

11/88

LOG NO: 1214	RD.
ACTION:	
FILE NO: 87-882-16621	

ASSESSMENT REPORT
EXPLORATION AND GEOTECHNICAL
DIAMOND DRILLING
ON THE
EXPOT MINERAL CLAIM
SKEENA MINING DIVISION

Owned by:

B. D. FAIRBANK
#1201-675 West Hastings Street
Vancouver, B.C.

Operated by:

CITY RESOURCES (CANADA) LIMITED
#2000 - 666 Burrard Street
Vancouver, B.C.
V6C 2X8

LATITUDE - 53° 32' 16" N
LONGITUDE - 132° 17' 0" W
16' 21"

103 F/9W

By: R. S. Tolbert

November 1987

16,621

GEOLOGICAL BRANCH
ASSESSMENT REPORT

MINISTRY OF ENERGY, MINES
AND PETROLEUM RESOURCES
Rec'd DEC 08 1987
SUBJECT _____
FILE _____
VANCOUVER, B.C.

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Introduction

The Expot Claim is located 18 km south-south west of Port Clements on Graham Island, Queen Charlotte Islands, B.C. The claims lie within N.T.S. 103 F 9 W. A five hole diamond drilling program was conducted on the claims to test several gold targets and also to gain geotechnical information of the ground conditions present. The program of diamond drilling was conducted from April 10 to April 30, 1987 with logging and compilation completed after these dates. Only minor precious metal values were encountered in the drilling.

Location

The Expot Claim is located 18 km south-south west of Port Clements on Graham Island, Queen Charlotte Islands B.C. The claim is located in NTS 103 F/9W at latitude 53° 32' .30" north, and longitude 132° 17' 0" west.

Access

Access to the claim area is gained via dirt and gravel logging roads southwards from Port Clements onto the claim. Drill equipment was moved via truck or skidded from drillsite to drillsite.

Claim Status

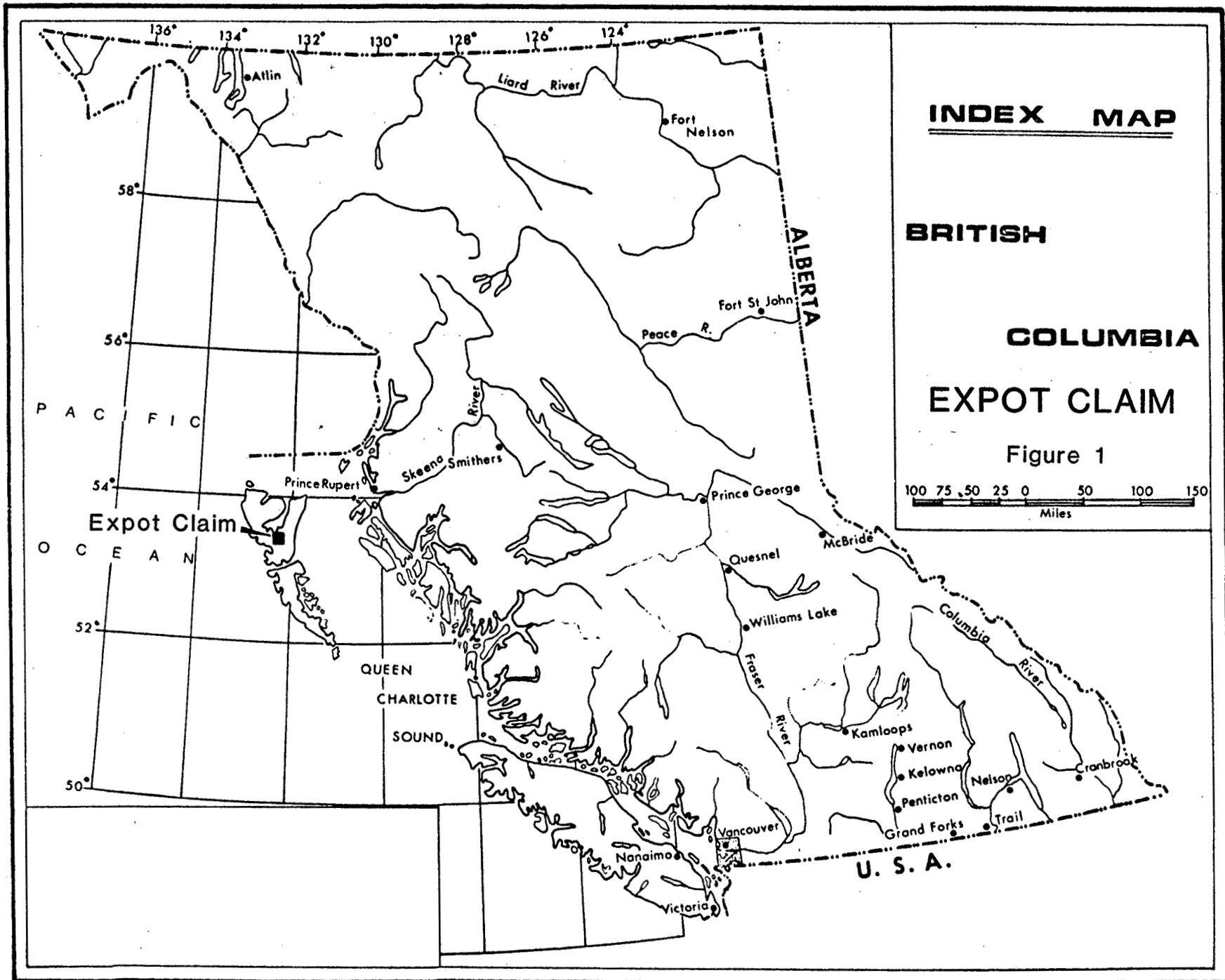
The Expot Claim is a 20 unit claim located in the Skeena Mining Division owned by B. D. Fairbank and recorded on November 26, 1986. The claim is to be sold to City Resources (Canada) Limited, Suite 2000 - 666 Burrard Street, Vancouver, B.C., V6C 2X8.

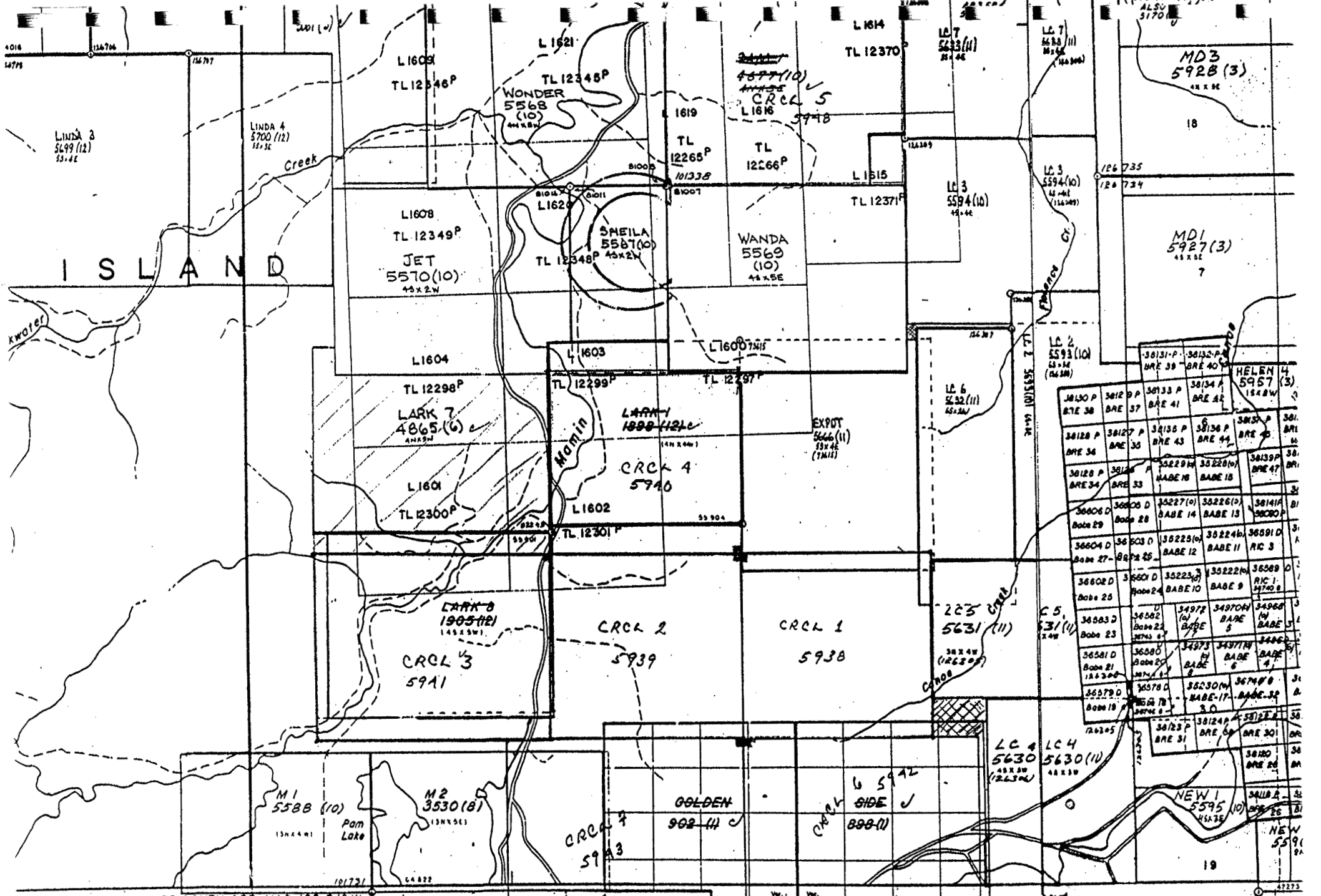
<u>Claim Name</u>	<u>Record No.</u>	<u>Record Date</u>	<u>Expiry Date</u>
Expot	5666	Nov. 26,1986	Nov. 26,1987

Assessment credit is applied for under this report.

Work Done

Five diamond drillholes, 87 GEO-3 to 87 GEO-7 were drilled by D.W. Coates Enterprises Ltd, 583 Vantage Place, Delta, B.C., V4G 1A5 using a Longyear 38 drill rig. A total of 296.4 m (972.4 ft) of NQ core drilling was done. The core was geologically and geotechnically logged and mineralized sections were split and one half was sent to Chemex Labs Ltd., 212 Brooksbank Ave., North Vancouver, B.C., V7J 2C1 who assayed the core for gold by fire assay methods. The remaining core was stored at the Cinola Deposit Camp of City Resources (Canada) Limited on Graham Island.





TO SOUTH SEE MAP 103 F/8 W

MINERAL TITLES REFERENCE MAP 103 F/9 W
 DEPARTMENT OF MINES AND PETROLEUM RESOURCES VICTORIA, B.C.
 This map is prepared as a guide only to the location of mineral claims that have been...

Figure 2

Three diamond drillholes 87-GEO-1, 87-GEO-2 and 87-GEO-3 were also drilled during this program but off the claim group. This latter portion of the program totalled 300.1 m (984.6 Ft) of NO diamond drilling.

Geology

Regional Geology

The geology of the Queen Charlotte Islands is described in full in B.C. Department of Mines and Petroleum Resources Bulletin #54 Geology of the Queen Charlotte Islands, British Columbia by A. Sutherland Brown. Repeating of this excellent work would be superfluous and the reader is referred to this publication for Regional geology background.

Property Geology


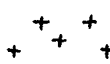
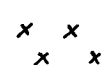
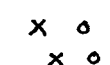
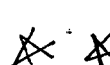
The geology of the Expot Claim has only been mapped in very general way and the following is a brief description of the geological interpretation.

The claims are underlain by the Masset Formation of Paleocene-Eocene ? Age as described by Sutherland Brown. It consists of a thick succession of volcanic flows; generally basaltic in composition; pyroclastics, primarily composed of alkali basalts and sodic rhyolites; and some reworked volcanics forming a volcanic sandstone-tuff variety. All the above belong to the Tartu Facies of the Masset Formation.

A brief description of the lithologic units encountered in the diamond drilling is given below along with a corresponding division within the Tartu Facies:

Graphic

<u>Symbol</u>	<u>Facies</u>	<u>Lithology Description</u>
▽:○:▽ ○:▽:○	TMA	<u>Lapilli Tuff Breccia</u> Variable, heterolithic. Dominantly basaltic fragments, but local has a high felsic percentage. Commonly at least 1% hematized fragments. Overall dark colour.
^ ^ ^ ^	TMb1	<u>Welded Ash Tuff</u> Andesitic? Commonly teardrop to vermiform shaped fragments. Often vesicular or amygdaloidal. Dark grey-green. Rare crystal fragments.

- 
 TMb2 Welded Ash Flow
 Similar to TMb1, but appears more like a flow. Commonly brecciated (monolithic) and banded. Rarely vesicular
- 
 TMb3 Basalt Flow
 Porphyritic, only weakly vesicular, may be brecciated, may be andesitic, dark grey in colour.
- 
 TMb4 Ash Tuff
 Fine grained, well sorted, homogeneous (may be re-worked by sedimentary action), rare lapilli and/or crystals
- 
 TMb5 Lapillit Tuff
 Not brecciated, lapilli up to 6 cm and rounded. Locally cast-supported. Ashy matrix.
- TMc "Carbonaceous" Tuff-Breccia
 Tan to dark grey, angular tuff fragments in clayey, black matrix. Local Shearing.
- TMd Volcanic Glass
 Devitrified, soft, dark, local banding, brittle vitreous to waxy surface. Various colours.
- 
 3b Rhyolite Crackle Breccia
 Porphyritic, gray to buff in colour.

Diamond Drilling

A diamond drillhole program consisting of 596.5 m of NQ diamond drilling in eight holes was conducted in the general area. Five holes in this program consisting of 296.5 m of NQ core were drilled within the boundaries of the Expot Claim or 49.69% of the drilling.

D.W. Coates Enterprises Ltd. of 583 Vantage Place, Delta, B.C., V4G 1A5 carried out the program under City Resources (Canada) Limited supervision using a Longyear 38 diamond drill rig.

The core was geologically logged by R. Boyce, contracted by City Resources (Canada) Limited, and geotechnically logged by T. Collette of Steffen, Robertson & Kirsten Consulting Engineers. Diamond drill logs are attached as Appendix I. The mineralized sections of the core were split and sent to Chemex Labs Ltd., 212 Brooksbank Ave. North Vancouver, B.C. V7J 2C1 for sample preparation and fire analysis for gold. Assay sheets for the 73 samples submitted are attached as Appendix II. The remaining core is stored at the Cinola Deposit camp on Graham Island, Queen Charlotte Islands, B.C.

The following is a list of the diamond drill holes on the Expot Claim:

<u>Hole No.</u>	<u>Azmuth</u>	<u>Inclination</u>	<u>Depth</u>
87-GEO-3	000°	-60°	114.9 m
87-GEO-4	050°	-60°	93.0 m
87-GEO-5	270°	-60°	50.3 m
87-GEO-6	-	-90°	18.3 m
87-Geo-7	-	-90°	22.9 m
			=====
		Total	296.4 m
			=====

Conclusions

The area is underlain by dark green Lapilli Tuffs to agglomerates, ash tuffs and welded ash tuffs, and basalt flows. All rock units are unaltered to slightly altered with local sections of chloritic to slightly argillic alteration associated with shears.

Calcite and/or quartz veining is sparce in the drilling and restricted to narrow, less than two meters, sections of vienlets in shear zones.

Shearing is not common in the drill core and is generally narrow, less than two metres wide. Some sections of tectonic fracturing or hydrofracturing over longer intervals is evident in some drill core.

Minor sulphides, mainly pyrite, are found as disseminations and occasionally as fracture coatings throughout the core, but is more common in the altered sections of the core.

The property has been tested by five diamond drillholes which returned no economic gold mineralization or anomalous gold values.

Although the property has not been fully drill tested it appears that viable gold mineralization does not exist on the claims.

Recommendations

Further drilling, if initiated, should be directed towards using the area as mine waste disposal area.

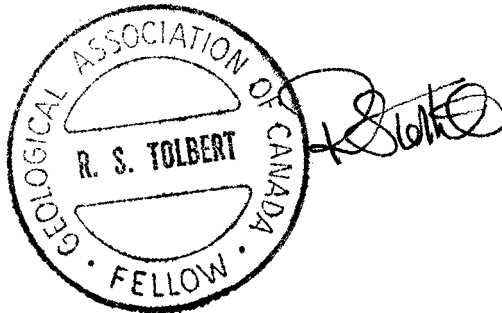
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Recommendations

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APPENDIX I

BOREHOLE LOG

CORE ORIENTATION DIAGRAM

HOLE NUMBER: 87-GEO-3

PROJECT : Cinda (Bob) Geotechnical

LOCATION : Queen Charlotte Islands

CLAIM : _____

GRID COORDINATES : _____

U.T.M. COORDINATES : _____ N

_____ E

COLLAR ELEVATION : 295m

INCLINATION : -60°

TOTAL DEPTH : 114.9m

PURPOSE : Tailings pond investigation - placed piezometer 99.1 to 114.9

REASON FOR HOLE TERMINATION: Reached target depth

LOGGED BY: R.A. Royce DATE(S) LOGGED: 25-27 April, 1987

DRILLING CONTRACTOR: D.W. Coates STARTED: 11 April, 1987 COMPLETED: 15 April, 1987

	CORE	
SIZE	FROM	TO
<u>NQ</u>	<u>7.6m</u>	<u>114.9m</u>
_____	_____	_____
_____	_____	_____

COLLAR CASED AND CAPPED: 4.4m casing

HOLE CEMENTED: 0.0 to 97.2m

STEEL DOWN HOLE: _____

SURVEY LOG

DDH 87-GEO-3

Date: 25 April, 1987 Logged By: R.A. Boyce

Collar Survey By: _____ Down Hole Survey By: SRK

ELEVATION	NORTHING	EASTING	UNITS Ft/M	RFE
<u>295 m.</u>				

DEPTH	INCLINATION	TRUE AZIMUTH	COMMENTS
<u>0.0</u>	<u>-60°</u>	<u>010°</u>	<u>Not surveyed</u>
<u>50.3</u>	<u>-59°</u>	<u>005°</u>	<u>Sperry-Sun</u>
<u>113.4</u>	<u>-59°</u>	<u>005°</u>	<u>Sperry-Sun</u>
<u>114.9</u>	<u>-59°</u>	<u>005°</u>	<u>Not surveyed</u>

COMMENTS ON COLLAR SURVEY
<u>Not surveyed</u>

CITY RESOURCES (Canada) LTD.
 LITHOLOGIC LOG

HOLE NO. 87-GEO-3
 LOGGED BY: R.A. Royce

OX	CAR	SUL	CLY	SFD	SVN	VN Width	Depth	Graphic	Au in oz/ton			Unit	Description <u>NR</u>
									0	0.10	0.20		
							0						
							7.6	OVB				Ø	
							9.4	▽○▽				TMa	heterolithic "Sandy"
													brecciated, cracked, grades to TMa
												TMb2	flow-banded bleached
							36.9						
							38.6					TMb2	interbedded
							43.6					TMa	Int chls Strong hemis + chls
							50m					TMb2	Cracked/brecciated Strong chls Local hemis rare chalcidony clasts
							66.5					TMa	Mod hemis rich Strong chls
							71.8					TMb2	Strong hemis brecciated (1/4 clast?)
							73.7					TMa	agglomeratic?
							85.4						
							86.4						lost
							88.1					TMc	black soft
							90.0	x x x				TMb4	tuffaceous ss?
							93.6					TMa	
							96.6					TMb5	
							100m					TMa	agglomeratic?
							102.6						
							105.9					TMb1	ex'd, grad to TMa
							114.9					TMa	Strong chls sheared + fr'd E.O.H 114.9 m.
							150m						

CITY RESOURCES (Canada) LTD.

