

Summary report - YMIP Grant # 03-03~~5~~2

Focus regional - prospecting of unnamed Mtn.-stock confined by Old Cabin Creek to the S, Rogue River to the N, E, and W and Arrowhead Pass to the SE, map sheet 105 O/11 and 105 O/12

coordinates: 131*30' w.L., 63*45' n.L.

Mayo Mining District

Dates of program: August 9th - September 6th 2003

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Dec.8th 2003

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Summary

Location and Access:

Mtn.-Range W of Arrowhead Lake, floor of valley, foot hills and alpine terrains. Access by helicopter or float plane from Arrowhead Lake.

Previous Work:

Some grassroots exploration were done by horse back in early 60's. Aeromagnetic survey was contacted by Kimross in W part of prospected region in 1997. Claims were never tagged and lapsed in 1999. No information available at Minfile.

Details of evaluation:

Work consisted of stream sediment sampling and of conventional prospecting of breaking and collecting rocks. The extent of granitic intrusions was mapped and the occurrence of altered and mineralized zones were plotted. Initial work was focused on granitic and volcanic intrusions. Two targets were identified and more closely examined: granite stock at the E of region at Lake A and volcanic rock occurrence in contact with chert at W-fringe of prospected region

Methods:

The prospecting focus encompasses an area of approximately 30km x 15km and was prospected by foot for 3 weeks. The routing was mainly dictated by topography and the previously deposited food caches. Two food caches were placed by helicopter in areas of high mineral potential. These areas and areas identified on the ground warranting further investigation because of more complex geology or mineralization were closer examined by staying longer in those locations and spending additional time for prospecting and general mapping.

The main key for the identification of mineral occurrences was assigned to the conduct of stream sediment sampling.

Traditional prospecting (breaking rocks) was used to evaluate the immediate proximity, while general geological mapping was used to outline mineralized zones and stratigraphical contacts in the extended vicinity.

All topographical terrains encountered were covered by prospecting.

Rock samples and stream sediment samples were taken frequently along the prospecting traverse.

Rock samples were obtained as grab samples of outcrop or float, placed in plastic bags and labeled for chemical analysis.

Stream sediment samples were collected from creeks and springs by digging holes in stream bed and running material thru 40 mesh sieves. Material was frequently watered to avoid losing fine material clinging to pebbles and gravel. The sediment residues were placed in plastic bags and labeled.

Analytical Methods:

All samples collected were analyzed in one batch by ACME Analytical Laboratories Ltd. in Vancouver.

All shipped samples were analyzed by the Group 4B and Group 1DX. The procedure was as follows: 4B: analyzed for REE by LiB02 Fusion and ICP/MS.

1DX: 0.5 g sample leached with 3ml 2-2-2 HCL-HN03-H2O at 95°C for one hour, diluted to 10ml and analyzed by ICP-MS.

Rock samples were crushed, split and pulverized to 250g of mesh -150 particle size.

Analytical results:

REE values obtained from collected stream sediment samples correspond to values reported for stream sediment samples by the GSC for the region. The GSC reports a higher value for light and heavy REE (Rare Earth Elements) in the W part of the region, what is strongly supported by assayed stream sediments. In matter of the fact collected stream sediment carried on average a higher value of REE for a specific sample site compared to the GSC report.

In total 37 samples were assayed comprised of 3 soil-, 18 stream sediment- and 16 rock samples.

The highest values obtained according to elements assayed for are [ppm]:

element	sample no.	rock type	assayed value	abundance
Cerium	355 (str.sed)	basalt, chert	272.4	29-96
Europium	300 (str.sed)	shale, chert	9.3	0.2-1.4
Ytterbium	119 (str.sed)	basalt	9.8	0.3-8
Copper	247 rock	basalt	5228	37-50
Gold	335 rock	basalt	0.54	0.0003 -0.018
Tantalum	307 rock	basalt	7.3	0.55-2.0

The abundance is provided if possible according to rock type.(Source: Handbook of Exploration Geochemistry by G.J.S. Govett)[1]

Cerium, Europium and Ytterbium were chosen to enable comparison with available data from geochemical reconnaissance for stream sediments carried out by the GSC in the 80's.

By applying a threshold limit equal the upper limit of the natural abundance for a single element and screening all obtained values, allowed to filter out and determine the distribution of higher value samples. For light and heavy REE higher value sample cluster in the W-part of the prospecting region and are very well defined to one part of the Mtn.-range. Especially values for light REE (Ce, Pr, Nd, Sm, and Eu) , Nb ,Gold, Copper (and to a lesser degree Ta) in the W-part are abnormal and in average 3-5 times higher than the highest value for crustal abundance reported in [1]. It seems there is no relation regarding distribution between copper and REE.

Other abnormal high values were determined but not appearing in clusters for:

sample no.	Mo [ppm](max. abundance)	Au [ppb](max. abundance)	V [ppm](max. abundance)	Y [ppm](max. abundance)
229	62.0 (15.0)	146.5 (57)		
136			604 (200)	
245		155.2 (18)		
119				196.4 (50)

Numbers in brackets indicate the max. value for abundance [1] according to the rock type of the sample assayed.

Stream sed. sample 119 reports also comparable high values for light and heavy REE accompanied by highest values for Zn (5890ppm), Ni (1416 ppm) and Cd (118 ppm) of all samples taken.

Evaluation

The prospected area was investigated for evidence of pegmatite associated with a known Tombstone Suite pluton and other intrusion related dykes and sills in the halo of this pluton in the E-part of the prospected region around Lake A. A second target was an areawith reported stream sediment anomalies for Rare Earth Elements and gold in the W-part of the region S of Lake B. The region is characterized by argillite and chert overlain partly by occurrences of volcanic breccia and basalt throughout the region. The E-part portrays a prominent biotite-granite intrusion pushed thru shale and chert and partly topped by basalt on the fringes.

Rock samples were taken and assayed according to their inherited potential for mineralization, while traditional prospecting was carried out continuously throughout the entire region traversed. The distribution of the sample sites for rock samples indicate a much more frequent collecting of rocks in the W-part of the region. This was for reason.

The granitic intrusion adjacent to Lake A in the E was disappointing since the granite turned out to be very homogenous and not indicating any prominent phase exhibition. No mineralization or pegmatic phases were observed and the seen parts of the granite stock are fine to medium granular. Some secondary iron oxide mineralization along cracks was encountered.

The terrain is rugged and steep requiring lots of time for a full evaluation of all parts of the granitic stock while exposed to a constant danger of rock fall.

Some remnants of volcanic stratigraphy sits on top of the fringe of the granite intrusion, but not showing remarkable mineralization besides the occasional occurrence of arsenopyrite in basalt.

