

**CINOLA GOLD PROJECT**  
QUEEN CHARLOTTE ISLANDS

*Tom Schmitt*  
*Nov. 24/89*  
*MORU Course*  
*(UBC)*  
*887899*  
*File → CINOLA*

**CURRENT STATUS - OWNERSHIP**

- **BARRACK MINES (AUSTRALIA) ACQUIRED CITY RESOURCES LIMITED (AUSTRALIA) AND CITY RESOURCES (CANADA) LIMITED.**
- **OPTION TO ACQUIRE DIRECT 50% INTEREST IN CINOLA GOLD PROJECT.**
- **BARRACK MINES ALSO ON ACQUISITION TRAIL IN NORTH AMERICA IN ITS' OWN RIGHT.**



**BARRACK MINE  
MANAGEMENT INC.**

***Rennie Blair***  
MANAGER GEOLOGY

#2000 - PARK PLACE - 666 BURRARD STREET  
VANCOUVER, B.C., CANADA V6C 2X8  
TELEPHONE: (604) 669-1524 FAX: (604) 684-0863

**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

**CURRENT STATUS - TECHNICAL**

- \* **FEASIBILITY STUDY COMPLETED IN 1988.**
  
- \* **BARRACK RE-EXAMINING PARTS OF STUDY TO IMPROVE RETURN ON INVESTMENT.**
  - **METALLURGY**
  
  - **PIT OPTIMIZATION**
  
- \* **DECISION ON PROJECT PERMITTING EXPECTED BY MAY, 1990.**

**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

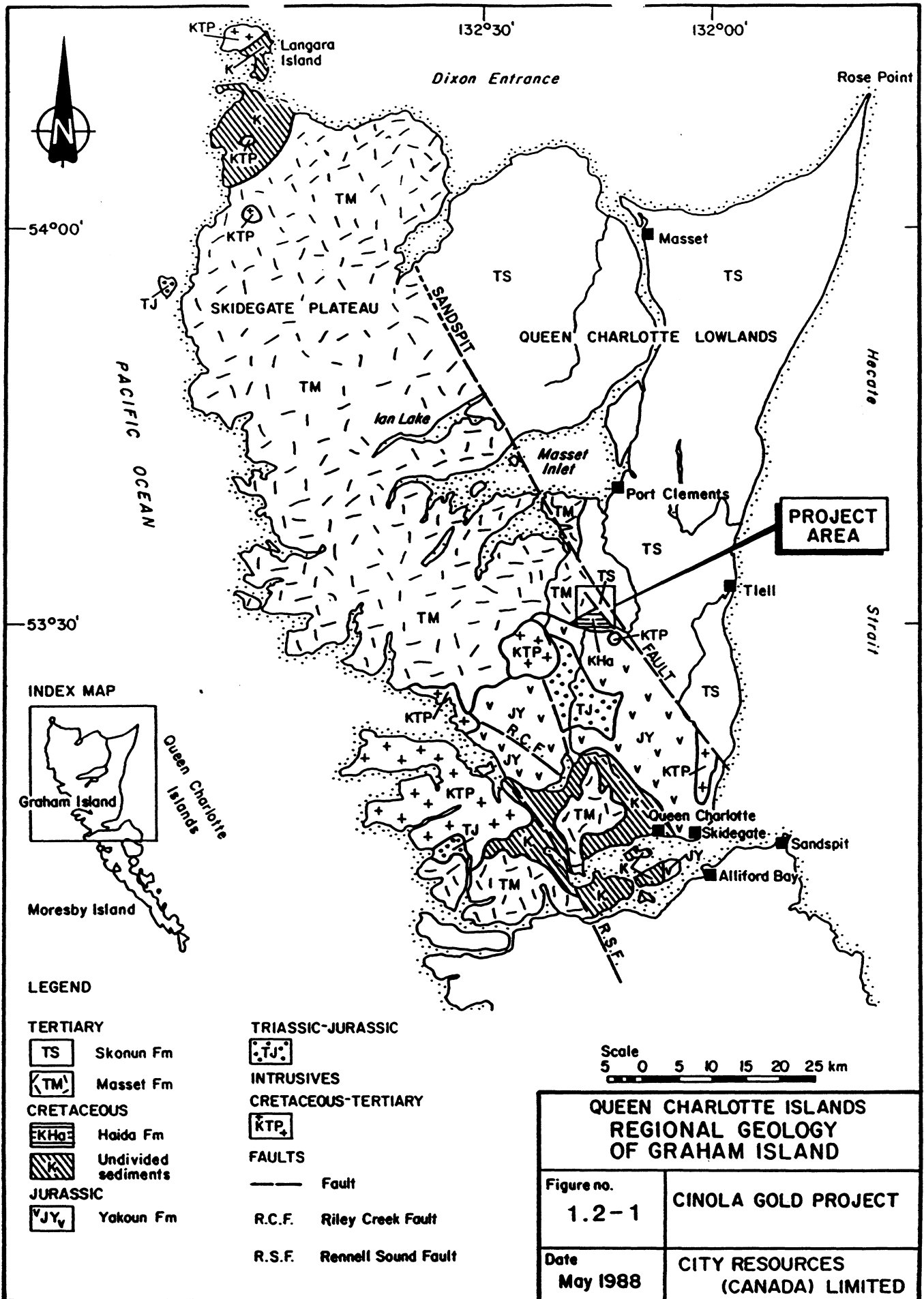
**PROJECT HISTORY**

- \* **DISCOVERED IN 1970 BY SPECOGNA/TRICO.**
  
- \* **7 COMPANIES HAVE BEEN INVOLVED PRIOR TO BARRACK/CITY RESOURCES.**
  
- \* **11 DRILLING CAMPAIGNS.**

**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

**GEOLOGICAL DESCRIPTION**

- \* MID-UPPER LEVELS OF AN EPITHERMAL HOT SPRINGS PRECIOUS METAL SYSTEM.
  
- \* GOLD MINERALIZATION IS ASSOCIATED WITH AREAS OF HYDROTHERMAL BRECCIATION, STOCKWORK VEINING, VEINING AND SILICIFICATION.
  