DDH 87-GEO-3

LITHOLOGIC LOG

Date: 25-27 April/87 Logged By: R.A. Boyce

FROM	TO	UNIT	% OX	% CHL	% SUL	% CLY	% SPD	% SVB	% CALVN	DESCRIPTION
*0.0	7.6	8								→ OVERBURDEN
*7.6	9.4	TMa								→ LAPILLI TUFF BRECCIA - weathered (strongly in top 30 cm) brownish to olive. Clasts mainly sm lapilli, 70% rdd, various volc types. Matrix tuffaceous "sandy". Lwr contact hidden in rubble
7.6	9.4	TMa	25	5	1	35	0	0	0	Wk-mud argillization, wkly oxidized (+ hematized) generally soft. "Coppery" discm sulc in some clasts. Cal amygdalae in some clasts.
*9.4	36.9	TMB ₂								→ WELDED ASH FLOW or airfall ^{intermed. compo} ash tuff - variable unit. V OX'd 10.2-11.6. Following sections brecciated or cracked and grade into or include parts of TMa: 13.5-16.4, 17.0-19.2, 20.1-21.1, 21.5-23.4, 23.9-24.9, 26.2-26.8, 28.7-29.3, 31.8-32.9. Local vermicorn texture. Central part well-foliated (flow-banded?). Section 23.0-24.2 is paler (bleached?) and appears more felsic (probably same material). ^{Texture more like flow than in previous}
9.4	36.9	TMB ₂	4	30	1	5	0	1	2	Weakly argillized and wk-mud chlorite. Hematized sections above 19 m, 50% lin 10.2-11.6. Cal veins and frc-filling common. Uncommon chal frc-fill below 24 m.
*36.9	38.6	TMB ₂								→ WELDED ASH FLOW - intermediate between above unit and breccia below. Mottled red-purple - local pale green. Old weathering stc?

CITY RESOURCES (Canada) LTD.

DDM 87-GEO-3

LITHOLOGIC LOG

Date 25-27 April/87 Logged By R.A. Boyce

FROM	TO	UNIT	% OX	% CHL	% SUL	% CLY	% SPD	% SVB	% CALVN	DESCRIPTION
36.9	38.6	TMB ₂	55	30	0	1	0	0	0	Strongly oxidized (hematized), mod chloritized
X38.6	43.6	TMa								→ LAPILLI TUFF-BRECCIA - texture obscured by alteration - mainly small lapilli matrix fg + local tgs, banded tuffaceous rocks. clayey. Bright to pale green and brick red.
38.6	42.1	TMa	10	70	0	10	0	0	0	Intensely chloritized, weak mod argillized, local strong hematite.
42.1	43.6	TMa	45	20	4	2	0	0	1	Strongly hematized, mod chlor. esp at lower end. Patchy strong clin sul
X43.6	66.5	TMB ₂								→ WELDED ASH-FLOW or tuff - cracked/brecciated almost entirely. Dk gray - gray to almost black intermed comp. Included in this unit due to monolithic form (+ rare chalcedony grains). Short section oxidized w reddish matrix. Mostly well-fred w/ some local arg. Central part shows distinct foliation or (flow) banding.
43.6	64.0	TMB ₂	2	20	3	4	0	1	2	Mod to strongly chloritized v local mod. hem. rare irreg patches cal or chol in matrix and v. rarely chalcedony as sm clasts. Dismpy in matrix locally strong.
64.0	66.5	TMB ₂	35	40	1	2	0	0	0	Mod hematized in matrix, mod chloritized. Py on fcs.
X66.5	71.8	TMa								→ LAPILLI TUFF-BRECCIA - heterolithic. Mod gray w/ few red clasts and locally greenish. Lower section brick red. Lapilli increase in size. % arg decrease downward. Fred.

CITY RESOURCES (Canada) LTD.
LITHOLOGIC LOG

DOM 87-GEO-3

Date: 25-27 April/87 Logged By: R.A. Boyce

FROM	TO	UNIT	% OX	% CHL	% SUL	% CLY	% SFD	% SVB	% CALVN	DESCRIPTION
66.5	70.6	TMa	5	45	5	5	0	0	1	Mod to strongly chloritized, wk argls + oxa. Rare cal veinlets. Dism py throughout.
70.6	71.8	TMa	50	15	2	20	0	0	0	Strongly hematized, spotty chl. Py on frcs Mod argls
*71.8	73.7	TMb ₂								→ WELDED ASH FLOW - brecciated, dk gray-grn. may be gradational to a clast w/ TMa
71.8	73.7	TMb ₂	2	40	5	3	0	0	1	Mod chloritized, wk local argls, Minor hem Dism py in matrix. Single 6 cm cal vein
*73.7	85.4	TMa								→ LAPILL-TUFF-BRECCIA - heterolithic - approaches agglomerate texture. Variable clast lithology size angularity and shape vs matrix. Includes var f.g. vols, amygdaloids + rare, partic. Dk gray-grn to med-pale grn, and locally porcelanous
73.7	85.4	TMa	2	30	4	5	0	0	1	Variably chloritized, weakly argillized. Cal in rare amygdaloids. Dism py throughout.
*85.4	86.4									→ LOST
*86.4	88.1	TMc								→ CARBONACEOUS TUFF-BRECCIA: dark colour - black matrix w/ tan to dk gray tuff (cm - angular, to 1cm. Jott. Black maybe inclusions? Locally black clasts in light matrix. Foliated + sheared. Dism py.
86.4	88.1	TMc	0	5	6	10	0	0	1	Strong carbon (or other blk mineral) pervasive. Wk chl.; variable argls. Dism py. Rare cal veinlets

CITY RESOURCES (Canada) LTD.
LITHOLOGIC LOG

DDM 87-GEO-3

Date 25-27 April, 1987 Logged By R.A. Boyce

FROM	TO	UNIT	% OX	% CHL	% SUL	% CLV	% SPD	% SVB	% CALVN	DESCRIPTION
*88.1	90.0	TMb4								ASH TUFF : f.g., well-sorted, locally br'd. DK olive-gray. Unlike other TMLs. Possibly reworked to tuffaceous sandstone.
88.1	90.0	TMb4	2	15	1	25	0	1	1	Wk-mod agnls, wk chl's, wk hema. Minor fracture fill cal and/or chal.
*90.0	93.6	TMa								LAPILLI TUFF-BRECCIA - representative, heterolithic incl tuffaceous, pyritic basaltic and banded rhyolitic fgms.
90.0	93.6	TMa	4	15	3	2	0	0	0	Weak agnls, spotty hema. Py w/ely dism. strong on frcs. Wk chl's
*93.6	96.6	TMb5								LAPILLI TUFF - dk gray-grn. - 15 to 60% lapilli in ash tuff matrix, v locally amygdaloidal <small>Local br'd.</small>
93.6	96.6	TMb5	5	20	4	2	0	1	1	Wk-mod chl's, local hema. Wk dism py. Cal + chal frc-filling, cal + chl in vesicles
*96.6	102.6	TMa								LAPILLI-TUFF-BRECCIA - heterolithic, poorly-sorted - approaches agglomerate. Larger clasts generally rounded, smaller angular. Med gray-grn, solid core.
96.6	102.6	TMa	2	18	2	5	0	0	1	Wk-mod chl's, wk agnls, hema at v local fgms. Wk dism. Py, hema on frcs. Rare calveinlets
*102.6	105.9	TMb1								WELDED ASH-TUFF - unit gradational to TMa brecciated, w/ 5% non-aggl. fgms. Flow- banded fgms. Dk grn-gray, fractured. Bottom 50 cm rubbly.

CITY RESOURCES (Canada) LTD.
DISCONTINUITY LOG

DOH 87-GEO-3

Date: 25-26 April/87 Logged By: R.A. Boyce

FROM	TO (M)	FEATURE	REG	ANGLE	ROTATION	W METRE	THICKNESS (M)	RFE ANGLE	RFE AZIMUTH	DESCRIPTION
10.1	11.3	RU		40°			1.2			Rusty, weathered frc zone
	13.8	FS		30°			0.05			Lim-chl slickensides
	18.4	FS		50°			0.03			Rusty frc zone
23.1	24.1	FB					1.0			Heavily frc'd (not rusty) zone
24.9	28.6	FB					3.7			" " " " " in b'rd rock
	30.2	FS		40°			0.03			Chl/cal slip stc.
	31.4	FS		15°						Chl slickensides
32.5	33.4	FB					0.9			Chloritic frc zone a.s rubble - pyritic
35.1	36.7	RU					1.6			
38.7	41.2	RU					2.5			Intensely chloritized, soft zone - hem'd above + below
44.3	45.2	RU					1.9			Rubble + frc'd, brecciated rock (fault zone?)
47.2	64.0	RU					16.8			" " " " " "
67.5	68.0	FG		2°			0.01			Chl-clay slip stc
67.8	69.0	RU					1.2			Rubble + frc'd rock
69.9	71.0	RU					1.1			Soft, chloritic frc'd rock - strongly hem'd below
	72.4	FS		20°						Chl-clay slickensides
76.7	77.7	FB					1.0			Sheared, slickensided zone
82.2	87.4	RU		40°			0.1			Cal-chl frc zone
84.0	85.1	FS		0°						Irregular chl slickenside stc
105.3	106.2	RU					0.9			Pyritic, chloritic frc'd rock + rubble
113.3	114.9	RU					1.6			" " " " " (Fault)
	29.0	SO		23°						Alignment of layers? flow-banding?
	57.0	SO		29°						" " " " " "

CITY RESOURCES (Canada) LTD.
BOREHOLE LOG

Date: 27 April, 1987

Page 1 of 7

HOLE NUMBER: 87-GEO-4

CORE ORIENTATION DIAGRAM

PROJECT : Cinta (Bobe) Tailings

LOCATION : Queen Charlotte Islands

CLAIM : _____

GRID COORDINATES : _____

U.T.M. COORDINATES : _____ N

_____ E

COLLAR ELEVATION : 265 m.

INCLINATION : -60°

TOTAL DEPTH : 93.0 m.

PURPOSE : Geotechnical study of Saddle Dam site, placed piezometer 50.9 - 52.4 m

REASON FOR HOLE TERMINATION: Reached target depth

LOGGED BY: R.A. Boyce DATE(S) LOGGED: 27 April, 1987

DRILLING CONTRACTOR: D.W. Coates STARTED: 17 April, 1987 COMPLETED: 18 April, 1987

	CORE	
SIZE	FROM	TO
<u>NQ</u>	<u>89.4</u>	<u>93.0 m.</u>
_____	_____	_____
_____	_____	_____

COLLAR CASED AND CAPPED: 29.0 m casing

HOLE CEMENTED: 0.0 to 49.4 m

STEEL DOWN HOLE: _____

SURVEY LOG

DDH 87-GEO-4

Date: 27 April, 1978 Logged By: R.A. Boyce

Collar Survey By: _____ Down Hole Survey By: _____

ELEVATION	NORTHING	EASTING	UNITS F/M	RFE
265			M	

DEPTH	INCLINATION	TRUE AZIMUTH	COMMENTS
0.0	-60°	052°	Not surveyed
93.0	-60°	052°	Not surveyed due to high potential of caving and instrument loss

COMMENTS ON COLLAR SURVEY
Not surveyed

CITY RESOURCES (Canada) LTD.
LITHOLOGIC LOG

HOLE NO. 87-GEO-4
 LOGGED BY: R.A. Boyce

OX	CAR	SUL	CLY	SFD	SVN	VN Width	Depth	Graphic	Au in oz/ton			Unit	Description
									0	0.10	0.20		
							0						
								OVB					
								OVB					
								OVB					
								OVB					
								OVB					
							50m	OVB				8	
								OVB					
								OVB					
								OVB					
								OVB					
							89.1	+					
							93.0	+				TM63	
								+					EOH 93.0m.
								+					
							100m						
							150m						

BOREHOLE LOG

CORE ORIENTATION DIAGRAM

HOLE NUMBER: 87-GEO-5

PROJECT : Cinola (Babe) Tailings

LOCATION : Queen Charlotte Islands

CLAIM : _____

GRID COORDINATES : _____

U.T.M. COORDINATES : _____ N

_____ E

COLLAR ELEVATION : 280. m.

INCLINATION : -60°

TOTAL DEPTH : 50.3 m.

PURPOSE : Geotechnical study of upstream end of tailings pond, placed piezometer 25.0-50.3m

REASON FOR HOLE TERMINATION: Reached target depth

LOGGED BY: R. A. Boyce DATE(S) LOGGED: 25 April, 1987

DRILLING CONTRACTOR: D.W. Coates STARTED: 10 April, 1987 COMPLETED: 11 April, 1987

	CORE	
SIZE	FROM	TO
<u>NQ</u>	<u>6.9 m</u>	<u>50.3 m</u>
_____	_____	_____
_____	_____	_____

COLLAR CASED AND CAPPED: 6.7 m casing

HOLE CEMENTED: 0.0 to 25.0 m

STEEL DOWN HOLE: _____

CITY RESOURCES (Canada) LTD.
SURVEY LOG

DDH 87-GEO-5

Date: 25 April, 1987 Logged By: R.A. Boyce

Collar Survey By: _____ Down Hole Survey By: SRK

ELEVATION	NORTHING	EASTING	UNITS F/M	RFE
<u>280</u>			<u>M</u>	

DEPTH	INCLINATION	TRUE AZIMUTH	COMMENTS
<u>0.0m</u>	<u>-60°</u>	<u>280°</u>	<u>Not surveyed</u>
<u>47.3m</u>	<u>-59°</u>	<u>279°</u>	<u>Sperry-Sun</u>
<u>50.3m</u>	<u>-59°</u>	<u>279°</u>	<u>Not surveyed</u>

COMMENTS ON COLLAR SURVEY
<u>Not surveyed</u>

CITY RESOURCES (Canada) LTD.
LITHOLOGIC LOG

HOLE NO. 87-GEO-5
 LOGGED BY: R.A. Boyce

(%) OX	(%) CAR	(%) SUL	(%) CLY	(%) SFD	(%) SVN	VN Width	Depth	Graphic	Au in oz/ton			Unit	Description <u>NQ</u>
									0	0.10	0.20		
							0	OVB				B	
							6.9						
							8.8	▽▽▽▽				TMa	
							12.6	^^^				TMb ₁	
								△△△△				TMa	
							28.6	△△△△					
							35.7	^^^				TMb ₁	
								△△△△				TMa	
							50.3	△△△△					
							50m						E.O.H. 50.3m
							100m						
							150m						

CITY RESOURCES (Canada) LTD.
LITHOLOGIC LOG

CCM 87-GEO-5

Date: 25 APR/87 Logged By: R. A. BOYCE

FROM	TO	UNIT	% OX	% CHL	% SUL	% CLT	% SFD	% SVB	% CALVN	DESCRIPTION
*0.0	6.9	8							→	OVERBURDEN
*6.9	8.8	T10							→	LAPILLI TUFF-BRECCIA - fragmental unit, med to dk gray-grn w/ 10% brick-red fams. Fams 60% arg to subang. Crinoidal: to 15mm, largest 20cm. Seriate clast/matrix particle sizes. Particles pale grn to gray, dk gray-grn brick red, chert and rarely fragmental. Matrix med to dk gray-brn. Rubble + ground-up core. Possibly grad from OVB in the 30cm.
6.9	8.8	T10a	25	25	2	15	0	0	5	Mod hematized, weakly argillized. Common fine cal veinlets. Some thin + aggregate subs @ 7.5m appear native Cu colour
*8.8	12.6	T16							→	WELDED ASH TUFF? (possible ash flow.) DK gray to black, solid core. Fams ash sized to v. rarely lapilli, irreg-shaped, ang to rdd. 5% vesicles smaller than 5mm lined w/ chl, and uncommonly filled w/ gray clay, wht cal or v. rarely, chalcedony. Textures obscure on drilled, sawn or broken sfcs - appears generally as basalt, but is possibly more acidic. Upper contact irregular but fairly sharp. Faint foliation. (Clast? Dyke?)
8.8	12.6	T16	1	30	0	4	0	0	1	Moderately chloritized, v. weakly argillized. Oils rare, on frcs, local cal as veinlets + amygdalites.

CITY RESOURCES (Canada) LTD.
LITHOLOGIC LOG

DDM 87-GEO-5

Date: 25 APR/87 Logged By: R.A. Boyce

FROM	TO	UNIT	% OX	% CHL	% SUL	% CLY	% SFD	% SVE	% CALVN	DESCRIPTION
*12.6	20.6	TMa	—	—	—	—	—	—	—	LAPILLI TUFF-BRECCIA: Med-dk gray-grn to gray-red. Similar to unit at collar except for clast size distribution. Commonly contains ~25% small lapilli but locally 10 to 20 cm. [30 cm fgm ash/tuff 21.0-21.3, and 60 cm clast (dyke?) 25.3-25.9 of welded ash tuff w/ common ^{veriform} irreg pods (amygdales?) of cal or chalcedony. Supported by f.g. purplish-gray matrix. Noted minor banded rhyol fgm. Unit could be called agglomerate. Foliation and/or streaming locally evident, though may be deflected around some fgm. 60% of fgm rounded, esp larger ones.
12.6	20.6	TMa	30	30	1	5	0	0	3	Weak pervasive argillization and carbonitization, spotty chloritization. Locally common cal veinlets to 3mm. mod pervasive hematization, esp in certain fgm.
*20.6	35.7	TMb	—	—	—	—	—	—	—	WELDED ASH TUFF - similar to this unit above. Dk gray-grn to black. F.g. texture of apparent ash-size clasts w/ cal filling of uncommon vesicles/cavities. Upper contact "interfingered" over 30 cm. No evident foliation. Solid core.
28.6	35.7	TMb	0	30	1	1	0	0	0	Mod chloritized. Minor cuts on chloritic (rc etc).
*35.7	50.3	TMa	—	—	—	—	—	—	—	LAPILLI TUFF-BRECCIA - mainly dark gray-green to less commonly med-dark gray-green. Variable texture and dominant particle size. Top 30 cm frx'd + healed w/ cal (fault'bx?) .. Smaller particles (ash matrix + 5m lapilli) are rndd to ang. Larger particles (20% of total), commonly

BOREHOLE LOG

CORE ORIENTATION DIAGRAM

HOLE NUMBER: 87-GEO-6

PROJECT : Cinola (Babe) Tailings

LOCATION : Queen Charlotte Islands

CLAIM : _____

GRID COORDINATES : _____

U.T.M. COORDINATES : _____ N

_____ E

COLLAR ELEVATION : 295 m

INCLINATION : -90°

TOTAL DEPTH : 18.3 m

PURPOSE : Test for water table in tailings area - piezometer set 12.8 to 18.3 m.

