K1 ✗ K13 ✗ K25 ✗ 9-65 ✗
2 ✗ 14 ✗ 26 ✗ 10-65 ✗
3 ✗ 15 ✗ 27 ✗ 11-65 ✗
4 ✗ 16 ✗ 28 ✗ 12-65 ✗
5 ✗ 17 13-65 ✗
6 ✗ 18 ✗
7 ✗ 19 ✗
8 ✗ 20 ✗ 3-65 ✗
9 ✗ 21 ✗ 4-65 ✗
10 ✗ 22 ✗ 5-65 ✗
11 ✗ 23 ✗ 6-65 ✗
12 ✗ 24 ✗ 7-65 ✗
8-65 ✗

KRAIN DRILL HOLE LOGS BY B.C. DEPARTMENT OF MINES

1956 ONWARD

DRILL HOLE K1

Casing to 20 ft.

40-42 ft. clay zone.

42-133 ft. quartz diorite, chloritized, occasional aplite veins. Malachite on joints with limonite. This malachite may be mostly chrysocolla. At 126 ft. brecciated quartz, chloritization, pale green alteration with kaolin, faulting.

133 ft. to 170 ft. porphyry, partly altered, magnatite gone to limonite.

At 138 ft. strong malachite and chrysocolla in a sericitious alteration.

138 ft. to 149 ft. strong fault.

159 ft. pyrite, disseminated, trace amounts, partly oxidized.

170 ft. to 179 ft. porphyry(?) sericitized chalcopyrite trace, disseminated, local malachite or chrysocolla.

179-189 ft. porphyry altered, becoming less altered from 183 ft.

187 ft. chalcopyrite disseminated.

189 onward strong alteration and shearing, possibly in quartz diorite.

192 ft. possibly porphyry with chalcopyrite and bornite in moderate amount.

Hole said to end at 213 ft.

DRILL HOLE K2

0-100 ft. quartz diorite, weakly chloritized with good chrysocolla, minor malachite and some quartz.

100 to 248 ft. quartz diorite, chloritized, becoming less chloritized. Some biotite is preserved. Minor quartz veins. Magnetite gone to limonite. Chrysocolla or malachite in small amount.

148 ft. locally native copper disseminated.

156-240 ft. weak chloritization becoming stronger. Little or no mineralization. Quartz veins few amount with a little malachite.

At 170 ft. quartz veins. Box 10 is missing.

At 243 ft. approximately, rock similar to the above unmineralized. Some pink felspar chloritization. Chloritization becoming stronger with kaolinization and probably faulting, little or no mineralization.

248 ft. to 300 ft. porphyry altered as previous and cut by quartz veins,

At 252 ft. bornite trace. Very poor mineralization in this section altogether.

At 285 ft. bornite trace.

At 282 ft. alteration increases kaolinization, chloritization, sericitization.

300 ft. very poor recovery trace of chalcopyrite in quartz.

300 ft. approximately hole ends.

HOLE K3.

Casing 0-38 ft.

38 ft. to 341 ft. quartz diorite. Malachite and rust.

At 97 to 150 ft. malachite abundant. This may be chrysocolla.

At 135 to 150 ft. fault, mud.

At 150 to 268 ft. malachite or chrysocolla.

At 247 ft. native copper, local.

At 275 ft. to 306 ft. native copper subordinate.

At 321 ft. to 327 ft. native copper filling minute fissures and in the dark minerals.

At 317 ft. trace chalcopyrite, trace malachite, cuprite.

205 ft. to 338 ft. calcacite sooty on pyrite in fissure at 305 ft.

At 327 ft. to 341 ft. quartz and calcite veins. Native copper subordinate.

341 ft. to 425 ft. Bethlehem quartz diorite, chlorite and epidote alteration moderate. Native copper present.

At 388 ft. native copper within chloritic alteration.

At about 400 ft. native copper becoming less.

425 ft. to 427 ft. porphyry. Poor recovery at contact.

427 ft. to 529 ft. Bethlehem quartz diorite as previous. Mineralization as previous.

At 451 ft. native copper subordinate becoming trace.

At 470 ft. no further native copper.

At 519 ft. chloritic alteration increasing.

At 529 ft. hole ends.

HOLE K4.

95 ft. starting to core to 155 ft. grey porphyritic basalt, massive polyvesicular slaggy appearance.

At 120-121 ft. volcanic breccia followed by slaggy and massive lava.

At 149 ft. volcanic breccia.

155 ft. or thereabouts to 212 ft. to gritty sediment.

212 ft. to 330 ft. quartz diorite with weak chlorite alteration.

At approximately 280 ft. weak chloritic alteration.

At approximately 280 ft. weak chloritic alteration increases to strong. Quartz veins. Sulfide moderate. Poor recovery, particularly at 283 ft. to 322 ft.

At 322 ft. pyrite chalcopyrite.

330 ft. to 495 ft. porphyry,much faulting, some mineralization.