- \* USING A CUT-OFF GRADE OF 1.1 g/t RESERVES ARE 25 mt AT 2.44 g/t Au.
  
- \* PLANNED MINING RATE OF 2.1 mt PER ANNUM, AVERAGING 150,000 oz. Au PER YEAR.



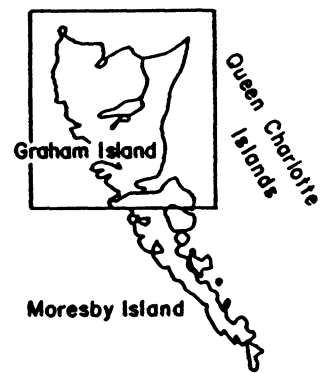
54°00'

53°30'

132°30'

132°00'

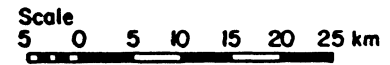
INDEX MAP



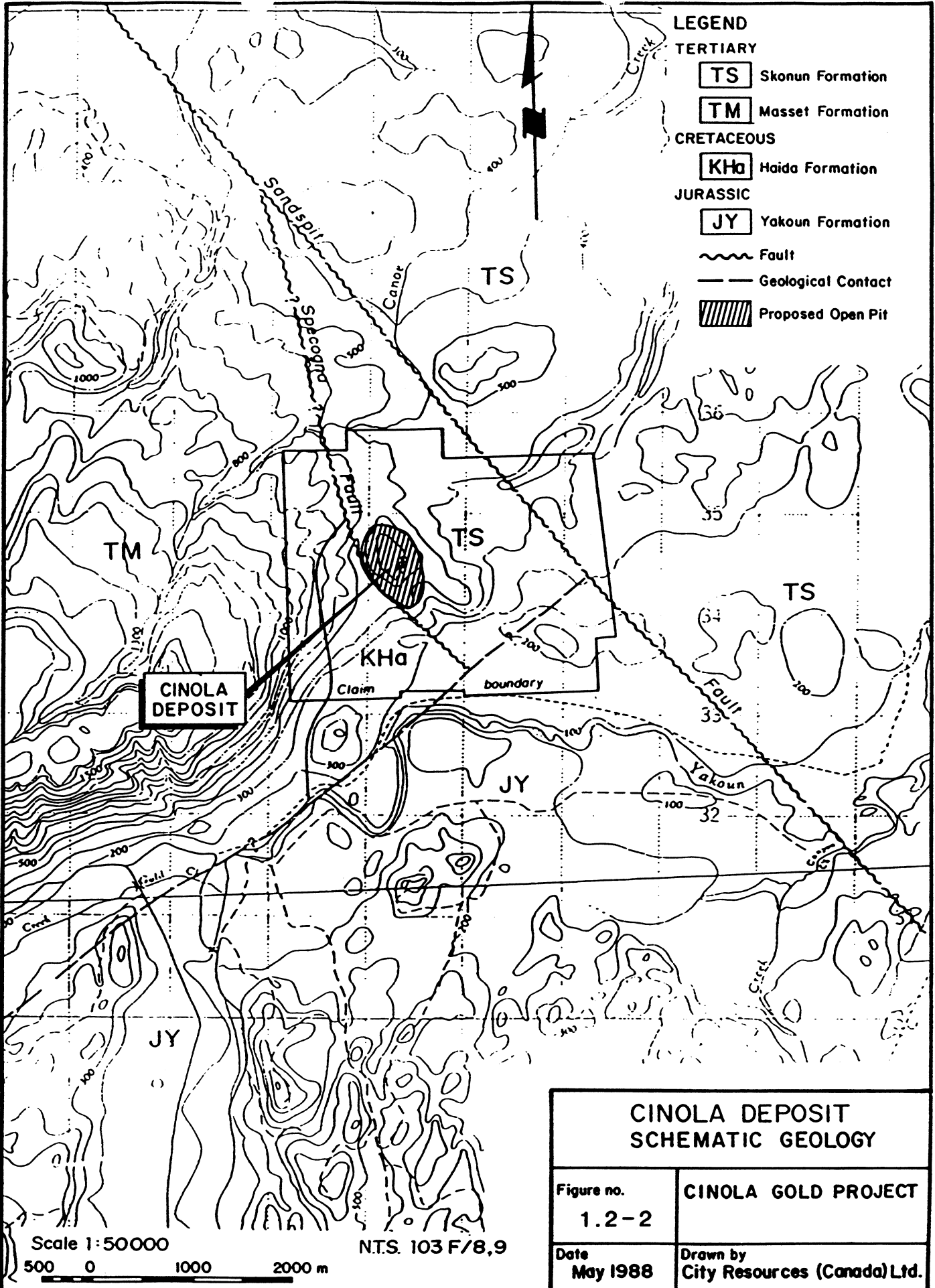
LEGEND

- TERTIARY**
- TS Skonun Fm
  - TM Masset Fm
- CRETACEOUS**
- KHa Haida Fm
  - [diagonal lines] Undivided sediments
- JURASSIC**
- JY Yakoun Fm

- TRIASSIC-JURASSIC**
- Tj
- INTRUSIVES**
- CRETACEOUS-TERTIARY**
- KTP
- FAULTS**
- Fault
  - R.C.F. Riley Creek Fault
  - R.S.F. Rennell Sound Fault



QUEEN CHARLOTTE ISLANDS REGIONAL GEOLOGY OF GRAHAM ISLAND	
Figure no. <b>1.2-1</b>	<b>CINOLA GOLD PROJECT</b>
Date <b>May 1988</b>	<b>CITY RESOURCES (CANADA) LIMITED</b>



<b>CINOLA DEPOSIT SCHEMATIC GEOLOGY</b>	
Figure no. <b>1.2-2</b>	<b>CINOLA GOLD PROJECT</b>
Date <b>May 1988</b>	Drawn by <b>City Resources (Canada) Ltd.</b>

