ARCHER, CATHRO
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CONSULTING GEOLOGICAL ENGINEERS

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NAT JOINT VENTURE

GEOLOGICAL, GEOCHEMICAL AND ~~GEOPHYSICAL~~ NCJ REPORT

NITRO 1-24 CLAIMS

(YA60232-YA60255)

Claim Sheet 115I/5 and 115I/6

Latitude 62°23'N; Longitude 137°30'W

Report by

A.R. Archer, B.A.Sc., P.Eng.

Work done from 28 May, 1981 to 29 August, 1981

090974

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 6,600.

R. Wilson

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

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KLAZAN PROPERTY

Introduction

Reanalysis of previously-collected samples in the spring of 1980 drew NAT's attention to the Klazan porphyry target on Big Creek with isolated geochemical anomalies in gold, silver, arsenic and lead. Further reanalysis in the spring of 1981 provided sufficient information to allow NAT Joint Venture (Chevron Canada Limited and Armco Mineral Exploration Ltd.) to stake 24 Nitro claims in late May.

Results of this reanalysis, and 1981 soil sampling conducted after the staking, are shown at 1:10,000 scale as Figures N19A through N19D. Geology was mapped from moderate rock exposure and existing trenching, and a compilation of this and previous work (Atlas, 1970) is illustrated at 1:10,000 scale as Figure N19E. Core from five holes drilled on the property in 1970 was relogged and geochemically resampled by NAT, as graphically depicted in Appendix I. The NAT personnel involved in this program are listed in Appendix II.

Property, Location and Access

The Nitro property consists of twenty-four contiguous mineral claims recorded in the name of Archer, Cathro & Associates (1981) Limited. The claim locations are illustrated on Location Map 1, and they are recorded in the Whitehorse Mining District as follows:

Claim Name	Record Numbers	Expiry Date
Nitro 1-24	YA60232-YA60255	1 June, 1982

The claims are located at latitude 62°23'N and longitude 137°30'W, straddling NTS claim sheets 115I/5 and 115I/6, about 71 km northwest of Carmacks. Access in 1981 was by helicopter from a camp on the Freegold summer road at its junction with Bow Creek, 18 km to the east. Access is also possible by an existing bulldozer trail leading to the claims from the end of the Freegold road. A 500 m airstrip

suitable for small fixed-wing aircraft was built by Atlas about 2 km north of the property. Improvements may be necessary to reuse this strip.

Previous Work

This property was discovered in 1965 during a reconnaissance geochemical program and staked as the Klazan claims in July, 1966 by Coranex Joint Venture (Frobex L, Inco, Dome EL, Denison ML, and MacIntyre Porcupine ML), which explored with a geochemical survey and mapping in 1966 and bulldozer trenching in 1968. The claims were staked to cover geochemical anomalies in Mo, Cu, Pb, Zn, Ag, Au, and As associated with a small but prominent gossan. It was optioned in 1970 by a joint venture between Atlas EL and Caltor Syndicate (Rayrock ML, Canadian Industrial GOL and Ashland Oil Canada L), which conducted grid soil sampling, a magnetometer survey, bulldozer trenching and 967 m (3171') of diamond drilling in 5 holes later that year before dropping the option. The best intersections reported from the drilling are 15m of 0.17% Cu and 3 m of 0.16% Cu and 0.68% MoS2. Klotassin Joint Venture (Newconex Canada EL, Marietta Res Int L, and Molybdenum Corp of America) tied on Roc and Jen claims in 1974 and Skunk claims in 1975 to the northwest and southeast, and performed mapping, geochemical surveys and a magnetometer survey in 1975-76.

Physiography and Glaciation

The property lies within the Yukon Plateau, an older, rejuvenated erosion surface in which major creeks now follow broad, steep-walled valleys. Smaller tributaries form deep, narrow valleys separated by long ridges of uniform elevation. Rock exposure is found on hill summits and creek cuts and rarely on steep hillsides. Overburden is relatively thin, varying in thickness up to 30 m. Volcanic ash is moderately thin (25 to 50 cm) and patchy, except where accumulations up to several metres thick occur in the vicinity of Big Creek. Permafrost hinders sampling on north-facing slopes, and much of the property is lightly treed.

Pleistocene glaciation did not cover this area, although the last ice-cap advance terminated less than 50 km to the south. Outwash detritus has filled several of the larger creek valleys, including parts of Big Creek, and local alpine glaciation probably existed on the higher mountains to the north and west. Surface weathering is deep, and leaching probably extends down to 200 m deep in fractured areas.

Geology and Mineralization

Tectonically, the Klazan property lies on the southern margin of the Big Creek Lineament, a strong, northwesterly-trending topographic and aeromagnetic lineament following Big Creek, which is postulated to be a major fault subparallel with, and possibly related to the Teslin Lineament. This tectonic setting is similar to all important porphyry occurrences (Casino, Cash, Revenue, Freegold) in this district. A related system of subsidiary southwest-trending faults are reflected by creek topography.

Regionally, the Klazan property covers an area of Jurassic granites and quartz monzonites (Mgd and Mqmp) and late Cretaceous to early Tertiary quartz porphyries (KTmnt), rhyolite porphyries (KTqrp), other rhyolitic volcanics (KTmn) and feldspar porphyries (KTfp). These intrude a large, northwesterly-trending, elongate batholith of porphyritic hornblende syenite (My).

The hornblende syenite outcrops at the southeast and the northwest corners of the claims, and is a coarse-grained hypidiomorphic porphyritic rock, distinctly grey, sometimes with a pinkish tinge. Large K-feldspar phenocrysts to 2 cm in size occur somewhat aligned in a matrix of medium- to coarse-grained hornblende, with finer-grained quartz (5%) and feldspar, and accessory magnetite and apatite. This unit is unaltered and unmineralized and exhibits little fracturing.

The older granitic rocks occur at the eastern margin of the claims (Mqmp) and near the centre of the claims (Mgd). Quartz monzonite porphyry is a medium-grained, hypidiomorphic, granular rock characterized by large phenocrysts of anhedral quartz up to 1 cm in size, in a matrix of roughly equal parts orthoclase, plagioclase and quartz, with minor biotite and hornblende, and accessory apatite and magnetite. This unit grades into a fine- to medium-grained granite along its northern margin. Alteration is predominant west of Etches Creek, mainly argillic to phyllic, with up to 70% of the rock sericitized and locally silicified. The porphyry is highly fractured in places but unmineralized.

The granodiorite (quartz monzonite) is a black-and-white to pink, medium-grained hypidiomorphic rock, composed of 80% feldspar and 100% quartz with biotite and hornblende and minor apatite and magnetite. Rare phenocrysts of orthoclase have been observed up to 1 cm in size. Propylitic alteration (epidote as fracture-fillings to 2 mm thick and chlorite) grades to the phyllic facies near the contact with the rhyolite porphyry to the south, where plagioclase is partially altered to sericite and clay, and pyrite (2%) and quartz contents increase.

The younger rocks are late Cretaceous to early Tertiary in age, and probably represent textured variations of a porphyry-extrusion package including quartz and feldspar porphyry, rhyolite tuff and intermediate volcanics.

The most extensive unit on the Nitro claims is a band of rhyolitic flow rocks (KTmnt) coeval with a light-grey, massive, aphanitic rhyolite porphyry (KTqrp). The crystal tuff consists of 40% quartz and feldspar crystal fragments from 1 to 2 cm in size, in a darker grey matrix of devitrified volcanic glass. There is no evidence of alteration, fracturing or mineralization. The porphyry contains up to 5% subhedral to euhedral quartz phenocrysts to 3 mm, and locally up to 10% K-feldspar fragments less than 1 cm. The matrix is partially devitrified glass. Alteration is

largely phyllic with much sericitization and silicification. The rhyolite porphyry is highly fractured and brecciated and appears to be strongly porous, with limonite and jarosite stains in vugs and along fracture surfaces. Unoriented quartz veins to 1 cm wide occur in a stockwork at the contact with the feldspar porphyry (main gossan zone), with minor pyrite and rare molybdenite.

A medium-grey to dark greenish-grey quartz latite porphyry to feldspar porphyry (KTfp), containing 10% white to pink subhedral orthoclase phenocrysts to 5 mm in a fine-grained matrix of feldspar and quartz with minor biotite, hornblende and aplite occurs at the centre of the claims and in bands elsewhere. Alteration is low with limited replacement of K-feldspar by calcite and clay. Hornblende is altered to chlorite, and sericitization and silicification appear minor. Fracturing is also low, containing clay, sericite, calcite and pyrite fillings. Pyritization of 10% and more is evident at Burgis Creek, with associated sporadic galena and sphalerite, and causes red-brown limonite coatings on weathered rock. The central gossan is probably caused by oxidation of waters passing through the pyritized feldspar porphyry. Numerous dykes occur peripherally.

Near the northern corner of the claims is an area of dark-green, massive, aphanitic, fresh basaltic to andesitic dykes associated with volcanic rocks (KTmn). Fracturing and alteration are absent.

Mineralization appears to be related to areas of intense silicification and sericitization and is mainly disseminated pyrite with traces of molybdenite, galena and sphalerite as noted above. It occurs either in the central feldspar porphyry stock or in the peripheral, altered rhyolite porphyry. No precious metal mineralization was seen.

Geochemistry

All samples were analyzed at Chemex Labs Ltd., North Vancouver, B.C. The analytical techniques used are described in Appendix III.

Geochemical reanalysis of older sample splits returned a few encouraging values, including 2.6 ppm Ag in a soil, seven arsenic values ranging from 50 ppm to 150 ppm, and six lead values ranging from 100 ppm to 280 ppm, however no gold anomalies were found.

After the staking in late May, a total of 15 traverses explored both the property and surrounding area (especially upstream, to the southwest) with geological mapping and soil sampling. Results of the 1981 geochemical analysis are shown on Figures N19A to N19D.