At 385 ft. pyrite chalcopyrite subordinate. 412 ft. chalcopyrite trace. Pyrite moderate.

At 457 ft. weak epidote alteration chalcopyrite trace or subordinate, pyrite strong.

At 475 ft. pyrite subordinate.

495 ft. to 548 ft. quartz diorite.

496 ft. weak chlorite alteration becomes stronger. Chalcopyrite subordinate to trace. Pyrite moderate.

548 ft. to 556 ft. porphyry for 3 feet then quartz diorite continues. Hole ends at 556 ft.

DRILL HOLE K5.

Casing to 30 ft.

30 ft. to 92 ft. porphyry. Epidote moderate. Chlorite alteration. Pyrite strong. Chalcopyrite moderate.

At 31 ft. pyrite chalcopyrite trace or nil.

106-134 ft. chloritic alteration becomes strong. Faults.

92 to 470 ft. quartz diorite altered with much pink felspar. Moderate native copper. Trace chalcopyrite, pyrite. Native copper ends at 94 ft.

At 122 ft. chalcopyrite moderate, pyrite. Occasional quartz ends with pyrite.

At 170 ft. the strong alteration decreases.

At 177 ft. strong chalcopyrite with pyrite.

At 181 ft. alteration decreases, chalcopyrite moderate pyrite. Trace of native copper.

At 255 ft. moderate pyrite with moderate chalcopyrite.

At 260 ft. faults. Malachite.

At 287 ft, alteration decreases to weak chloritization.

At 312 ft. chalcopyrite moderate pyrite.

At 380 ft. weak chloritization, trace of native copper.

At 387 ft. chloritization increases.

370-402 ft. fault. with quartz, few fractures.

At 403 ft.strong alteration decreases.

At 408 ft. alteration decreases stillfurther. Mineralization weak.

At 470 ft. hole ends.

DRILL HOLE K6.

Casing to 76 ft.

76 ft. to 92 ft. sedimentary brecchia mainly of volcanic sandy layers.

92 ft. to 140 ft. sand and silt with occasional coarse layers.

127 ft. to 136 ft. quartz diorite boulder.

135 ft. shaley layer.

138 ft. carbonaceous interbedded with grit.

140-156 ft. porphyry jointed and filled with shaley grit to 154 ft. Pyrite disseminated in porphyry.

156 ft. to 497 ft. quartz diorite weakly chloritized. Chalcopyrite trace, native copper trace molybdenite present(?)

308 ft. to 316 ft. faults.

At 346 ft. moderate to strong alteration. Pyrite trace,chalcopyrite moderate.

380 ft. alteration strong becoming weaker. Moderate pyrite. Trace chalcopyrite.

400-416 ft. epidote present. Pyrite trace.

At 420 ft. epidote present quartz diorite is magnetic. Little or no mineral.

440 ft. chloritic alteration strong faulting.

At 492 ft. trace chalcopyrite present.

Hole ends at 497 ft.

HOLE K7.

Casing to 40 ft.

40 ft. to 95 ft. approximately, basalt and sediments. Mostly sediments. Porphyry fragments occur.

At 160 ft. quartz diorite chloritic alteration. Native copper occurs subordinately to 163 ft.

At 165 ft. sand, probably fault.

At 166 ft. no mineralization.

At 177 ft. oxidized pyrite probable.

179 ft. to 270 ft. much sand and faults. Rusty weathered quartz diorite with kaolinite. Poor recovery.

Hole ends at 380 ft. in rusty and weathered, weakly chloritized quartz diorite. No mineral observed.

HOLE K8.

0-230 ft. quartz diorite with chloritic alteration.

Rusty to 150 ft. Little or no mineral, trace of malachite.

At 120 to 127 ft. faults.

At 210 ft. pyrite moderate in seams.

From 230 ft. quartz diorite identified as Bethlehem quartz diorite. White, partly bleached, with pyrite moderate to subodrinate, chalcopyrite trace.

No core present after about 240 ft.

Hole is said to end at 346 ft.

HOLE K9.

Casing to 23 ft. approximately.

27 to 107 ft. or earlier white quartz porphyry, pyrite moderate, disseminated. Epidote occurs in the rock.

107 ft. to 126 ft. quartz diorite,chloritic alteration weak. Typical Guichon quartz diorite, trace chalcopyrite, trace native copper.

At 117 ft. weak chloritic alteration increases.

126 ft, to 188 ft. Bethlehem quartz diorite or,more probably, porphyry.

At 128 ft.pyrite subordinate amounts, chalcopyrite trace or none.

At 170 ft. chalcopyrite trace.

Hole ends at 188 ft.

DRILL HOLE K10.

0-25 overburden.

60 ft. to 250 ft. Guichon quartz diorite, weathered appearance to 60 ft. Chlorite and weak chlorite alteration. No mineralization. Occasional rust.

At 117 ft. malachite weak,local.

158 ft. to 230 ft. sheared, rusty, weathered. Malachite subordinate.