**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

**DEVELOPMENT OF RESERVE DATABASE**

\* **BASED ON WORK UNDERTAKEN FROM 1971 TO 1987:**

- **DIAMOND DRILLING**
- **PERCUSSION DRILLING**
- **UNDERGROUND SAMPLING**

\* **GEOLOGICAL DATA BASED ON:**

- **9700 m OF NEW CORE AND CUTTINGS 1986-1987**
- **RE-LOGGING 27900 m OF CORE DRILLED PRIOR TO 1986.**
- **UNDERGROUND GEOLOGICAL MAPPING OF 120 m OF NEW WORKINGS AND 340 m OF PREVIOUS WORKINGS.**

**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

**LOGGING DRILL CORE/CUTTINGS**

- \* **LITHOLOGIC UNIT**
- \* **OXIDATION**
- \* **VEINING**
- \* **SULPHIDES**
- \* **CARBON CONTENT**
- \* **SILICIFICATION**
- \* **ALTERATION**
- \* **STRUCTURAL DISCONTINUITIES**
- \* **ALL CORE PHOTOGRAPHED**



**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

**PRE-1987 DRILLING**

- \* **TEN PROGRAMS COMPLETED FROM 1971 TO 1984.**
  
- \* **ASSAY VALUES ON DRILL LOGS WERE CHECKED AGAINST ORIGINAL ASSAY CERTIFICATES AND ENTERED INTO PC-XPLOR AND VALIDATED FOR DATA ENTRY ERRORS.**
  
- \* **ALL HOLES WERE RE-LOGGED AND LITHOLOGIES RE-CLASSIFIED.**

**1986-1987 DRILLING**

- \* **ASSAYS TRANSFERRED VIA MODEM FROM CHEMEX LAB. TO CITY RESOURCES' OFFICE.**
  
- \* **LOADED INTO PC-XPLOR DATABASE.**
  
- \* **CHECKED AGAINST ORIGINAL ASSAY CERTIFICATES**
  
- \* **FINAL OVERALL DATABASE CONSISTS OF 18800 SAMPLES.**

TABLE 2.2-1

SUMMARY OF CINOLA DEPOSIT DRILLING PROGRAMS  
(FROM INITIAL DISCOVERY IN 1970 TO 1987)

Drilling Program (Years)	Operating Company	Diamond Drilling		Percussion Drilling		Total Drilled (m)
		# holes	(m)	# holes	(m)	
1971	Kennco Ltd.	2	55	---	---	55
1972	Cominco Ltd.	9	498	---	---	498
1974	Quintana Minerals Corp.	4	57	18	603	660
1975	Quintana Minerals Corp.	5	718	---	---	718
1977	Consolidated Cinola Mines Ltd.	13	679	---	---	679
1978	Consolidated Cinola Mines Ltd.	8	1 254	---	---	1 254
1979-81	Consolidated Cinola Mines Ltd.	138	22 241	---	---	22 241
1981	Consolidated Cinola Mines Ltd.	19	2 644	---	---	2 644
1981	Consolidated Cinola Mines Ltd. (shallow holes for surface mapping program)	---	---	24	132	132
1984	Consolidated Cinola Mines Ltd.	17	1 369	---	---	1 369
1986-87	City Resources (Canada) Limited	30	3 448	64	6 232	9 680
TOTALS TO 1987		245	32 963	106	6 967	39 930

**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

**1986-1987 PROGRAM**

- \* **NOVEMBER, 1986 - FEBRUARY, 1987**
  
- \* **30 DDH, 3,450 m.**
  
- \* **64 PERCUSSION, 6,200 m.**
  
- \* **DOWNHOLE SURVEYS USING A SPERRY-SUN SINGLE SHOT CAMERA.**
  
- \* **COLLAR SURVEY.**

**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

**SAMPLE COLLECTION**

- \* **SAMPLING UNDERTAKEN ON 2.0 m INTERVALS. SEVERAL HOLES SELECTED AND SPLIT AT SMALLER INTERVALS TO TRY AND ASCERTAIN GRADE CONTROLLING FEATURES.**
  
- \* **DD CORE NQ AND HQ WAS SAWN AND HALF OF IT RETAINED.**
  
- \* **PERCUSSION SAMPLES. ONE QUARTER OF EACH 2.0 m INTERVAL WAS OBTAINED USING A JONES RIFFLE SPLITTER.**
  
- \* **REMAINDER OF SAMPLE WAS PLACED IN 5-GALLON PLASTIC BUCKETS FOR FUTURE METALLURGICAL TESTING.**
  
- \* **TWINNED HOLES.**

**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

**UNDERGROUND SAMPLING DATA**

- \* **ADIT PRIMARILY FOR METALLURGICAL TEST SAMPLES.**
  
- \* **DETAILED MAPPING AND SAMPLING.**
  
- \* **TO MAINTAIN SAMPLE TYPE CONSISTENCY ASSAY VALUES WERE NOT INCORPORATED INTO THE DATABASE.**
  
- \* **HOWEVER THE SAMPLING INFORMATION HAS PROVED VALUABLE FOR COMPARATIVE PURPOSES.**

**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

**ASSAYING**

- \* ALL CORE AND PERCUSSION SAMPLES ASSAYED BY FIRE BY CHEMEX LABS OF NORTH VANCOUVER.
  
- \* SAMPLES GREATER THAN 0.1 oz./t (3.43 g/t) WERE RE-ASSAYED, WITH AN AVERAGE DIFFERENCE OF 0.199 g/t AND STANDARD DEVIATION OF 3.514 g/t.

**CHECK ASSAYS**

- \* EVERY 20th SAMPLE (DUPLICATES) SENT TO GEOCHEMICAL SERVICES INC. IN RENO.
  
- \* 270 SAMPLES WERE RE-ASSAYED WITH AN AVERAGE DIFFERENCE OF 0.006 g/t AND STANDARD DEVIATION OF 0.365.

