoic. Most faults within the province are Proterozoic brittle fracture zones, some of which produce prominent topographic lineaments.

### **5.6 Economic Geology**

The Lupin mine, operated by Echo Bay Mines Ltd. and located on Contwoyto Lake, is the only producing mine in the area. The ore body at Lupin consists of tightly folded, gold bearing pyrrhotite-hornblende iron formation within the metaturbidites of the Contwoyto Formation (Yellowknife Supergroup). These iron formations have been the subject of numerous exploration programs. However, the Lupin operation is the only economically viable deposit discovered to date. Major mineral occurrences are shown in Figure 4.

### **5.7 Property Geology**

Due to the non-contiguous nature of the PT property, the underlying geology consists of multiple lithologies. Intermediate felsic volcanic rocks dominant PT 1 – PT 6, and PT 10. A thin unit of supracrustal rocks extends through the PT 1 – PT 6 claim block. Claims PT 7, 8, 12, 13, and 22 area all underlain by granitoid rocks (Figure 5).

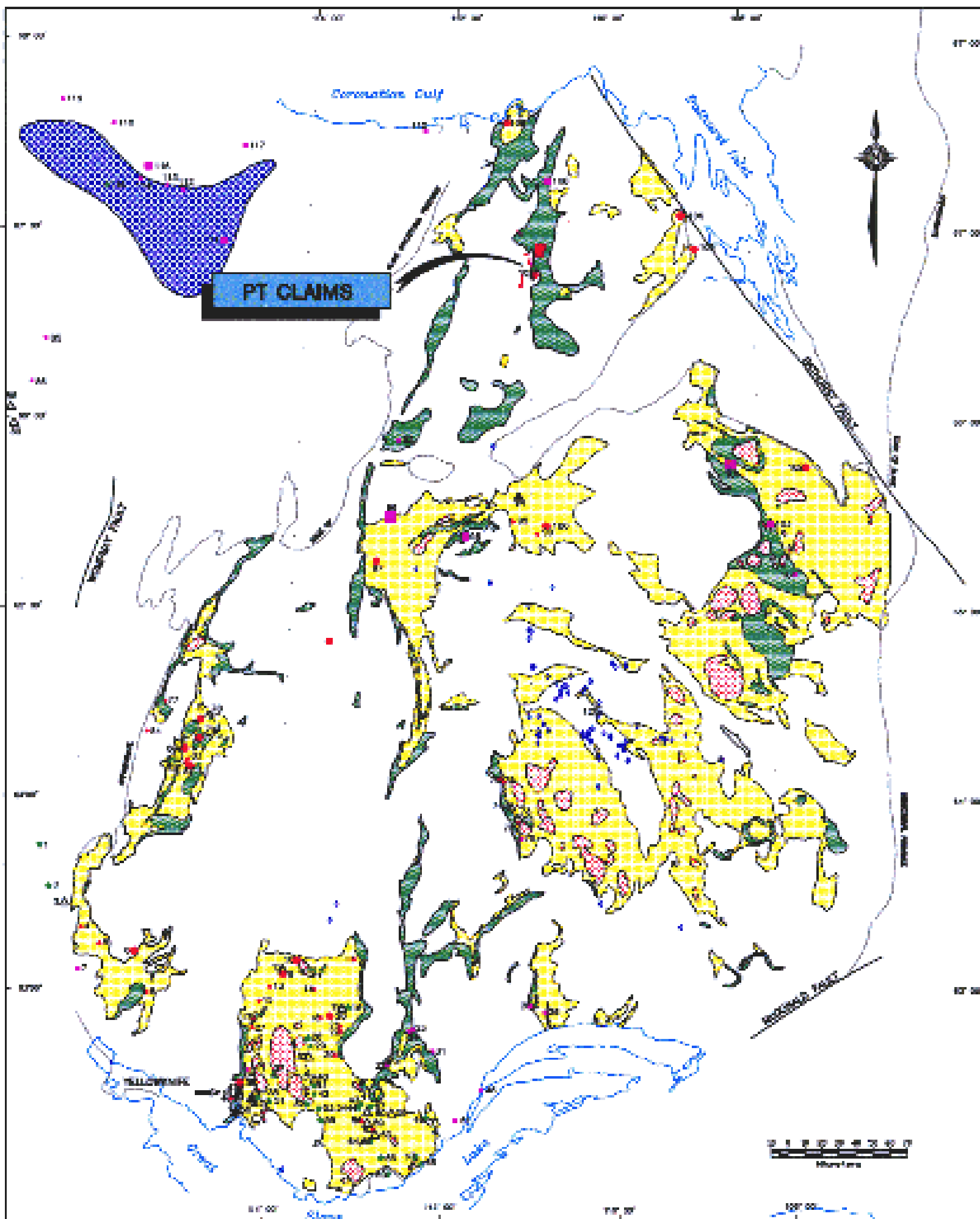
### **5.8 Pleistocene Geology**

Reconnaissance mapping of surficial deposits and ice direction indicators has been carried out over the property. M. J. Millard of Saskatchewan Research Council was commissioned to provide reconnaissance airphoto interpretation and field investigation of surficial geology over the property.

Till is the most extensive surficial sediment. Two genetically different types of till deposits have been recognized: basal (subglacial) till and ablation (englacial) till. Subglacial till is deposited primarily from active ice and generally contains more local material than does englacial till. Thus, it is regarded as the best sample medium when conducting drift prospecting programs. Englacial till, deposited during ablation processes by stagnant ice, is often associated with other ice disintegration features such as esker systems.

The dominant ice flow direction over the PT claim blocks varied from 328° to 338°.





## DEPOSITS

1. Sun Mine Deposit
2. Lake Deposit
3. Deposit Mine
4. Copper Lake Deposit
5. Deposit Mine
6. Deposit Mine
7. Sun Deposit
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150. Deposit Mine

## LEGEND

### BASE METALS (Cu, Pb, Zn)

- > 10 MT
- 1 MT - 10 MT
- < 1 MT