Gold anomalies of 810, 622, 431, 399 ppb and lower have been returned in soil samples, and 476, 203 ppb and lower in rocks. One soil sample containing 1575 ppb was taken at a location some 2 km southwest of the claims in the creek valley, but since resampling in that vicinity failed to corroborate it, a spurious placer gold flake is suspected. Gold anomalies were also generated from NAT's reanalysis of Atlas' 1970 drill core. In hole KL-1 (depth 244 m) samples over a total of 212 m returned values in excess of 100 ppb Au, to a maximum of 335 ppb over 2 m. Similarly, gold values in excess of 100 ppb were returned from samples over 86 m of hole KL-2 (depth 99 m) to 233 ppb Au; over 199 m of hole KL-3 (depth 244 m) to 354 ppb Au; over 63 m of hole KL-4 (depth 196 m) to 787 ppb Au (over 15 m); and over 109 m of hole KL-5 to 526 ppb Au (also over 15 m). These results are graphically represented on the diagrams following page 61 in the text.

The consistency of anomalous geochemical response in gold is pronounced in both the diamond drill hole results and in soils from the existing bulldozer trench over the gossan. As shown on Figure N19A, 12 of the 20 samples taken in this trench returned values between 99 and 399 ppb Au. A check on lab consistency was also made, with good results. A bulk soil sample (5 kg) from near the middle of the trench was mechanically homogenized (by mixing in a large pan) and introduced into ten separate bags, with the following results (in ppb Au): 185, 212, 225, 317, 261, 246, 317,

229, 238 and 223 (mean = 245 ppb, standard deviation s=42). Even better consistency was reported for these samples for silver (mean = 10.3 ppm, s=0.81); arsenic (mean = 430 ppm, s=17); and lead (mean = 231 ppm, s=13).

Arsenic response parallels that of gold, with twenty-nine samples (about 20% of sampling on the claims) returning in excess of 100 ppm, including three greater than 500 ppm (see Figure N19C). As with gold, the best cluster is underlain by the feldspar porphyry unit where a previous bulldozer trench had cut the gossan.

Both silver and lead patterns resemble those of gold and arsenic. Twenty-nine samples (20%) returned silver values greater than 2 ppm, including two rock samples of 31 ppm each, and soils of 28, 18.2 and 13.5 ppm and lower. Twenty-six samples (19%) returned anomalous lead values (greater than 150 ppm), including 960, 520, 400 ppm and lower in rock, and 435, 405, 370 ppm and lower in soil.

Analysis of the diamond drill core gives anomalous results in arsenic for hole KL-1, in silver for holes KL-1, KL-4 and parts of KL-5, and in lead for hole KL-1 (to 3150 ppm over 2 m) and sections of the other holes.

Geochemical response outside of the claims, based on NAT's limited sampling, does not point to additional areas of interest.

Discussion

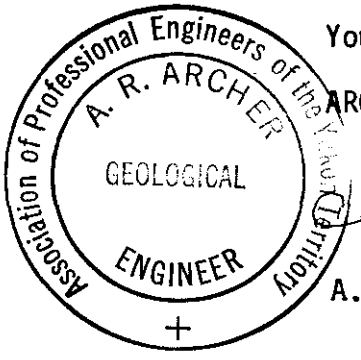
Previous geochemical sampling programs (i.e. by Coranex, Atlas and Klotassin) at the Klazan porphyry has been directed towards base metals: copper, molybdenum, lead and zinc. Atlas also assayed drill core for silver. Despite moderate (and locally strong) anomalies, each of these companies concluded its program with negative recommendations for further work because of the low grade and small size of any potential deposit. However, the precious metal response has been consistently anomalous in soil overlying the favourable rock host. The ground appears suitably prepared, in terms of alteration, brecciation, fracturing and silicification, for the formation of an economic deposit, especially one that may be open-pittable.

Examination of the drill hole data (see charts following page 61) confirms this consistency in anomalous precious metal (particularly gold) values, with no signs of decreasing at depth. Indeed, the deepest hole (KL-5, which was drilled vertically to 183 m) returned an average of 303 ppb Au and 4.5 ppm Ag from its lowest 15 m section. Parameters on each chart show correlations between gold and arsenic and between silver and lead, as expected. The density of quartz veining and percentage of visible sulphides do not correlate well with anomalous geochemistry, suggesting that mineralization is not associated with these factors but is probably disseminated throughout the units (KTfp and KTqfp). The role of alteration is unclear, but the strongest geochemical anomalies all occur within sections of argillic alteration, mostly of moderate to strong intensity. This is most clearly shown for Hole KL-3, where gold values are lowest for weak alteration and highest for strong alteration, especially where the degree is at least kaolinitic to phyllic.

Future work should begin with detailed geological mapping, concentrating on outlining the Tertiary porphyry units and fault structures, as well as mapping alteration facies. A concurrent deep grid-soil sampling program should be conducted, partly to aid in the mapping by examination of rock-chip fragments in the soil pits. A total of 600 samples (50 m spacing on lines 100 m apart) will adequately cover the known dimensions of the Tertiary units. Due to the heavy permafrost and thick ash in some locations, this sampling may take as much as 50 mandays of work, and should be done as late in the field season as feasible. The best target areas arising from this work should be drilled the following year. No immediate geophysical work is recommended.

Yours truly,

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED,

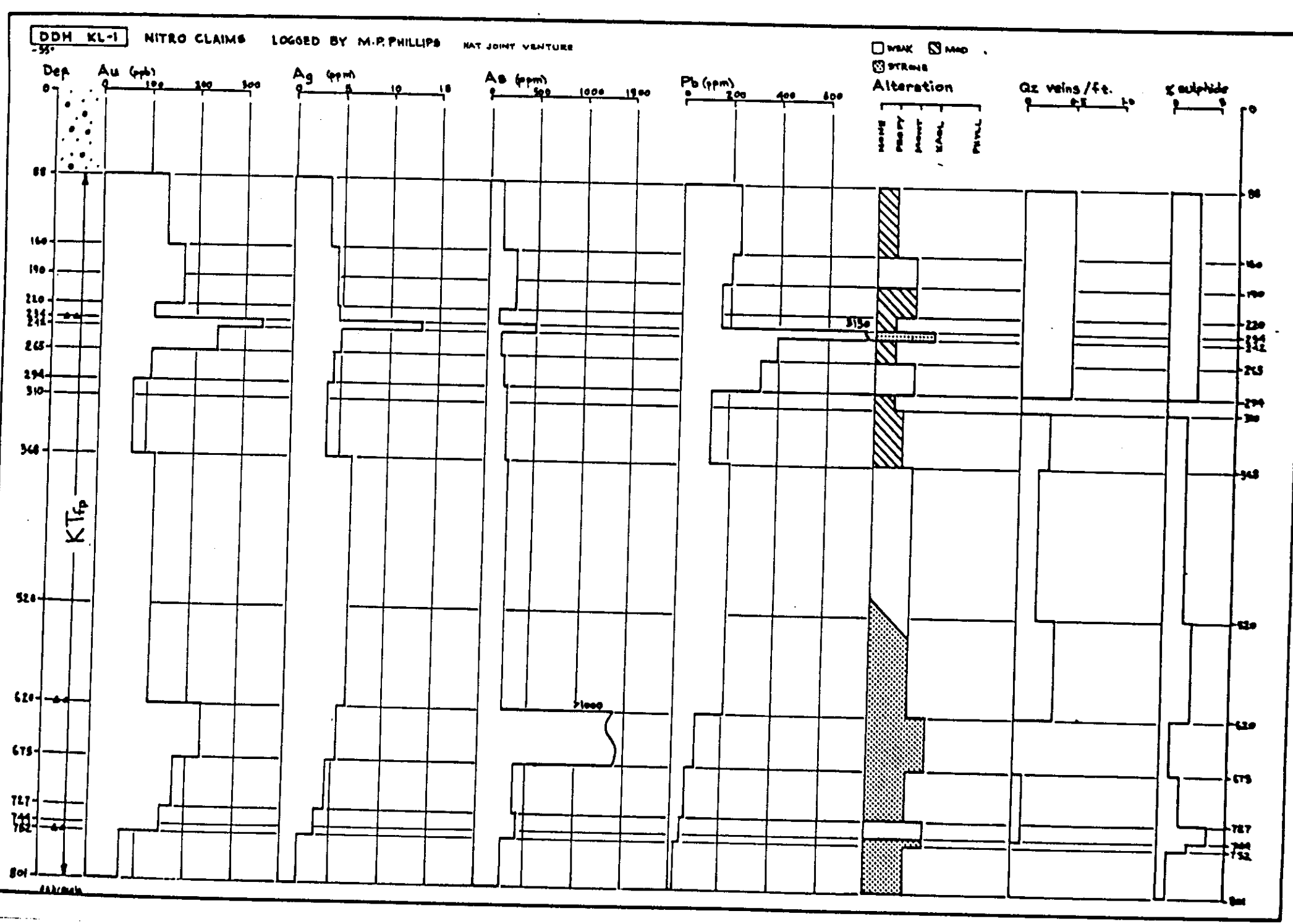


/jm

A.R. Archer, B.A.Sc., P.Eng.

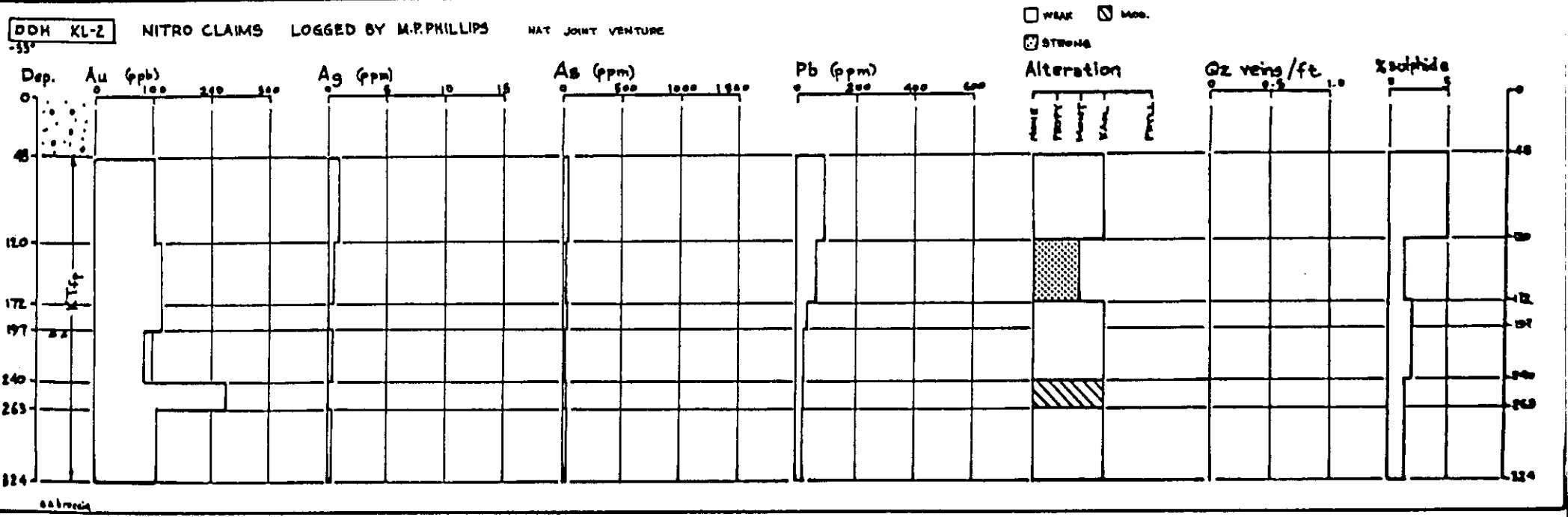
APPENDIX I

DRILL LOGS


DDH KL-1
NITRO CLAIMS
LOGGED BY M.P. PHILLIPS
NAT JOINT VENTURE
-55°
WEAK
MOD
STRONG
Dep
Au (ppb)
Ag (ppm)
As (ppm)
Pb (ppm)
Alteration
Qz veins / ft.
% sulphide
KTfp
>1000
5150