Figure 2.5-1 Comparison of Chemex Original and Resplit Assays

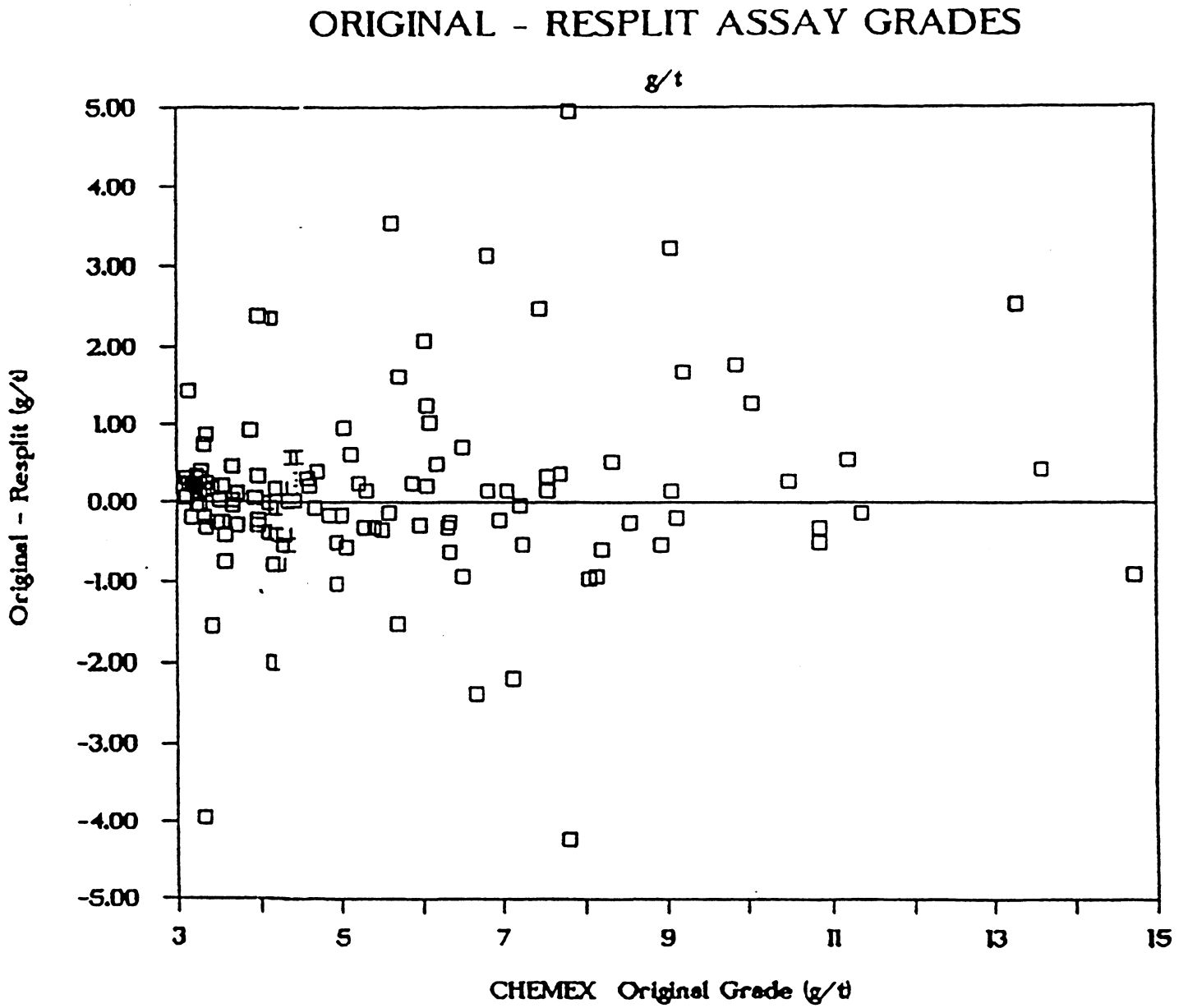
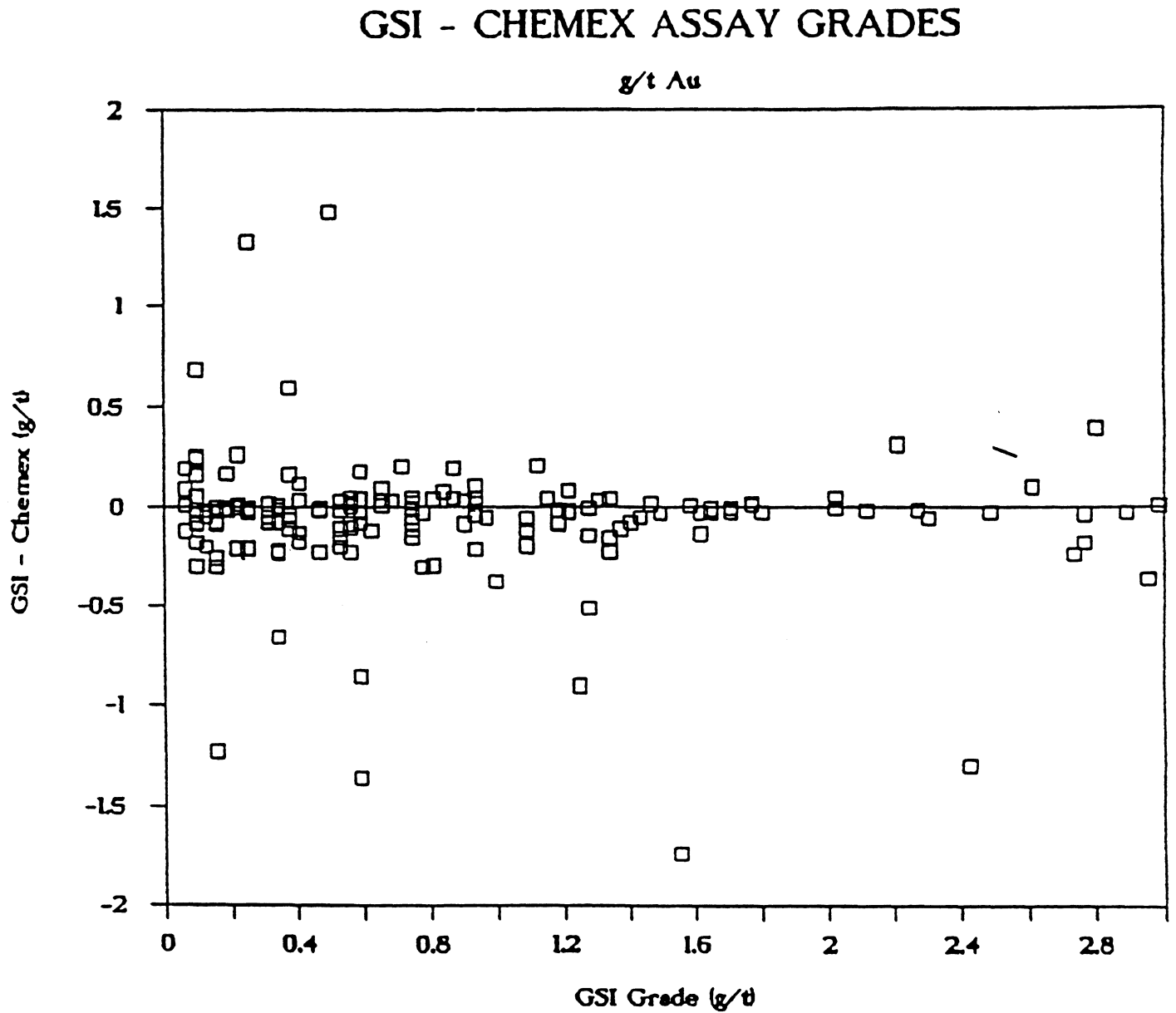