### PRECIOUS METALS (Au, Ag, Pd)

- > 100,000 oz.
- 10,000 - 100,000 oz.
- < 10,000 oz.
- ▲ BASE METAL DEPOSITS (SUBCLASS)
- ◆ OTHER MINERAL TYPES

- IRON-ORE RESERVE
- IRON-ORE RESERVE
- IRON-ORE RESERVE
- IRON-ORE RESERVE

- ▲ PROPOSED MINE
- △ EX-PROPOSED MINE

MODIFIED FROM E.C.S. 1994-95 BY P.L.BEALES

**083808**

**BENACHEE RESOURCES INC.  
SNOWPIPE RESOURCES LTD.**

MINERAL OCCURENCES  
IN THE  
SLAVE PROVINCE

SCALE: AS SHOWN

DATE: DEC. 1995

APPROVED BY: J. JONES FILE: PT-FIG4.DWG

FIGURE 4



## **6. Previous Exploration (Diamonds)**

No previous diamond exploration had been accounted for on the PT property prior to 1994

## **7. Current Exploration (1994-1996)**

### **7.1 Overview**

The main focus of ground exploration on the PT property has been till sampling intended to quickly discover widespread, glacially transported, indicator mineral trains derived from kimberlitic pipes. A total of 18 samples were collected on the property during the December 17, 1994 to December 16, 1996 reporting period (Drawing 1, back pocket)

## **8. Geochemistry**

### **8.1 Sampling Procedure**

Frost-boils are the ideal sampling material. Frost-boils are quite numerous and easy to locate and represent underlying till material that has been reworked by fluid movement to produce a higher concentrations of sand-sized particles. The next best sample medium is glacial till. The till layer varies from a veneer of less than two meters thick to a thin blanket (two to ten meters thick) over most of the claim area (Aylsworth *et al* 1988).

Once a site has been located and the sample collected, sample material is passed through a 3/32 or ten mesh wire screen (3.36 to 1.70 mm) into a collection basin. This screening process is carried out with the aid of water. The oversize fraction is examined for kimberlite fragments and discarded if none are found. The material collected in the basin is submerged in water and agitated to liberate the majority of the fine clay and silt particles. The water, with the suspended particles, is then poured off leaving behind only the granular material. This screening and washing process is continued until approximately 15 kilograms of screened and washed material remains. The residual material is transferred to a 15 litre plastic bucket with sealable lids for transport.