REASON FOR HOLE TERMINATION: Reached target depth

LOGGED BY: R.A. Boyce DATE(S) LOGGED: 27 April, 1987

DRILLING CONTRACTOR: D.W. Coates STARTED: 16 April, 1987 COMPLETED: 16 April, 1987

SIZE	CORE FROM	TO
<u>NQ</u>	<u>6.4m.</u>	<u>18.3m.</u>
_____	_____	_____
_____	_____	_____

COLLAR CASED AND CAPPED: 5.5m casing

HOLE CEMENTED: 0.0 to 11.3 m.

STEEL DOWN HOLE: _____

SURVEY LOG

DDH 87-GEO-6

Date: 27 April, 1987 Logged By: R.A. Boyce


Collar Survey By: _____ Down Hole Survey By: _____

ELEVATION	NORTHING	EASTING	UNITS F/M	RFE
295			M	

DEPTH	INCLINATION	TRUE AZIMUTH	COMMENTS
0.0	-90°		Not surveyed
18.3	-90°		" "

COMMENTS ON COLLAR SURVEY
Not surveyed

CITY RESOURCES (Canada) LTD.
LITHOLOGIC LOG

(%) OX	(%) CAR	(%) SUL	(%) CLY	(%) SFD	(%) SVN	VN Width	Depth	Graphic	Au in oz/ton			Unit	Description <u>IVQ</u>
									0	0.10	0.20		
							0						
							6.4	OVB				8	
							18.3					TMa	
													E.O.H. 18.3m
							50m						
							100m						
							150m						

CITY RESOURCES (Canada) LTD.
BOREHOLE LOG

Date: 27 April, 1987

Page 1 of 7

CORE ORIENTATION DIAGRAM

HOLE NUMBER: 87-GEO-7

PROJECT : Cinola (Pabe) Tailings

LOCATION : Queen Charlotte Islands

CLAIM : _____

GRID COORDINATES : _____

U.T.M. COORDINATES : _____ N

_____ E

COLLAR ELEVATION : 325m.

INCLINATION : -90°

TOTAL DEPTH : 22.9m.

PURPOSE : To test for water table depth. Piezometer placed 17.4 to 22.9m.

REASON FOR HOLE TERMINATION: Reached target depth

LOGGED BY: R. A. Boyce DATE(S) LOGGED: 27 April, 1987

DRILLING CONTRACTOR: D. W. Coates STARTED: 19 April, 1987 COMPLETED: 19 April, 1987

	CORE	
SIZE	FROM	TO
<u>NQ</u>	<u>30m.</u>	<u>22.9m.</u>
_____	_____	_____
_____	_____	_____

COLLAR CASSED AND CAPPED: No casing

HOLE CEMENTED: 0 to 17.4m

STEEL DOWN HOLE: _____

SURVEY LOG

DDH 87-GEO-7

Date: 27 April, 1987 Logged By: R.A. Boyce

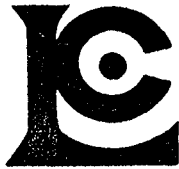
Collar Survey By: _____ Down Hole Survey By: _____

ELEVATION	NORTHING	EASTING	UNITS F/M	RFE
325			M	

DEPTH	INCLINATION	TRUE AZIMUTH	COMMENTS
0.0	-90°		Not surveyed
22.9	-90°		" "

COMMENTS ON COLLAR SURVEY
Not surveyed

APPENDIX II



Chemex Labs Ltd.

Analytical Chemists • Geochemists • Registered Assayers

212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

CERTIFICATE OF ANALYSIS A8714223

To : CITY RESOURCES (CANADA) LIMITED

2000 - 666 BURRARD ST.
VANCOUVER, BC
V6C 2X8

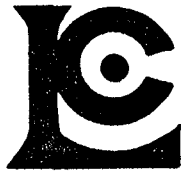
Page No. : 1
Tot. Pages: 2
Date : 13-MAY-87
Invoice # : I-8714223
P.O. # : NONE

Project :
Comments :

SAMPLE DESCRIPTION	PREP CODE	Au FA oz/T										
63301 G	208	---	^^	0.002								
63302 G	208	---	^^	0.002								
63303 G	208	---	^^	0.002								
63304 G	208	---	^^	0.002								
63305 G	208	---	^^	0.002								
63306 G	208	---	^^	0.002								
63307 G	208	---	^^	0.002								
63308 G	208	---	^^	0.003								
63309 G	208	---	^^	0.002								
63310 G	208	---	^^	0.002								
63311 G	208	---	^^	0.003								
63312 G	208	---	^^	0.002								
63313 G	208	---	^^	0.002								
63314 G	208	---	^^	0.002								
63315 G	208	---	^^	0.002								
63316 G	208	---	^^	0.002								
63317 G	208	---	^^	0.002								
63318 G	208	---	^^	0.004								
63319 G	208	---	^^	0.002								
63320 G	208	---	^^	0.002								
63321 G	208	---	^^	0.002								
63322 G	208	---	^^	0.002								
63323 G	208	---	^^	0.002								
63324 G	208	---	^^	0.002								
63325 G	208	---	^^	0.002								
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63327 G	208	---	^^	0.002								
63328 G	208	---	^^	0.002								
63329 G	208	---	^^	0.002								
63330 G	208	---	^^	0.002								
63331 G	208	---	^^	0.002								
63332 G	208	---	^^	0.002								
63333 G	208	---	^^	0.002								
63334 G	208	---	^^	0.006								
63335 G	208	---	^^	0.003								
63336 G	208	---	^^	0.002								
63337 G	208	---	^^	0.002								
63338 G	208	---	^^	0.002								
63339 G	208	---	^^	0.002								
63340 G	208	---	^^	0.002								

ALL ASSAY DETERMINATIONS ARE PERFORMED OR SUPERVISED BY B.C. CERTIFIED ASSAYERS

CERTIFICATION : *W. San Marini*



Chemex Labs Ltd.

Analytical Chemists • Geochemists • Registered Assayers
 212 BROOKSBANK AVE., NORTH VANCOUVER,
 BRITISH COLUMBIA, CANADA V7J-2C1
 PHONE (604) 984-0221

CERTIFICATE OF ANALYSIS A8714223

To: CITY RESOURCES (CANADA) LIMITED

2000 - 666 BURRARD ST.
 VANCOUVER, BC
 V6C 2X8

Page No. : 2
 Tot. Pages: 2
 Date : 13-MAY-87
 Invoice # : I-8714223
 P.O. # : NONE

Project :
 Comments :

SAMPLE DESCRIPTION	PREP CODE	Au FA oz/T											
63341 G	208	---	<	0.004									
63342 GG	208	---	<	0.002									
63343 GG	208	---	<	0.002									
63344 G	208	---	<<	0.002									
63345 G	208	---	<<	0.002									
63346 G	208	---	<	0.004									
63347 GG	208	---		0.005									
63348 GG	208	---		0.002									
63349 GG	208	---		0.003									
63350 G	208	---	<	0.002									
63351 G	208	---		0.002									
63352 GG	208	---		0.002									
63353 GG	208	---		0.002									
63354 G	208	---		0.003									
63355 G	208	---	<	0.002									
63356 G	208	---	<<	0.002									
63357 GG	208	---	<<<	0.002									
63358 G	208	---	<<<	0.002									
63359 GG	208	---	<<<	0.002									
63360 G	208	---	<<	0.002									
63361 G	208	---	<<<	0.002									
63362 GG	208	---	<<<	0.002									
63363 GG	208	---	<<<	0.002									
63364 G	208	---	<<<	0.002									
63365 G	208	---	<<<	0.002									
63366 G	208	---	<<<	0.002									
63367 GG	208	---	<<<	0.002									
63368 G	208	---	<<<	0.002									
63369 GG	208	---	<<<	0.002									
63370 G	208	---	<<<	0.002									
63371 G	208	---	<<<	0.002									
63372 GG	208	---	<<<	0.002									
63373 G	208	---	<<<	0.002									

ALL ASSAY DETERMINATIONS ARE PERFORMED OR SUPERVISED BY B.C. CERTIFIED ASSAYERS

CERTIFICATION : W. Stan Madonini

APPENDIX III

CINOLA GOLD PROJECT
HIGH WEST AREA
GEOTECHNICAL DRILL PROGRAM
APRIL 1987

Prepared by:

Tim Collett
Steffen Robertson & Kirsten (B.C.) Inc.
801 - 1030 West Georgia Street
Vancouver, B.C. V6E 2Y3

November 1987

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List of Appendices	iii
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2.0 THE INVESTIGATION	2
2.1 Geology	2
2.2 Groundwater	2
3.0 RESULTS	3
3.1 Geology	3
3.2 Groundwater	4

LIST OF FIGURES

Figure

- 1 Location of High West Area
- 2 Borehole Location Plan

LIST OF APPENDICES

Appendix

A Geological Sections

B Borehole Logs

B-1 Summary Logs

B-2 Detailed Logs

1.0 INTRODUCTION

During April 1987, a geotechnical investigation of the bedrock in the vicinity of the proposed High West tailings/waste rock impoundment was carried out by Steffen Robertson and Kirsten Consulting Engineers on behalf of City Resources (Canada) Limited. The investigation consisted of drilling eight boreholes supplemented by mapping readily accessible rock and soil exposures. Figure 1 shows the location of the High West area in the vicinity of the Cinola Gold Project.

The purpose of the investigation was to identify the general geotechnical aspects of the site. The geological and hydrogeological characteristics were determined in order to provide an understanding of the foundation conditions beneath the proposed embankments, the baseline groundwater system, and potential rock quarry sites. Bedrock beneath the proposed impoundment area was examined for economic potential by City Resources (Canada) Limited.

2.0 THE INVESTIGATION

During April 1987, a preliminary geotechnical subsurface investigation of the proposed High West tailings/waste rock impoundment was performed. A total of eight boreholes (87-GEO-1 to 87-GEO-8) were drilled and piezometers were installed in six of them (87-GEO-2, 87-GEO-4 to 87-GEO-8). Boreholes 87-GEO-1 to 87-GEO-5 were inclined at either 50° or 60° to the horizontal and boreholes 87-GEO-6 to 87-GEO-8 were vertical. Boreholes 87-GEO-1 to 87-GEO-4 were deep, ranging from 90 m to 170 m long; borehole 87-GEO-5 was about 50 m long, and boreholes 87-GEO-6 to 87-GEO-8 were shallow, about 20 m deep. Figure 2 shows the location of the boreholes. The borehole logs are included in Appendix B.

2.1 Geology

As drilling progressed geotechnical logging of the core was performed at the rig by Steffen Robertson and Kirsten Consulting Engineers. For each run the following items were recorded: recovery, RQD (Rock Quality Designation), degree of weathering, hardness, fracture/joint description, and rock type. For each run the fracture/joint roughness, dip, separation, infilling, and frequency was recorded.

While drilling continued, the core was taken to the coreshed and the geology logged by City Resources (Canada) Limited. The primary concerns of the logging were the lithology and economic potential of the core.

2.2 Groundwater

During drilling, constant head packer tests were conducted in six of the boreholes (87-GEO-1 to 87-GEO-5, and 87-GEO-7). Boreholes 87-GEO-6 and 87-GEO-8 were not tested because they were shallow holes, primarily intended for piezometer installation, located adjacent to deeper holes that had already been tested. The boreholes were tested in five to thirty meter lengths (the average length was ten meters) over most of the length of the holes. The test zones were sealed with a single pneumatic packer and extended to the bottom of the hole at the time of the test. The excess head was provided by gravity feed and by pumping water at a constant pressure. In order to obtain more accurate hydraulic conductivity estimates, water was used for lubrication during drilling instead of mud, except in some of the fracture zones where clay squeezed on the drill rods. Packer tests were not performed in the zones where mud was used. The packer zones and associated hydraulic conductivities are illustrated in the borehole logs.

3.0 RESULTS

3.1 Geology

All the rock encountered in the High West area is part of the tertiary Massett Formation. The boreholes encountered layers of ash tuff flow, welded ash flow, welded ash tuff, basalt flow, and lapilli-tuff breccia. Five geological sections (A-A to E-E inclusive) were interpreted from the data; they are included in Appendix A. The basalt flow seems to lie to the north and northwest of Florence Creek, under the saddle and saddle knoll. To the south and southwest of Florence Creek the geology is mixed layers of more felsic flows and breccias. Near the surface the bedrock is predominantly a welded ash flow or welded ash tuff underlain by lapilli-tuff breccia. The flows and breccia are not clearly defined; throughout each layer are numerous narrow bands of ash tuff, welded ash tuff, welded ash flow, lapilli tuff, and lapilli-tuff breccia. In borehole 87-GEO-2 a few rhyolite flows were identified in the basalt.

The basalt seems to be separated from the more felsic flows and breccias by a fracture plane along Florence Creek. Borehole 87-GEO-2 encountered a fracture plane which likely parallels the dip of the southern scarp of Florence Creek (see geological section C-C). The core was not oriented so, though dips were recorded, the structural directions could not be identified. The deeply incised tributaries to Florence Creek also seem to follow fracture zones. Borehole 87-GEO-1 appears to be drilled along the length of a fracture plane which has been eroded into a gully by the Florence Creek tributary (the flow direction used for the geological sections were based on measurements taken during surficial mapping).

The majority of the core was unweathered except in the vicinity of fracture zones. The fracture zones encountered often had associated complete chloritic and argillaceous alteration and some oxidation of the bedrock. The rock is soft and brecciated, often having an RQD of less than 30%. Borehole 87-GEO-1 was intensely weathered over the entire length of the borehole, probably because it was drilled along a fracture plane.

Most of the bedrock lies outside of the fracture zones and bedrock is usually medium hard, only slightly weathered, and often brecciated. RQD values range from about 20 to 100%, and are on average about 60%.

The core was examined for economic potential by City Resources (Canada) Limited. The core was logged by a geologist and any zones which indicated signs of economic mineralization were assayed. The results show that no

potential orebodies were intersected during the drill program.

Drilling through the overburden indicated that the average depth to bedrock is about six metres, however at topographic highs, such as the saddle knoll, bedrock may be at the surface. In the saddle (borehole 87-GEO-4) the overburden extended to a depth of 80 m. This is thought to be the ancient Florence Creek valley which has been filled with overburden during glaciation. The overburden was identified from the tricone cuttings as a brown sand and gravel with some silt and clay and is probably a till.

For geotechnical purposes the Massett volcanics are considered suitable for embankment construction material. The rock should quarry fairly easily since it is not too hard and will break along joint planes.

The preliminary study indicates that the bedrock should make a suitable foundation material for the proposed embankments. For detailed design more investigation is required. The volcanics are generally medium hard and fairly competent. The proposed main embankment lies over an area of complex geology (refer to geological section C-C) which requires detailed investigation. The proposed saddle embankment will be constructed over a thick zone of overburden. The overburden should be an adequate foundation material since it appears to be a low permeability, fairly dense till. (The permeability is discussed in the next section.)