At 230 to 250 ft. rusty partings.

Hole ends at 250 ft.

DRILL HOLE K11.

0-25 ft. overburden.

25 ft. to 65 ft. Guichon quartz diorite with chlorite, moderate epidote. Pyrite moderate. Chalcopyrite trace.

65 ft. to 214 ft. porphyry, white, two generation hornblende, epidote grey-white colour, good quartzite, low content of matrix cut by quartz veinlets. Pyrite present.

At 135 ft. chlorinite veins.

At 180 ft. pyrite trace. Chalcopyrite present locally.

At 192 ft. to 200 ft. chilling of the porphyry becomes evident.

At 200 ft. minor fault.

214 ft. to 284 ft. Guichon quartz diorite cut by quartz and epidote veinlets. Chloritic alteration. Fresh biotite present in places. Chalcopyrite trace.

At 230 ft. chloritic alteration pyrite trace, chalcopyrite, trace molybdenite.

284 to 305 ft. porphyry fine grained, chilled.

305 ft. to 347 ft. Guichon quartz diorite weakly to moderately chloritized, shearing 314 ft., little or no mineral.

Hole ends at 347 ft.

HOLE K12.

Casing to 10 ft.

10 ft. to 71 ft. clay fragments. Some quartz diorite fragments.

At 118 ft. weak chloritic alteration. Malachite subordinate to 159 ft.

Between 133 ft. and 157 ft. locally malachite is strong. This may be chrysocolla. Malachite continues subordinate possibly to 191 ft.

71 ft. to 146 ft. quartz diorite, weathered and chloritic alteration weak.

146 ft. to 162 ft. porphyry, chloritic alteration weak to moderate.

162 ft. to 349 ft. faults and quartz diorite.

At 258 ft. rusty appearance ends. Malachite subordinate. Chalcopyrite trace. Some of core upset and unable to log.

At 270 ft. alteration locally increasing. Some faults. Pyrite is partly oxidized occurs in seams, also malachite, pyrite subordinate. Epidote moderate in rock. Malachite ends at 300ft. Rustiness continues to 330 ft.

From 240 ft. onward some sections of quartz diorite are silicified?

Hole ends at 349 ft.

HOLE K13.

Casing to 75 ft.

75 ft. to 319 ft. quartz diorite, weathered, chloritic.

At 212 ft. no core. Change to EX size.

219 ft. chloritic. Pyrite, molybdenite subordinate(?). Sulfide occurs on seams.

At 193 ft. no core. Probably a fault.

At 248 ft. alteration increasing to strong. Partly sericite. Pyrite.

319 to 321 ft. porphyry strongly altered pyrite.

At 321 ft. onward, quartz diorite.

Hole ends at 367 ft.

HOLE K14.

Casing 34 ft.

34 to 37 ft. probably porphyry. Chalcopyrite moderate, pyrite.

37 ft. to 209 ft. porphyry altered with pyrite, chalcopyrite moderate.

At 66 ft. alteration becoming locally increased. Chalcopyrite, subordinate pyrite, trace molybdenite, At 101 ft. fault.

Very moderate recovery in this section. Porphyry is minutely fractured with chlorite quartz and chalcopyrite on fractures.

At 118 ft. probably porphyry but altered. Some add mixed sericite in the chloritic alteration.

209 ft. to 300 ft. quartz diorite altered to strongly altered. Chalcopyrite stringers cutting quartz veinlets. Quartz veinlets with between 244 ft. and 273 ft. Much of core is missing.

300 ft. to 314 ft. porphyry altered with chalcopyrite molybdenite moderate.

314 ft. to 348 ft. Guichon quartz diorite. Altered and strongly altered. Chalcopyrite.

Hole ends at 348 ft. Much of core is missing between 335 ft. and 348 ft.

DRILL HOLE K15.

0-13 ft. porphyry.

13-14 ft.basalt.

14-153 ft.? porphyry.

At 65 ft. fault weathered chlorite and limonite. Weak malachite. Pyrite seams are oxidized.

At 117 ft. dark porphyry with half centimetre hornblendes. Malachite weak. Trace pyrite, limonite. Last core between 125 ft. and 134 ft.

153-269 ft. chilled porphyry cut by aplite veins and chlorite veinlets. Pyrite moderate.

At 269 ft. sheared contact with quartz diorite. Pyrite on chlorite seams.

313-347 ft. porphyry with pyrite moderate chalcopyrite.

Hole ends at 347 ft.

DRILL HOLE K16.

Casing to 40 ft.

40-57 ft. quartz diorite with chlorite. Pyrite disseminated and in stringers. Moderate chalcopyrite.

57 ft. to 78 ft. porphyry with strong pyrite and moderate chalcopyrite.

78 ft. to 180 ft. approximately quartz diorite, rusty, moderate to strong alteration including sericitization. Pyrite, chalcopyrite, trace malachite.

128 ft. alteration decreases. Pyrite moderate. Little or no chalcopyrite. Native copper at 130 ft. in small amount.