## **8.2 Sample Processing**

Till samples, collected from the PT property, were processed in Canamera Geological's lab facilities located in North Vancouver. Gravity concentration methods and procedures were used in handling initial stages of mineral processing.

## **8.3 Producing a Heavy Mineral Concentrate**

### *Stage 1*

Screening of sample material into four size fractions using a vibratory Sweco unit.

Size categories are

- 1) 10 mesh - 1.7 mm
- 2) 20 mesh - 0.85 mm
- 3) 40 mesh - 0.425 mm
- 4) 60 mesh - 0.250 mm

### *Stage 2*

Simple gravity separation of the -20 to +40 fraction using Wilfley tables to produce two products: low density material and high density material. Only the high density product is processed further.

### *Stage 3*

Heavy density product is magnetically separated at two settings to produce three distinct products, an ilmenite rich magnetic concentrate and a garnet-chrome diopside rich concentrate. The remaining material is the non-magnetic fraction.

### *Stage 4*

Both the ilmenite and garnet-chrome diopside concentrates are further refined using a Magstream dense magnetic media separation.

#### *Stage 5*

Trained mineral sorters examine each final concentrate for kimberlitic pyrope garnet, chrome diopside, eclogitic garnet, ilmenite, chromite and olivine grains using binocular microscopes. Questionable grains are examined by the senior mineralogist and / or sent out for microprobe analysis.

At each stage of screening, separation, and concentration, a record of weights is maintained for all fractions. All sample splits are repackaged separately and kept in archives.

#### **8.4 Results and Interpretation**

One sample collected (065531 on PT 8) returned a single, moderately abraded, ilmenite, possibly from a kimberlite source.

The presence of the possible kimberlite indicator mineral suggests the source may reside within the PT 8 claim.

#### **8.5 Conclusions and Recommendations**

Based on the last two years of diamond exploration, it is concluded that the PT claim blocks are prospective for continual diamond exploration, especially PT 7, 8, 12, and 13. Although no heavy mineral till samples have been collected on PT 12 and 13, these claims are situated within a highly prospective area.

For continual diamond exploration the following are recommended: 1) a follow-up sampling program on PT 8 to determine the source for the recovered ilmenite, and 2) a regional sampling program on PT 12 and PT 13 and a subsequent regional sampling program on PT 7.

Report by



Darren G. Anderson B.Sc.,  
March 12, 1997

## **References and Bibliography**

- Aylsworth, J M and W W Shilts 1988 Glacial Features Around the Keewatin Ice Divide  
District of Mackenzie Geological Survey of Canada Map 24-1987
- Bostock, H H 1980 Geology of the Itchen Lake area, District of Mackenzie Geological  
Survey of Canada Memoir 391
- Fyson, W K and W A Padgham 1993 Geology of The Slave Structural Province, 1 Map  
EGS 1993-08
- Padgham, W A and W K Fyson 1992 The Slave Province a distinct Archean craton  
Canadian Journal of Earth Science 29 pp 2072-2086
- Relf, C 1992 Two Distinct Shortening Events During Late Archean Orogeny in the West-  
Central Slave Province, Northwest Territories, Canada, Canadian Journal of Earth  
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**Appendix A**  
**Statement of Costs**

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**PT CLAIMS**  
**EXPLORATION EXPENDITURES**  
**FOR PERIOD: DECEMBER 17, 1994 - DECEMBER 16, 1996**