Adjacent and in considerable distance to the intrusion faults stained by yellow iron hydroxide cutting thru argillites could be seen or sampled. Similar sills like appearances occur in chert at the lower contact to the overlaying volcanic rocks and are probably not related to the intrusion.

Other parts of the region are composed of chert, schist and fractured shale and do occasionally exhibit some arsenopyrite, pyrite and hematite mineralization in fracture planes and small veins with quartz and calcite.

The E-part of the prospected region S of Lake B shows heavily mineralized chert and altered volcanics. Chalcopyrite and pyrite are common and high copper values are reported by assay. Calcite and qtz veins are more frequent, although rarely extensive. Chalcopyrite mineralization is accompanied by elevated gold values in the range of 100-150ppb. REE-values in the watershed S of Lake B are at background levels. The terrain reflects the results of past glacier forming activity in the high country and is best described as a felsensmeer made up of chert and volcanic boulders.

The S-part of the same Mtn.-massive (samples 307-354) demonstrate high values for light REE and the highest value for gold. The area is composed of argillite, chert and volcanics. Mineralization occurs mainly on fracture planes of basalt as chalcopyrite, markasite and pyrite with elevated gold values. These mineralized fracture planes are seemingly the source for the similar high REE-values of the stream sed samples in the same watershed, indicating a high mobility for light REE.

In general the assayed rock- and stream sediment samples exhibit similar values for REE in the same collecting area. The total values for Rb and Sr for rocks in the watershed of the sampled creek are twice as high than for the associated stream sediment samples. Since the mobility of Rb and Sr are restricted, lower values of Sr and Rb observed in stream sed samples versus volcanic rocks sampled, indicate different mineral composition of stream sed samples compared to volcanic rocks. This fact clearly points to a high mobility of REE and explains the similar values of REE in stream sed samples and source rocks. But it also indicates that stream sed samples merely present the highly elevated background level for REE in this area. The similar high values for rock and stream sed samples of the same watershed leaves not much room for the assumption of a highly mineralized source for REE.

Conclusions and recommendations

The granitic intrusion in the E off the prospected region adjacent to Lake A did not yield any encouraging results due to the lack of mineralization and non-fractionalization of the granitic stock. A more intense investigation of the pluton is time intensive and difficult.

The nature of limonitic sills in contact with the lower limit of the volcanics could not be determined finally. The mineralization associated with these zones seems to be limited to arsenopyrite, some pyrite and hematite and do not demonstrate elevated values in REE or gold and base metals.

The W-part of the region is clearly of most interest. Chalcopyrite, gold and REE mineralization occurs here in two separate but adjacent areas south of Lake B.

The high values for copper and gold were found in volcanics and contact chert in a high country glacier karr. Exploration in this area consumes extensively time since the area to evaluate is covered by a felsenmeer.

The second adjacent anomalous area to the S of it, is characterized by an at least 3 times higher light REE- value compared to the high end range for crustal abundance assumed as background level. This area provides also the highest gold value reported. Copper values exceeding 1000ppm are present.

This area warrants further investigation regarding gold and precious metals. No source for anomalous REE values could be determined but comparison of rock and stream sed samples of the same watershed indicate rather a elevated background level than a high grade source for REE.

Appendicies

- #1 traverses Aug.9th-Aug.12th 2003
- #2 traverses Aug.13th-Aug.17th 2003
- #3 traverses Aug 18th-Aug.20th 2003
- #4 traverses Aug 21st-Aug. 23rd 2003
- #5 traverses Aug 23rd-Aug.26th 2003
- #6 traverses Sept.1st -Sept. 6th 2003
- #7 traverses Sept. 4th 2003
- #8 overview routing and camps sat. image
- #9 sample points and routing E-part sat. image
- #10 sample points and routing W-part sat. image
- #11 rock sample locations
- #12 stream sed. sample location
- #13 high values for Rare Earth Elements
- #14 values for Copper>1000ppm
- #15 General geology around granite intrusion
- #16 location of yellow limonitic zones
- #17 assay report (3parts)

Prospecting Diary YMIP 03-032

by Heiko Mueller

Rougue Range.

Sample numbers are identical with plotted numbers on maps showing daily traverses

August 9th 03, overcast, windy, 14°C

departure by helicopter from Finlayson Lk. at noon after one day waiting for weather to improve, two hour flight to area W of Arrowhead Lake, set out food caches at Mtn. Lake A (12 km E of Arrowhead Lk.) and at Mtn Lake B approx. 32 km E of Arrowhead Lk., food container consisting of 5 gal. plastic buckets and closed with screw on lid thrown in lakes for better storage,

set up camp in upper valley 5 km E of Arrowhead Lk. at 1377m elevation, prospecting in afternoon:

100: spring on W slope of valley rich in iron oxide sediment, slope composed of chert and granite float, sediment sample taken

101: stream sediment sample further up valley, yellow brwn. Iron oxide sediment, mainly chert + granite gravel, creek width 1m, fast flowing

104: incised creek in black chert

August 10th 03, sunny, calm

ascent ridge to E with backpack weighing 110lb,

108: blue bleached looking chert

109: band of blue bleached? chert

August 11th 03, sunny, hazy, mosquitos

explore basalt cliffs around camp, continue traverse to E down into major unnamed valley

111: stream sed. sample at small creek near camp, width 0.5m, fast flowing, grey+drkbrwn. Chert and volcanics,

waterfall 300m down stream from sample site, marks start of one sided canyon in volcanics (basalt), basalt cliffs explored

112-115: basalt cliffs with calcite veins, brwn-.qtz amygdales, disseminated fine chalcopyrite?

119: stream sed. sample in major creek, gravel of volcanics, yellow-white sediment between, creek width 4m, fast flowing

August 12th 03, partly sunny, hazy, warm, forest fire smoke in distance

ascend steep slope towards Mtn. Lk. A, dense buck brush

120: grey+orange argillite

higher up close to Lk. granite bolders, retrieve food buckets from lake and descent to lower lake for better shelter to N, set up camp near small shallow lake in granite and volcanics, volcanics encompass upper 1/4 part of surrounding steep mtns., lots of swimming worms in small lake fed only by precipitation, elevation 1659m

August 13th 03 , showers and hail, sunny breaks
prospect around camp at base of past glacier cirque,
125: rusty brown volcanics with disseminated arsenopyrite in talus, strains of limonitic chert in between
126: talus of limonitic brecciated volcanics, some calcite veins and nodules embedded shale starts to N
128: E-W trending fault zone of yellow limonitic argillite, width approx. 5m , intersects creek below camp in sharp angle, occasionally arsenopyrite and manganese stain, soil sample taken in fractured zone