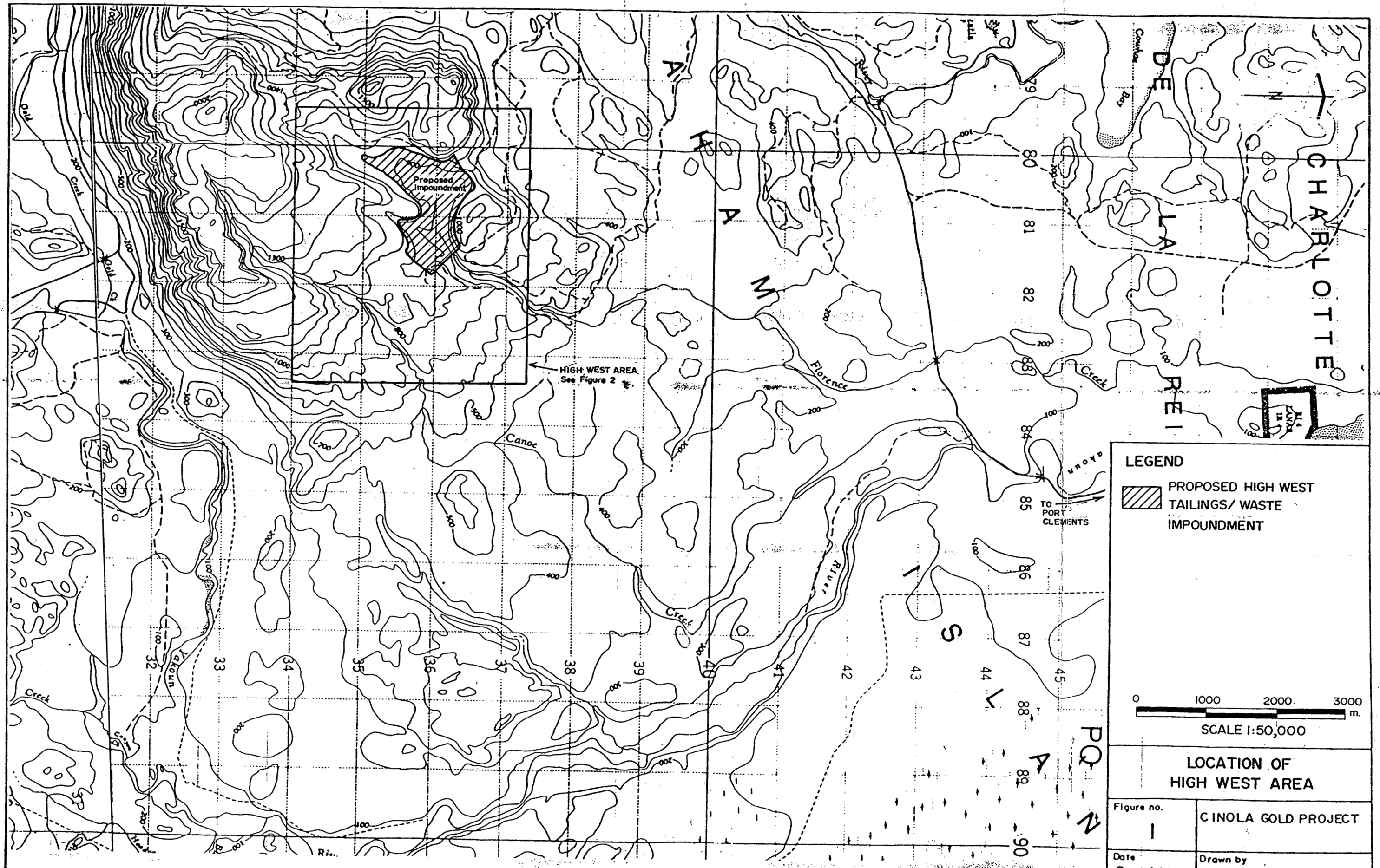
3.2 Groundwater

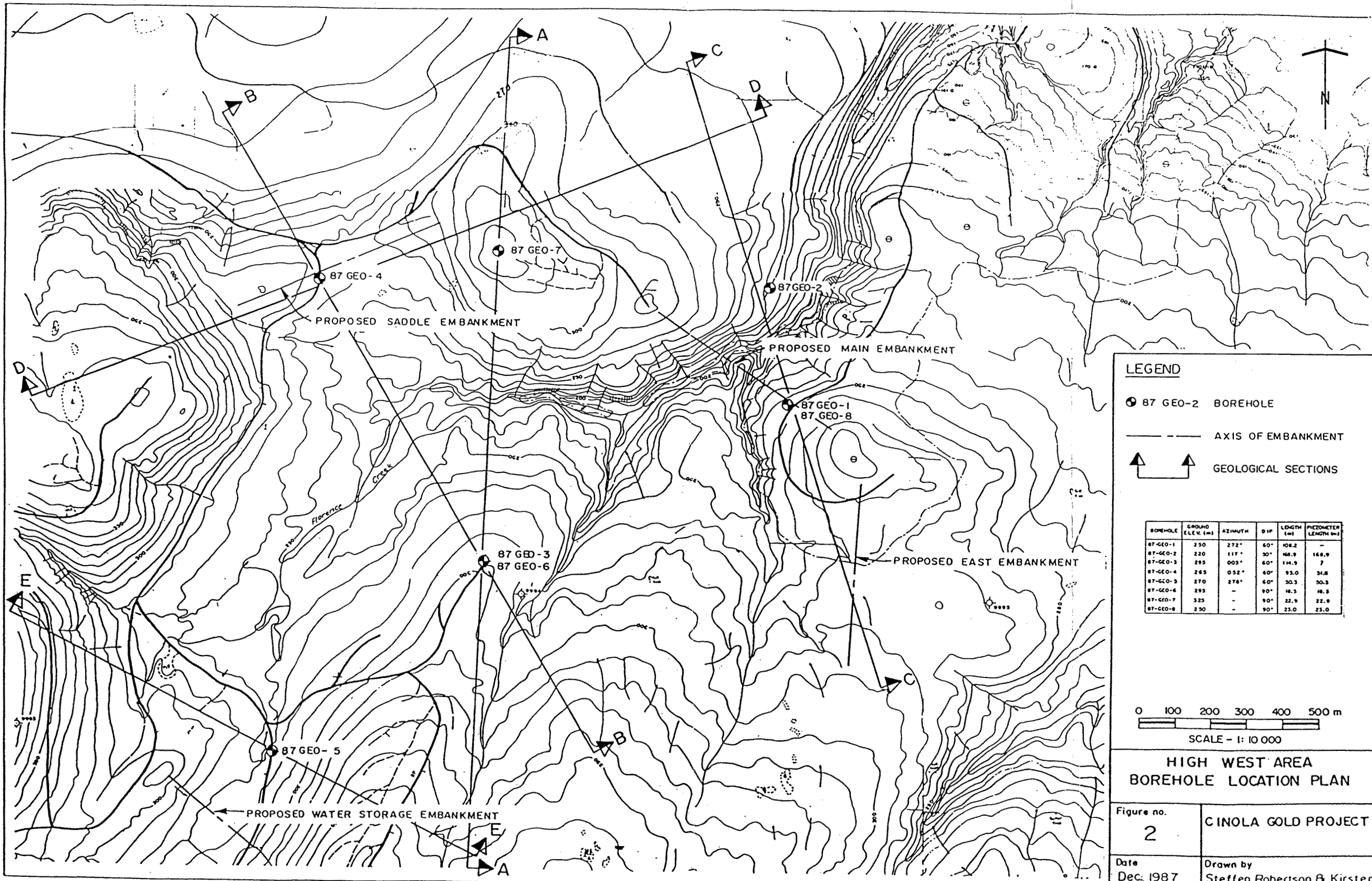
The results of the packer tests and the piezometer water levels were analyzed to develop a concept of the groundwater system in the High West area.

Groundwater flows from the topographic highs to the topographic lows. All the groundwater in the Florence Creek basin, defined by the saddle and the saddle knoll to the north and northwest and the high ridges to the south and southwest, appears to be captured by Florence Creek. Piezometer water levels, when compared to the water table encountered while drilling, indicate that the hydraulic gradient is downwards from the topographic highs and upwards beneath Florence Creek. The water table is generally about 3 m below the ground surface, but was found to be about 18 m deep in the saddle and the saddle knoll. Slight artesian flow was encountered in borehole 87-GEO-1, probably due to a partial groundwater barrier imposed by the fracture plane.

The hydraulic conductivity data was analyzed and a value of $5 (10^{-8})$ m/sec appears to be the most plausible overall value for the Massett Volcanics. Only two tests were conducted in the overburden materials, the average measured

hydraulic conductivity was $2 (10^{-7})$ m/sec. The data indicates that the fault zones have hydraulic conductivity values that are well within the range of hydraulic conductivities found in the bedrock.

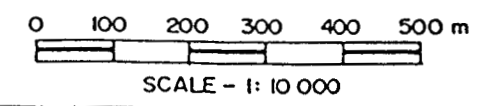




LEGEND

- 87 GEO-2 BOREHOLE
- AXIS OF EMBANKMENT
- ▲▲ GEOLOGICAL SECTIONS

BOREHOLE	GROUND ELEV. (m)	AZIMUTH	DIP	LENGTH (m)	PIEDOMETER LENGTH (m)
87-GEO-1	230	272°	60°	108.2	-
87-GEO-2	220	117°	50°	168.9	168.9
87-GEO-3	295	003°	60°	114.9	7
87-GEO-4	263	052°	60°	93.0	51.8
87-GEO-5	270	278°	60°	50.3	50.3
87-GEO-6	293	-	90°	16.3	16.3
87-GEO-7	325	-	90°	22.9	22.9
87-GEO-8	230	-	90°	23.0	23.0



**HIGH WEST AREA
BOREHOLE LOCATION PLAN**

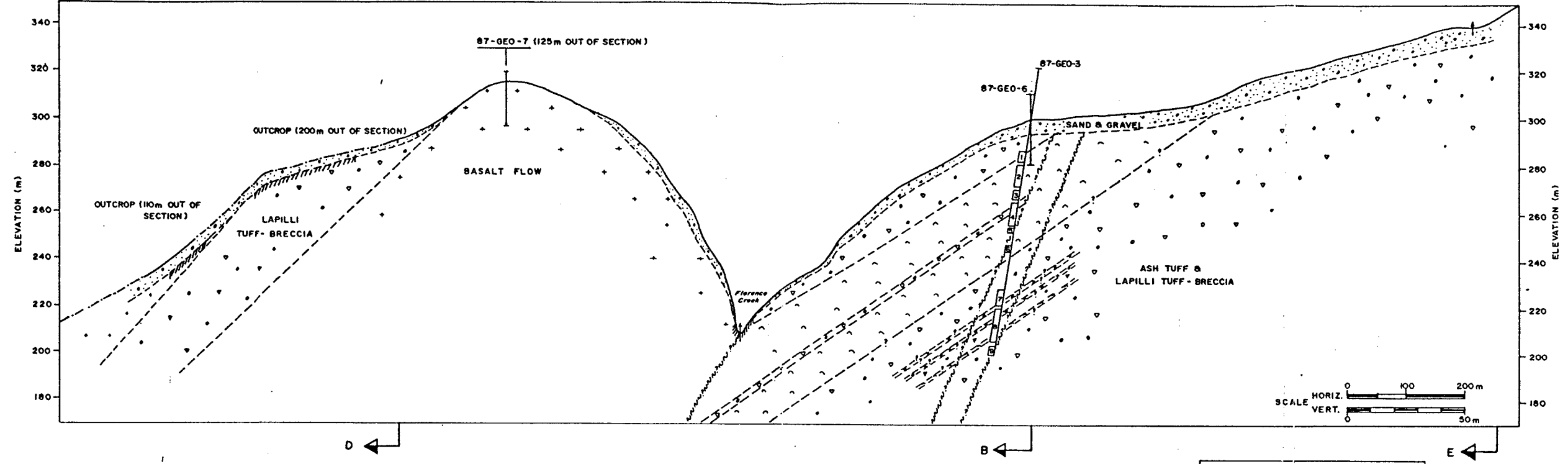
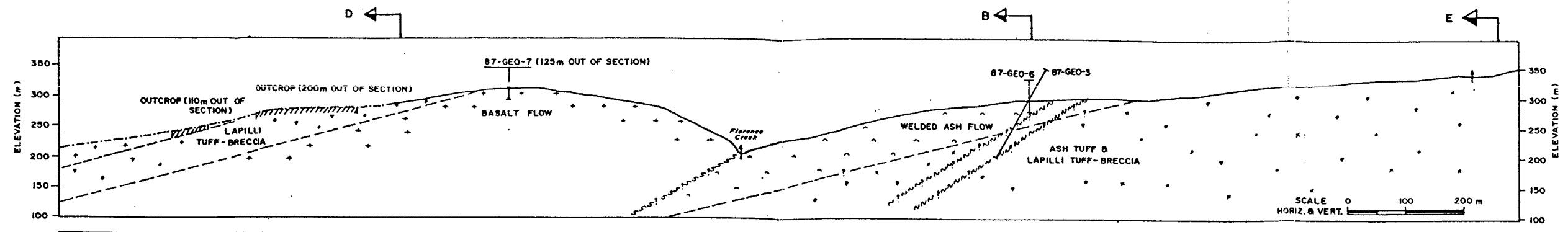
Figure no.	2	CINOLA GOLD PROJECT
Date		
Dec. 1987	Drawn by Steffen Robertson & Kirsten	

APPENDIX A
GEOLOGICAL SECTIONS

Contains:

Geological Section A-A
Geological Section B-B
Geological Section C-C
Geological Section D-D
Geological Section E-E

Note: For the location of the geological sections on plan refer to Figure 2 in the text.



LEGEND

Contacts and Structure	— Known	- - - Probable	- · - · - Possible
Outcrop	Mapped by SRK Apr. 1987		
Lithology	▲ ▲ ▲	Lapilli Tuff-Breccia	
	▲ ▲ ▲	Welded Ash Tuff	
	▲ ▲ ▲	Welded Ash Flow	
	▲ ▲ ▲	Basalt Flow	
	▲ ▲ ▲	Ash Tuff	
	▲ ▲ ▲	Lapilli Tuff	
	▲ ▲ ▲	Rhyolite Crackle-Breccia	
Structure	~ ~ ~	Fracture Plane	
Creeks	↑	Flow into Section	▲ Seasonal Creeks
	↓	Flow out of Section	
Topography	—	From 1:5000 Topo Map Produced for MacMillan Bloedel	
	- - -	From 1:50,000 Federal Topo Map	

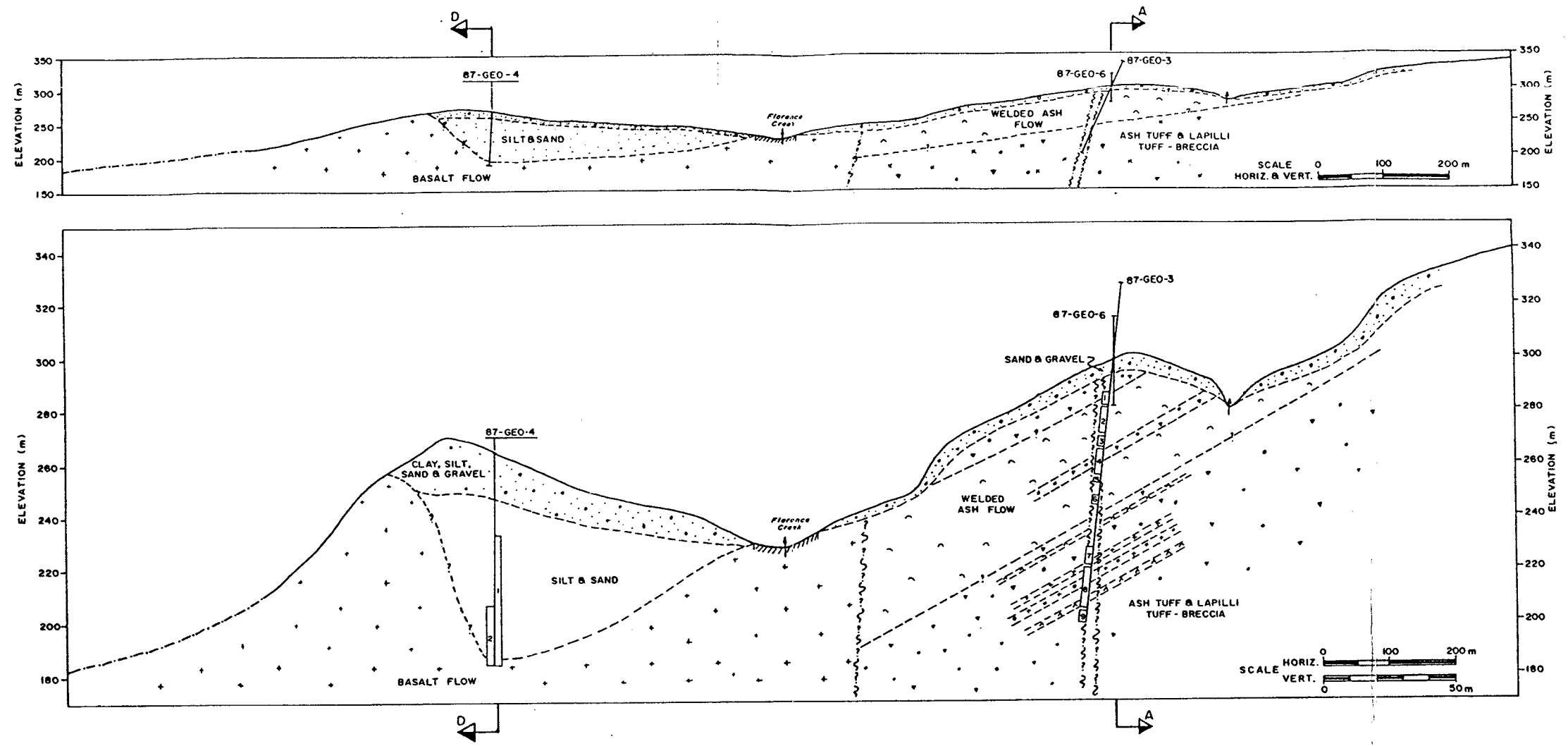
Note:

- Contacts are assumed to be linear and parallel to the flow directions indicated on SRK's structural geology map, Apr. 1987.
- Lithologies are from SRK logs by T. Collett and J. Sharps, and City Resources logs by R. Boyce
- Hydraulic Conductivity are from SRK logs

FIELD TEST RESULTS

HOLE	PACKER ZONE	HYDRAULIC CONDUCTIVITY ($\times 10^{-7}$) m/s
87-GEO-3	1	5.96
	2	14.8
	3	10.2
	4	14.5
	5	14.6
	6	1.64
	7	2.62
	8	4.05
	9	17.1

CITY RESOURCES (CANADA) LIMITED		DATE	NOV. 1987
CINOLA GOLD PROJECT		PROJ. NO.	82602
HIGH WEST AREA		APPROVED BY	
GEOLOGICAL SECTION A-A		DRWS NO.	82602 - 12
STEFFEN ROBERTSON & KIRSTEN Consulting Engineers		REVA.	



LEGEND

Contacts and Structures	— Known	- - - Probable	- · - · - Possible
Outcrop	Mapped by SRK Apr. 1987		
Lithology	<ul style="list-style-type: none"> Lapilli Tuff-Breccia Welded Ash Tuff Welded Ash Flow Basalt Flow Ash Tuff Lapilli Tuff Rhyolite Crackle-Breccia 		
Structure	Fracture Plane		
Creeks	Flow into Section	Flow out of Section	Seasonal Creeks
Topography	<ul style="list-style-type: none"> From 1:5000 Topo Map Produced for MacMillan Bloedel From 1:50,000 Federal Topo Map 		

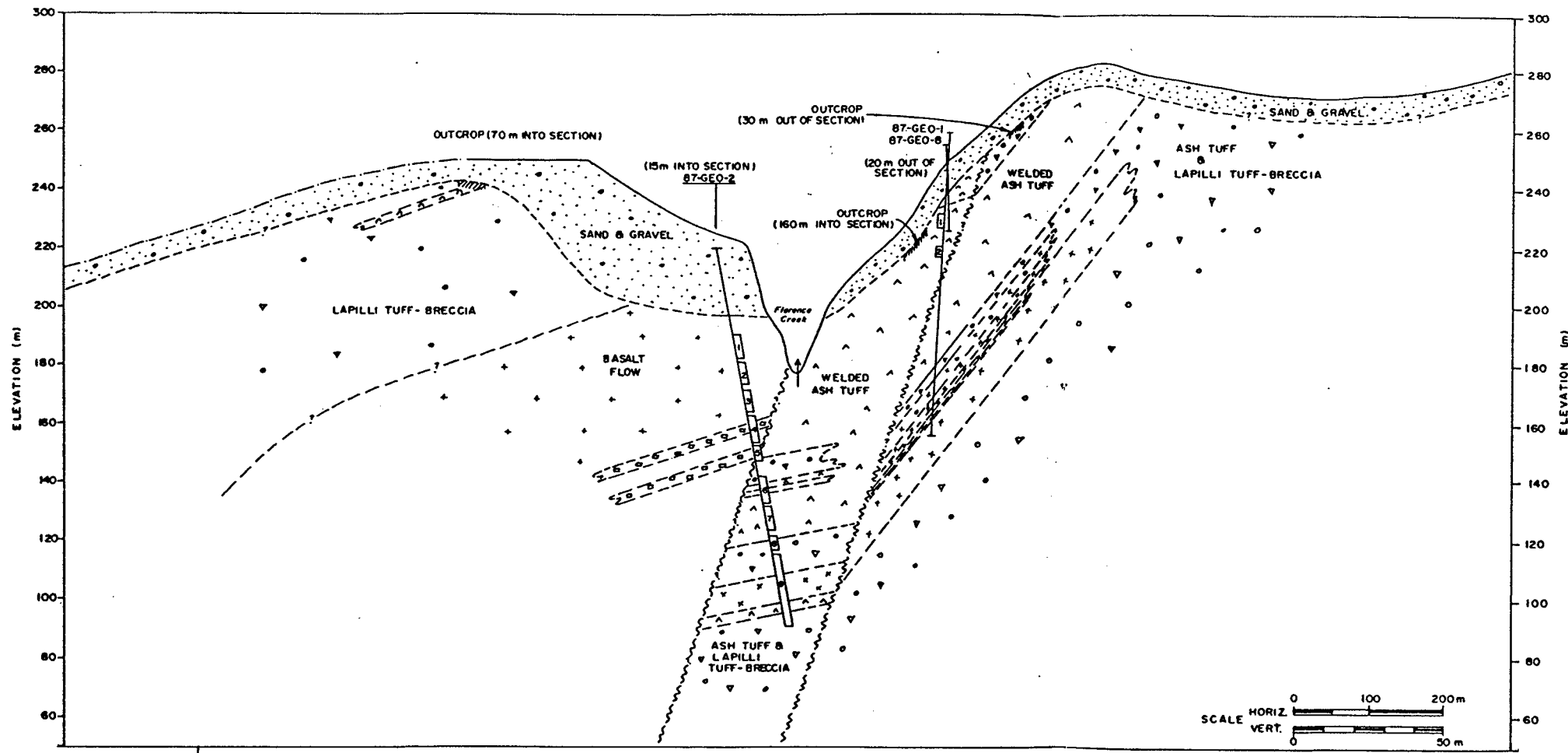
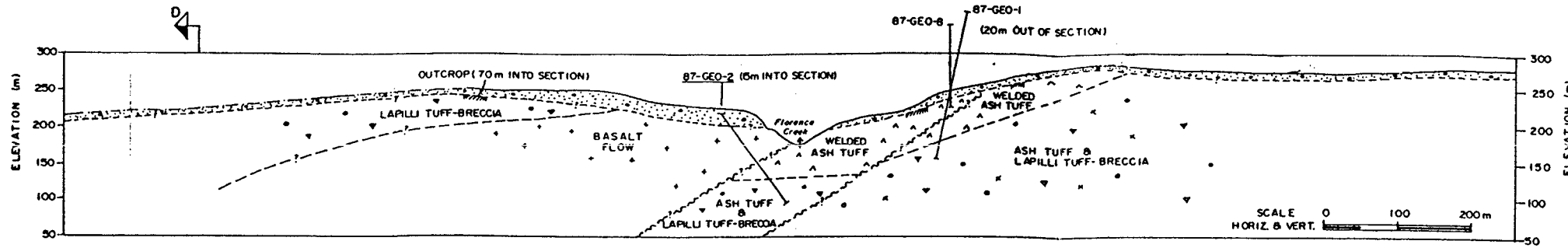
FIELD TEST RESULTS