Figure 2.5-2 Comparison of Chemex and GSI Duplicate Assays





**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

**SPECIFIC GRAVITY**

- \* 237 SAMPLES OF FRESH CORE (7 LATER DISCARDED AS BEING NON-REPRESENTATIVE) TESTED USING VOLUME DISPLACEMENT.
  
- \* ALL MAJOR ROCK TYPES WERE TESTED FOR ORE AND WASTE MATERIAL.

TYPE		SPECIFIC GRAVITIES			
		ORE	WASTE		
			Silicified	Argillic Altered	Other
Skonun Conglomerate	2c	2.55 (43)	2.55 (26)	2.27 (11)	---
Skonun Fine-grained Sediments	2a	---	2.57 (14)	2.06 (3)	---
	2b	---	2.53 (6)	1.90 (3)	---
	2ab	2.57 (21)	2.42 (1)	2.56 (2)	---
	4cu	---	2.53 (1)	2.04 (1)	---
	4c	2.54 (28)	2.57 (1)	2.13 (3)	---
Rhyolite	3a	---	2.67 (1)	---	---
	3b	---	2.62 (2)	---	---
	3c	---	2.77 (1)	---	---
	3abc	2.60 (17)	---	---	---
Vuggy rhyolite	4a	2.48 (5)	---	---	---
Hydrothermal Breccia	4b	2.56 (22)	2.51 (2)	---	---
Veins	5	2.49 (11)	2.53 (1)	---	---
Haida Mudstone	1a	---	---	---	---
	1b	---	---	---	2.04 (2)
	1c	2.52 (1)	2.57 (1)	---	---
<b>Total (230)</b>	<b>All</b>	<b>2.55 (148)</b>	<b>2.56 (57)</b>	<b>2.19 (23)</b>	<b>(2)</b>

NOTE: Values in ( ) indicate the number of specific gravity measurements taken.