August 14th 03, cloudy with short sunny breaks
climb high rugged mtn. ridge above Lake A to the E
130-132: black and blue shale and argillite
133: contact between shale and topping volcanics
134: talus of limonitic volcanics, impressive yellow alteration of volcanics originating from mtn. peak, check for radioactive response, just background of 24 μ SV/h, rock sample
135: another limonitic talus of volcanics
136: fine fractured yellow talus, soil sample of same color taken
137: lighter colored volcanics (basalt) with densely disseminated arsenopyrite , rock sample of volcanic shows indication of volcanic phase, rusty stained
138: altered volcanic with arsenopyrite
descent hastily along rugged mtn. ridge towards S to escape approaching rain front

August 15th 03 , frequent showers, strong wind
prospect N of camp
145: limonitic shale with slip and slides, part of fault zone 30m wide , rock sample
146: limonitic shale with calcite and galena?
151: shale with arsenopyrite

August 16th 03, extremely windy with continuous rain
almost blown away in my tent,

August 17th 03, extremely stormy night, than sun and showers, only 5°C
prospect S into canyon at lower elevation
155: argillite limonitic and manganese stain
156: S end of altered zone described by 155, rock sample
158: granite boulder rock meer, uniform
160: upper start of steep sided ravine in limonitic shale, cut by flat lying secondary faults
161: stream sed. sample at lower end of ravine in limonitic shale, width of creek 1m , fast flowing

August 18th 03, cloudy, calm

leaving camp, proceeding N and turn E later

165: greenish blue argillite with calcite veins and some arsenopyrite

170: area composed of slate and schist, topped by volcanics close to peak

171: argillite with milky qtz vein and hematite in small druse

172: altered argillite with calcite and manganese/hematitic stain

sighting of caribos

174: canyon of shale, entering rugged terrain comprised of boulders of granite and basalt

August 19th 03, rain, calm

prospecting in carr S of camp,

176: stream sed. sample at lower end of canyon composed of hematitic altered schist, creek width 1.5m, fast running

177: stream sed. sample, strong current in main creek, some sediment obtained from smaller arm of creek running thru argillite and granite bolder, some organics, N-most extent of granite intrusion, very homogenous

179: field of volcanic boulders, some fractured with qtz planes and veins (milky)

180: volcanic with calcite and up to 5mm long muscovite crystals

183: granite with brwn. iron oxide vein lets and calcite, in qtz-vein lead grey soft mineral with same streak of 1cm diameter

August 20th 03, cloudy

leave camp, prospect along E slope of valley

191: argillite with muscovite and black hematite?

192: crumbly yellow argillite or strongly altered volcanic from sill 200m vertical above, similar to limonitic zone above lake A, sill at contact between argillite and volcanics

193: qtz-vein fragment with coarse vesicules of hematite (source of iron oxide stain?)

194: main talus of slightly silicified volcanics, also limonitic

195: volcanic with purple rusty stain and arsenopyrite (black streak), rock sample

199: stream sed. sample at conjunction of tributaries to main valley creek, width 1.5m, fast flowing, gravel platy and composed of argillites and shales

August 21st 03, sunny and clouds, calm

prospect base of cirque, hike over saddle and descent into next valley to NE

202: silicified argillite with arsenopyrite in small qtz- veinlets, rock sample

203: silicified argillite with hematitic qtz-vein and arsenopyrite

204: silicified volcanic with rusty red tarnished arsenopyrite, limonitic sill 100m above

207: lower edge of limonitic sill composed of silicified volcanics with some qtz-veins, rock sample

August 22nd 03, cloudy and showers

ascend to saddle to E, entire mtn-range comprised of shales and argillites

215: stream sed sample of main creek near camp, width 1.5m, fast flowing, volcanic and argillite gravel

217-218: purple - grey shale with growing appearance of milky non mineralized qtz-veins

August 23rd 03, rain and fog in morning

grizzly crossing creek 300m away, proceed prospecting uphill to E

222: stream sed sample , main creek width 2.5m, medium velocity, purple shale, grey argillite and grey vesicular volcanics

ascend to ridge: schist with qtz-veins and qtz crystals, altered volcanics with rusty stain

225: purple crumbly shale

226: stream sed sample, width 3m, medium velocity, gravel composed of shale, schist, qtz arriving at Lake B

August 24th 03, cloudy but rain showers always pass by to N and S, seems special micro weather zone

228: claim post (4post) with no tags name:NEW

229: stream sed sample from creek feeding Lake B, width 2.5m ,medium velocity, gravel composed of schist with qtz-veins and argillite

August 25th 03, cloudy with sunny breaks

prospecting high terrain to the S composed entirely by boulders

236: heavily mineralized volcanic? With druse like assembly of mainly hematite and chalcopryrite in talus

237: volcanic with black hematite

238: altered volcanic with chalcopryrite, rock sample

239: volcanic with lamellar qtz-veinlets, most 1cm wide, strike N-S, rock sample

240: volcanic with calcite, muscovite and hematite, rock sample

241: volcanic with qtz-vein 5cm wide with coarse hematite

242: volcanic with limonitic veinlets, qtz crystals

245: limonitic veinlets in altered volcanic

247: heavy mineralized volcanic similar to 236

248: similar to 236

250: milky water in creek caused by abundant calcite

August 26th 03, sunny, warm

prospect high country SE of camp

260: at foot of moraine: hornfels with qtz and muscovite

263: brwn.-black altered chert with qtz and massive chalcopryrite and some chloritization rock sample

264: chalcopryrite and markasite in chert

265: qtz-vein fragment heavily mineralized with chalcopryrite? and markasite, rock sample

266: same as 264

267: volcanic breccia with fine disseminated chalcopryrite?

268: purple coated chert with markasite, chalcopryrite, manganese and azurite

270: old claim post, claim name New

grizzly bear approaching me, scare off with gun shot in air at 40m distance

August 27th 03

prepare for pick up and scheduled return with new provision

September 1st 03, cloudy and windy

fly into target area adjacent to Lake B by helicopter accompanied by prospectors assistant set up camp, ground saturated with water, snow cap on surrounding mtns.