130 ft. epidote present.

162 ft. chloritic alteration increases, no malachite or limonite seen below this point.

At 171 ft. moderate chalcopyrite and moderate pyrite.

180 ft. approximately to 190 ft. porphyry.

190 ft. approximately to 200 ft. Guichon quartz diorite sheared contact. Poor recovery. Moderate chalcopyrite with pyrite.

223 ft. to 227 ft. porphyry.

227 ft. to 259 ft. mostly quartz diorite, altered, epidote disseminated, pyrite moderate. Chalcopyrite trace, pyrite is partly crystalline on seams up to 4 millimetres thick. Seams are in several directions.

Hole ends at 260 ft.

HOLE K18.

Casing to 6 ft.

6 to 7 ft. quartz diorite.

7 to 9 ft. basalt dyke.

9 ft. to 190 ft. quartz diorite with minor chloritization.

At 61 ft. to 81 ft. strong malachite or chrysocolla.

At 94 to 104 ft. rusty quartz and brecciation.

At 104 ft. strong chloritization.

At 115 ft. small amounts of malachite.

At 117 to 155 ft. quartz and biotite crystallization.

Magnatite gone to hematite. chalcopyrite disseminated and in seams.

At 159 ft. strong alteration becoming extremely strong soft green chloritic with calcite streaks. Slender quartz veins.

At 155 ft. major chalcopyrite. Trace of pyrite.

190 ft. to 269 ft. porphyry intensely altered as above.

At 190 ft.extreme alteration decreases with only occasional ex treme alteration. Chalcopyrite strong where alteration is strong. Elsewhere chalcopyrite moderate.

At 204 to 245 ft. extreme alteration with chalcopyrite.

245 ft. to 269 ft. strong alteration becomes moderate alteration. Chalcopyrite partly on crystallline quartz in small amount. Molybdenite present.

End hole at 269 ft.

DRILL HOLE K19.

Casing to 54 ft.

54 ft. mud fault.

54 ft. to 78 ft. quartz diorite rusty. Poor recovery.

78 ft. to 83 ft. mud and sand.

83 ft. to 84.5 ft. basalt agglomerate with flow structure and inclusions of quartz diorite.

84.5 ft. to 254 ft. quartz diorite sharp contact with weathered quartz diorite. Minor epidote chloritic alteration.

107 ft. faulting.

107-111 ft. malachite or chrysocolla trace of azurite with quartz.

111 ft. to 208 ft. strong alteration pyrite, chalcopyrite moderate.

111 ft. to 127 ft. trace of malachite or chrysocolla. Faults occur at 186 ft., 190 ft., 194 ft.

At 200 ft. pyrite and chalcopyrite.

208 ft. onward alteration becomes less strong and then strong again. Strong faulting and brecciation.

254 ft. to 500 ft. porphyry with alteration. Strong pyrite chalcopyrite.

At 285 ft. fault.

At 313 ft. extreme alteration decreases.

At 337 ft. fault.

342 ft. alteration increases. Chalcopyrite and pyrite partly in quartz seams.

359 ft. fault.

375 ft. Guichon quartz diorite.

377 ft. extreme alteration decreases to strong alteration. Pink calcite occurs with pink felspar. Recovery poor.

DRILL HOLE K19. (cont.)

441 ft. chalcopyrite and pyrite observed.

At 472 feet fault.

Hole ends at 500.8 ft.

DRILL HOLE K20.

Casing to 42 ft. Bedrock may not occur until 50 ft.

About 50 ft. occasional quartz diorite, apparent faults if bedrock is present.

50 ft. to 221 ft. quartz diorite strongly chloritic with kaolin, pink calcite and pink felspar. Moderate bornite, small amounts of native copper.

At 60 ft. trace of chalcopyrite.

At 84 ft. chloritization decreases.

88 ft. to 113 ft. rusty rock, some shearing.

189 ft. minor malachite.

189 ft.to 202 ft. basalt, probably dyke, with other small stringers of same rock nearby.

At 221 ft. hole ends.

DRILL HOLE K21.

o ft. to 55 ft. various rock types including basalt, porphyry, andesite, quartz diorite, vesicular andesite.

55 ft. probably bedrock.

55 ft. to 235 ft. quartz diorite minor chloritization. Weak pyritization.

80-88 ft. trace of malachite seen.

At 70 ft. chlorite increasing.

At 110 ft. rusty, shearing.

At 117 ft. chlorite alteration decreasing. Little or no mineralization.

At 109 ft. pyrite.

At 126 ft. trace chalcopyrite.

At 133 ft. chlorite alteration increasing. Native copper trace at 148 ft.

At 133 ft. onwards chalcopyrite trace appears with native copper replacing the dark minerals of the rock. No cuprite seen. Native copper trace to 186 ft.

196 ft. rusty fault. Core is mostly unsplit.

200-212 ft. trace of native copper.