Table 2.4-1 Specific Gravities of Cinola Ore and Waste

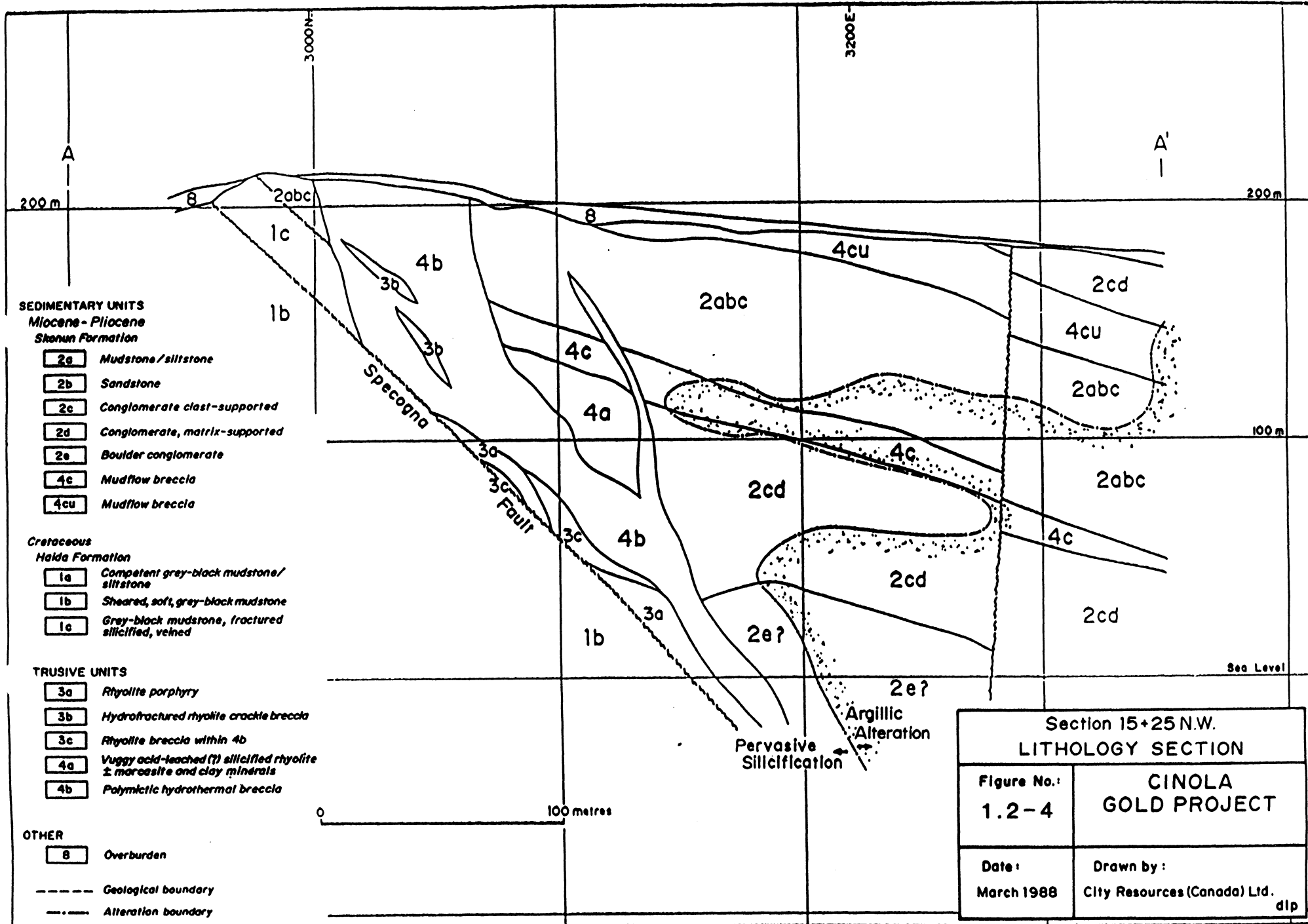
**CINOLA GOLD PROJECT**  
QUEEN CHARLOTTE ISLANDS

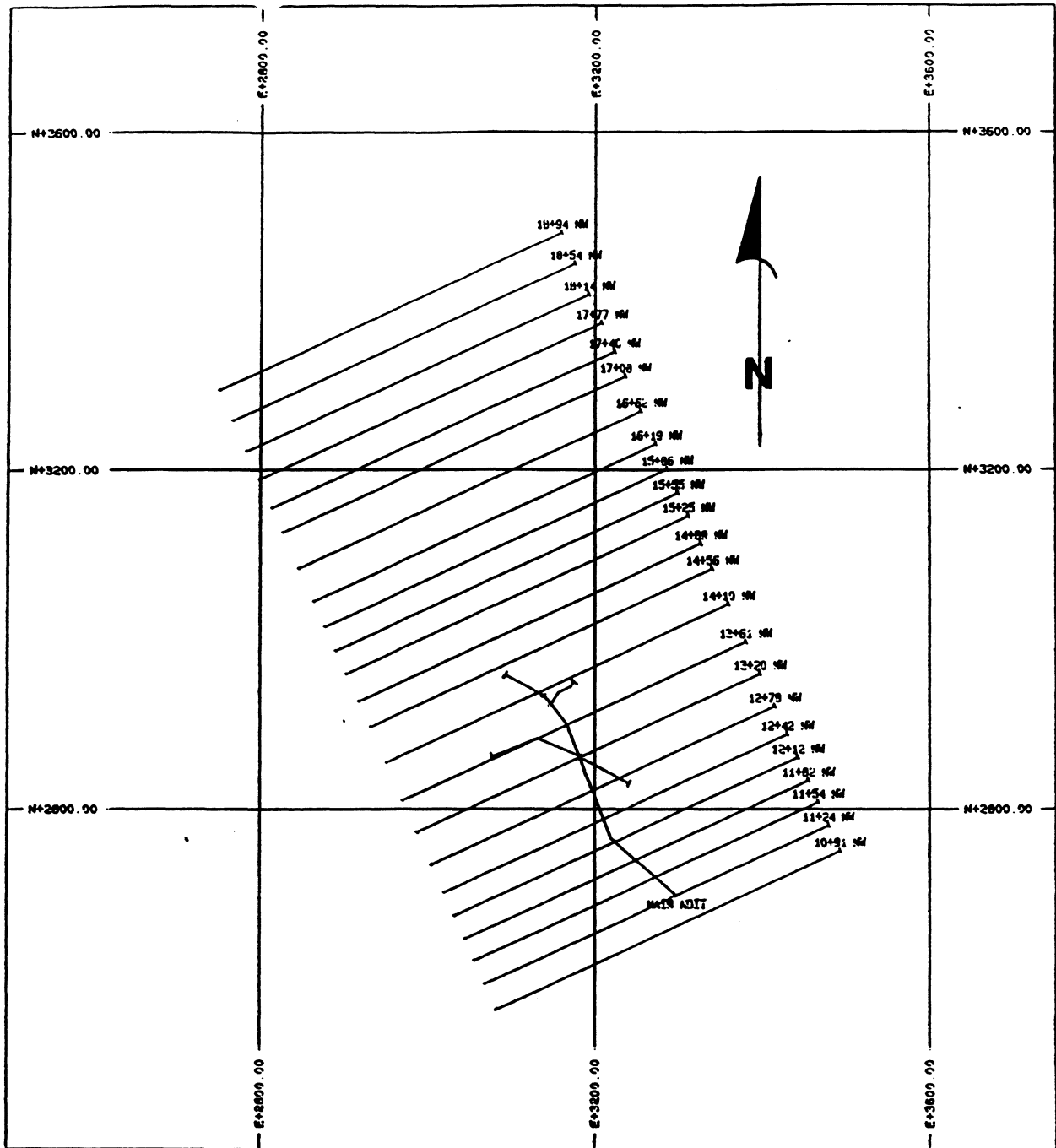
**GEOLOGICAL INTERPRETATION**

- \* 23 CROSS-SECTIONS (30 m INTERVALS)
- \* 45 BENCH PLANS (6 m INTERVALS)

**INTERPRETATION**

- \* "HOT SPRING" MODEL
- \* INTERPRETATION DEVELOPED DURING LOGGING AND RE-LOGGING
- \* MAJOR LITHOLOGICAL BOUNDARIES AND ALTERATION MANUALLY PLOTTED ONTO 1:500 CROSS-SECTIONS ALONG WITH DRILL HOLE TRACES.
- \* INITIAL INTERPRETATION TRANSFERRED TO DUPLICATE ACETATE CROSS-SECTIONS TO GAIN A 3D EFFECT. CHANGES THEN MADE TO ORIGINAL PAPER SECTIONS.
- \* FINAL INTERPRETATION CREATED BY DIGITIZING INTERPRETATION INTO GEOMODEL DATABASE.
- \* BENCH LEVEL INTERPRETATIONS WERE THEN MADE TO VERIFY THE CROSS-SECTION INTERPRETATION.