300: stream sed sample of camp creek, width 2m, medium velocity, gravel consists of shale and chert, calcite sediment between creek gravel

September 2nd 03, windy and showers

prospect highlands S of camp

302: talus composed of chert with chalcopryite, rock sample

303: chert with chalcopryite

304: volcanic with calcite

305: basalt with chalcopryite

306: same as 305 + calcite

307: basalt with chalcopryite, rock sample

308: volcanic with intense limonitic stain

309: volcanic with massive chalcopryite, rock sample

311: old claim posts

315: stream sed sample above start of gorge ,width of creek 1.5m, fast current, gravel composed of chert, slate ,argillite, volcanics

September 3rd 03, rain, snow line descending

prospect W of camp

316: stream sed sample, width 1.5m, medium velocity of current, creek gravel: slate, argillite ,volcanics

317: stream sed sample, width 3m, fast flow, argillite with qtz-veins, slate and chert as creek gravel

September 4th 03, rain with short sunny breaks, later ceasing

prospect mtn-ridge and flank SW of camp

325: lower contact of volcanics with chert

327: weathered volcanics, crumbly, red-brwn. Color

330: old lapsed claim posts 4 er set with no tags

331: volcanic breccia with chalcopryite, rock sample

September 5th 03, sunny and first frost

335: at mtn.-ridge, big broken off bolder alongside fracture plane, on surface of fracture clusters of arsenopyrite and markasite, rock sample

339: higher up in gully rusty zones not examined

340: rusty volcanic with chalcopyrite and hematite

341: volcanic with finely disseminated chalcopyrite originating from rusty zone above, rock sample

342: weathered volcanic with coarse chalcopyrite mineralization, rock sample

343: highly mineralized volcanic with lots of chalcopyrite in higher gully, rock sample

334: volcanic with calcite, chalcopyrite and asbestos

346: stream sed sample, right fork of upper creek, almost dry, sample from talus material in periodical creek

347: volcanic with calcite and chalcopyrite

348: soil sample of crumbled and weathered cherty talus material

September 6th 03, sunny, clear, warm

352: volcanic breccia with calcite, rock sample

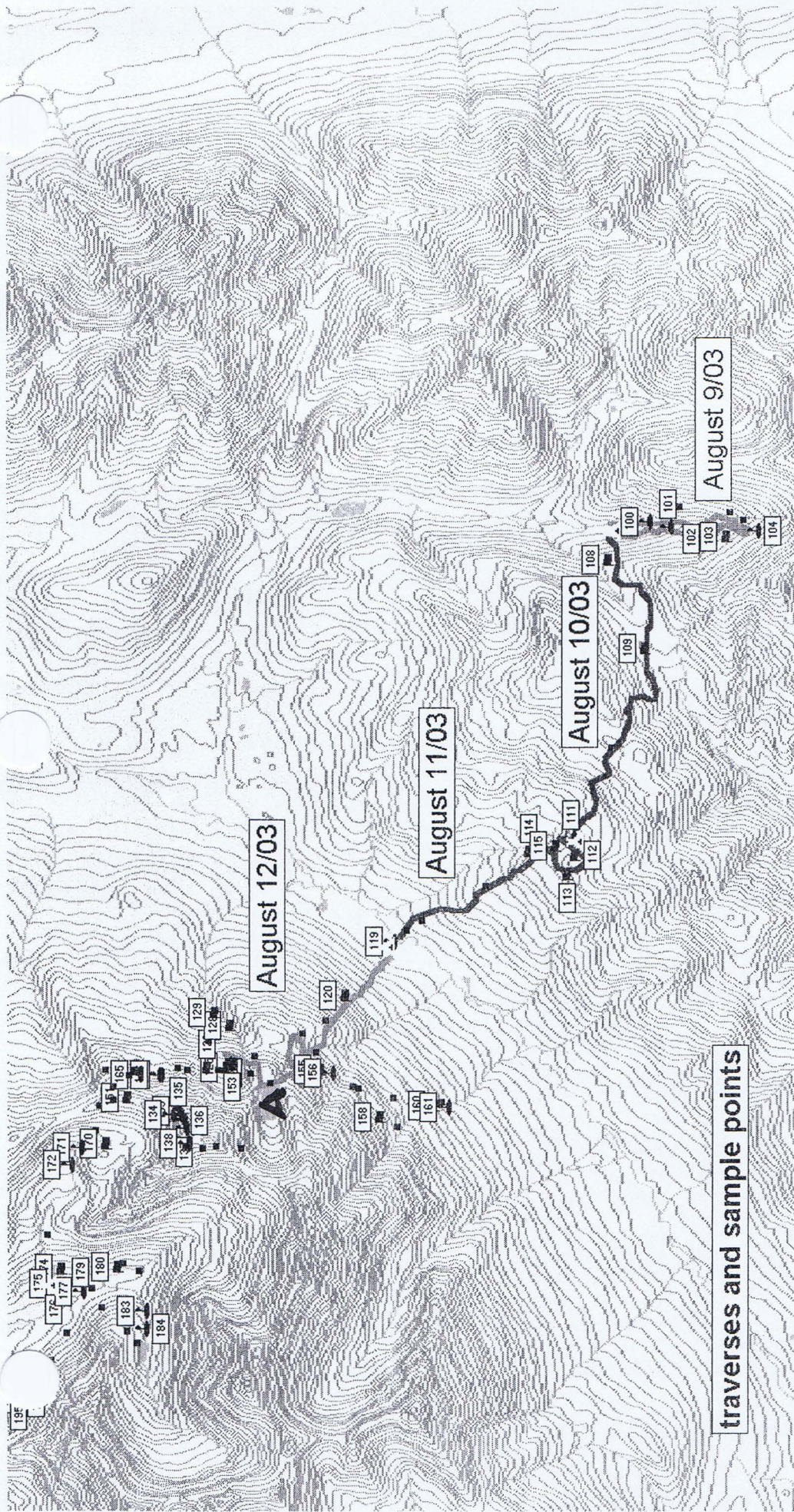
353: multi colored resinous chert, rock sample