HOLE	PACKER ZONE	HYDRAULIC CONDUCTIVITY ($\times 10^{-7}$) m/s
87-GEO-4	1	2.54
	2	1.92
87-GEO-3	1	5.96
	2	14.8
	3	10.2
	4	14.5
	5	14.6
	6	1.64
	7	2.62
8	4.05	
9	17.1	

Note:

- Contacts are assumed to be linear and parallel to the flow directions indicated on SRK's structural geology map, Apr. 1987.
- Lithologies are from SRK logs by T. Collett and J. Sharpe, and City Resources logs by R. Boyce
- Hydraulic Conductivity are from SRK logs

CITY RESOURCES (CANADA) LIMITED CINOLA GOLD PROJECT HIGH WEST AREA GEOLOGICAL SECTION B-B	DATE NOV. 1987 PROJ. NO 62602 APPROVED BY DRWG. NO. 62602-13 REVA
STEFFEN, ROBERTSON & KIRSTEN Consulting Engineers	



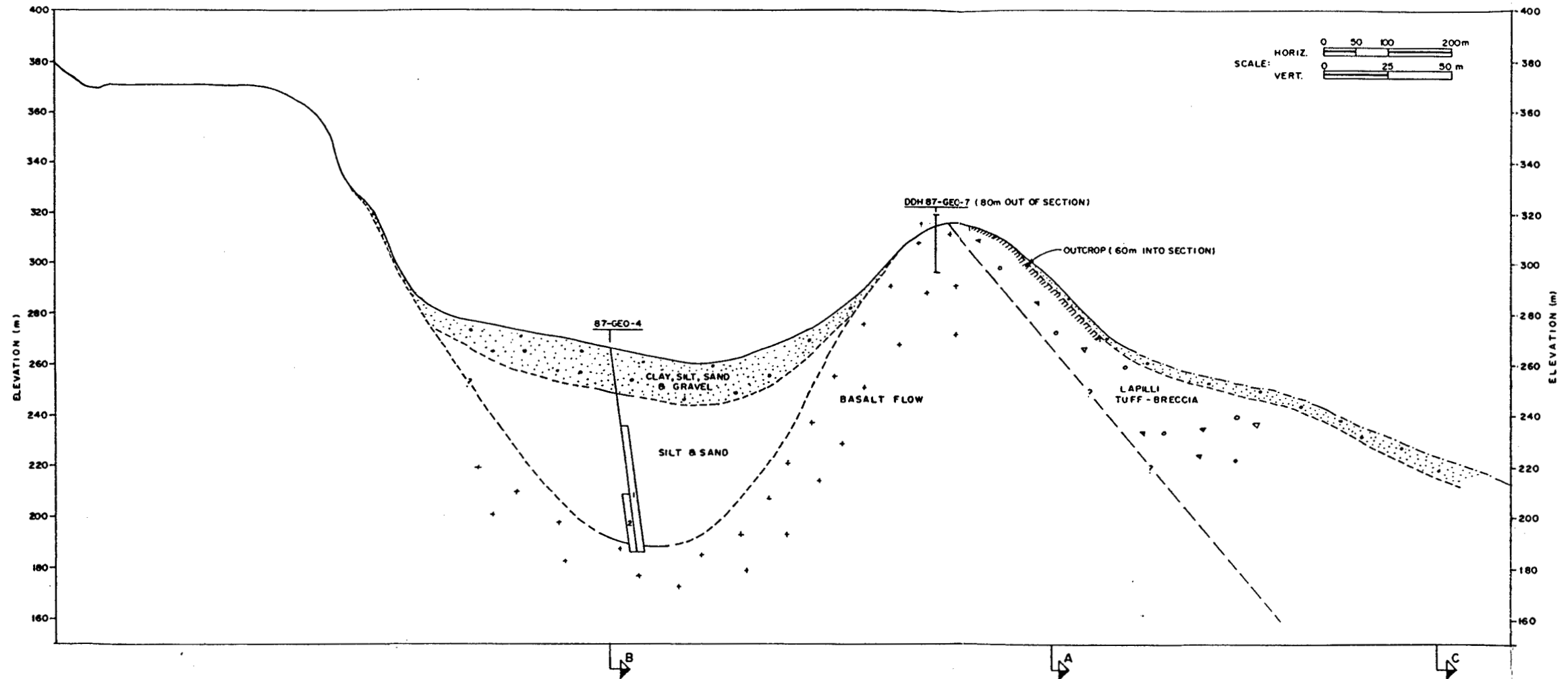
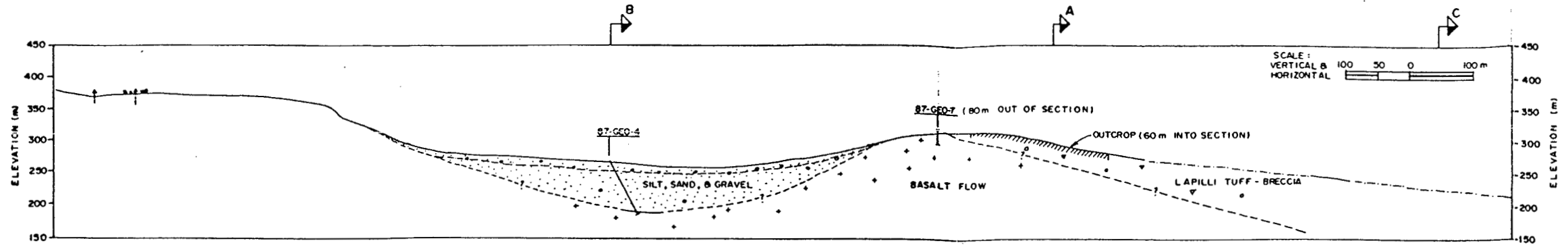
FIELD TEST RESULTS		
HOLE	PACKER ZONE	HYDRAULIC CONDUCTIVITY ($\times 10^{-7}$) m/s
87-GEO-2	1	1.97
	2	2.03
	3	0.111
	4	0.612
	5	1.92
	6	2.21
	7	3.65
	8	0.250
	9	0.139
87-GEO-1	1	10.8
	2	3.93

LEGEND		
Contacts and Structure	— Known	- - - Probable
Outcrop	Mapped by SRK, Apr. 1987	
Lithology	<ul style="list-style-type: none"> Lapilli Tuff-Breccia Welded Ash Tuff Welded Ash Flow Basalt Flow Ash Tuff Lapilli Tuff Rhyolite Crackle-Breccia 	
Structure	Fracture Plane	
Creeks	↑ Flow into Section	↓ Seasonal Creeks
Topography	<ul style="list-style-type: none"> From 1:500 Topo Map Produced for MacMillan Bloedel From 1:50,000 Federal Topo Map 	

Note:

- Contacts are assumed to be linear and parallel to the flow directions indicated on SRK's structural geology map, Apr. 1987.
- Lithologies are from SRK logs by T. Collett and J. Sharpe, and City Resources logs by R. Boyce
- Hydraulic Conductivity are from SRK logs

CITY RESOURCES (CANADA) LIMITED CINOLA GOLD PROJECT HIGH WEST AREA GEOLOGICAL SECTION C-C	DATE NOV. 1987
	PROJ. NO. 62602
	APPROVED
	Drawn No. 62602-14
STEFFEN ROBERTSON & KIRSTEN, Consulting Engineers	
REV. A	



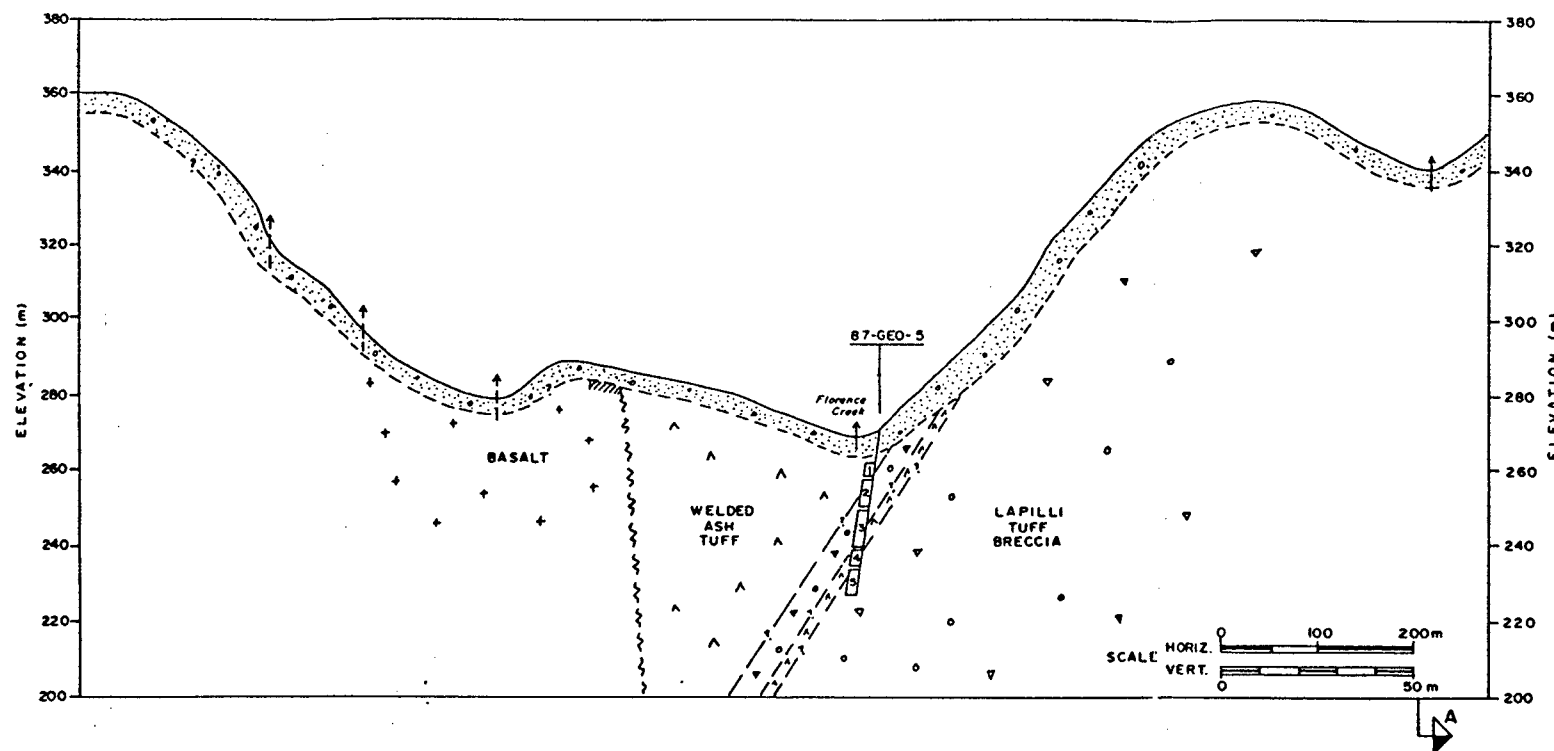
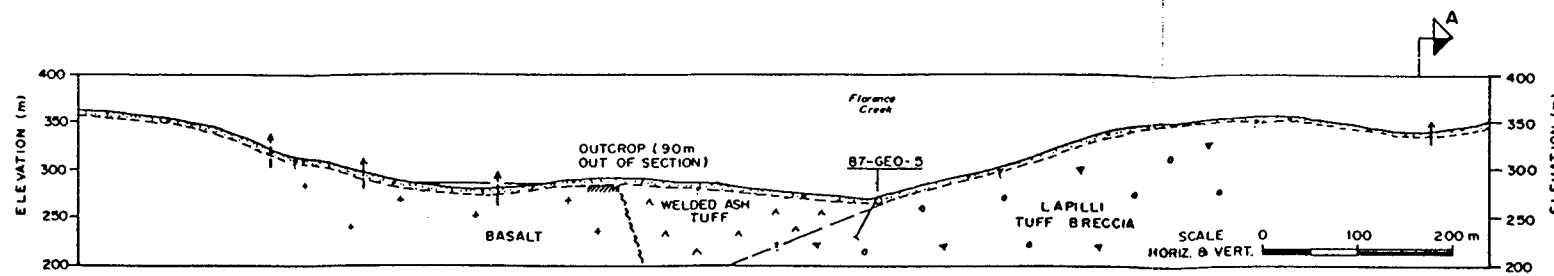
FIELD TEST RESULTS		
HOLE	PACKER ZONE	HYDRAULIC CONDUCTIVITY ($\times 10^{-7}$) m/s
87-GEO-4	1	2.54
	2	1.92

LEGEND	
Contacts and Structure	— Known - - - Probable - · - · - Possible
Outcrop	▬ Mapped by SRK Apr. 1987
Lithology	<ul style="list-style-type: none"> ▲ Lapilli Tuff-Breccia ▲ Welded Ash Tuff ▲ Welded Ash Flow ▲ Basalt Flow ▲ Ash Tuff ▲ Lapilli Tuff ▲ Rhyolite Crackle-Breccia
Structure	▬ Fracture Plane
Creeks	<ul style="list-style-type: none"> ↑ Flow into Section ↓ Flow out of Section ↑ Seasonal Creeks
Topography	<ul style="list-style-type: none"> — From 1:200 Topo Map Produced for MacMillan Bloedel - - - From 1:30,000 Federal Topo Map

Note:

- Contacts are assumed to be linear and parallel to the flow directions indicated on SRK's structural geology map, Apr. 1987.
- Lithologies are from SRK logs by T. Collett and J. Sharpe, and City Resources logs by R. Boyce
- Hydraulic Conductivity are from SRK logs

CITY RESOURCES (CANADA) LIMITED		DATE NOV. 1987
CINOLA GOLD PROJECT HIGH WEST AREA		PROJ. NO. 62602
GEOLOGICAL SECTION D-D		APPROVED BY
STEFFEN ROBERTSON & KIRSTEN, Consulting Engineers		DRWG. NO. 62602- 15 REV. A



FIELD TEST RESULTS		
HOLE	PACKER ZONE	HYDRAULIC CONDUCTIVITY ($\times 10^{-4}$) m/s
87-GEO-5	1	3.97
	2	0
	3	5.63
	4	2.39
	5	0

LEGEND	
Contacts and Structure	— Known - - - Probable - - - Possible
Outcrop	Mapped by SRK Apr. 1987
Lithology	Lapilli Tuff-Breccia Welded Ash Tuff Welded Ash Flow Basalt Flow Ash Tuff Lapilli Tuff Rhyolite Crackle-Breccia
Structure	Fracture Plane
Creeks	↑ Flow into Section ↑ Seasonal Creeks ↓ Flow out of Section
Topography	— From 1:5000 Topo Map Produced for MacMillan Bloedel - - - From 1:50,000 Federal Topo Map

Note:

- Contacts are assumed to be linear and parallel to the flow directions indicated on SRK's structural geology map, Apr. 1987.
- Lithologies are from SRK logs by T. Collett and J. Sharpe, and City Resources logs by R. Boyce
- Hydraulic Conductivity are from SRK logs

CITY RESOURCES (CANADA) LIMITED CINOLA GOLD PROJECT HIGH WEST AREA GEOLOGICAL SECTION E-E STEFFEN ROBERTSON & KIRSTEN Consulting Engineers	DATE NOV. 1987
	PROJ. NO. 62602
	APPROVED BY
	DRWG. NO. 62602- 16 REV.A

APPENDIX B
BOREHOLE LOGS

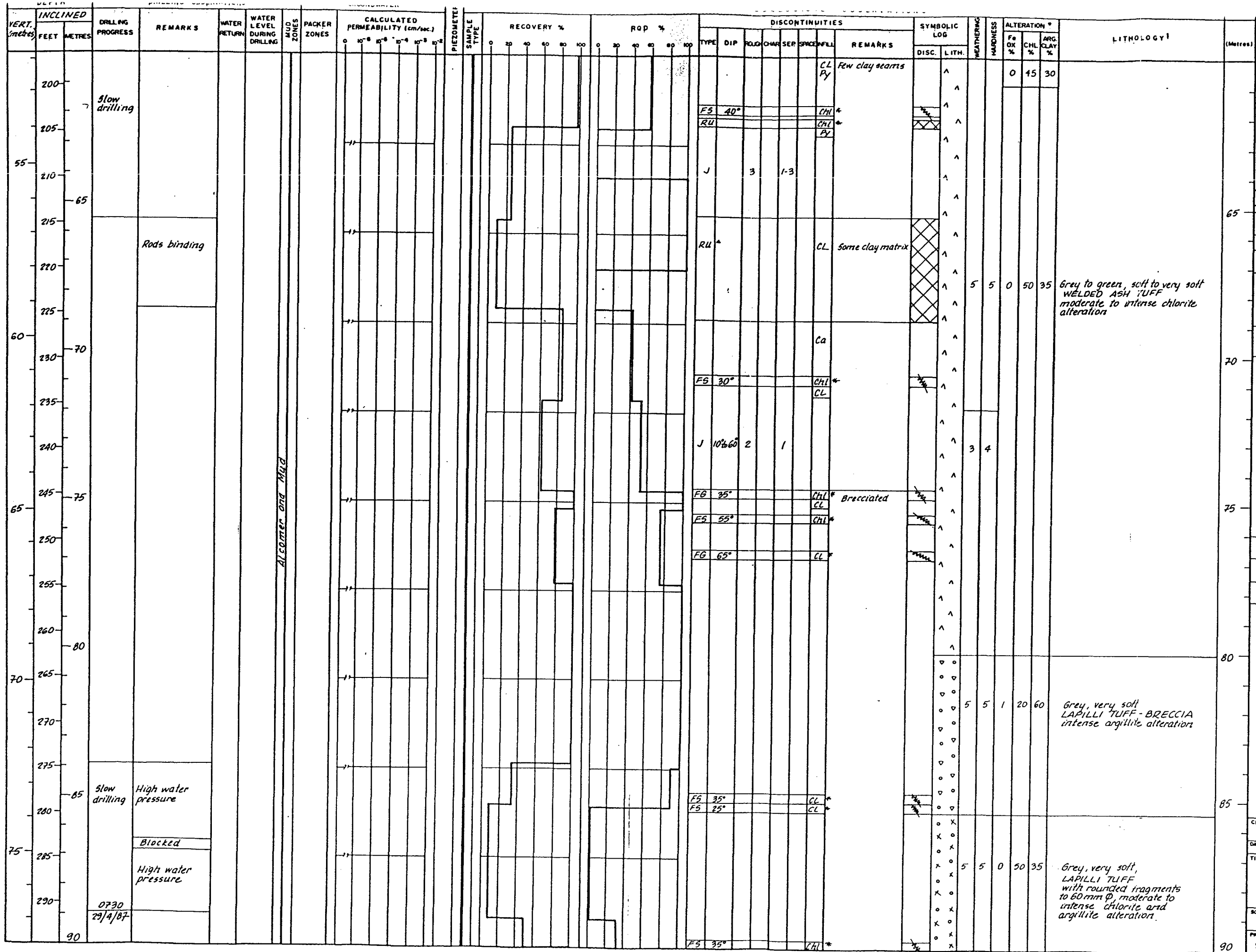
Contains:

Borehole 87-GEO-1
Borehole 87-GEO-2
Borehole 87-GEO-3
Borehole 87-GEO-4
Borehole 87-GEO-5
Borehole 87-GEO-6
Borehole 87-GEO-7
Borehole 87-GEO-8

Note: For the location of the boreholes on plan refer to
Figure 2 in the text.