DDH KL-2 NITRO CLAIMS LOGGED BY M.P.PHILLIPS NAT JOINT VENTURE

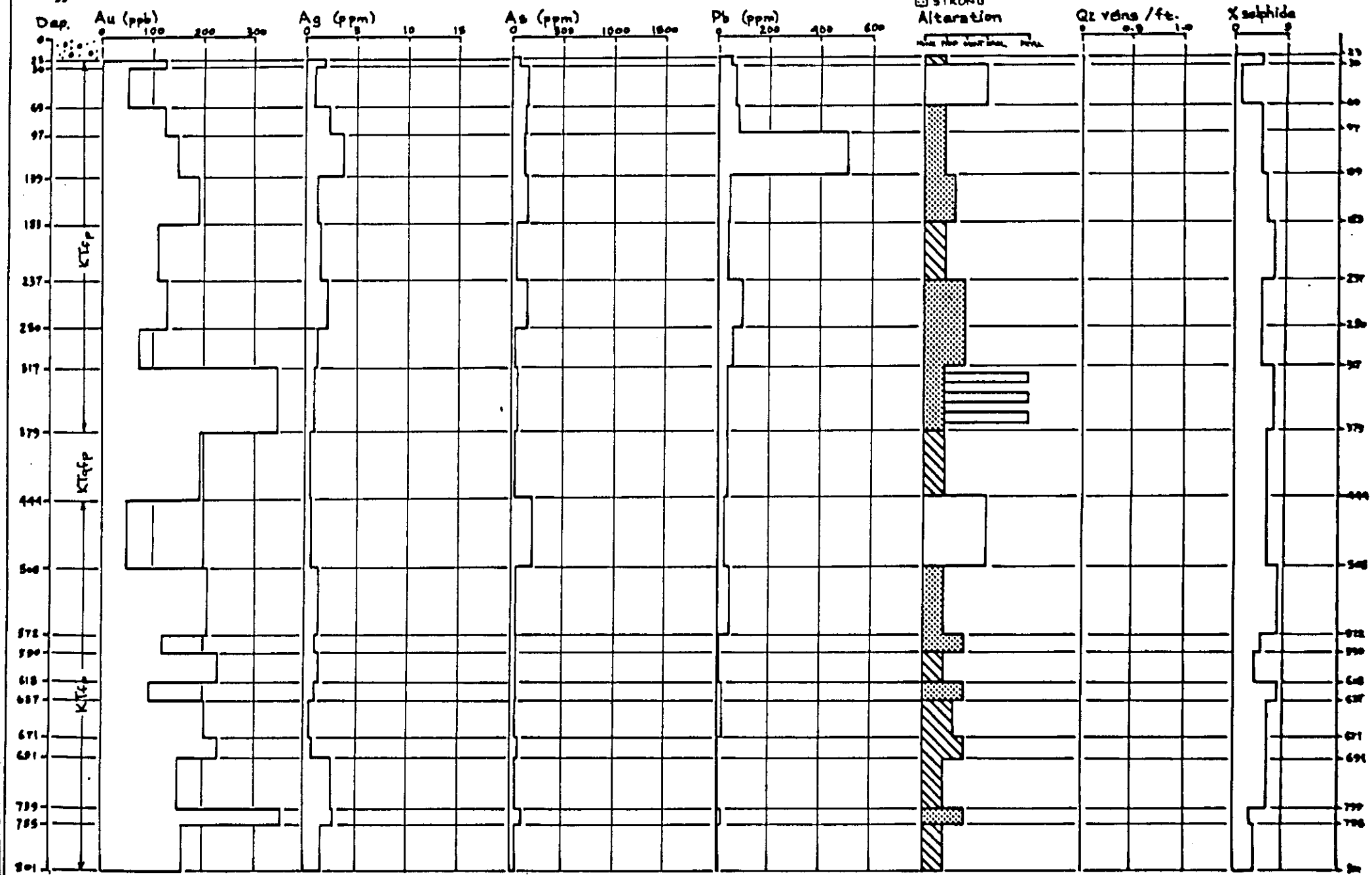
-55°



DDH KL-3 NITRO CLAIMS LOGGED BY M.P. PHILLIPS MAT JOINT VENTURE

-55°

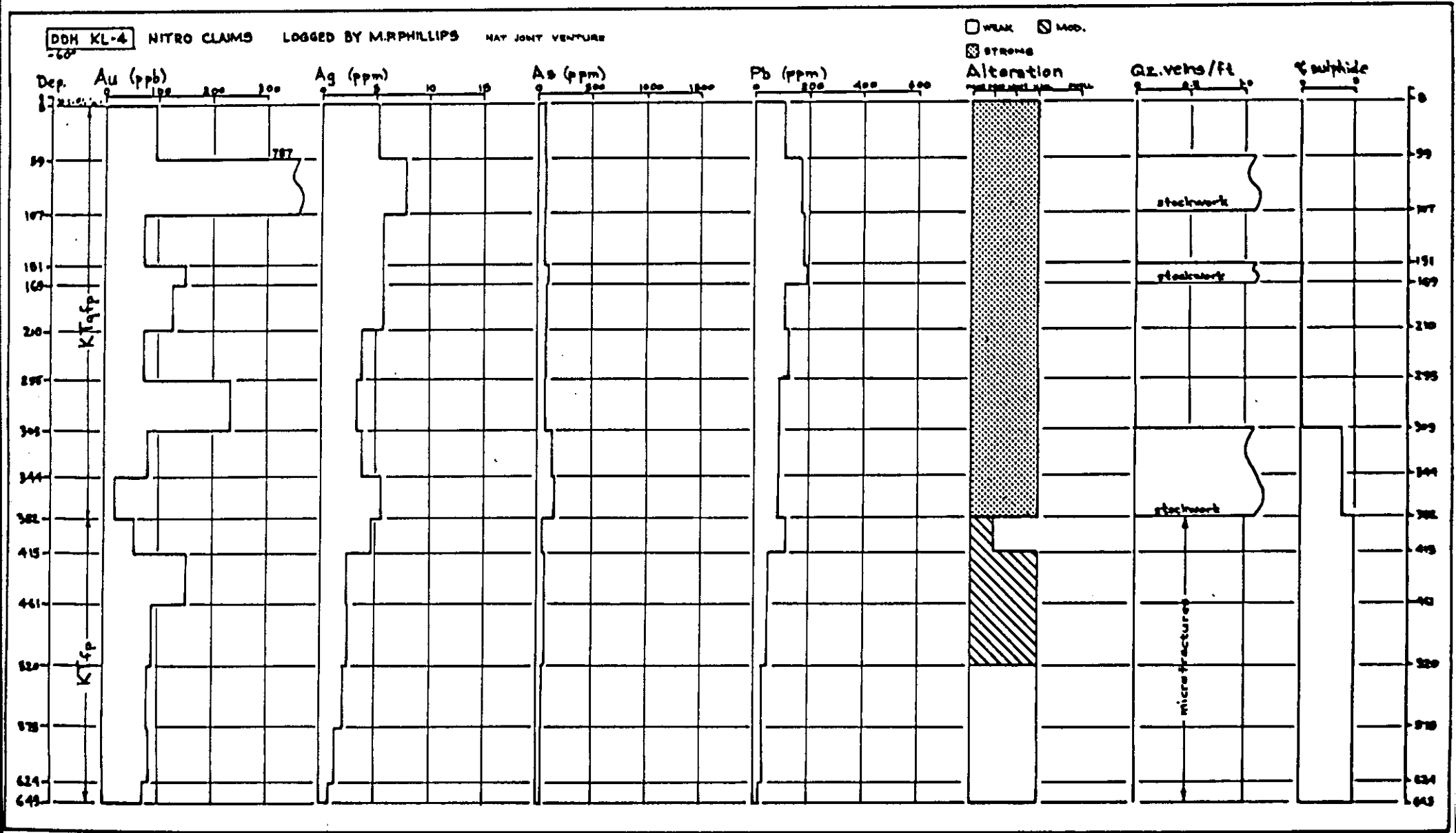
☐ WEAK ▨ MOD. ▩ STRONG



DDH KL-4 NITRO CLAIMS LOGGED BY M.R.PHILLIPS NAT JOINT VENTURE

-60°

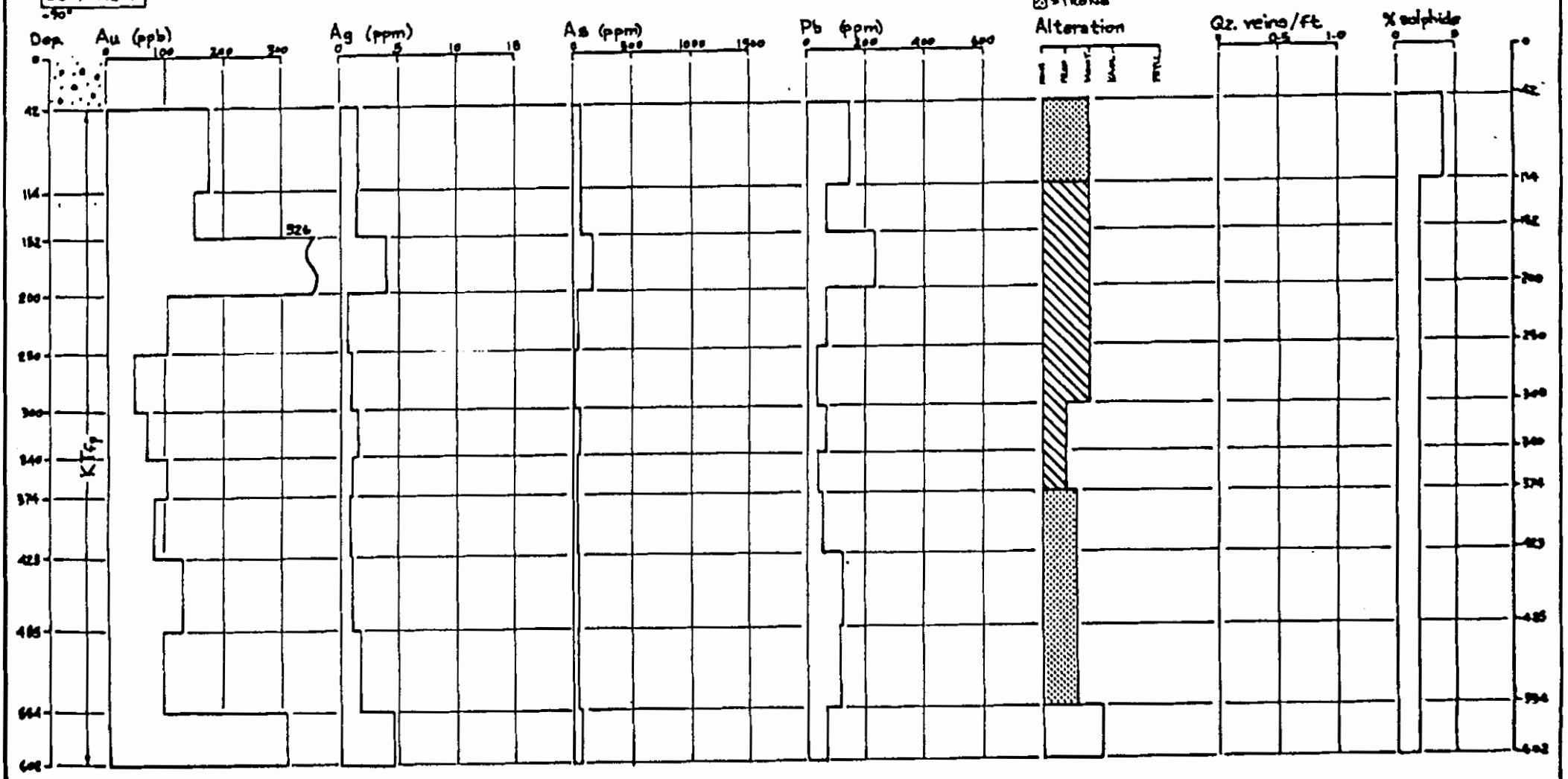
WEAK MOD. STRONG



DDH KL-5 NITRO CLAIMS LOGGED BY M.P. PHILLIPS NAT JOINT VENTURE

-50°

WEAK MOD. STRONG



APPENDIX II

PERSONNEL

PERSONNEL

Name	Address	Work Period
E. Onasick	3-2859 West Broadway Ave., Vancouver, B.C.	28 May - 2 August, 1981
H. Oiye	107 - 1730 Chesterfield St., North Vancouver, B.C.	28 May - 29 August, 1981
L. Lindinger	5 - 1940 Arbutus St., Vancouver, B.C.	28 May, 1981
J. Robertson	2421 Royal Ave., Saskatoon, Sask.	28 May - 9 June, 1981
B. Jenkins	General Delivery, Shoal Lake, Man.	28 May - 28 August, 1981
B. Goldbeck	2034 Townline Rd., Abbotsford, B.C.	28 May, 1981
M. Phillips	Box 4127, Whitehorse, Y.T.	27 August - 29 August, 1981

APPENDIX III

TECHNIQUES OF GEOCHEMICAL ANALYSIS

TECHNIQUES OF GEOCHEMICAL ANALYSIS

Analysis techniques used in 1981 included geochemical and fire assay methods, the latter used mainly for rock specimens with visible mineralization. After screening to -35 mesh and pulverizing to -80 mesh for silts and soils, or crushing and screening to -80 mesh for rocks, samples were analyzed for gold by the "combo" method, silver and lead by nitric-perchloric extraction followed by Atomic Absorption, and arsenic by the hydride vapour technique. The combo method for gold is concentration by fire assay followed by measurement with either Neutron Activation Analysis (1 ppb detection) or Atomic Absorption (5 ppb detection). Most of NAT's 1981 analysis used the more sensitive detection limit.

ARCHER, CATHRO
AND ASSOCIATES LTD.
CONSULTING GEOLOGICAL ENGINEERS

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VANCOUVER, B.C.
V6B 1L8

AFFIDAVIT

I, Joan Mariacher, of Vancouver, B.C. make oath and say:

That to the best of my knowledge the attached Statement of Expenditures for exploration work on the Nitro 1 - 24 mineral claims on Claim Sheet 115I/5 & 6 is accurate.

Joan Mariacher

Sworn before me at Vancouver, B.C.
this 7 day of
January, 1982

C. R. C

Notary, Yukon Territory

090974