354: stream sed sample, width 2m, medium flow, gravel: volc., chert

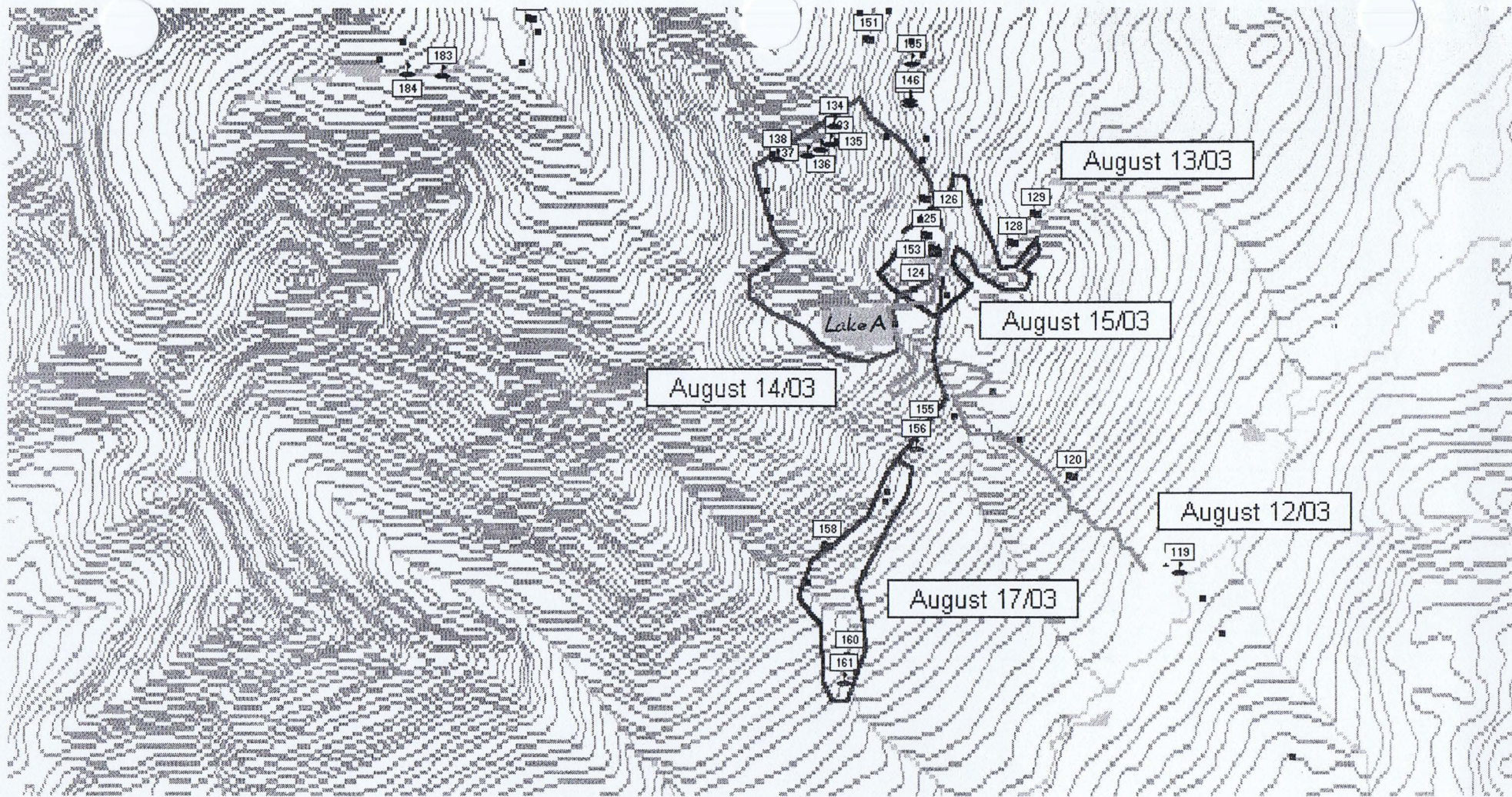
355: stream sed sample, end of small canyon in chert, width 2m, gravel: chert, volcanics, shale

357: contact of chert and topping volcanics

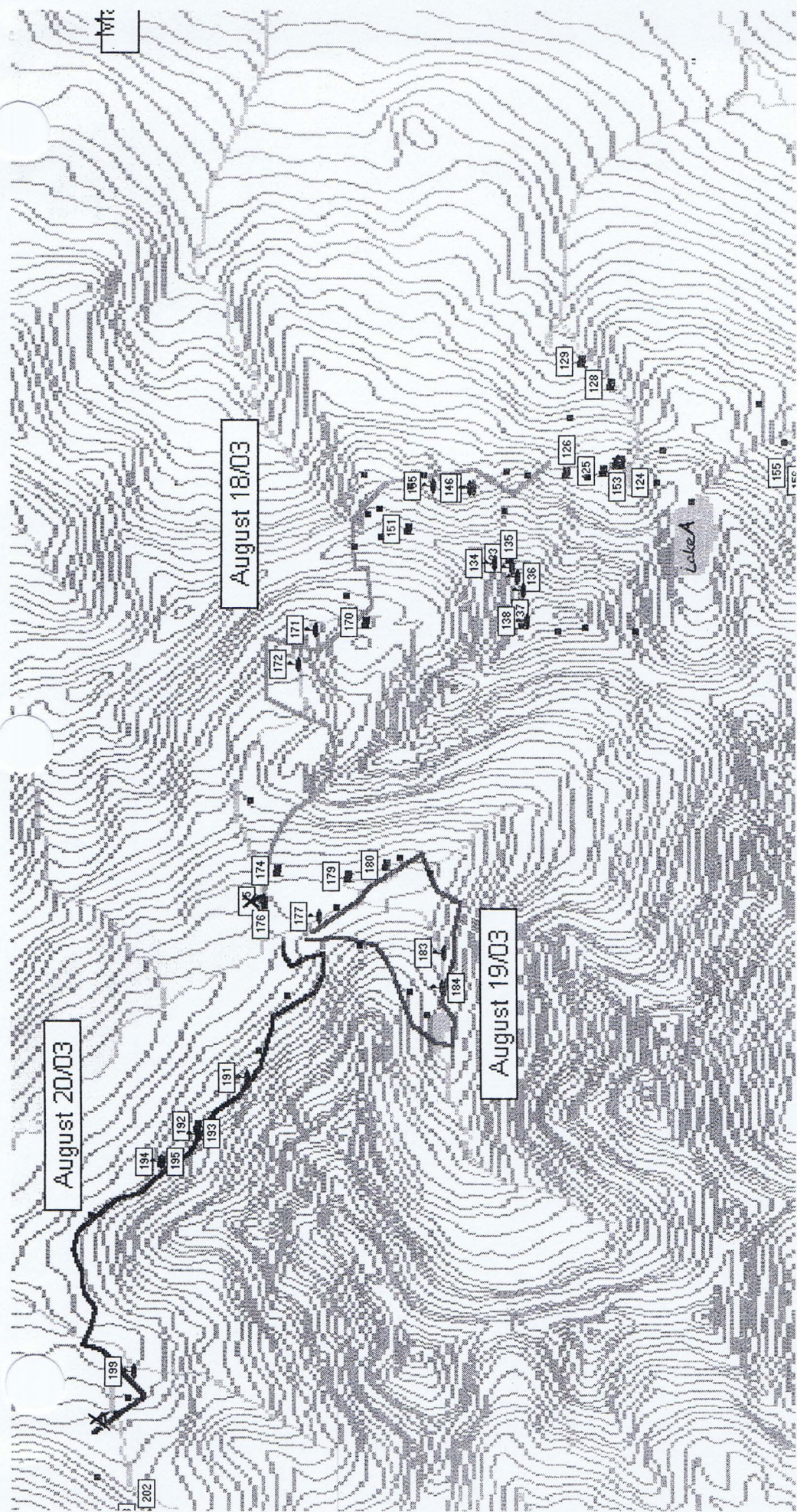
358: single tower of volcanic in open plain, trail of rocks extending towards W indicating former movement of glacier