APPENDIX B-2:

DETAILED LOGS



DRILL HOLE NO. 87-GEO-1

PROJECT NO. 62602
GROUND ELEVATION 250m
COORDINATES 272°
AZIMUTH 60°
DIP 75-29 APRIL 1987

DATES CASING SIZE NO
DRILLER COATES
DRILL RIG LONGYEAR 38
PACKER TYPE RST PNEUMATIC N-O PACKER
LOGGED BY T. COLLETT & J. SHARPE (SRK) & R. BOYCE (CITY)

LEGEND

DATES INDICATED BY DAY/MONTH/YEAR
WATER RETURN FULL RETURN UNLESS INDICATED
WATER % LOSS % GAINED
WATER INDICATED DEPTH OF HOLE AND DATE AT TIME OF READING

MUD/PACKER ZONE

PIEZOMETER SLOTTED ZONE GROUT
BENTONITE SEAL

SAMPLE TYPE TRICONE CORE

DISCONTINUITIES

TYPE	RU	FS	FB	J
	• RUBBLE ZONE	• FAULT GOUGE	• FAULT SURFACE (SLICKENSIDES)	• FAULT BRECCIA
				• JOINT

DIP ANGLES MEASURED RELATIVE TO CORE AXIS
ROUGHNESS 1 = SMOOTH 2 = SL. ROUGH 3 = MEDIUM 4 = ROUGH 5 = V. ROUGH
CHARACTER P = PLANAR U = UNDOULATING S = STEPPED

SEPARATION MEASURED IN mm
JOINT SPACING NO. OF JOINTS PER 300 mm
INFILLING CL = ARGILLITE Co = CALCITE
CNI = CHLORITE Zc = ZEOLITE
Fe = IRON OX. S1 = SILICA/QUARTZ Py = PYRITE

SYMBOLIC LOG
FAULT (ORIENTED IF DIP GIVEN)
RUBBLE FAULT BRECCIA

WEATHERING 1 = UNWEATHERED 2 = SLIGHTLY 3 = MEDIUM 4 = HIGHLY 5 = COMPLETELY

HARDNESS 1 = VERY HARD 2 = HARD 3 = MEDIUM 4 = SOFT 5 = V. SOFT

ALTERATION OVERALL ALTERATION OF ROCK AS % OF ZONE INDICATED

DATA COMPILED FROM SRK LOGS UNLESS INDICATED:
COMPILED FROM CITY RESOURCES LOGS
Δ COMPILED FROM BOTH CITY RESOURCES AND SRK LOGS
1 OVERBURDEN AND HARDNESS DESCRIPTIONS ARE FROM SRK LOGS. ROCK LITHOLOGY DESCRIPTIONS ARE FROM CITY LOGS.

CLIENT CITY RESOURCES (CANADA) LTD.
DATE PROJ NO. 62602
TITLE CINOLA GOLD PROJECT HIGH WEST TAILINGS INVESTIGATION BOREHOLE LOG DDH 87-GEO-1
SCALE AS SHOWN DRWG. NO. 62602-
PREPARED BY STEFFEN ROBERTSON & KIRSTEN

DEPTH VERT (metres)	INCLINED FEET METRES	DRILLING OBSERVATIONS				GROUNDWATER				GEOLOGICAL OBSERVATIONS																							
		DRILLING PROGRESS	REMARKS	WATER RETURN	WATER LEVEL DURING DRILLING	MUD ZONES	PACKER ZONES	CALCULATED PERMEABILITY (cm/sec.)				PIEZOMETER	RECOVERY %		RQD %		DISCONTINUITIES				SYMBOLIC LOG		ALTERATION %		LITHOLOGY ¹								
							0	10 ⁻⁸	10 ⁻⁷	10 ⁻⁶	10 ⁻⁵		0	20	40	60	80	100	TYPE	DIP	ROUGH	CHAR	SEP	SPACE/FILL		REMARKS	DISC.	LITH.	WEATHERING	HARDNESS	Fe OX %	CHL %	ARG CLAY %
25	105	1990 20/4/87	Rock encountered Minor slough encountered while reaming casing																J 0° to 60° 3/4	1	Ca			Joints appear tight, most predominant dip 35° - 45°			2	2	2	8	5		
35	115																		FS 25°					Chl*									
40	130		Blocked bit burned due to sealed water ports. Change bit. Same slough inside.																FS 10° FS 40°					Chl* Chl*									
45	145																		FS 15° RU FS 20°					Chl* Chl*									
50	160																		FS 25°					Chl*	Brecciated by light olive tan mudstone matrix								
55	175																		FS 30°					Chl*									
60	190																		J 0° to 90° 3	1				Open Joint Joints appear tight									
65	195																		FS 20°					Chl*	Brecciated by mudstone matrix								
70	210																		J 60° to 80° 3	1	Ca												
75	225																		FS 60° FS 25°					Chl* Chl*									
80	240																		J 60° to 80° 3	1	Ca				Brecciated by light olive tan mudstone matrix								
85	255																		FS 25°					Chl*									
90	270																		J 10° to 60°	1				Chl*	Joints appear tight								
95	285																		FS 15°					Chl*									
100	300																																
105	315																																
110	330																																
115	345																																
120	360																																
125	375																																
130	390																																
135	405																																
140	420																																
145	435																																
150	450																																
155	465																																
160	480																																
165	495																																
170	510																																
175	525																																
180	540																																
185	555																																
190	570																																
195	585																																
200	600																																

DRILL HOLE NO. 87-GEO-2

PROJECT NO. 62602
GROUND ELEVATION 220m
COORDINATES 117°
AZIMUTH 50°
DIP

DATES 20-24 APRIL, 1987
CASING SIZE NO
DRILLER COATES
DRILL RIG LONGYEAR 38
PACKER TYPE RST PNEUMATIC N-O PACKER
LOGGED BY T. COLLETT & J. SHARPE (SRK)
& R. BOYCE (CITY)

LEGEND
DATES INDICATED BY DAY/MONTH/YEAR
WATER RETURN FULL RETURN UNLESS INDICATED
WATER INDICATED DEPTH OF HOLE AND DATE AT TIME OF READING
MUD/PACKER ZONE
PIEZOMETER
SAMPLE TYPE
DISCONTINUITIES
SYMBOLIC LOG
WEATHERING
HARDNESS
ALTERATION
DATA COMPILED FROM SRK LOGS UNLESS INDICATED:
* COMPILED FROM CITY RESOURCES LOGS
Δ COMPILED FROM BOTH CITY RESOURCES AND SRK LOGS
1 OVERBURDEN AND HARDNESS DESCRIPTIONS ARE FROM SRK LOGS. ROCK LITHOLOGY DESCRIPTIONS ARE FROM CITY LOGS.

CLIENT
CITY RESOURCES (CANADA) LTD.
DATE
PROJ NO 62602
TITLE
CINOLA GOLD PROJECT
HIGH WEST TAILINGS INVESTIGATION
BOREHOLE LOG
DDH 87-GEO-2
SCALE AS SHOWN
PREPARED BY STEFFEN ROBERTSON & KIRSTEN
DRWG. NO. 62602-1

Dark grey, hard
BASALT FLOW
porphyritic, variably silicified,
silicified around fractures,
almost entirely brecciated,
breccia fragments are 80-100%
Basalt.

Dark grey, hard
BASALT FLOW
as above except unbrecciated.

DEPTH FEET METRES	DRILLING OBSERVATIONS				GROUNDWATER		GEOLOGICAL OBSERVATIONS										DEPTH (Metres)										
	DRILLING PROGRESS	REMARKS	WATER RETURN	WATER LEVEL DURING DRILLING	MUD ZONES	PACKER ZONES	CALCULATED PERMEABILITY (cm/sec.)		PIEZOMETER SAMPLE TYPE	RECOVERY %		RQD %		DISCONTINUITIES				SYMBOLIC LOG		WEATHERING HARDNESS		ALTERATION *		LITHOLOGY ¹			
							10 ⁻⁶ 10 ⁻⁸ 10 ⁻⁴ 10 ⁻³ 10 ⁻²			0 20 40 60 80 100	0 20 40 60 80 100	TYPE	DIP	ROUGH	CHAR	SEP	SPACE	FILL	REMARKS	DISC.	LITH.			Fe OX %	CHL %	ARG CLAY %	
5																											Brown, loose to dense SAND and GRAVEL some silt and clay
10																											
15																											
20																											
25		Fluctuating water pressure																									
30																											
35		Blocked																									
40	0730 16/4/87	Blocked	100%																								
45																											
50																											
55																											
60	0945 16/4/87																										End of Hole @ 18.3 m
65																											

DRILL HOLE NO. **87-GEO-6**

PROJECT NO. **62602**

GROUND ELEVATION **225 m**

COORDINATES
AZIMUTH
DIP **90°**

DATES
CASING SIZE
DRILLER
DRILL RIG
PACKER TYPE
LOGGED BY

NO
COATES
LONGYEAR 38
RST PNEUMATIC N-Q PACKER
T. COLLETT & J. SHARPE (SRK)
B. R. BOYCE (CITY)

LEGEND

DATES INDICATED BY DAY/MONTH/YEAR

WATER RETURN FULL RETURN UNLESS INDICATED
% LOSS % GAINED

WATER INDICATED DEPTH OF HOLE AND DATE AT TIME OF READING

MUD/PACKER ZONE

PIEZOMETER SLOTTED ZONE GROUT
BENTONITE SEAL

SAMPLE TYPE TRICONE CORE

DISCONTINUITIES

TYPE RU • RUBBLE ZONE
FG • FAULT GOUGE
FS • FAULT SURFACE (SLICKENSIDES)
FB • FAULT BRECCIA
J • JOINT

DIP ANGLES MEASURED RELATIVE TO CORE AXIS

ROUGHNESS 1 • SMOOTH 4 • ROUGH
2 • SL. ROUGH 5 • V. ROUGH
3 • MEDIUM

CHARACTER P • PLANAR U • UNDULATING
V • STEPPED

SEPARATION MEASURED IN mm

JOINT SPACING NO. OF JOINTS PER 300 mm

INFILLING CL • CALCITE Cg • CALCITE
CLAY Cn • CHLORITE Zc • ZEOCLITE
Fe • IRON OX. Si • SILICA/QUARTZ
Py • PYRITE

SYMBOLIC LOG

FAULT (ORIENTED IF DIP GIVEN)
RUBBLE FAULT BRECCIA

WEATHERING 1 • UNWEATHERED 4 • HIGHLY
2 • SLIGHTLY 5 • COMPLETELY
3 • MEDIUM

HARDNESS 1 • VERY HARD 4 • SOFT
2 • HARD 5 • V. SOFT
3 • MEDIUM

ALTERATION OVERALL ALTERATION OF ROCK AS % OF ZONE INDICATED

DATA COMPILED FROM SRK LOGS UNLESS INDICATED:

• COMPILED FROM CITY RESOURCES LOGS
△ COMPILED FROM BOTH CITY RESOURCES AND SRK LOGS
1 OVERBURDEN AND HARDNESS DESCRIPTIONS ARE FROM SRK LOGS. ROCK LITHOLOGY DESCRIPTIONS ARE FROM CITY LOGS.

CLIENT
CITY RESOURCES (CANADA) LTD.

DATE PROJ. NO. **62602**

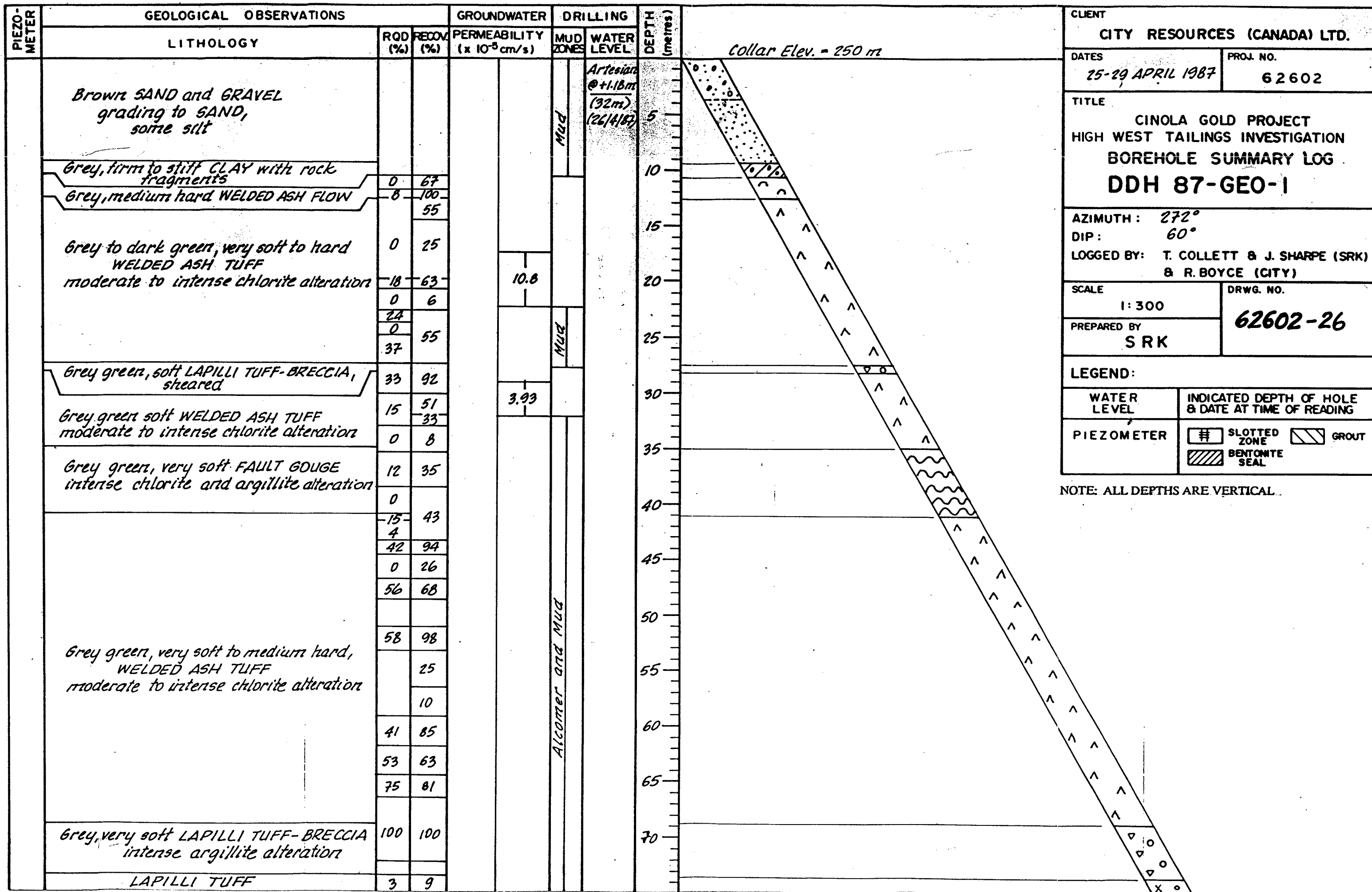
TITLE
**CINOLA GOLD PROJECT
HIGH WEST TAILINGS INVESTIGATION
BOREHOLE LOG
DDH 87-GEO-6**

SCALE AS SHOWN DRWG. NO. **62602-**

PREPARED BY **STEFFEN ROBERTSON & KIRSTEN**

APPENDIX B-1:

SUMMARY LOGS



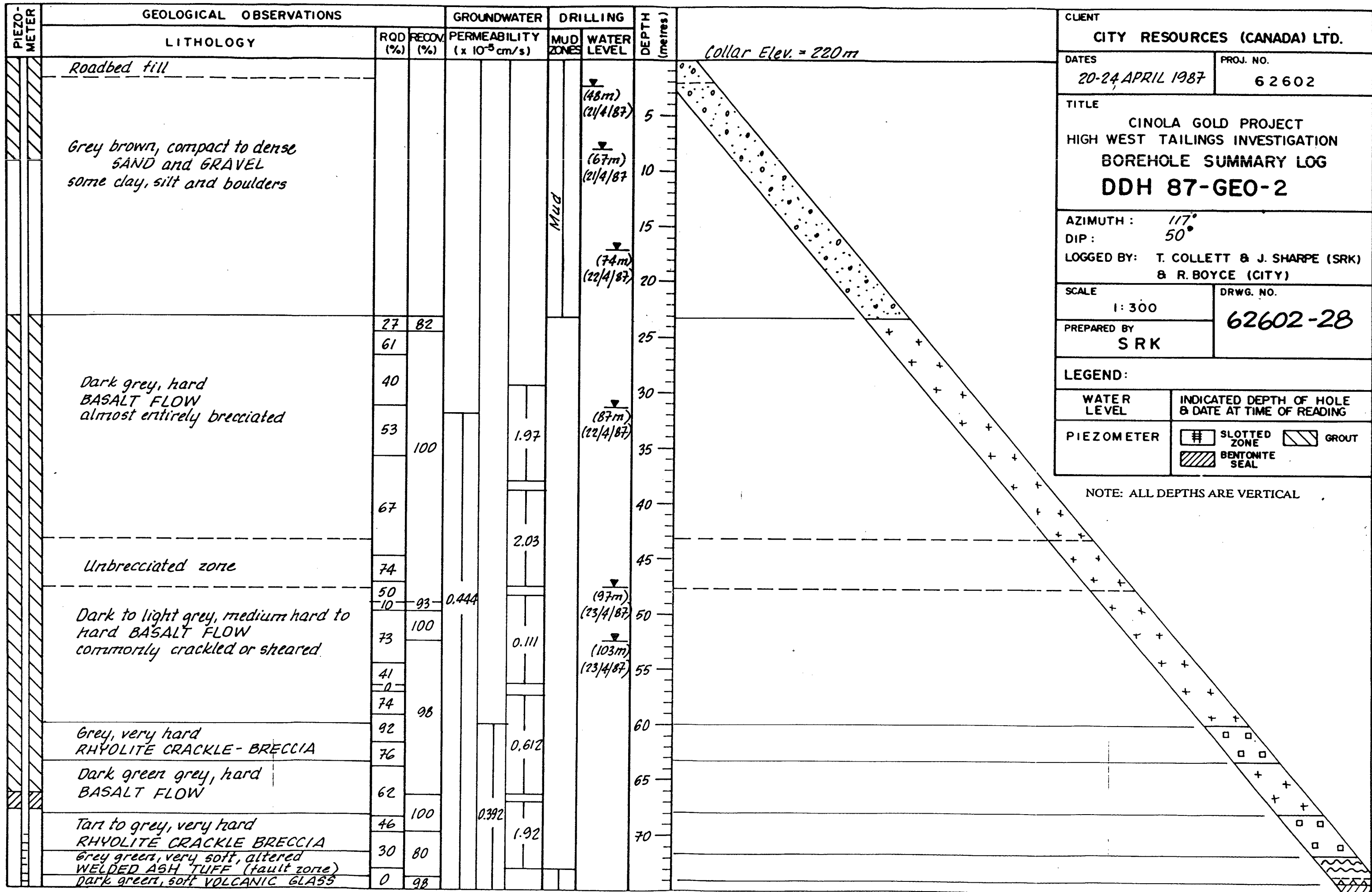
CLIENT CITY RESOURCES (CANADA) LTD.	
DATES 25-29 APRIL 1987	PROJ. NO. 62602
TITLE CINOLA GOLD PROJECT HIGH WEST TAILINGS INVESTIGATION BOREHOLE SUMMARY LOG DDH 87-GEO-1	
AZIMUTH: 272° DIP: 60° LOGGED BY: T. COLLETT & J. SHARPE (SRK) & R. BOYCE (CITY)	
SCALE 1:300	DRWG. NO. 62602-26
PREPARED BY SRK	
LEGEND:	
WATER LEVEL	INDICATED DEPTH OF HOLE & DATE AT TIME OF READING
PIEZOMETER	<input type="checkbox"/> SLOTTED ZONE <input type="checkbox"/> GROUT <input checked="" type="checkbox"/> BENTONITE SEAL

NOTE: ALL DEPTHS ARE VERTICAL.

PIEZO-METER	GEOLOGICAL OBSERVATIONS		GROUNDWATER		DRILLING		DEPTH (metres)
	LITHOLOGY	RQD (%)	RECOV (%)	PERMEABILITY ($\times 10^{-5}$ cm/s)	MUD ZONES	WATER LEVEL	
	<i>Grey, very soft LAPILLI TUFF, moderate to intense chlorite and argillite alteration</i>	3 33 65	9 49		<i>Mud and Alcomer</i>		
	<i>Grey, very soft ASH TUFF intense argillite alteration</i>	98					
	<i>Layered grey to grey green, very soft LAPILLI TUFF-BRECCIA and ASH TUFF intense argillite alteration</i>	100 10	100				
	<i>Grey, very soft to medium hard ASH TUFF intense argillite alteration</i>	92 100					
	<i>End of Hole @ 93.7 m</i>						

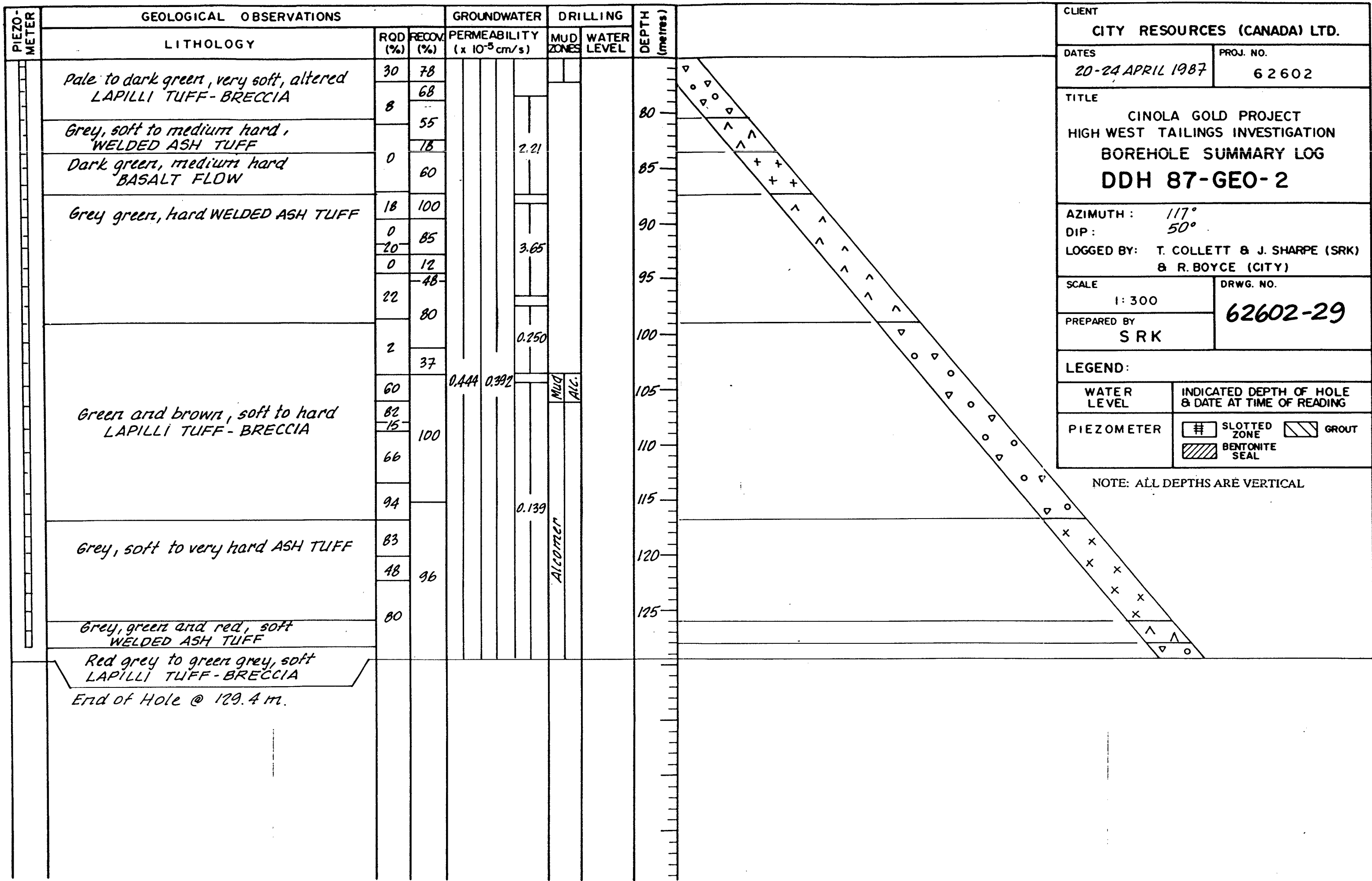
CLIENT CITY RESOURCES (CANADA) LTD.	
DATES <i>25-29 APRIL 1987</i>	PROJ. NO. 62602
TITLE CINOLA GOLD PROJECT HIGH WEST TAILINGS INVESTIGATION BOREHOLE SUMMARY LOG DDH 87-GEO-1	
AZIMUTH: <i>272°</i> DIP: <i>60°</i>	
LOGGED BY: T. COLLETT & J. SHARPE (SRK) & R. BOYCE (CITY)	
SCALE 1:300	DRWG. NO. 62602-27
PREPARED BY SRK	
LEGEND:	
WATER LEVEL	INDICATED DEPTH OF HOLE & DATE AT TIME OF READING
PIEZOMETER	SLOTTED ZONE BENTONITE SEAL GROUT

NOTE: ALL DEPTHS ARE VERTICAL



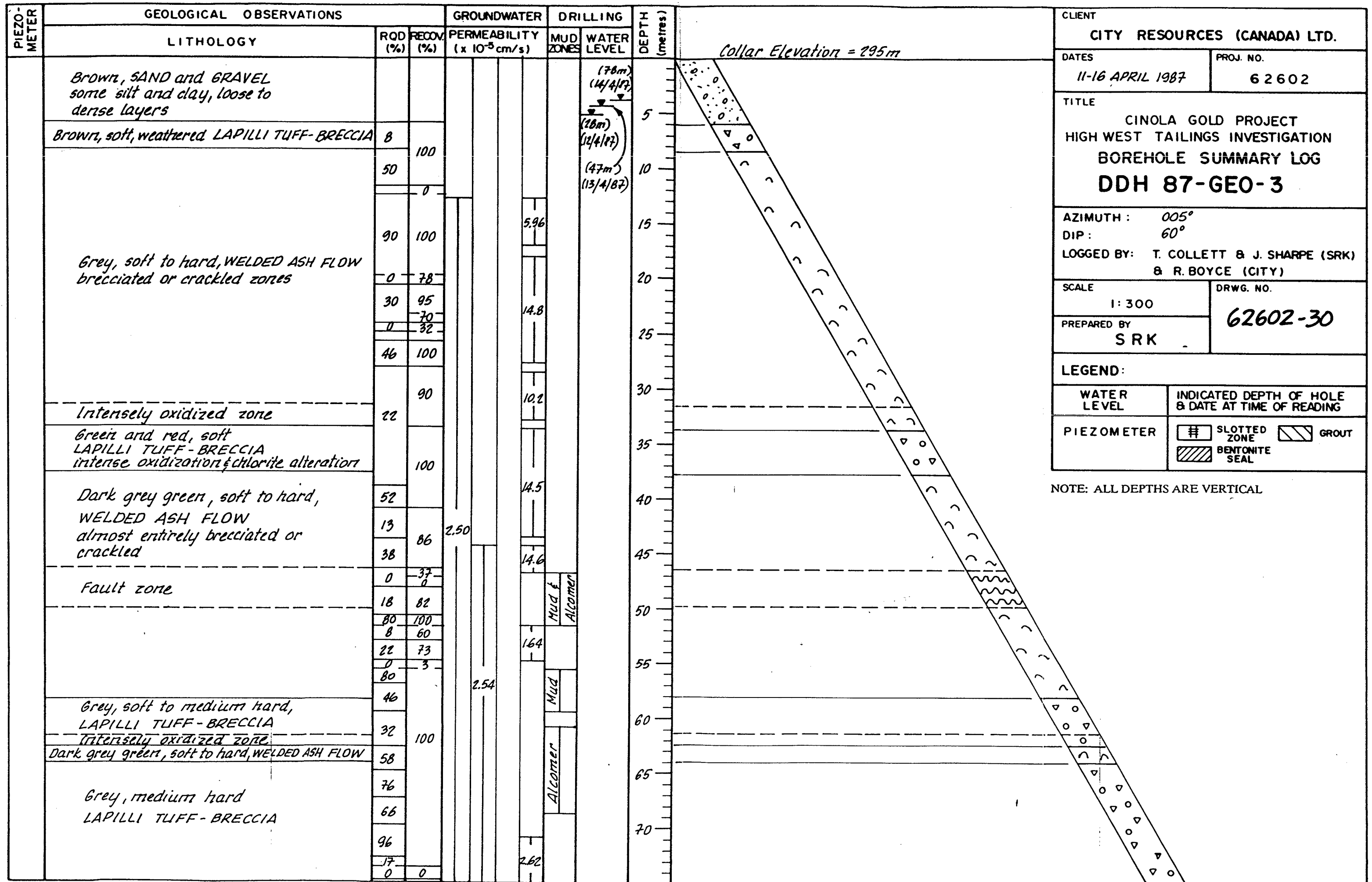
CLIENT CITY RESOURCES (CANADA) LTD.	
DATES 20-24 APRIL 1987	PROJ. NO. 62602
TITLE CINOLA GOLD PROJECT HIGH WEST TAILINGS INVESTIGATION BOREHOLE SUMMARY LOG DDH 87-GEO-2	
AZIMUTH: 117° DIP: 50° LOGGED BY: T. COLLETT & J. SHARPE (SRK) & R. BOYCE (CITY)	
SCALE 1:300	DRWG. NO. 62602-28
PREPARED BY SRK	
LEGEND:	
WATER LEVEL	INDICATED DEPTH OF HOLE & DATE AT TIME OF READING
PIEZOMETER	<input type="checkbox"/> SLOTTED ZONE <input type="checkbox"/> GROUT <input type="checkbox"/> BENTONITE SEAL

NOTE: ALL DEPTHS ARE VERTICAL



CLIENT CITY RESOURCES (CANADA) LTD.	
DATES 20-24 APRIL 1987	PROJ. NO. 62602
TITLE CINOLA GOLD PROJECT HIGH WEST TAILINGS INVESTIGATION BOREHOLE SUMMARY LOG DDH 87-GEO-2	
AZIMUTH: 117° DIP: 50° LOGGED BY: T. COLLETT & J. SHARPE (SRK) & R. BOYCE (CITY)	
SCALE 1:300	DRWG. NO. 62602-29
PREPARED BY SRK	
LEGEND:	
WATER LEVEL	INDICATED DEPTH OF HOLE & DATE AT TIME OF READING
PIEZOMETER	<input type="checkbox"/> SLOTTED ZONE <input type="checkbox"/> GROUT <input type="checkbox"/> BENTONITE SEAL

NOTE: ALL DEPTHS ARE VERTICAL



CLIENT
CITY RESOURCES (CANADA) LTD.

DATES
11-16 APRIL 1987

PROJ. NO.
62602

TITLE
CINOLA GOLD PROJECT
HIGH WEST TAILINGS INVESTIGATION
BOREHOLE SUMMARY LOG
DDH 87-GEO-3

AZIMUTH : 005°
DIP : 60°
LOGGED BY: T. COLLETT & J. SHARPE (SRK)
& R. BOYCE (CITY)

SCALE
1:300

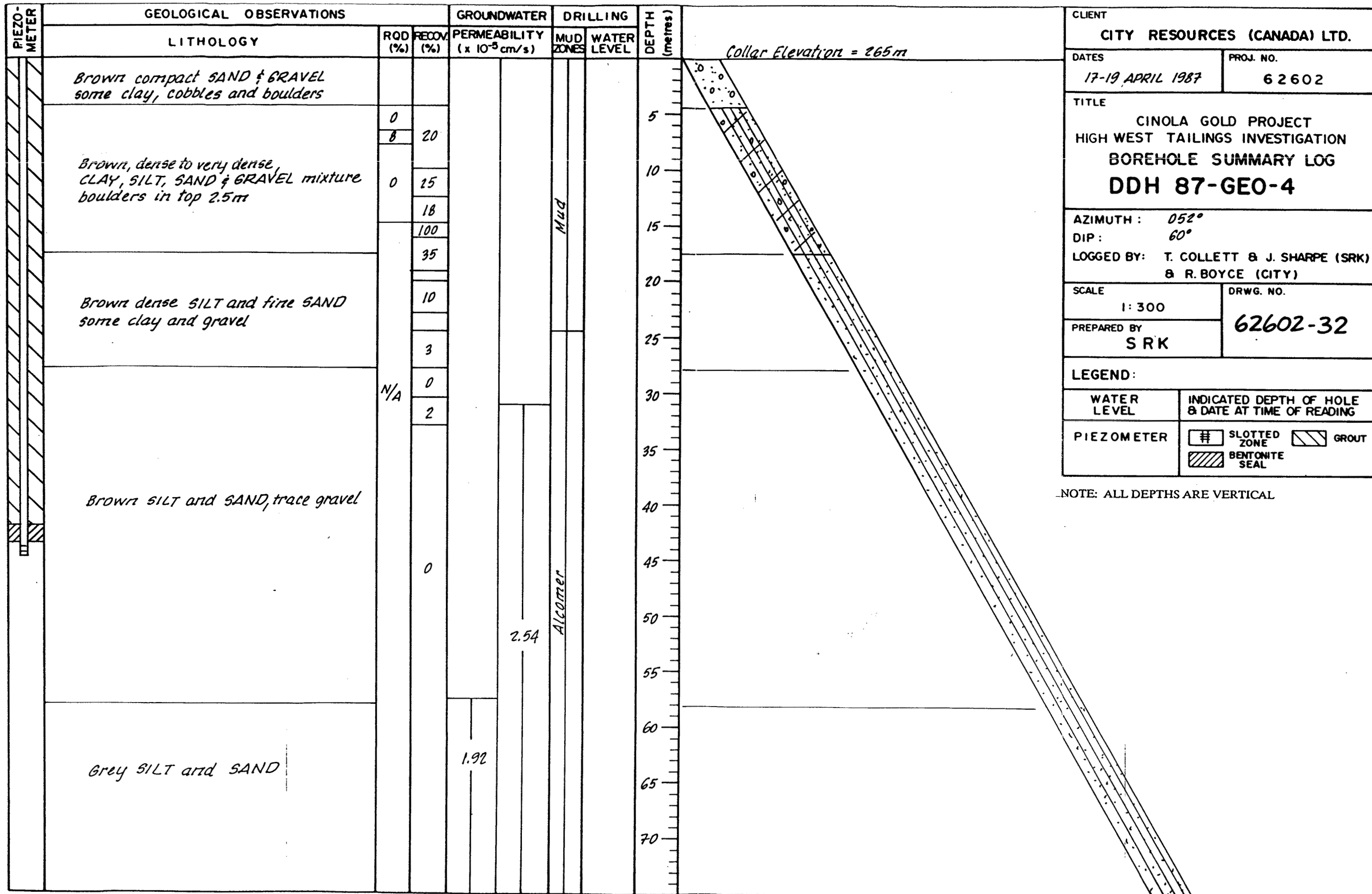
DRWG. NO.
62602-30

PREPARED BY
SRK

LEGEND:

WATER LEVEL	INDICATED DEPTH OF HOLE & DATE AT TIME OF READING	
PIEZOMETER	SLOTTED ZONE BENTONITE SEAL	GROUT




NOTE: ALL DEPTHS ARE VERTICAL



CLIENT CITY RESOURCES (CANADA) LTD.	
DATES 17-19 APRIL 1987	PROJ. NO. 62602
TITLE CINOLA GOLD PROJECT HIGH WEST TAILINGS INVESTIGATION BOREHOLE SUMMARY LOG DDH 87-GEO-4	
AZIMUTH: 052° DIP: 60° LOGGED BY: T. COLLETT & J. SHARPE (SRK) & R. BOYCE (CITY)	
SCALE 1:300	DRWG. NO. 62602-32
PREPARED BY SRK	
LEGEND:	
WATER LEVEL	INDICATED DEPTH OF HOLE & DATE AT TIME OF READING
PIEZOMETER	