212 ft. chlorite alteration increasing, frequent shearing, 50° dip. Pyrite strong in seams and disseminated. Chalcopyrite minus. No native copper.

225 ft. moderate pyrite.

235 to 273 ft. porphyry chloritic. Pyrite chalcopyrite moderate or trace.

DRILL HOLE K21 (cont.)

273-350 ft. quartz diorite altered;pyrite chalcopyrite trace.

301 ft. alteration increases, calcite and quartz

some buff alteration some green alteration.

At 280 ft. rusty appearance ends.

At 350 ft. hole ends.

DRILL HOLE K22.

Casing 0-55 ft.

55 ft. to 155 ft. quartz diorite with some alteration and shearing, epidote disseminated, pyrite strong,disseminated and in fractures. Chalcopyrite trace disseminated.

Hole ends at 155 ft.

DRILL HOLE K23.

Casing to 40 ft.

40-119 ft. quartz diorite chloritized, rusty fractures, chlorite seams. Pyrite moderate, disseminated. Core is unsplit to 61 ft.

At 61 ft. pink felspar in quartz diorite. Minor chlorite. Pyrite, trace chalcopyrite.

82-109 ft. is unsplit.

82 ft. alteration weak becomes strong alteration.

119-208 ft. porphyry with epidote disseminated. Chilled contact, unaltered rock, weak alteration, sheared in places. Quartz seams with pyrite little or no chalcopyrite.

202-206 ft. faults, alteration increases, pyrite and moderate chalcopyrite occur.

208 ft. to 498 ft. quartz diorite similar alteration and mineralization.

250 ft. to 308 ft. alteration strong becoming stronger. Very poor recovery, strong shearing, strong pyrites with chalcopyrite.

At 308 ft. strong shearing. Pyrite and chalcopyrite on seams and disseminated.

At 378 ft. biotite occurs fresh in altered rock.

At 419 ft. chalcopyrite moderate, bornite moderate.

At 440 ft. strong alteration decreases.

At 480 ft. rock is only slightly magnetic.

At 487 ft. aplite veins occur in Guichon quartz diorite.

Hole ends at 498 ft.

DRILL HOLE K24.

Casing to 5 ft.

5 ft. to 104 ft. quartz diorite partly long hornblende fine medium, contact type.

From 26 ft. Guichon quartz diorite. Quartz diorites are partly altered. Pyrite present. Occasional red hematite, chalcopyrite trace to nil. Epidote disseminated.

104 ft. to 121 ft. pink porphyry, no quartzite, chloritic alteration. Pyrite moderate. Chalcopyrite trace.

121 ft. to 145 ft. quartz diorite partly strongly altered. Probably Guichon.

145 ft. to 337 ft. quartz monzonite. Probably Bethlehem quartz diorite. Pyrite moderate. Chalcopyrite close. Epidote chlorite present. Rock is cut by aplite veins locally.

At 191 ft.quartz diorite is cut by narrow basalt vein. Faults occur at 303 ft.

323 ft. chalcopyrite increases locally.

327 ft. to 460 ft. porphyry pink, chloritic, fine grained with quartzes - i.e. quartz porphyry. Epidote present.

At 358 ft. chloritic alteration becomes stronger. Quartz veins occur.

376 ft. fault.

At 378 ft. to 382 ft. chalcopyrite and pyrite moderate.

392 ft. fault.

At 415 ft. molybdenite trace. Pyrite or pyrrhotite present locally on quartz with chlorite. The porphyry contains sieve hornblende crystals.

DRILL HOLE K24 (cont.)

At 440 ft to 446 ft. strong fault.

At 447 ft. onward the core is not available.

Porphyry is the only rock present in what remains.

Hole ends at 460 ft.

HOLE K25

Casing to 13 ft.

14 ft. to 77 ft. quartz diorite with much pink felspar. Granophyric texture.

At 30 ft. recovery becomes poor. Faults and shearing occur.

All this may be an overburden. Bedrock taken to be from 77 ft. possibly.

77 ft. to 82.6 ft. very poor recovery.

82.6 ft. to 154 ft. quartz diorite pink with strong chloritization, occasional. Very poor recovery.

At 116 ft. sericitious alteration with pyrite.

At 120-144 ft. strong faulting and alteration, pyrite only seen.

At 151 ft. pyrite, chalcopyrite.

154 ft. to 377 ft. prophyry with a sheared contact. Mineralization as previous.

174 ft. to 225 ft. strong faulting with lost core in places.

351 ft. fault. Possibly this rock is quartz diorite or porphyritic quartz diorite. Possibly it is a porphyry.

377 ft. to 400 ft. basalt dyke with vesicles. No mineralization.

At 400 ft. hole ends.

HOLE K26.

Casing 0-25 ft.

25 ft. to 431 ft. quartz diorite strong alteration including chlorite and calcite. Pyrite strong, chalcopyrite moderate. At 45 ft. weak chalcopyrite becomes strong, strong pyrite becomes moderate pyrite. In other words, inverse proportion chalcopyrite to pyrite.