Description	Total (\$)
Sample Collection	
Project Preparation	\$ 326 00
Personnel	
Camp Geologist, Assistant, Cook and 8 Samplers (11 man camps)	1,543 00
Camp Building and Mobilization	705 00
Demobilization and Clean-up	198 00
Field Supplies	190 00
Personnel Board	301 00
Personnel Room	564 00
Communications	62 00
Sampling Equipment Rental	301 00
Sampling Supplies	81 00
Fuel Caching	155 00
Twin Otter	2,321 00
Helicopter (dry)	5,488 00
Fuel Consumption	
Helicopter Fuel	
Jet B	904 00
Camp Fuel	
p-50 Stove	154 00
p-40 Diesel	29 00
Camp Fuel	
Propane	68 00
Safety Equipment	107 00
Sample Shipping	<u>903 00</u>
Total Field Collection Expenditures	\$14,400 00
Sample Processing Expenditures	
18 Samples @ \$300/Sample (including screening, tabling, magnetic separation, magstream, and mineral sorting)	\$5,400 00

(continued)



**PT CLAIMS**  
*EXPLORATION EXPENDITURES*  
**FOR PERIOD: DECEMBER 17, 1994 - DECEMBER 16, 1996**

Description	Total (\$)
Total Sample Exploration Costs	
Samples Collected	18 Samples
Average Cost per Sample	\$1,100 00 \$19,800 00
Report Preparation	<u>2,500 00</u>
<b>Total Exploration Expenditures</b>	<b><u>\$22,300.00</u></b>

**Appendix B**  
**Claim Data**

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# PT PROPERTY - FORM 9 ATTACHMENT

11-Mar-97

CLAIM NUMBER	CLAIM NAME	OWNER(S)	NTS SHEET(S)	AREA (ACRES)	NEW WORK	EXISTING EXCESS USED	NEW EXCESS CREDIT	YEARS APPLIED	RECORDED	NEW ANNIVERSARY
F48876	PT 8	BENACHEE RESOURCES INC / SNOWPIPE RESOURCES LTD	076-L-14 / - / -	1018	6 236 93	0 00	128 93	3	12/16/1994	12/16/1998
F48877	PT 22	BENACHEE RESOURCES INC / SNOWPIPE RESOURCES LTD	076-L-14 / - / -	826 4	5 063 07	0 00	104 67	3	12/16/1994	12/16/1998

total # of acres = **1,844.40**

total amount of new work = **\$11,300.00**

total # of claims = **2**

total existing excess credit used = **\$0.00**

total amount of new excess credit = **\$233.60**



# PT PROPERTY - FORM 9 ATTACHMENT

11-Mar-97

CLAIM NUMBER	CLAIM NAME	OWNER(S)	NTS SHEET(S)	AREA (ACRES)	NEW WORK	EXISTING EXCESS USED	NEW EXCESS CREDIT	YEARS APPLIED	RECORDED	NEW ANNIVERSARY
F48875	PT 7	BENACHEE RESOURCES INC / SNOWPIPE RESOURCES LTD	076-L-14 / 076-L-15	650.8	11 000.00	0.00	587.20	8	12/16/1994	12/16/2003

total # of acres = 650.80

total amount of new work = \$11,000.00

total # of claims = 1

total existing excess credit used = \$0.00

total amount of new excess credit = \$587.20

## **Appendix C**

### **Geochemical Data**

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# CANAMERA GEOLOGICAL LTD.

## Sample Processing Summary For The

### PT Claims

3/12/1997

COLLECTION			CONCENTRATION			SORTING		
Sample #	NTS	Claim	Tabling Wt/gm	Conc Wt/gm	Sort Wt/gm	Result Class	Status	Indicator Recovery Totals
066531	76L14 PT 8		6800	805	88	ANOMALOUS	C	0 0 0 0 1 0 0