Statement of Expenditures
Geochemical Sampling and Geological Mapping
Nitro 1 - 24 Claims
January 6, 1982

Salaries		
E. Onasick - June 7, Aug. 2 at $220/day	$ 440.00	
H. Oiye - June 7-9, Aug. 27-29 at $162/day	972.00	
J. Robertson - June 7-9 at $101/day	303.00	
M.P. Phillips - Aug. 27-29 at $250/day	750.00	
B. Jenkins - Aug. 27-28 at $89/day	178.00	$2,643.00
Expenses		
Trans North Turbo Air contract Hughes 500C helicopter - 5.6 hours at $350/hour	1,960.00	
Helicopter fuel, 5.6 hours at 22 gal/hr at $3.50/gal at camp site	431.00	
Chemex Labs Ltd., total 201 samples analyzed for Au, As, Ag and Pb at $10.40 each	2,090.00	4,481.00
Total		$7,124.00

In Account With

Project – NAT JOINT VENTURE

Date – – 30 JUNE, 1981

			Total
MANAGEMENT			
	JUNE	A	2250.00
LABOUR			
Supervisory			
	M PHILLIPS - 2 HRS LOGGING KAISER HOLES AT		
Field	E. ONASICK - JUNE 1-30 + MAY CB 50.	2950.00	
	H. DIYE - JUNE 1-30 + MAY CB 25.	2175.00	
	L. LINDINGER - JUNE 1-30 + MAY CB 110.	2210.00	
	J. ROBERTSON - JUNE 1-30 + MAY CB 98	1698.00	
	B. JENKINS - JUNE 1-30 + MAY CB 14	1364.00	
	B. GOLDBECK - JUNE 1-30 + MAY CB 63	1565.00	
	K. WYLLIE - JUNE 1-30	1600.00	
	F. SCHUERHECK - JUNE 1-4 AT 1350 + MAY CB 23.	203.00	
	D. CHARTERS - JUNE 8-13 AT 1350	270.00	
	D. EATON - JUNE 1-4 AT 3000 + MAY CB -70.	430.00	B
	M. TRUDZIK - JUNE 5-30 AT 1350	1170.00	15573.00
	plus 50 %		7786.50
Casual			
EXPENSES			
Accounting	JUNE	400.00	C3
Expediting	JUNE	900.00	D3
Room & Board in Whse	TRUDZIK-3; CHARTERS-4; LINDINGER-3; GOLDBECK-3; DIYE-4; JENKINS-4; ONASICK-4; ONASICK, DIYE, ROBERTSON & EATON - 1 DAY MEALS ONLY total 17 days at $ 35.00 / day	675.00	DY
Field equipment from AC stock		169.08	D1
Xerox copies, 116 copies at .10 /copy		289.00	C1
Radio rental CHR JUNE 1-8 AT 250/mo; + SBX 11 JUNE 1-30 AT 250/mo		316.67	D1
Rental AC Brown truck JUNE 1-30	at $ 900 / mo.		
plus (7332 to 8017)	1359 kms at .70 /km	1178.40	D4 D1-3.78
Petty cash 4.50 D1; 7.46 CV; 3.78 D4; 30.90 D3-17. D1-5.90		41.64	CV-7.46 D1-10.40 D3-17.
Telephone 5.95		5.95	CV
Blueprinting, 119 sq. ft. Ozalid at 30 c/ft plus 52 sq. ft. Dilar at $ 2.50 /ft.		165.20	C1
Drafting, 44 hrs. at $ 18 /hr.		792.00	C1
Rental AC magnetometer JUNE 1-30 AT 150/mo		150.00	D1
Yukon Delivery - truck rental		75.00	D4
(Golden Rose Mfg. - wobble pump)		125.00	D1
			5783.97
	Total		30197.77