49 ft. alteration, some pink felspar in rock. Pyrite strong, chalcopyrite moderate. At 95 ft. epidote present. Chloritic fracturing frequent, usually steep with introduction of sulfites.

162 ft. to 182 ft. abundant shearing.

At 180 ft. faulting with alteration and extreme alteration.

226 ft. to 249 ft. faulting.

At 260 ft. strong alteration becomes extreme with chalcopyrite trace, pyrite abundant.

At 280 ft. fresh poikilitic biotite occurs in strongly altered rock. At 302 ft. start of good mineralization with chalcopyrite and pyrite, also molybdenite on quartz.

At 307 ft. fault.

At 329 ft. extreme alteration decreases, occasional chalcopyrite seams and sparse dissemination of chalcopyrite and pyrite.

At 370 ft. most rock is altered. Chalcopyrite strong, pyrite moderate to weak. Occasional molybdenite on quartz with chalcopyrite.

391 ft. to 403 ft. fault.

At 405 ft. moderate alteration becomes weaker. Pink felspar is conspicuous. Chlorite.

At 431 ft. the hole ends.

DRILL HOLE K27.

Casing to 22 ft.

22 ft. to 220 ft. quartz diorite alteration weak porphyritic pink felspar, pyrite occurs on seams.

At 52 ft.alteration becomes weak alteration with weak pyrite.

At 82? ft. weak alteration increases, pyrite trace amounts, chalcopyrite trace.

At 99 ft.native copper in trace amount.

At 124 ft. rock becomes fresh, little or no chalcopyrite. Pyrite occurs.

At 148 ft. rock becomes slightly altered. Chalcopyrite moderate with pyrite.

172-175 ft. fault.

220 ft. to 331 ft. porphyry altered, strong pyrite, moderate chalcopyrite.

247 ft. alteration decreases.

266 ft. fault and mineralization as previous. Possibly only trace of chalcopyrite.

At 263 ft. alteration increases.

At 271 ft. chalcopyrite and pyrite present.

331-386 ft. quartz diorite in contact with chilled porphyry above. Weak alteration quartz diorite chloritic. Chalcopyrite moderate, pyrite moderate.

At 337 ft. fault.

At 372 ft. drusy quartz in seams with epidote. Rusty limonite in nearby rock. Pyrite and chalcopyrite specular hematite all present.

At 375 ft. alteration increases.

Hole ends at 386 ft.

HOLE K28.

Drilled by Kennecott in 1958.

0-47 ft. overburden.

47 ft. onward fresh Guichon quartz diorite only locally altered. Pyrite trace on joints to about 100 ft. In fact, pyrite throughout this hole.

From 100 ft. onward, chalcopyrite trace observed.

At 160 ft. pyrite and chalcopyrite disseminated, weak chloritic alteration of biotite. Felspars fresh pink orthoclase. Epidote chlorite veinlets with sulfides fairly plentiful.

At 180 ft. to 190 ft. somewhat argillized, chloritized. Chalcopyrite pyrite fractures sparse.

At 200 ft. occasional quartz vein.

At 205 ft. weak chloritization of the dark minerals. Whole rock becomes dark because of darkening of felspars which remain hard.

215 ft. on, intense chloritization with local earlier calcitic alteration. Sulfides occur.

At 320 ft. felspars argillized, chloritized. Quartz diorite texture remains. Chlorite seams contain sulfides.

At 370 ft. intensely chloritized rock.

At 455 ft. similar rock alteration as seen at 205 ft.

475 ft. change to Bethlehem quartz diorite below a fault.

At 603 ft. or previous, Guichon quartz diorite, weak chloritization. Hornblendes remain fresh. Very little mineral.

627 ft. to 633 ft. porphyry dark grey aphanitic. Quartz eyes small. Hornblendes well shaped. Pyrite on joints and seams. Chlorite sericite alteration.

Hole ends at 633 ft.

KRAIN HOLE NO.3-65

Casing to 45 ft.

45 ft. to 376 ft. granophyric quartz porphyry local, alteration weak. Shearing. Quartz veinlets. Pyrite strong, chalcopyrite subordinate. Malachite present.

At 376 ft. onward Guichon quartz diorite partly sheared, altered.

At 447 ft. shearing. Quartz diorite mineralized with chalcopyrite.

At 495 ft. red K felspar veins cut by quartz veinlets.

At 500 ft. strong alteration, local. Chalcopyrite and bornite present. Molybdenite subordinate to trace in quartz veinlets.

At 750 Guichon quartz diorite.

At 795 ft. Bethlehem quartz diorite.

975 ft. to 1000 ft. faults with slickensides chlorite sericite alteration. The previous section mineralized weakly to moderate. Chalcopyrite,bornite in quartz veinlets.

1000 ft. to 1113 ft. quartz diorite, probably Bethlehem quartz diorite.

Faults at 1025 ft. and 1093 ft.

Hole ends at 1113 ft.