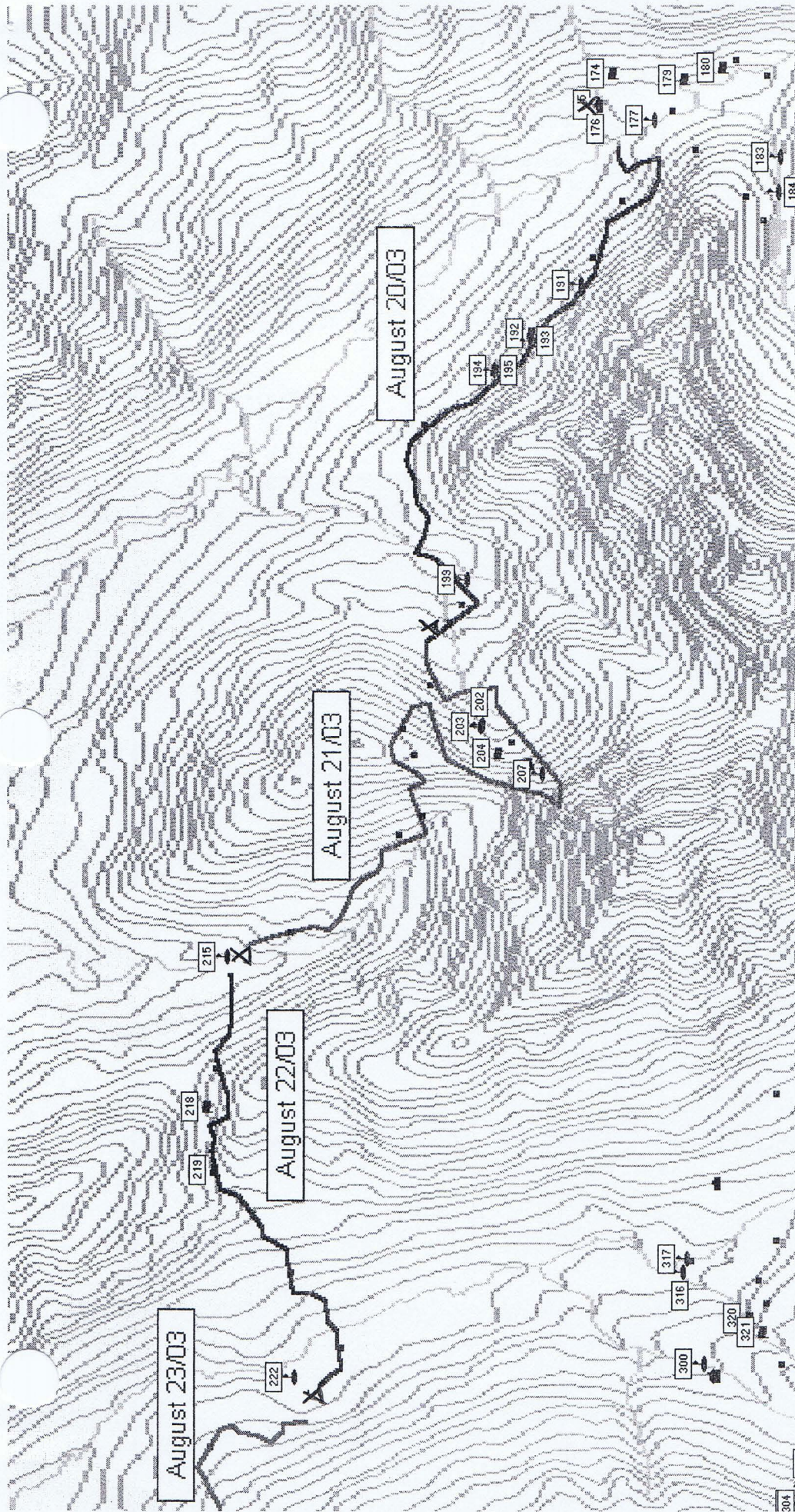
App. #1



App. # 2



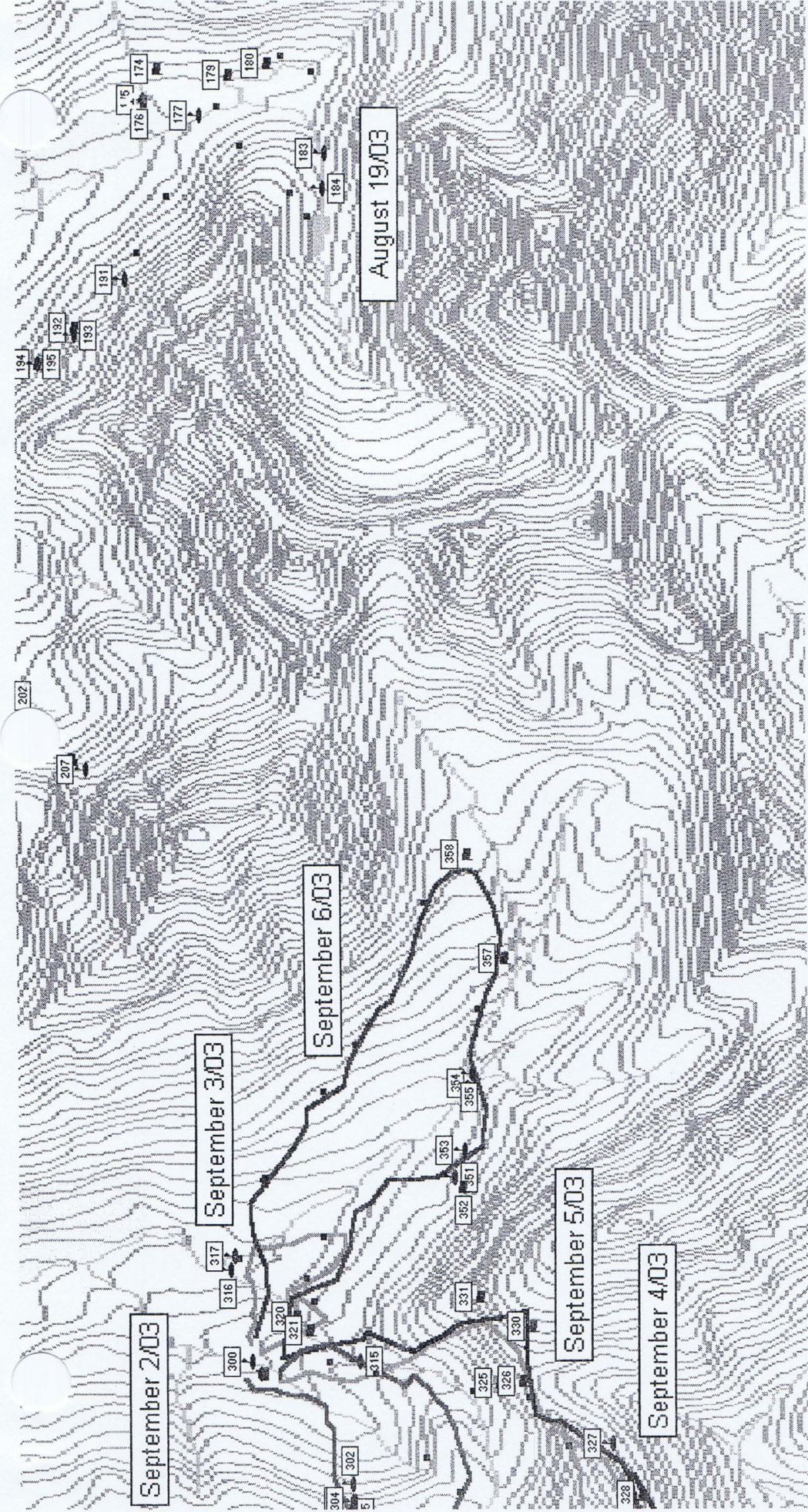