CITY RESOURCES (CANADA) LIMITED

FIGURE 3.1-1

CINOLA PROJECT  
CROSS-SECTION LOCATION PLAN

PLOTTED BY PCXPLOE VERSION 1.20

CINOLA GOLD PROJECT  
CINOLA ISLAND S.L. Canada

28/ 3/1989

SCALE 1: 7500

# **CINOLA GOLD PROJECT**

**QUEEN CHARLOTTE ISLANDS**

## **GRADE MODEL**

- \* **TWO MAIN GRADE CONTROLLING FEATURES WERE IDENTIFIED FROM GEOLOGICAL MODEL:**
  - **HYDROTHERMAL BRECCIA PARALLEL TO SPECOGNA FAULT.**
  - **VERTICAL/SUB-VERTICAL VEINS EXTENDING OUTWARDS FROM THE HYDROTHERMAL BRECCIA INTO THE SEDIMENTS AT AN AZIMUTH OF 030°.**
  
- \* **ASSAY SECTIONS CONSISTED OF THE PC-XPLOR GENERATED CROSS-SECTIONS, GOLD ASSAY RESULTS AND VEIN INTERVALS.**
  
- \* **GRADE CROSS-SECTIONS THEN CREATED BY OVERLAYING ASSAY SECTIONS OVER THE CORRESPONDING GEOLOGICAL SECTIONS AND CONTOURING GRADE BOUNDARIES AT:**
  - **0.69 g/t Au.**
  - **1.2 g/t Au.**
  - **1.7 g/t Au.**

**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

**GEOLOGICAL RESERVE MODEL**

- \* **COMPILED AFTER COMPLETION OF GEOLOGICAL AND GRADE MODELS.**
  
- \* **'GEOGRADE' POLYGON BOUNDARIES CREATED USING LITHOLOGIES AND GRADE BOUNDARIES.**
  
- \* **FINAL GEOGRADE POLYGONS WERE CREATED BY SUBDIVIDING INITIAL POLYGONS ON THE BASIS OF DRILLHOLE LOCATIONS.**
  
- \* **DIGITIZED INTO GEOMODEL.**
  
- \* **FOR EACH POLYGON, IT'S LITHOLOGIC UNIT, THE CORRESPONDING SG AND WEIGHTED AVERAGE GRADE WERE RECORDED IN THE COMPUTER.**
  
- \* **GEOGRADE POLYGONS WITH NO INTERSECTING DRILLHOLE WERE ASSIGNED THE GRADES OF THE CLOSEST GEOGRADE POLYGON WITHIN THE SAME GRADE CONTOUR.**