DRILL HOLE NO.4-65

Casing to 23 ft.

23 ft. onward Guichon quartz diorite, weakly altered, somewhat weathered, with quartz veinlets. Malachite, limonite.

At 215 ft. onward, more strongly altered. Kaolin chlorite.

At 232 ft. quartz porphyry locally with Guichon quartz diorite at 249 ft. Chalcopyrite moderate, bornite moderate. Poor core recovery from 270 ft. to 439 ft.

505 ft. fault. Bornite, chalcopyrite seen at 420 ft. to 505 ft.

At 520 ft. chalcopyrite seen in subordinate amount.

Hole ends at 605 ft.

DRILL HOLE NO.5-65

Casing to 75 ft.

At 75 ft. dark coloured volcanics to 80 ft.

At 80 ft. quartz porphyry,granophyric texture, sheared, altered, pyrite strong on fractures.

At 180 ft. onward quartz diorite, probably Guichon quartz diorite, altered. Pyrite, chalcopyrite. Core missing from 360 ft. to 460 ft. Unable to log this section.

At 460 ft. chalcopyrite subordinate increasing.

At 529 ft. to 538 ft. approximately, quartz porphyry granophyric texture.

At 538 ft. onward Guichon quartz diorite.

At 580 ft. quartz diorite is veined by quartz veins containing chalcopyrite.

At 590 ft. approximately, quartz diorite, possibly Bethlehem quartz diorite altered quartz veined. Chalcopyrite, pyrite subordinate. Molybdenite subordinate to trace.

At 777 ft. approximately, fault and strong alteration. Chalcopyrite subordinate. This goes on to 805 ft.

At 805 ft. quartz diorite, probably Bethlehem quartz diorite. Pyrite strong.

At 830 ft. fault. Alteration strong in cavernous quartz diorite. Pyrite quartz veins plentiful.

At 887 ft. quartz pyrite? strong. Chalcopyrite trace only present on slips.

Hole ends at 938 ft. in faulted ground. Pyrite present.

HOLE NO.6-65

Casing to 14 ft.

14 ft. onward Guichon quartz diorite, quartz veins, malachite, limonite, chalcopyrite, bornite subordinate locally at 134 and elsewhere.

At 150 ft. on, quartz porphyry, grey coloured. Pyrite, chalcopyrite both subordinate. Shearing with sericite alteration occurs at 231 ft., 243 ft., 302 ft., etc. Mineralization includes chalcopyrite, molybdenite disseminations. Bornite is present in trace amounts.

At 431 ft. approximately shearing, pink calcite present as alteration. Same mineralization as previous.

At 485 ft. onward Bethlehem quartz diorite altered/1 m/m. Molybdenite blebs associated with chalcopyrite occur in quartz veins. Some quartz veins may have chalcopyrite and bornite in elongate blebs to 1 m/m.

At 575 ft. shearing and alteration.

Fault at 595 ft.

Core missing between 598 ft. to 703 ft. probably due to pack rats.

703 ft. on, Bethlehem quartz diorite as previous, but sheared. Pyrite strong. Chalcopyrite subordinate to moderate.

780 ft. alteration decreases. Pyrite strong.

At 845 ft. shearing.

At 890 ft. approximately, fault. Pyrite strong. Little or no chalcopyrite present.

Hole ends probably at 915 ft.

HOLE NO.7-65

Casing to 50 ft.

59 ft. onward, quartz porphyry, granophyric texture. Grey colour shearing. Very little core preserved. Pyrite moderate. Chalcopyrite subordinate to trace.

At 214 ft. altered Bethlehem quartz diorite.

224 ft. to 247 ft. possibly Guichon quartz diorite. This may not be correct.

250 ft. onward, quartz porphyry, granophyric texture. Pyrite, chalcopyrite.

At 286 ft. onward, Guichon quartz diorite altered with pyrite, chalcopyrite.

At 339 ft. shearing,decrease in alteration,decrease in mineralization.

563 ft. shearing.

600 ft. approximately, mineralization consists of pyrite, subordinate chalcopyrite.

659 ft. to 790 ft. Bethlehem quartz diorite, partly strongly altered.

Hole ends at 790 ft. with mineralization of pyrite. Chalcopyrite subordinate or trace.

HOLE NO.8-65

4 ft. onward, Guichon quartz diorite. Little or no malachite. Chrysocolla. Rusty fractures and veinlets, probably ex pyrite (after pyrite). Little or no chalcopyrite present. Sericite, Clarinite, chlorite alteration with quartz veinlets in rock.

At 165 ft. fault. Epidote pyrite present. Little or no chalcopyrite.

168 ft. to 173 ft. approximately, quartz porphyry, granophyric. Pyrite present.

At 173 ft. onward, Guichon quartz diorite altered.

309 ft. minus shearing.

351 ft. onward, quartz veins prominent.

439 ft. strong alteration accompanied by shearing. Bornite locally present together with chalcopyrite and pyrite.

509 ft. to 526? ft. fault.