In Account With

Project – NAT JOINT VENTURE
Date – – AUGUST 31, 1987

			Total
MANAGEMENT			
	Aug		2,250
LABOUR			
Supervisory			
	M.P. Phillips - Aug 1-4, 11-31 field supervision at Lilypad prospect - total 24½ days at $250/d		6,125
Field	E ONASICK - AUG 1-31 AT $4500/mo	2500.00	
	L LINDINGER - AUG 1-31 AT $1100/mo + JULY C/O 31.00	2131.00	
	H DIVE - AUG 1-31 AT $1100/mo + JULY C/O $6.00	2156.00	
	J ROBERTSON - AUG 1-31 AT $1600 + JULY C/O 100.00	1700.00	
	B. GOLDBECK - AUG 1-31 AT $1500/mo + JULY C/O 30.00	1530.00	
	B JENKINS - AUG 1-31 AT $1400/mo	1400.00	
	K WYLLIE - AUG 1-31 AT $1600/mo	1600.00	
	M TRUDZIK - AUG 1-2; 24-31 AT $1350/mo + JULY C/O 10.00	1810.00	
	S DUKE - AUG 5-31 AT $1500/mo + JULY C/O 6.00	1370.00	
	D. EATON - AUG. 28 AT $3000/mo	97.00	
	D HEBELLEM - AUG 14-31 AT $1100/mo	857.00	
	M JOVANOVIC - AUG. 25-31 AT $1400/mo plus 5%	1470.00	
~~Casual~~	M. LEGASSICKE - JULY C/O 26.00	26.00	
	R. PHILLIPS - AUG 1 AT $250/mo + JULY C/O 62.00	91.00	1617.00
CASUAL	C. CHALMERS - 5 DAYS AT $140/DAY	700.00	820.00
	K. HACKMAN - AUG. 11 - 1 DAY AT $140/DAY	140.00	
EXPENSES			$820.00
Accounting	AUG	400.00	C3
Expediting	AUG 1-31	900.00	D3
Room & Board in Whse	C CHALMERS-4; HACKMAN-1; JOVANOVIC-3; TRUDZIK-1; ONASICK-1; DIVE-1; LINDINGER-1; ROBERTSON-1; JENKINS-5 WYLLIE-1; EATON-1; total 31 days at $ 35 /day	1085.00	DV
Field equipment from AC stock		492.50	D1
Xerox copies, 357 copies at 25¢/copy		89.25	C1
Radio rental	2 SB3X11's for Aug @ $250 + $150	400.00	D1
Rental AC Braun truck	Aug 1-31 at $ 920 /mo.		
	plus (33,376 to 34,446) 1070 kms at 20¢ /km	1144.00	DV
Petty cash	C2 - 28, D2 26.43	28.43	CV-V D2-26.43
Telephone	1.45	1.45	CV
Blueprinting,	56 sq. ft. Ozalid at 30 c/ft plus 228 sq.ft. Dilar at $ 2,50 /ft.	546.80	C1
Drafting,	16½ hrs. at $ 18 /hr.	297.00	C1
	Rental AC computer terminal for Clamar data	150.00	D1
	Interwrite Office Supplies	12.56	CV
	Nodine Couriers	9.60	D3
	Receiver General	7.00	CV
	Clamar	29.20	D1
	C.P. Air frt	10.35	D3
	Clamar	20.00	E
	Yukon Office	11.70	CV
	postage	75.00	CV
			5759.84
Credit -	receipt for freight to Eureka during period June 4 - July 1 @ 352 lb + $14.26 lb/load total 12.2 hrs	(5297.97)	G1
	- Northern Services	(24.65)	D1
	- Material Disc, replaced damaged final disc	(55.00)	G3
	- Idun Arjan Gelling double billed in June Total in July -	(150.00)	(B 5527.62)
		N	33,694.22

TRANS NORTH TURBO AIR LTD.
BOX 4339, WHITEHORSE, YUKON Y1A 3T6
TELEPHONE (403)668-2177 • TELEX 036-8-290

ACCOUNT NUMBER: 117
52539

CHARTERER: ARCHER CATHRO

BILLING ADDRESS:

INVOICE DATE: 10 01 6 81

A/C TYPE: H500C
AIRCRAFT REGISTRATION: CXJW

FLIGHT DATE: DAY 07 MONTH 06 YEAR 81

PURCHASE ORDER NO.: NAT

FUEL & OIL-I TNTA	FUEL & OIL-I CUST.	TNTA FUEL USED	HRS.-GALS.	FROM
	X		1.8 HR	BOW RIVER

FROM / TO	MILES	HOURS	ZONE	REMARKS - NO. OF PASS - FREIGHT LBS.
FROM BOW RIVER				
TO FREEGOLD				P.U. & SET OUT 2
BOW RIVER		.4		PAX @ STEWART
BOW RIVER		1.4		SET OUT & P.U. CREW ON NEWT & NUCLEUS CLAIMS

ACS	S.L.			
9	2	9	0	630 00

1.8 @ 350.00 = 630 00

TERMS: NET 30 DAYS
1.75% INTEREST PER MONTH (21% PER ANNUM) WILL BE CHARGED ON ALL OUTSTANDING AMOUNTS OVER 30 DAYS.

X _____ CHARTERER'S SIGNATURE

David Reid PILOT'S SIGNATURE

INITIALS: CO-PILOT'S NAME

ENGINEER'S NAME: Charlie Haeber

FLIGHT ATTENDANT

WAITING TIME	@	/HR.
FUEL:	@	/GAL.
FUEL:	@	/GAL.
MEALS & LODGING		
OTHER		
OTHER		

TOTAL $ 630 00

FLIGHT REPORT INVOICE

TRANS NORTH TURBO AIR LTD.

BOX 4339, WHITEHORSE, YUKON Y1A 3T6

TELEPHONE (403)668-2177 • TELEX 036-8-280

ACCOUNT NUMBER: 52540

INVOICE DATE: 16 08 16 81

AREA: B.C. ☐ YUKON ☒ NWT ☐ ALTA. ☐

CHARTERER: PRATHER CATARD

BILLING ADDRESS:

A/C TYPE: H 500 C

AIRCRAFT REGISTRATION C: - X V W

FLIGHT DATE: DAY 08 MONTH 06 YEAR 81

PURCHASE ORDER NO.: NAT

FUEL & OIL-I		TNTA FUEL USED	HRS.-GALS.	FROM
TNTA	CUST.			
	X		2.3 HRS	BOW RIVER

FROM	TO	MILES	HOURS	ZONE	REMARKS - NO. OF PASS - FREIGHT LBS.
BOW RIVER	PEECOCK				SET OUT & P.U.
	BOW RIVER		.4		2 PAX
BOW RIVER			1.9		SET OUT & P.U.
					CREWS ON NUCLEUS & NITRO

SUB	S.L.		AMOUNT				
9	2	5	0	2	0	805	00

2.3	@ 350.00		805 00
	@		
	@		
	@		
WAITING TIME	@	/HR.	
FUEL:	@	/GAL.	—
FUEL:	@	/GAL.	
MEALS & LODGING			
OTHER			
OTHER			

TOTAL $ 805 00

TERMS: NET 30 DAYS
1.75% INTEREST PER MONTH (21% PER ANNUM) WILL BE CHARGED ON ALL OUTSTANDING AMOUNTS OVER 30 DAYS.

X _____ CHARTERER'S SIGNATURE

David Reid PILOT'S SIGNATURE

INITIALS: CO-PILOT'S NAME

ENGINEER'S NAME: Charlie Hoeller

FLIGHT ATTENDANT

FLIGHT REPORT INVOICE

TRANS NORTH TURBO AIR LTD.
BOX 4339, WHITEHORSE, YUKON Y1A 3T8
TELEPHONE (403)668-2177 • TELEX 036-8-290

ACCOUNT NUMBER: 1/7
52541
INVOICE DATE: 16/06/81
ALTA B.C. YUKON NWT ALTA.

CHARTERER: ARCHER CATHRO

BILLING ADDRESS:

A/C TYPE: HUGHES 500
AIRCRAFT REGISTRATION C-: -XVW

FLIGHT DATE: DAY 09 MONTH 06 YEAR 81

PURCHASE ORDER NO.: NAT

FUEL & OIL-X TNTA	FUEL & OIL-X CUST.	TNTA FUEL USED	HRS.-GALS.	FROM
	X		2.3 HRS	BOW RIVER

FROM	TO	MILES	HOURS	ZONE	REMARKS - NO. OF PASS - FREIGHT LBS.
BOW RIVER	BOW RIVER		1.6		SET OUT & P.U. CREWS OF NUCLAIS & NITTPO
FREEBOLD	BOW RIVER		.7		SET OUT & P.U. 3 PAX @ STOPPARTS

SUB	G.L.	AMOUNT			
912	5620	805	00	2.3 @ 350.00	805 00
				@	
				@	
				@	

TERMS: NET 30 DAYS
1.75% INTEREST PER MONTH (21% PER ANNUM) WILL BE CHARGED ON ALL OUTSTANDING AMOUNTS OVER 30 DAYS.

X _____ CHARTERER'S SIGNATURE

David Reid PILOT'S SIGNATURE

INITIALS: CO-PILOT'S NAME

ENGINEER'S NAME: Charlie Hoelke

FLIGHT ATTENDANT

WAITING TIME	@	/HR.
FUEL:	@	/GAL. —
FUEL:	@	/GAL.
MEALS & LODGING		
OTHER		
OTHER		

TOTAL $ 805 00

FLIGHT REPORT INVOICE

TRANS NORTH TURBO AIR LTD.
BOX 4338, WHITEHORSE, YUKON Y1A 3T6
TELEPHONE (403)668-2177 • TELEX 036-8-290

ACCOUNT NUMBER: 117
52597
INVOICE DATE: 15 01 81
AREA: B.C. / YUKON / NWT / ALTA.

CHARTERER: ARCHER CATHRO
BILLING ADDRESS:

A/C TYPE: H500C
AIRCRAFT REGISTRATION C-: CXVW
FLIGHT DATE: DAY 02 MONTH 08 YEAR 81
PURCHASE ORDER NO.: NAT

FUEL & OIL-X TNTA	FUEL & OIL-X CUST.	TNTA FUEL USED	HRS.-GALS.	FROM
	X		4.4 HRS	BOW RIVER

FROM / TO	MILES	HOURS	ZONE	REMARKS - NO. OF PASS - FREIGHT LBS.
FROM BOW RIVER / TO LILY PAD AREA				SET OUT & P.V. CREW
BOW RIVER		1.8		
NITRO		.2		ARC TO CHECK TRENCH
LILY PAD		.3		& TAKE SAMPLES ON CLAIMS & RETURN CAMP
LILY PAD		1.1		
LILY PAD		.4		RIDE CAT ROUTE W/ TH JIM
BOW RIVER				
LILY PAD		0.6		SLING DIESEL
BOW RIVER				

SUB	G.L.		AMOUNT				
9	12	5102		1540	00	4.4 @ 350.00	1540 00
						@	
						@	
						@	

TERMS: NET 30 DAYS
1.75% INTEREST PER MONTH (21% PER ANNUM) WILL BE CHARGED ON ALL OUTSTANDING AMOUNTS OVER 30 DAYS.