**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

**FINAL RESERVE COMPILATION**

- (1) **CALCULATION OF CROSS-SECTIONAL AREA OF GEOGRADE POLYGON.**
  
- (2) **DETERMINATION OF EFFECTIVE THICKNESS OF THE SECTION.**
  
- (3) **CALCULATION OF THE REPRESENTATIVE VOLUME.**
  
- (4) **IDENTIFICATION OF THE SG AND GRADE OF THE POLYGON.**
  
- (5) **CALCULATION OF TONNAGE OF THE POLYGON.**
  
- (6) **CALCULATION OF CONTAINED METAL.**
  
- (7) **PROCESS REPEATED FOR EVERY GEOGRADE POLYGON.**



**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

**GEOSTATISTICS**

**GEOSTATISTICAL ESTIMATES WERE THEN UNDERTAKEN INITIALLY:**

**30 m X 30 X 6 m BLOCKS**

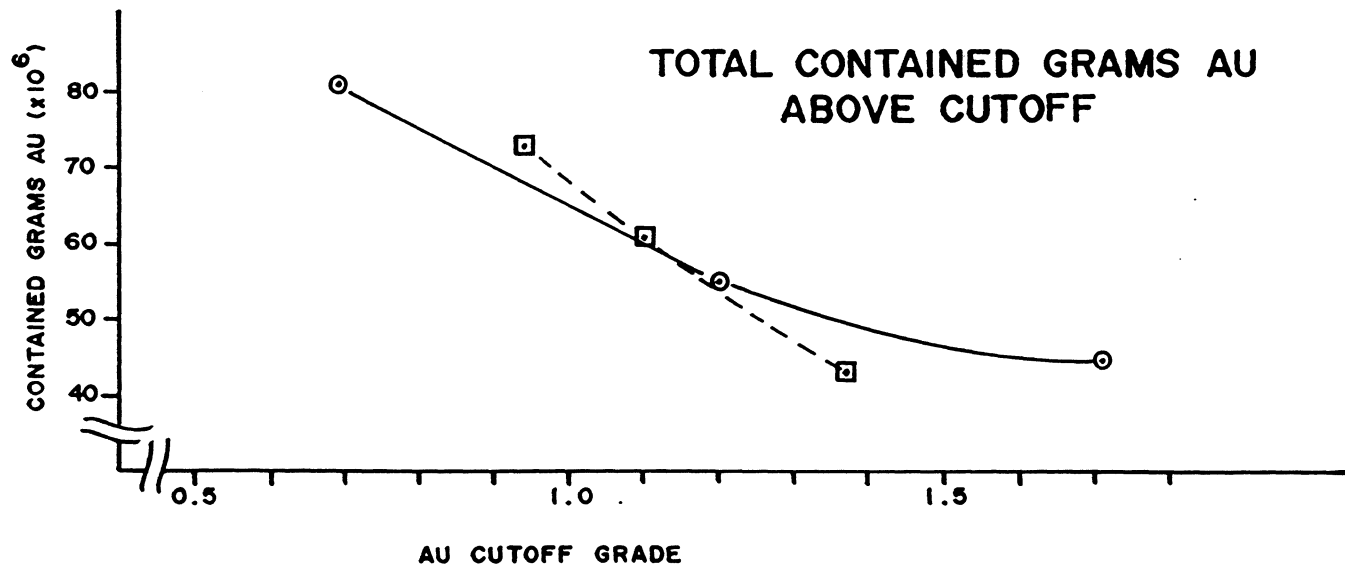
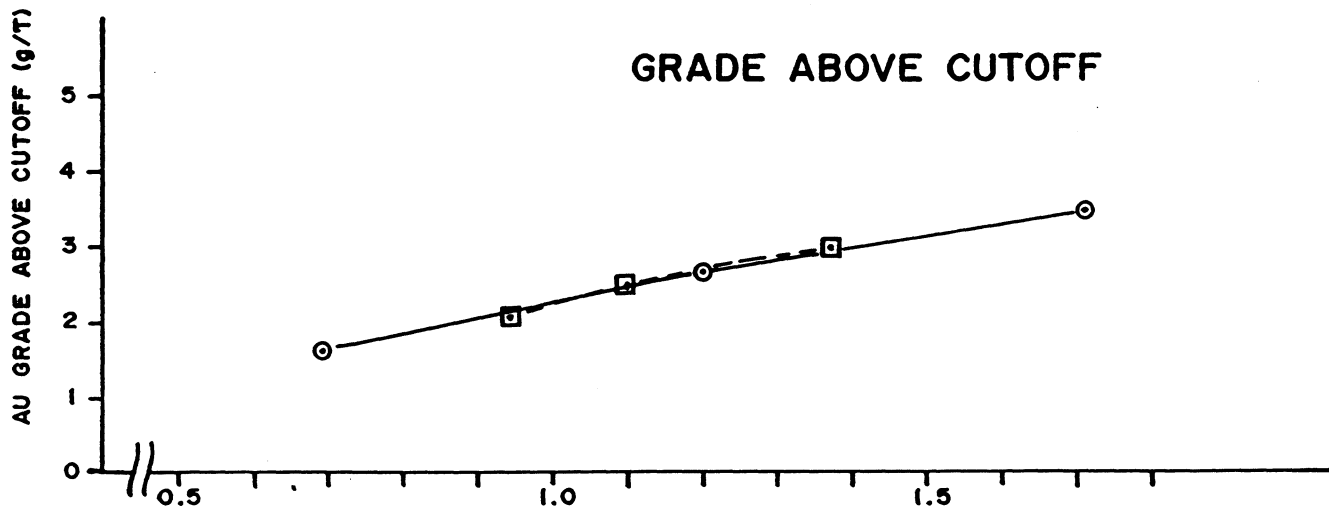
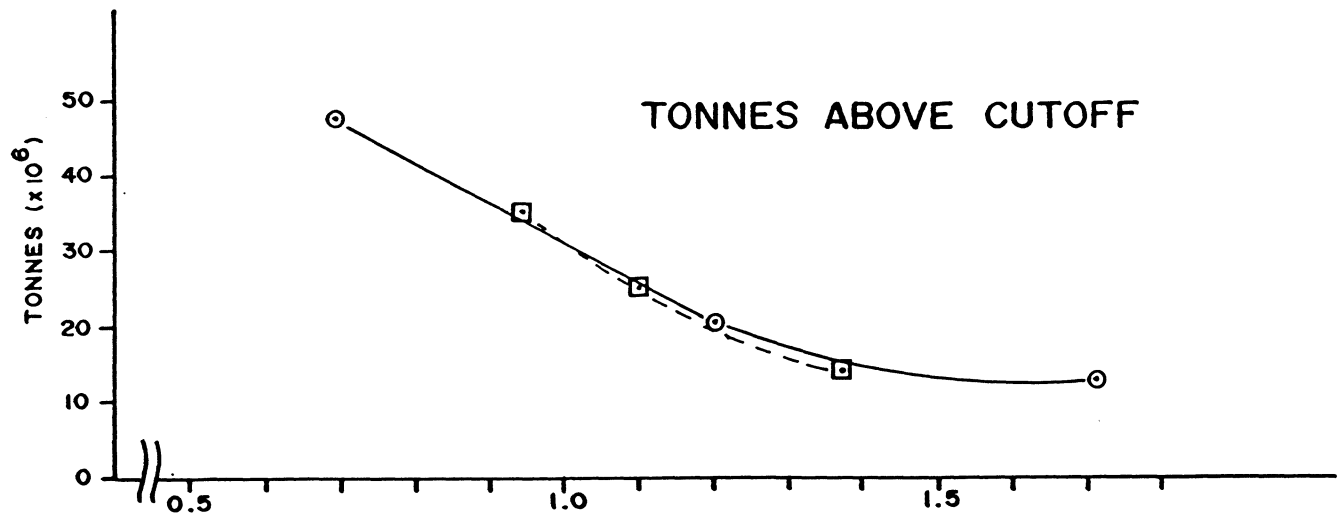
**THEN RECOVERABLE RESERVES AT:**

**5 m X 5 m X 6 m "MINING UNITS"**

**WERE CALCULATED.**

CUTOFF GRADE	CROSS SECTIONAL				GEOSTATISTICAL			
	g/t (oz/t)	Tonnes X 10 <sup>6</sup>	g/t	oz/t	Tonnes of Au	Tonnes X 10 <sup>6</sup>	g/t	oz/t
0.94 (0.0275)	31.38	2.01	0.059	63.07	31.06	2.01	0.059	62.43
1.10 (0.032)	23.44	2.35	0.069	55.08	22.63	2.36	0.069	53.40
1.37 (0.040)	15.52	2.94	0.086	45.62	14.63	2.97	0.087	43.45

Table 3.2-1      Comparison of Manual and Geostatistical Mineable Reserve Estimates



○—○ Cross-sectional Reserve Estimate  
 □---□ Geostatistical Reserve Estimate

**CITY RESOURCES  
 (CANADA) LIMITED**  
**CINOLA  
 GOLD PROJECT**  
 March 1989

**FIGURE 3.1-3  
 IN SITU GEOLOGIC RESERVE GRADE-TONNAGE  
 CURVES**

**CINOLA GOLD PROJECT**  
**QUEEN CHARLOTTE ISLANDS**

**SUMMARY**

- \* **LOGICAL STRAIGHT-FORWARD DEVELOPMENT OF DATABASE.**
  
- \* **PROCEDURES RECORDED AND DOCUMENTED IN ORDER FOR REVIEWERS OF FEASIBILITY STUDY TO UNDERSTAND METHODOLOGY.**
  
- \* **DAVY McKEE / MINPROC - COMPLEMENTARY REGARDING THE DATABASE QUALITY.**