App. # 3



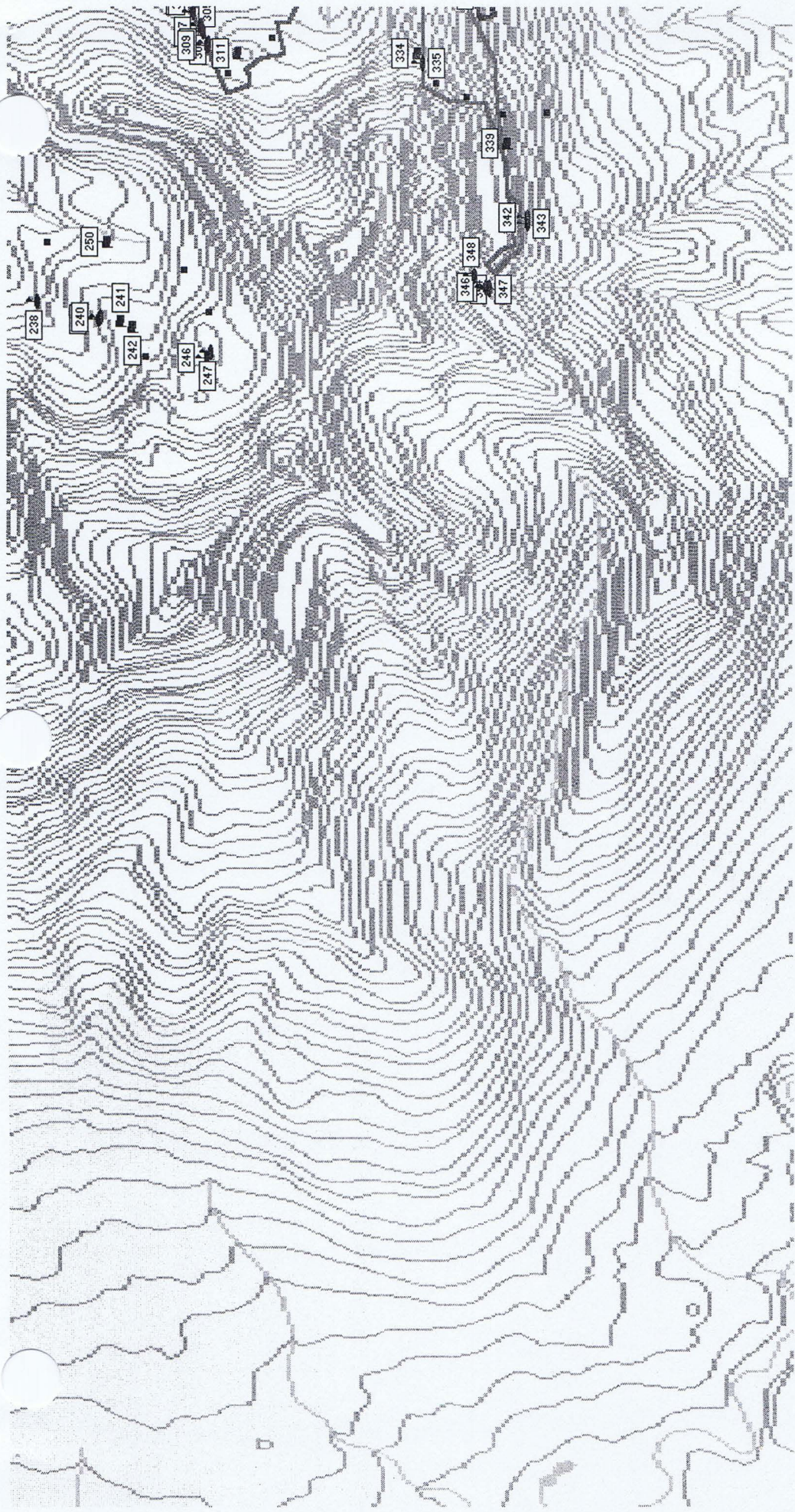
APP #4



App. #5



App. # 6