X _____ CHARTERER'S SIGNATURE

Dave Reid
PILOT'S SIGNATURE

INITIALS: CO-PILOT'S NAME

ENGINEER'S NAME: Charlie Hoeller

FLIGHT ATTENDANT

WAITING TIME	@	/HR.	
FUEL:	@	/GAL.	
FUEL:	@	/GAL.	
MEALS & LODGING			
OTHER			
OTHER			
TOTAL		$	1540 00

FLIGHT REPORT
INVOICE

TRANS NORTH TURBO AIR LTD.
BOX 4339, WHITEHORSE, YUKON Y1A 3T6
TELEPHONE (403)668-2177 • TELEX 036-8-280

ACCOUNT NUMBER: 117
52627
INVOICE DATE: 01 09 81
AREA: B.C. YUKON NWT ALTA.

CHARTERER: ARCHER CATHRO

BILLING ADDRESS:

A/C TYPE: H500C
AIRCRAFT REGISTRATION #: -X VW

FLIGHT DATE: DAY 27 MONTH 08 YEAR 81

PURCHASE ORDER NO.: NAT

FUEL & OIL-I TNTA	FUEL & OIL-I CUST.	TNTA FUEL USED	HRS.-GALS.	FROM
	X		5.4HRS	BOW RIVER

FROM	TO	MILES	HOURS	ZONE	REMARKS - NO. OF PASS - FREIGHT LBS.
BOW RIVER	KLABAN / LILY PAD				SET ON 3 P.V. CREW. MICK P. TO KLABAN &
KLABAN / LILY PAD	BOW RIVER		3.1		(1/2-1/2 NITRO, LILYPAD)
BOW RIVER	WHITEHORSE				AL + 2 PAX IN, DOUGH
WHITEHORSE	BOW RIVER		2.3		POD TO BOW RIVER

SUB	F.L.		AMOUNT				
722	50	20	1890	00	5.4	@ 350.00	1890 00
						@	
						@	
						@	

WAITING TIME	@	/HR.	
FUEL:	@	/GAL.	
FUEL:	@	/GAL.	
MEALS & LODGING			
OTHER			
OTHER			
TOTAL			$ 1890 00

TERMS: NET 30 DAYS
1.75% INTEREST PER MONTH (21% PER ANNUM) WILL BE CHARGED ON ALL OUTSTANDING AMOUNTS OVER 30 DAYS.

X _____ CHARTERER'S SIGNATURE

DJR INITIALS — Dave Reid PILOT'S SIGNATURE

CO-PILOT'S NAME

ACH — Charlie Hoelle ENGINEER'S NAME

FLIGHT ATTENDANT

FLIGHT REPORT INVOICE

TRANS NORTH TURBO AIR LTD.

BOX 4338, WHITEHORSE, YUKON Y1A 3T6

TELEPHONE (403)668-2177 • TELEX 036-8-290

ACCOUNT NUMBER: 117

52628

INVOICE DATE: 01 | 019 | 811

AREA: B.C. / YUKON / NWT / ALTA.

CHARTERER: ARCHER CATHRO

BILLING ADDRESS:

A/C TYPE: H500C

AIRCRAFT REGISTRATION C: -XVW

FLIGHT DATE: DAY 28 | MONTH 08 | YEAR 81

PURCHASE ORDER NO.: NAT

FUEL & OIL-X TNTA	FUEL & OIL-X CUST.	TNTA FUEL USED	HRS.-GALS.	FROM
	X		4.1 HRS	BOW RIVER

FROM	TO	MILES	HOURS	ZONE	REMARKS - NO. OF PASS - FREIGHT LBS.
BOW RIVER	MILES CREEK				CHECK TARGETS
	BOW RIVER		2.5		GET STAPLES
	NITRO / LILYPAD				
	BOW RIVER		1.6		SET OUTS P.U. CREW

SUB	G.L.		AMOUNT
9212	5020		1435 00

4.1 @ 350.00 = 1435 00

WAITING TIME	@	/HR.	
FUEL:	@	/GAL.	
FUEL:	@	/GAL.	
MEALS & LODGING			
OTHER			
OTHER			

TOTAL $ 1435 00

TERMS: NET 30 DAYS
1.75% INTEREST PER MONTH (21% PER ANNUM) WILL BE CHARGED ON ALL OUTSTANDING AMOUNTS OVER 30 DAYS.

X _____ CHARTERER'S SIGNATURE

DJR — Dave Reid — PILOT'S SIGNATURE

INITIALS: DJR — CO-PILOT'S NAME:

ENGINEER'S NAME: ACH — Charlie Hoeller

FLIGHT ATTENDANT:

FLIGHT REPORT
INVOICE

TRANS NORTH TURBO AIR LTD.
BOX 4339, WHITEHORSE, YUKON Y1A 3T8
TELEPHONE (403)668-2177 • TELEX 036-8-290

ACCOUNT NUMBER: 117
F.C. 52629
INVOICE DATE: 01-09-81
AREA: B.C. YUKON NWT ALTA

CHARTERER: ARCHER CATHRO
BILLING ADDRESS: Box 4127 Whse

FUEL & OIL-R TNTA	FUEL & OIL-R CUST.	TNTA FUEL USED	HRS.-GALS.	FROM
	X		6.1 Hrs	Bow River

A/C TYPE: H500C
AIRCRAFT REGISTRATION C: -XVW
FLIGHT DATE: DAY 29 MONTH 08 YEAR 81
PURCHASE ORDER NO.: NAT

FROM / TO	MILES	HOURS	ZONE	REMARKS - NO. OF PASS - FREIGHT LBS.
FROM Bow River				
TO Lily Pad				SET OUT & MOVE 3 PAX, SLING DIESEL OUT + DRUMS & SAMPLES BACK
Bow River		4.7		
Nitro / Lily Pad				
Bow River		1.4		MOVE 2 PAX TO LOC-LOFE

SUB	F.L.	AMOUNT
9	21 2 50 00	2135 00
9	22 5 Hrs	

6.1	@ 350.00	2135	00
	@		
	@		
	@		

TERMS: NET 30 DAYS
1.75% INTEREST PER MONTH (21% PER ANNUM) WILL BE CHARGED ON ALL OUTSTANDING AMOUNTS OVER 30 DAYS.

X _____ CHARTERER'S SIGNATURE

INITIALS	CO-PILOT'S NAME / PILOT'S SIGNATURE
DJR	Dave Reid
PCH	ENGINEER'S NAME: Charlie Hoelle
	FLIGHT ATTENDANT

WAITING TIME	@	/HR.	
FUEL:	@	/GAL.	
FUEL:	@	/GAL.	
MEALS & LODGING			
OTHER			
OTHER			

TOTAL $ 2135 00

FLIGHT REPORT INVOICE

White Pass Petroleum Services

P.O. Box 4070
Whitehorse
Yukon Y1A 3T1

DATE July 23 19 81

ARCHER CATHERO.

ACCOUNT NUMBER 4718

Chevron

INVOICE 267540

TRUCK TRAILER

TRIP NO.

SHIP TO

STN FROM

STN CODE 19

ORDER NO

WP NO 4

QTY. ORDER	BACK ORDER	PRODUCTS DELIVERED	SIZE OF PACKAGE	CODE	QUANTITY	PRICE	AMOUNT
		JP-4 10	DRUMS	28 1 1	450	1.799	809.55
		JP4 TAX		961 3 1	450	.032	14.40
		Diesel 8	DRUMS	46 1 1	360	1.718	618.48
		Diesel TAX.		903 5 1	360	.236	84.96
		NAT					

DELIVERED BY

PRODUCTS RECEIVED BY Bill Seibert

APPROVED CHECKED

PAYMENTS RECEIVED

CASH

CHEQUES

EXCHANGE

TOTAL

TAX				18	
DRUM CHARGES	910 04 9			Balance Standard	53.00 990.00
DRUM CREDITS					( )
TERMS - NET CASH (NO DISCOUNT)				TOTAL	2517.30

P854 15M REV. 9/80

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

To : ARCHER CATHRO & ASSOC. LTD.
BOX 4127
WHITEHORSE, Y.T.
Y1A 3S9

Invoice # : I8111741
Date : 10-JUL-81
P.O. # : NONE
Project NAT

Invoice for analytical work reported on certificate(s) A8111741-001 to -006

Quantity	Analysed for code	description		unit price	amount
240	004 -	Pb	ppm		
	006 -	Ag	ppm		
	013 -	AS	ppm		
	101 -	AU-NAA	ppb	11.50	2760.00

Sample preparation and other charges :

240	203 - -35 mesh sieve + ring	1.50	360.00

TOTAL	$ 3120.00
Discount (20 %)	$ 624.00
Please pay this amount ---->	$ 2496.00

TERMS -- NET 30 DAYS
1.5 % per month (18 % per annum) charged on overdue accounts

604.80
517.80
2090.40
946.40
1486.
114.80
540.
1496.
64.
40.
17.60
17.60
162.
1603.40

CTA MEMBER CANADIAN TESTING ASSOCIATION

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: (604)984-0221
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

*** INVOICE ***

o : ARCHER, CATHRO & ASSOCIATES (1981) LTD.
1016 - 510 W. HASTINGS ST.,
VANCOUVER, B.C.
V6B 1L8

Invoice # : I8113230
Date : 12-SEP-81
P.O. # : NONE
Project NAT

nvoice for analytical work reported on certificate(s) A8113230-001 to -006

uantity	Analysed for code	description	unit price	amount
210	004 - Pb	ppm		
	006 - Ag	ppm		
	013 - AS	ppm		
	101 - AU-NAA	ppb	11.50	2415.00