515 ft. onward, quartz porphyry, granophyric, strongly altered, including chloritic with quartz veins. Chalcopyrite subordinate.

At 623 ft. the rock has pink aplite veins which are steep. Chalcopyrite subordinate, pyrite subordinate. Limonite present.

678 ft. shear.

723 ft. shear.

812 ft. onward, quartz diorite, probably Guichon quartz diorite, Chalcopyrite subordinate, bornite trace.

830 ft. quartz diorite - Bethlehem quartz diorite possible. Rock contains biotite books. Chalcopyrite subordinate.

850 ft. quartz diorite, possibly Guichon quartz diorite.

HOLE NO.8-65 (cont.)

860 ft. thick red aplite.

865 ft. onward, Bethlehem quartz diorite, weakly altered in part. Chalcopyrite subordinate. Moderate subordinate to trace. Locally strong. Aplite present locally. Locally cut pyrite strong.

End hole at 1211 ft. Mineralization generally poor at end.

HOLE NO.9-65

27 ft. to 500 ft. End hole at 500 ft. All hole is Guichon quartz diorite. Mineralization pyrite, subordinate to trace. Chalcopyrite subordinate to trace. Epidote alteration in places.

HOLE NO.10-65

Casing to 56 ft.

56 ft. onward, Guichon quartz diorite, weakly altered, locally strongly altered. Pyrite moderate to subordinate. Chalcopyrite trace to locally strong.

At 142 ft. alteration increases.

Fault at 175 ft. to 206 ft.

Fault at 295 ft. to 312 ft. Pyrite present.

_____ faults. 490 ft. to end hole at 502 ft. quartz porphyry, granophyric texture altered. Pyrite moderate. Chalcopyrite moderate.

HOLE NO.11-65

Casing to 56 ft.

56 ft. onward, Guichon quartz diorite, weakly altered, some quartz veins. Malachite trace. Limonite.

At 130 ft. shear _____.

237 ft. to 270 ft. shearing. Malachite present, decreasing at 285 ft.

313 ft. to 318 ft. fault.

At 323 ft. and elsewhere hematite strong on joints. Strong specular hematite.

366 ft. native copper present, possibly with cuprite. Malachite subordinate.

388 ft. minor shear.

414 ft. onward, quartz porphyry, granophyric type.

Shear at 473 ft.

485 ft. fault of sericite gouge clay. Chalcopyrite blebs occur in the fault gouge.

Hole ends at 511 ft. in sheared chloritic altered porphyry with little or no mineral.

HOLE NO.12-65

Casing to 16 ft.

16 ft. to 42 ft. Guichon quartz diorite, weakly chloritized to moderately chloritized, sheared mildly, pyrite subordinate.

42 ft. to 113 ft. quartz porphyry. Frequent pyrite trace. Minor fault at 65 ft.

94 ft. onward, rock is fresher, pyrite occurs subordinate on fractures.

113 ft. to 131 ft. Guichon quartz diorite,weakly altered. Little or no mineral.

131 ft. to 136 ft. quartz porphyry.

136 ft. to 226 ft. Guichon quartz diorite, weakly altered. Alteration increasing. Pyrite in veins 1/10 inch wide with quartz.

226 ft. to 256 ft.? quartz porphyry altered by chlorite. Pyrite subordinate.

256 ft. to the end of the hole at 342 ft. Guichon quartz diorite, weakly to moderately chloritized, sheared at 300 ft and 325 ft. Pyrite subordinate. Chalcopyrite trace.

HOLE NO.13-65

Casing to 74 ft.

74 ft. on, quartz porphyry. Malachite subordinate.

Limonite subordinate.

88 ft. fault. Sericitic, strong alteration in quartz porphyry.

Malachite trace.

At 129 ft. fault minor.

155 ft.? to 172 ft. sheared quartz porphyry, rusty. Little or no mineral. Malachite trace.

At 214 ft. minor fault. Shearing continues.

From 335 ft.? onward, rock becomes fresh.

415 ft. minor shearing.

421 ft.? to 465 ft. shears, quartz veins at 1/2" wide. Little or no mineral.

Hole ends in quartz porphyry at 500ft.

JANUARY 14, 1971

NOTE: (?) - as dictated

? - questioned by typist

- blank spaces, i.e. words missing

Krain DD logs — corrections & additions to typed record by J McCANN

K-25	351'	a ? porphyry
K-21	301'	calcite & quartz ?
K-5	370-402'	fault infill quartz (fract?) fractures
K-15	14-153'	? porphyry
K-13	219'	Sulphides
K-4	95'	[illegible]
5-65	887'	quartz pyrite ? strong
6-65	485'	altered. 1mm. moly blebs
10-65	?	faults. 490' to end
11-65	130'	shear — ?
12-65	to 256'	? quartz porphyry
13-65	155' ? to 172'	altered quartz porphyry
	From 355' ?	altered, rock becomes fresh
	421 ft ? to 465'	shears