17 BARREN Samples								
044566	76L15 PT 7	1500	102	35	BARREN	C	0	0 0 0 0 0 0 0
044612	76L14 PT 7	100	28	1	BARREN	C	0	0 0 0 0 0 0 0
044613	76L15 PT 7	100	14	14	BARREN	C	0	0 0 0 0 0 0 0
044656	76L14 PT 7	1200	88	22	BARREN	C	0	0 0 0 0 0 0 0
044656	76L14 PT 7	2800	160	57	BARREN	C	0	0 0 0 0 0 0 0
044710	76L14 PT 7	100	14	14	BARREN	C	0	0 0 0 0 0 0 0
044714	76L14 PT 7	100	4	4	BARREN	C	0	0 0 0 0 0 0 0
045238	76L14 PT 7	100	2	2	BARREN	C	0	0 0 0 0 0 0 0
045239	76L15 PT 7	300	28	1	BARREN	C	0	0 0 0 0 0 0 0
045240	76L15 PT 7	2600	80	50	BARREN	C	0	0 0 0 0 0 0 0
066223	76L14 PT 22	5000	177	35	BARREN	C	0	0 0 0 0 0 0 0
066224	76L14 PT 22	8200	484	107	BARREN	C	0	0 0 0 0 0 0 0
066481	76L14 PT 22	10000	434	91	BARREN	I	0	0 0 0 0 0 0 0
066482	76L14 PT 22	6100	385	69	BARREN	C	0	0 0 0 0 0 0 0
066483	76L14 PT 22	5200	276	83	BARREN	C	0	0 0 0 0 0 0 0
066484	76L14 PT 22	5800	347	64	BARREN	C	0	0 0 0 0 0 0 0
066532	76L14 PT 22	8100	485	84	BARREN	C	0	0 0 0 0 0 0 0

# CANAMERA GEOLOGICAL LTD.

## Abrasion Summary for PT Claims

3/10/1997

COLLECTION			SORTING										ABRASION				ABRASION				ABRASION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Sample #	NTS	Claim	Status	PY	Indicator Recovery Totals							Garnet Abrasion Evaluation				Chromite Diopside Abrasion Evaluation				Ilmenite Abrasion Evaluation																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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065531 78L14 PT 8

c

0 0 0 0 0 0 0 0 0 0

0

1

3

1. ANOMALOUS Samples

1

### LEGEND

Status H=half sort, Q=quarter sort, F=final result, C=complete

Indicators PY=Pyrope Garnet EG=Eclogitic Garnet, CD=Chromium Diopside, IL=Picro Ilmenite, CR=Chromite, OL=Olivine

Kalphyte Preservation Index KP11 - Least Abraded, KP14 - Most Abraded

**Appendix D**  
**List of Personnel**

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## **PERSONNEL**

<b>Names</b>	<b>Addresses</b>	<b>Days</b>
Anderson, Darren	304 - 1520 Chesterfield Avenue, North Vancouver, B C , V7M 2N6	2
Brophy, Ken	808 - 1150 Jervis Street, Vancouver, B C , V6E 2C8	5
Pitzal, Ralph	4210 - 17th Avenue, Vernon, B C , V1T 7K8	1
Rousseau, S	2021 Chemin Robillard, Berthierville, P Q , V0K 1A0	2
Smeeton, Sandy	406 - 2085 Belleview Avenue, West Vancouver, B C V7V 1C1	1
Vaillancourt, Tom	205 Johnson Street, Prince George, B C , V2M 2Z4	2
Villeneuve, T		4

**Appendix E**  
**Statement of Qualifications**

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## STATEMENT OF QUALIFICATIONS

### **Darren George Anderson**

I, Darren George Anderson, resident at 304 - 1520 Chesterfield Avenue, North Vancouver, British Columbia, V7M 2N6, hereby certify that

I am employed full time as a geologist by Canamera Geological Ltd , 650 - 220 Cambie Street, Vancouver, B C

I received a Bachelor of Science degree in Geology from University of Regina, Regina, Saskatchewan, Canada, in 1995

I have worked full time in the mineral exploration and mining industry since 1995

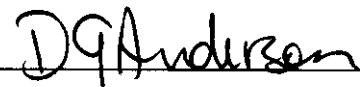
I am familiar with the current state of exploration of the PT claims

I have no direct or indirect interest in the PT claims or in the shares of Benachee Resources Inc , or Snowpipe Resources Ltd nor do I expect any

Permission is hereby granted for the use of this report, or excerpts thereof, for any legal purposes normal to the business of Benachee Resources Inc and Snowpipe Resources Ltd  
The author reserves the right to approve any summaries or alterations

Dated at Vancouver, British Columbia, this 12th Day of March, 1997

Report by



Darren George Anderson B Sc

March 12, 1997