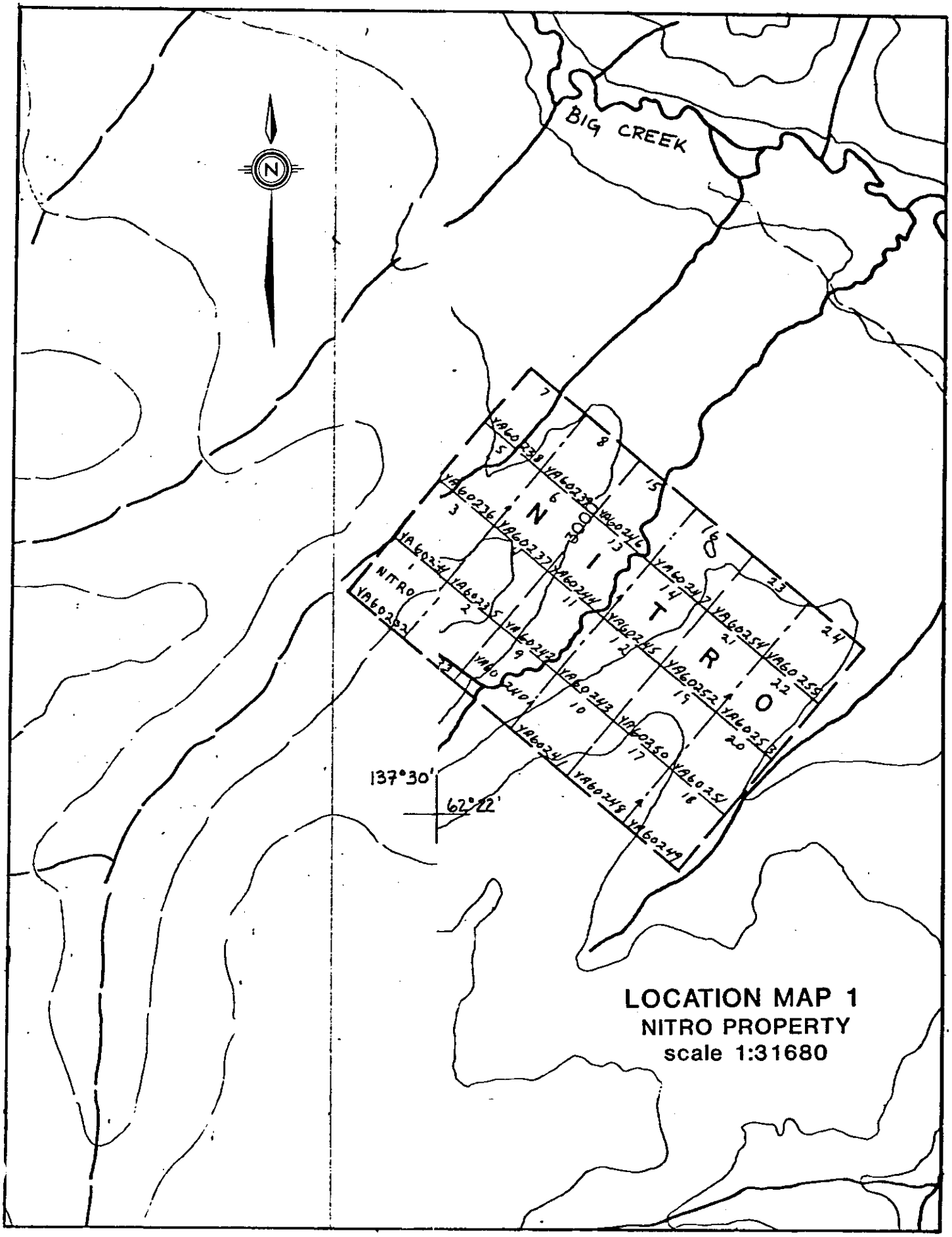
Sample preparation and other charges :

210	203 - -35 mesh sieve + ring	1.50	315.00

TOTAL	$ 2730.00
Discount (20 %)	$ 546.00
Please pay this amount ---->	$ 2184.00

RMS -- NET 30 DAYS
0 % per month (24 % per annum) charged on overdue accounts

CTA MEMBER CANADIAN TESTING ASSOCIATION



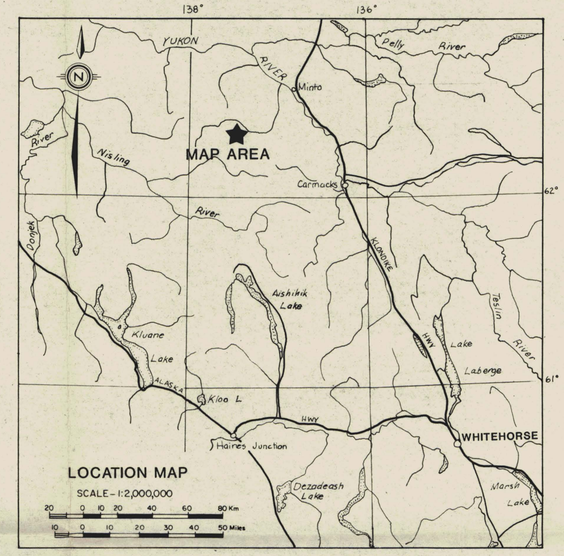
LOCATION MAP 1
NITRO PROPERTY
scale 1:31680

090974

137°30'

62°23'

NITRO CLAIMS 1 - 24



LEGEND

- • SOIL
- x SILT ppb Au
- ■ ROCK
- T Trace

FIGURE NI9A

ARCHER, CATHRO & ASSOCIATES (1981) LTD.

GOLD GEOCHEMISTRY

NITRO PROPERTY

NAT JOINT VENTURE

SCALE - 1:10,000

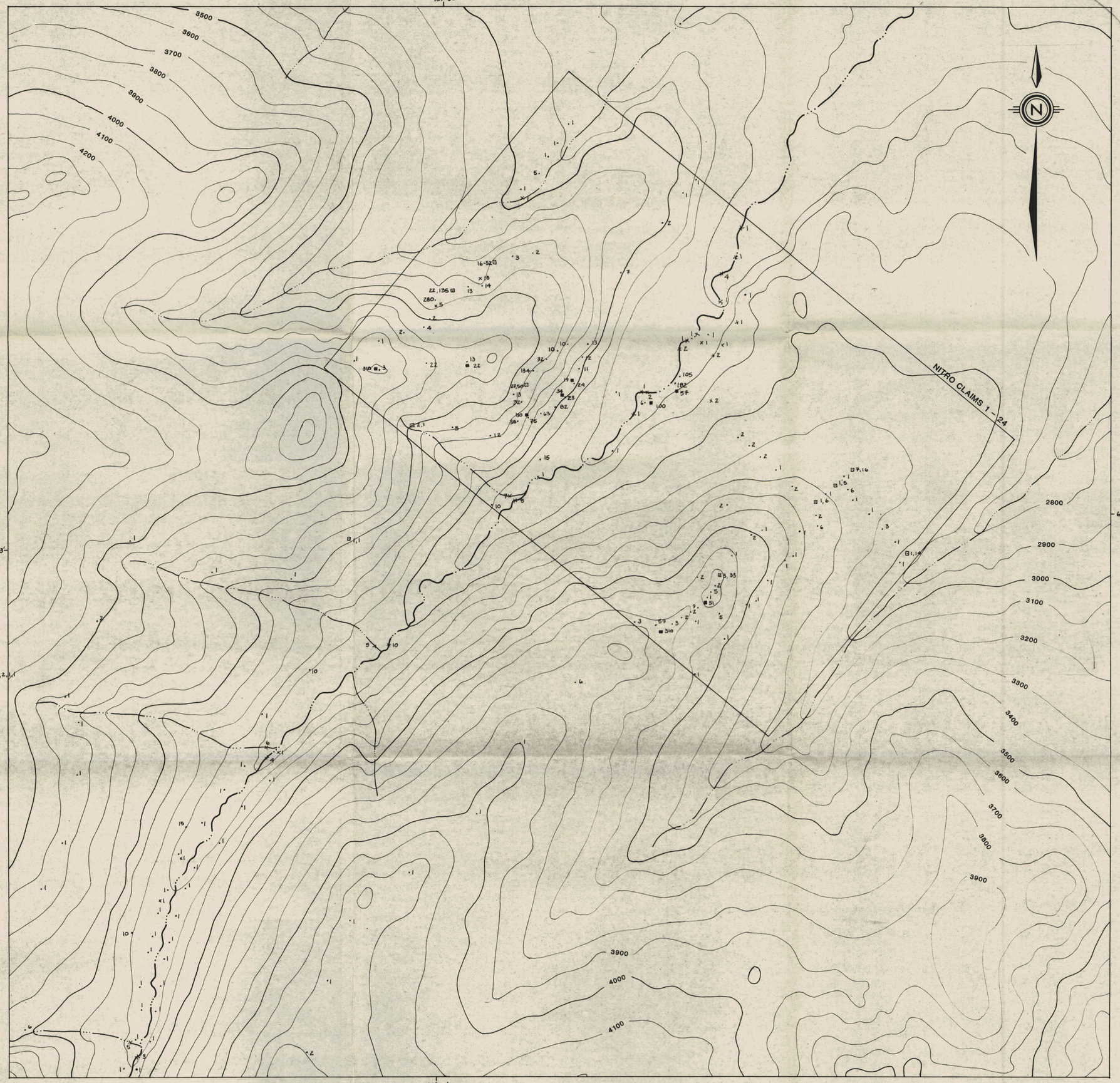
200 100 0 100 200 300 400 500 600 Metres

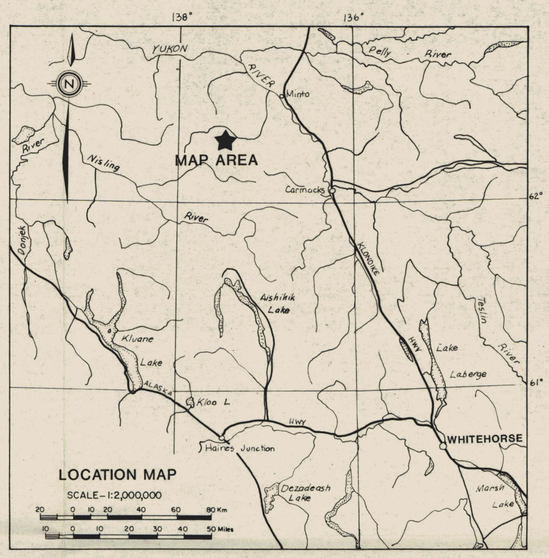
200 100 0 100 200 400 600 Yards

Association of Professional Engineers of the Yukon Territory
A. R. ARCHER
GEOLOGICAL
ENGINEER

090974

To accompany report by A.R. Archer Jan 82





LEGEND

- • SOIL
- x SILT ppm Ag x10
- ■ ROCK
- T Trace

FIGURE N19B

ARCHER, CATHRO & ASSOCIATES (1981) LTD.