NOTE: ALL DEPTHS ARE VERTICAL

PIEZO-METER	GEOLOGICAL OBSERVATIONS		GROUNDWATER		DRILLING		DEPTH (metres)
	LITHOLOGY	ROD (%)	RECOV (%)	PERMEABILITY (x 10 ⁻⁵ cm/s)		MUD ZONES	
	Grey SILT and SAND	N/A	0				
	Dark grey green, medium hard, BASALT FLOW	0	16	1.92	2.54	Alcortec	80
	End of Hole @ 80.5m						85

CLIENT CITY RESOURCES (CANADA) LTD.	
DATES 17-19 APRIL 1987	PROJ. NO. 62602
TITLE CINOLA GOLD PROJECT HIGH WEST TAILINGS INVESTIGATION BOREHOLE SUMMARY LOG DDH 87-GEO-4	
AZIMUTH: 052° DIP: 60° LOGGED BY: T. COLLETT & J. SHARPE (SRK) & R. BOYCE (CITY)	
SCALE 1:300	DRWG. NO. 62602-33
PREPARED BY SRK	
LEGEND:	
WATER LEVEL	INDICATED DEPTH OF HOLE & DATE AT TIME OF READING
PIEZOMETER	 SLOTTED ZONE  BENTONITE SEAL  GROUT

NOTE: ALL DEPTHS ARE VERTICAL

PIEZO-METER	GEOLOGICAL OBSERVATIONS		GROUNDWATER		DRILLING		DEPTH (metres)
	LITHOLOGY	ROD (%)	RECOV (%)	PERMEABILITY (x 10 ⁻⁵ cm/s)	MUD ZONES	WATER LEVEL	
	Brown, loose to compact silty SAND and GRAVEL, some clay						Collar Elevation = 270 m
	Grey, very soft to medium hard LAPILLI TUFF-BRECCIA	0	74				(20m) (11/4/87)
	Dark grey WELDED ASH TUFF	48					
		65		3.97			
		49					
	Grey, medium hard LAPILLI TUFF-BRECCIA	80		0			
		67					
		48					
		38	100				
	Dark grey, medium hard, WELDED ASH TUFF	82		2.09	5.63		
		67					
	Dark grey green, medium hard LAPILLI TUFF-BRECCIA	74		2.39			
		86					
	End of Hole @ 43.5m						

CLIENT CITY RESOURCES (CANADA) LTD.	
DATES 10-11 APRIL 1987	PROJ. NO. 62602
TITLE CINOLA GOLD PROJECT HIGH WEST TAILINGS INVESTIGATION BOREHOLE SUMMARY LOG DDH 87-GEO-5	
AZIMUTH: 278° DIP: 60° LOGGED BY: T. COLLETT & J. SHARPE (SRK) & R. BOYCE (CITY)	
SCALE 1:300	DRWG. NO. 62602-34
PREPARED BY SRK	
LEGEND:	
WATER LEVEL	INDICATED DEPTH OF HOLE & DATE AT TIME OF READING
PIEZOMETER	<div style="display: flex; justify-content: space-between;"> <div>  SLOTTED ZONE  BENTONITE SEAL </div> <div>  GROUT </div> </div>

NOTE: ALL DEPTHS ARE VERTICAL

PIEZO METER	GEOLOGICAL OBSERVATIONS		GROUNDWATER		DRILLING		DEPTH (metres)
	LITHOLOGY	RQD (%)	RECOV (%)	PERMEABILITY (x 10 ⁻⁵ cm/s)	MUD ZONES	WATER LEVEL	
	Brown, loose to dense SAND & GRAVEL some silt and clay						0.0
	Orange brown to dark grey, very soft to medium hard LAPILLI TUFF-BRECCIA intensely oxidized zones	20	100				0.0
		0	16				0.0
		60	90		AG		0.0
		27	100				0.0
	55	93				0.0	
	End of Hole @ 18.3 m						0.0

Collar Elevation = 295 m




(12m)
(16/4/87)

CLIENT CITY RESOURCES (CANADA) LTD.	
DATES 16 APRIL 1987	PROJ. NO. 62602
TITLE CINOLA GOLD PROJECT HIGH WEST TAILINGS INVESTIGATION BOREHOLE SUMMARY LOG DDH 87-GEO-6	
AZIMUTH: — DIP: 90° LOGGED BY: T. COLLETT & J. SHARPE (SRK) & R. BOYCE (CITY)	
SCALE 1:300	DRWG. NO. 62602-35
PREPARED BY SRK	
LEGEND:	
WATER LEVEL	INDICATED DEPTH OF HOLE & DATE AT TIME OF READING
PIEZOMETER	<input type="checkbox"/> SLOTTED ZONE <input checked="" type="checkbox"/> BENTONITE SEAL <input type="checkbox"/> GROUT

NOTE: ALL DEPTHS ARE VERTICAL

PIEZO-METER	GEOLOGICAL OBSERVATIONS		GROUNDWATER		DRILLING		DEPTH (metres)
	LITHOLOGY	RQD (%)	RECOV (%)	PERMEABILITY ($\times 10^{-3}$ cm/s)	MUD ZONES	WATER LEVEL	
	Dark grey, medium hard BASALT FLOW brecciated below 11.5 m	50				(17m) (25m) (19/4/87)	5
		40	95				10
		47					15
		72		1.70			20
		66	100				25
		78					
	End of Hole @ 22.8 m						




Collar Elev. = 325 m

CLIENT CITY RESOURCES (CANADA) LTD.	
DATES 19 APRIL 1987	PROJ. NO. 62602
TITLE CINOLA GOLD PROJECT HIGH WEST TAILINGS INVESTIGATION BOREHOLE SUMMARY LOG DDH 87-GEO-7	
AZIMUTH: — DIP: 90° LOGGED BY: T. COLLETT & J. SHARPE (SRK) & R. BOYCE (CITY)	
SCALE 1:300	DRWG. NO. 62602-36
PREPARED BY SRK	
LEGEND:	
WATER LEVEL	INDICATED DEPTH OF HOLE & DATE AT TIME OF READING
PIEZOMETER	 SLOTTED ZONE  BENTONITE SEAL  GROUT

NOTE: ALL DEPTHS ARE VERTICAL

PIEZO METER	GEOLOGICAL OBSERVATIONS		GROUNDWATER		DRILLING		DEPTH (metres)
	LITHOLOGY	ROD (%)	RECOV. (%)	PERMEABILITY (x 10 ⁻⁵ cm/s)	MUD ZONES	WATER LEVEL	
	<i>Brown, SAND and GRAVEL, varying from clean to clayey to silty</i>	0	35				5
	<i>Grey to dark green, soft WELDED ASH FLOW moderate to intense chlorite alteration</i>	18	58				10
	<i>Dark green grey, soft to medium hard, WELDED ASH TUFF intense chlorite alteration</i>	0	11				15
	<i>End of Hole @ 23.0 m</i>	13	55				20
		72	94				25

Collar Elev. = 250 m

CLIENT CITY RESOURCES (CANADA) LTD.	
DATES <i>30 APRIL 1987</i>	PROJ. NO. 62602
TITLE CINOLA GOLD PROJECT HIGH WEST TAILINGS INVESTIGATION BOREHOLE SUMMARY LOG DDH 87-GEO-8	
AZIMUTH: - DIP: 90°	
LOGGED BY: T. COLLETT & J. SHARPE (SRK) & R. BOYCE (CITY)	
SCALE 1:300	DRWG. NO. 62602-37
PREPARED BY SRK	
LEGEND:	
WATER LEVEL	INDICATED DEPTH OF HOLE & DATE AT TIME OF READING
PIEZOMETER	 SLOTTED ZONE  BENTONITE SEAL  GROUT

NOTE: ALL DEPTHS ARE VERTICAL

APPENDIX IV

November 19, 1987

A STATEMENT OF QUALIFICATION

I, Tim Collett, am presently employed as a junior geotechnical engineer with Steffen, Robertson, and Kirsten (B.C.) Inc. Consulting Engineers. I currently reside at:

1040 Jefferson Avenue
West Vancouver, B.C.
V7T 2A5
Telephone: 922-6047.

I am a registered engineer-in training with the Association of Professional Engineers of British Columbia. I graduated from the geological engineering program at the University of British Columbia in the spring of 1986. While at university and upon graduation, I spent four summers (1983-1986) as an assistant geologist. My duties involved soil sampling, surficial geology mapping, geophysical surveys, splitting core, and some core logging.

I have been employed as a geotechnical engineer for one year, involved in numerous field programs and office work. In the field I have been a field engineer on both soil and bedrock drill programs, and in the office I have prepared and analyzed data.

Sincerely,



Tim Collett

Certification

I, Robert A. Boyce, with address at 8067 11th Avenue, Burnaby, B.C., do hereby certify that:

I am a geologist.

I graduated from the University of British Columbia in 1977, with a BSc. in Geology.

I have engaged in the practice of mineral exploration, continuously since graduation, in the provinces of British Columbia, Saskatchewan and Quebec, and in the Yukon and Northwest Territories.

I am a Fellow of the Geological Association of Canada and a member of the Canadian Institute of Mining and Metallurgy.

I hold valid subsisting Free Mining Certificate 297890BOYCRA.

signed this 25 November, 1987

R. A. Boyce

R. A. Boyce

CERTIFICATION

I, JOHN RAYMOND DEIGHTON, of 3250 West 33rd Avenue, Vancouver, British Columbia, do hereby certify that:

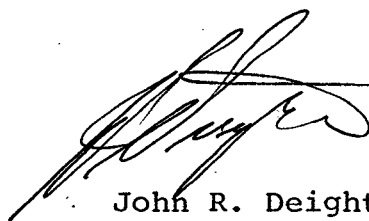
I am a graduate of the University of British Columbia, with a Bachelor of Science Degree in Geology, 1965.

Since graduation I have been engaged in Mineral Exploration in British Columbia, Yukon, Northwest Territories, Washington, Arizona and California.

I am a Fellow of the Geological Association of Canada and of the Canadian Institute of Mining and Metallurgy.

I am a Geologist

Vancouver, B. C.

A handwritten signature in black ink, appearing to read 'John R. Deighton', is written over a horizontal line.

John R. Deighton
Geologist

STATEMENT OF QUALIFICATIONS

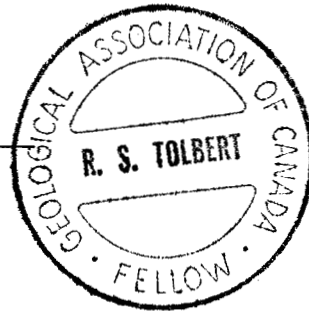
I, ROBIN STUART TOLBERT, of #306 - 145 East 12th Street, North Vancouver, British Columbia, V7L 2J3, state that:

1. I graduated in 1972 from Edinburgh University, Scotland with a B.Sc. in Geology.
2. From 1974-1978, I was employed by UMAX as Geologist, and from 1979-81 as Senior Geologist, on exploration programs in B.C., Yukon and western United States.
3. From 1981-1985, I was employed by Cyprus Anvil Mining Corporation, as District Geologist, based in Faro, Yukon involved in exploring and developing deposits within the Anvil District.
4. From 1985-1987, I was a Consulting Geologist.
5. From February 1987-present, I have been employed by City Resources (Canada) Limited as Manager of the Exploration Department.

DATED at Vancouver this 9th day of November 1987.



R. S. Tolbert



APPENDIX V

STATEMENT OF COSTS

Salaries

R.A. Boyce (Contract Geologist)
April 24 to May 1
7 1/2 days @ \$250/day \$ 1,906.40

T. Collette (Geological Engineer)
April 9 to May 27th Field and
office time as per bill 11,862.00

\$13,768.40

Drilling

D.W Coates Enterprises Ltd
as per invoice (4 man drill crew) 66,688.03

Assaying

73 samples (preparation and Au by
Fire Assay) 837.67

Room and Board

111 man days at \$35/man day 3,885.00

Transportation

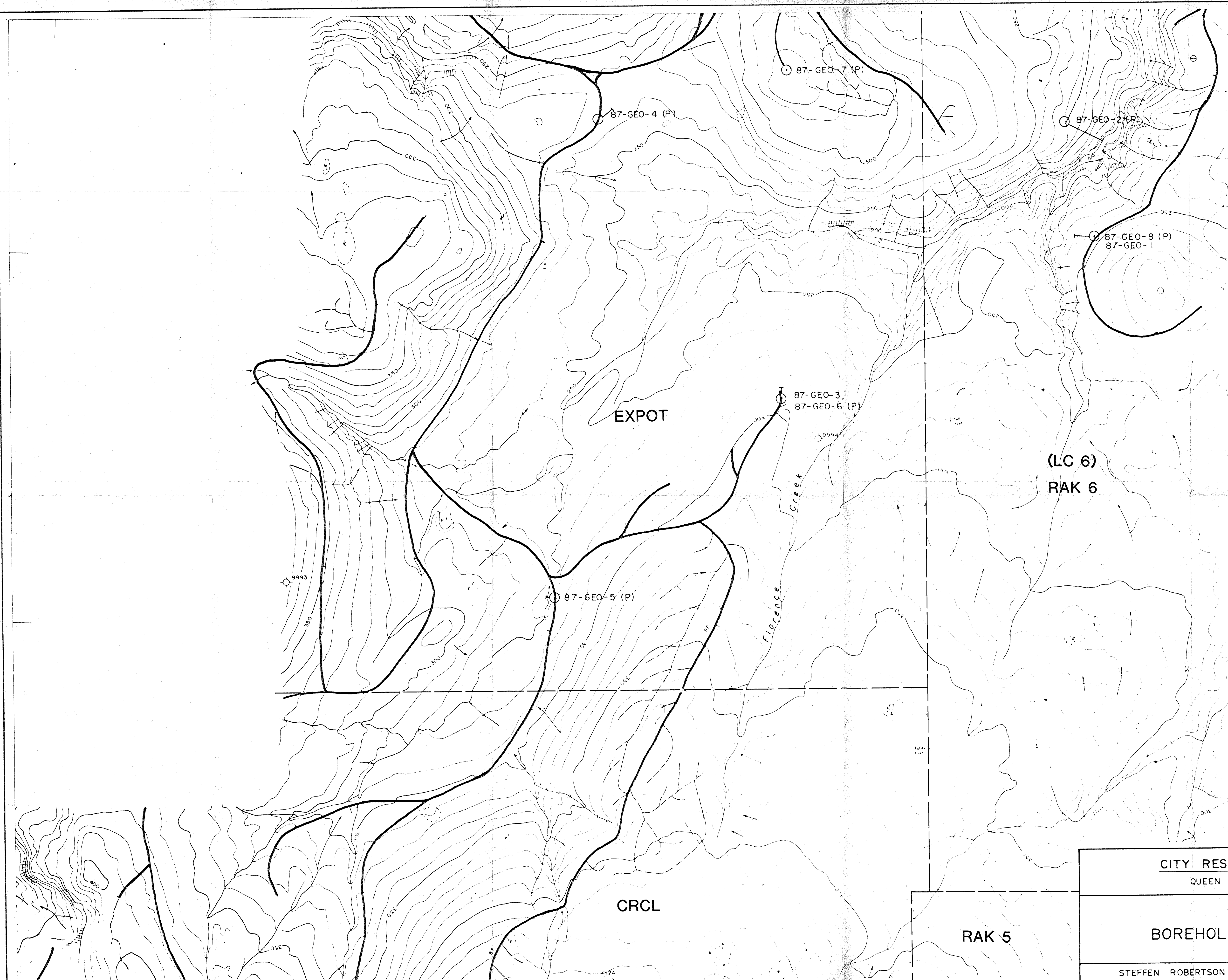
21 days equivalent vehicle rental at
\$50/day 1050.00
Airfare 323.40 \$ 1,373.40

Report Preparation

Drafting, supplies, typing, writing, etc. 1,000.00

Total expenditures \$ 87,552.50
=====

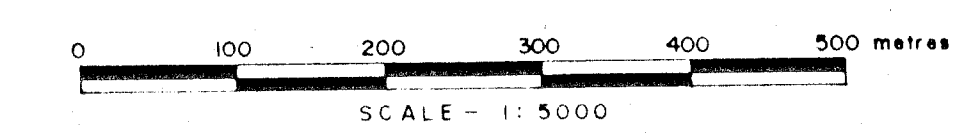
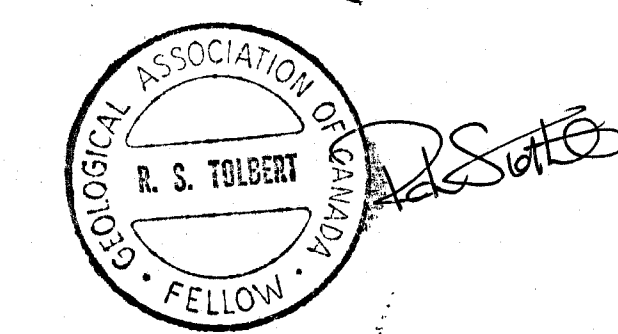
Since program drilling (8 holes) was 596.5 m and only (5 holes)
296.5 m was done on the Expot Claim or 49.69%, then only
\$87,552.50 x 49.69% = \$43,504.84 can be claimed.



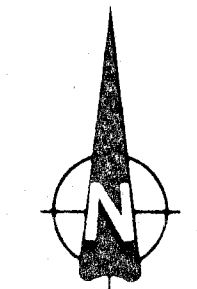
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,621

BOREHOLE	GROUND ELEV (m)	AZIMUTH	DIP	LENGTH (m)	PIEZOMETER LENGTH (m)
87-GEO-1	250	272°	60°	108.2	-
87-GEO-2	220	117°	50°	168.9	168.9
87-GEO-3	295	005°	60°	114.9	?
87-GEO-4	265	052°	60°	93.0	51.8
87-GEO-5	270	278°	60°	50.3	50.3
87-GEO-6	295	-	90°	18.3	18.3
87-GEO-7	325	-	90°	22.9	22.9
87-GEO-8	250	-	90°	23.0	23.0



- LEGEND**
- INCLINED BOREHOLE
 - VERTICAL BOREHOLE
 - (P) PIEZOMETER INSTALLED
 - CLAIM BOUNDARY



CITY RESOURCES CANADA LTD. QUEEN CHARLOTTE PROJECT	DATE MAY, 1987
	PROJECT NO 62602
BOREHOLE LOCATION PLAN	Figure 3
	NO 62602-15
STEFFEN ROBERTSON & KIRSTEN, Consulting Engineers	

EXPOT

(LC 6)
RAK 6

CRCL

RAK 5

87-GEO-7 (P)

87-GEO-4 (P)

87-GEO-2 (P)

87-GEO-8 (P)
87-GEO-1

87-GEO-3,
87-GEO-6 (P)

87-GEO-5 (P)

Florence Creek