SILVER GEOCHEMISTRY

NITRO PROPERTY

NAT JOINT VENTURE

SCALE – 1:10,000

200 100 0 100 200 300 400 500 600 Metres

200 100 0 100 200 400 600 Yards

Association of Professional Engineers of the Yukon Territory
A. R. ARCHER
GEOLOGICAL
ENGINEER

090974

To accompany report by A.R.Archer
Jan '82

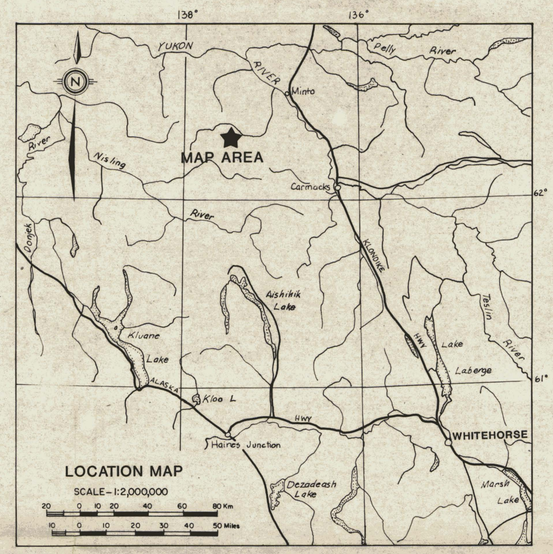
137°30'

62°23'

NITRO CLAIMS 1 - 24

N

2800
2900
3000
3100
3200
3300
3400
3500
3600
3700
3800
3900
4000
4100
4200



LEGEND

- • SOIL
- X SILT ppm As
- ■ ROCK
- T Trace

FIGURE N19C

ARCHER CATHRO & ASSOCIATES (1981) LTD.

ARSENIC GEOCHEMISTRY

NITRO PROPERTY

NAT JOINT VENTURE

SCALE - 1:10,000

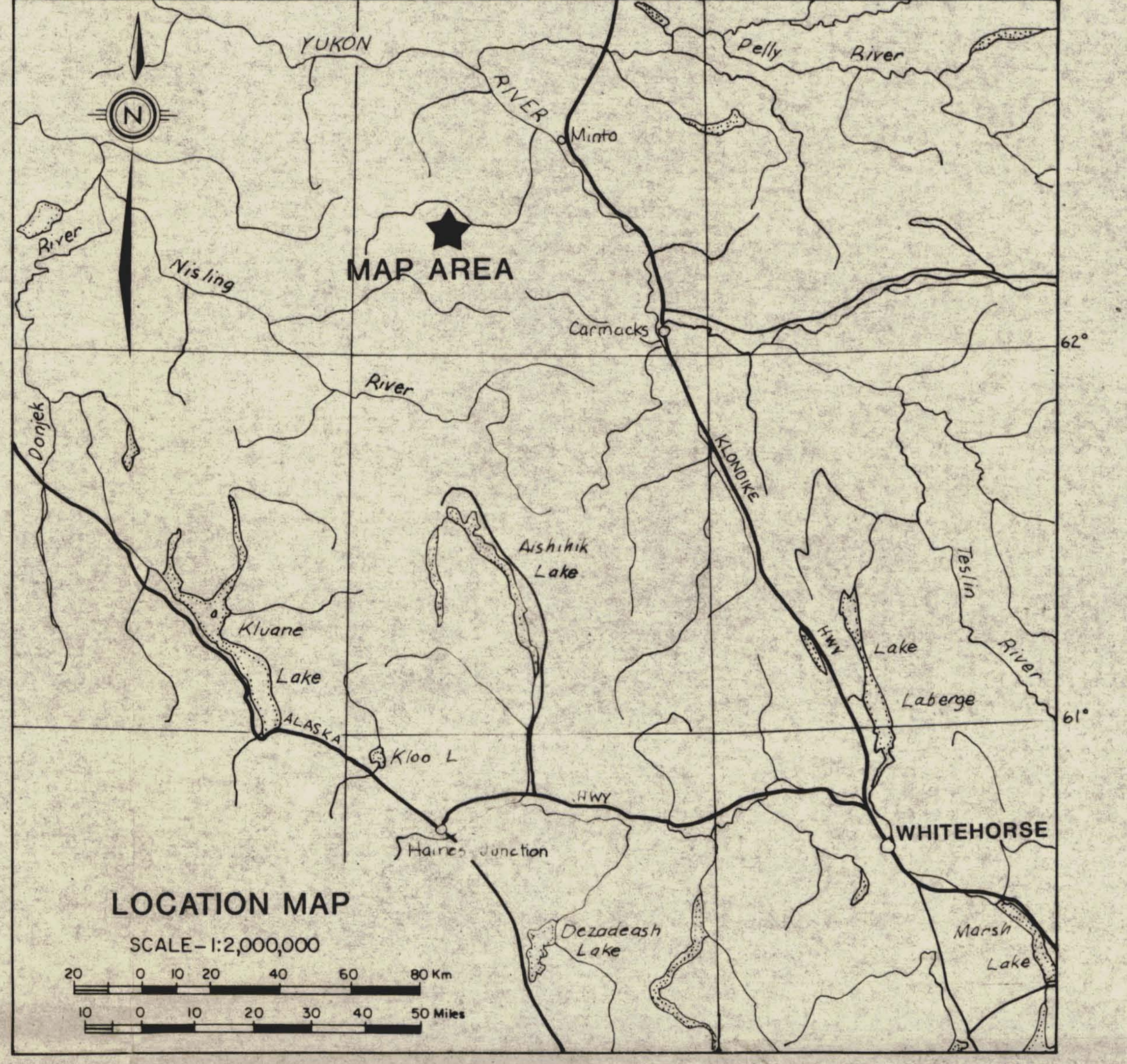
200 100 0 100 200 300 400 500 600 Metres

200 100 0 100 200 400 600 Yards

Association of Professional Engineers of the Yukon Territory
A. R. ARCHER
GEOLOGICAL
ENGINEER

090974

To accompany report by A.R. Archer, Jan 82



LEGEND

- • SOIL
- x SILT   ppm Pb
- ▪ ROCK
- T Trace

FIGURE N19D

ARCHER, CATHRO & ASSOCIATES (1981) LTD.

LEAD GEOCHEMISTRY

NITRO PROPERTY

NAT JOINT VENTURE

SCALE – 1:10,000

200 100 0 100 200 300 400 500 600 Metres

200 100 0 100 200 400 600 Yards

Association of Professional Engineers of the Yukon Territory — A. R. ARCHER — GEOLOGICAL ENGINEER

090974

To accompany report by A.R. Archer Jan '82

137°30'

62°23'

3500 3600 3700 3800 3900 4000 4100 4200

My KTqrp KTmn KTmnt KTfp KTqfp Mgd Mqmp

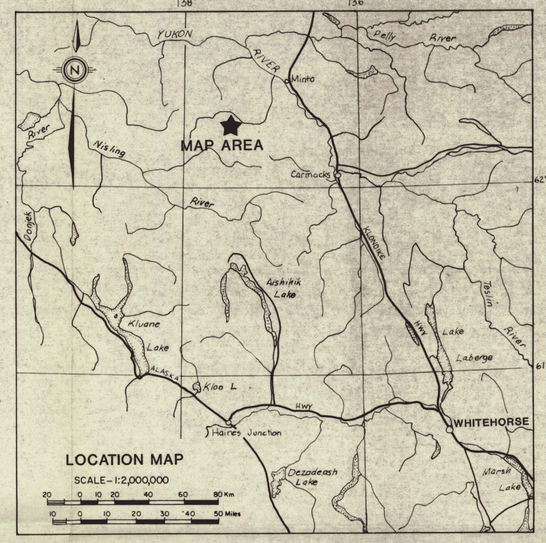
DDH-KL-4 DDH-KL-3 DDH-KL-5 DDH-KL-2 DDH-KL-1

Foster Ck. Burgess Ck. Etches Ck.

NITRO CLAIMS 1-24

2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800 3900 4000 4100

137°30'



LOCATION MAP

SCALE - 1:2,000,000

20 0 10 20 40 60 80 Km

10 0 10 20 30 40 50 Miles

LEGEND

LATE CRETACEOUS or EARLY TERTIARY

KTmn MOUNT NANSEN: Area of dark green, massive, aphanitic, fresh, basaltic to andesitic, northwest-trending dykes associated with volcanic rocks

KTmnt RHYOLITE TUFF: Light grey, fresh tuff containing 40% quartz and feldspar crystal fragments (10-25mm) in a darker grey matrix of devitrified volcanic glass; unfractured and unmineralized

KTfp FELDSPAR PORPHYRY: Medium to dark green-grey, brecciated, quartz latite porphyry to feldspar porphyry (white to pink orthoclase phenocrysts to 5mm); quartz and feldspar with minor biotite, hornblende and apatite; occasional quartz veins and stringers to 5mm

KTqrp RHYOLITE PORPHYRY: Light grey, massive, aphanitic, glassy (partially devitrified) matrix containing 5-10% quartz (to 3mm) and K-feldspar (to 10mm) phenocrysts

MESOZOIC or later

Mqmp QUARTZ MONZONITE PORPHYRY: Light grey to pink, medium to fine grained quartz monzonite porphyry to granite porphyry, containing phenocrysts of anhedral quartz (to 10mm) with minor biotite and hornblende

Mgd QUARTZ MONZONITE/GRANODIORITE: Black and white to pink, medium grained, hypidiomorphic quartz monzonite to granodiorite; minor hornblende and biotite

My SYENITE: Grey to pinkish, coarse grained hypidiomorphic porphyritic hornblende syenite containing large phenocrysts of hornblende and K-feldspar (to 3mm), somewhat aligned in a medium to coarse grained hornblende feldspar quartz matrix with accessory magnetite and apatite

FAULT

GEOLOGICAL CONTACT (approximate, assumed)

DIAMOND DRILL HOLE (Atlas 1970 program)

TRENCH (Atlas 1970 program)

FIGURE N19E

ARCHER, CATHRO & ASSOCIATES (1981) LTD.

GEOLOGY

NITRO PROPERTY

NAT JOINT VENTURE

SCALE - 1:10,000

200 100 0 100 200 300 400 500 600 Metres

200 100 0 100 200 400 600 Yards

Association of Professional Engineers of the Yukon Territory
A. R. ARCHER
GEOLOGICAL
ENGINEER

090974

To accompany report by A.R. Archer-Jones