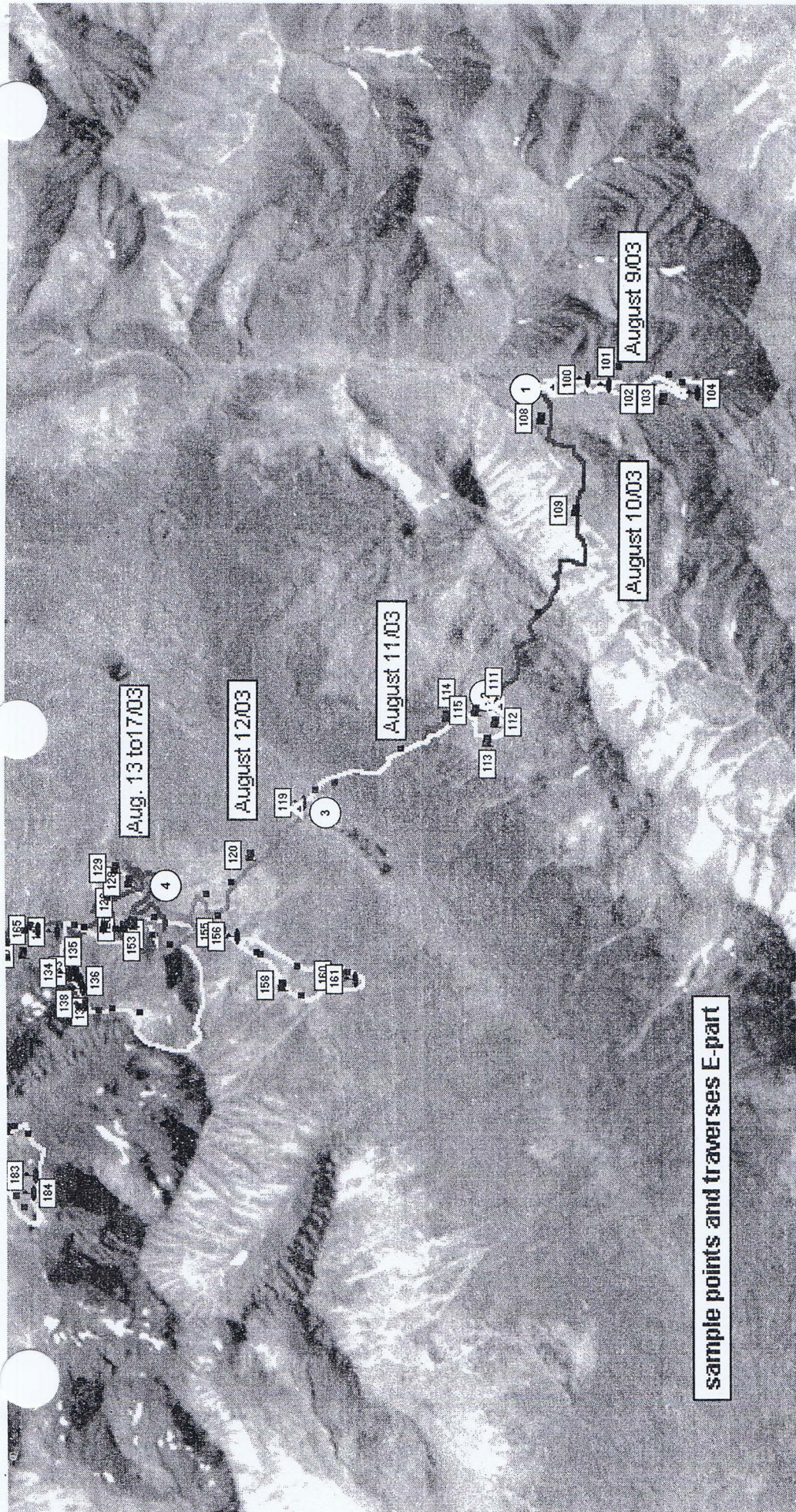


App. #7

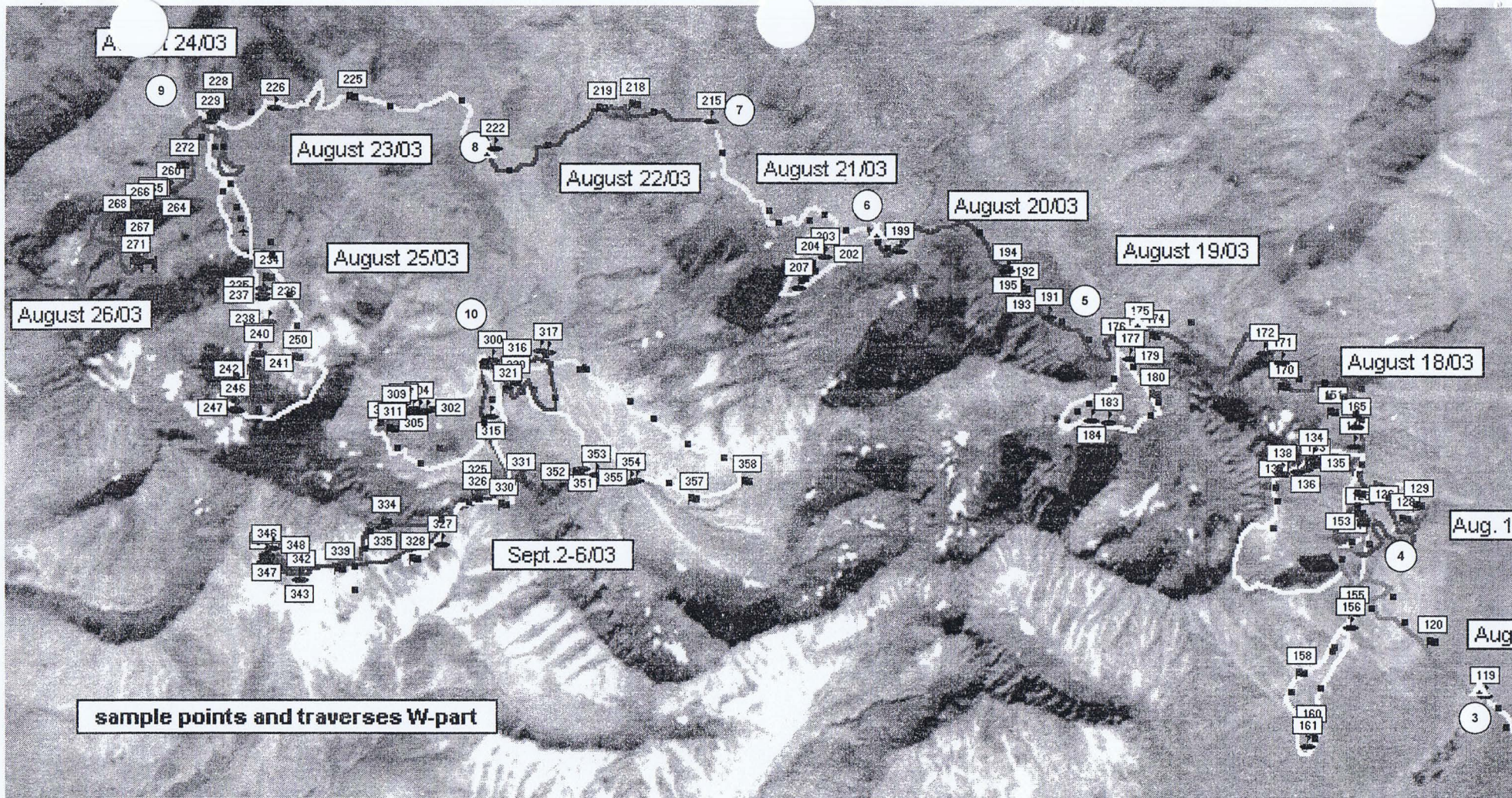


overview and number of camps

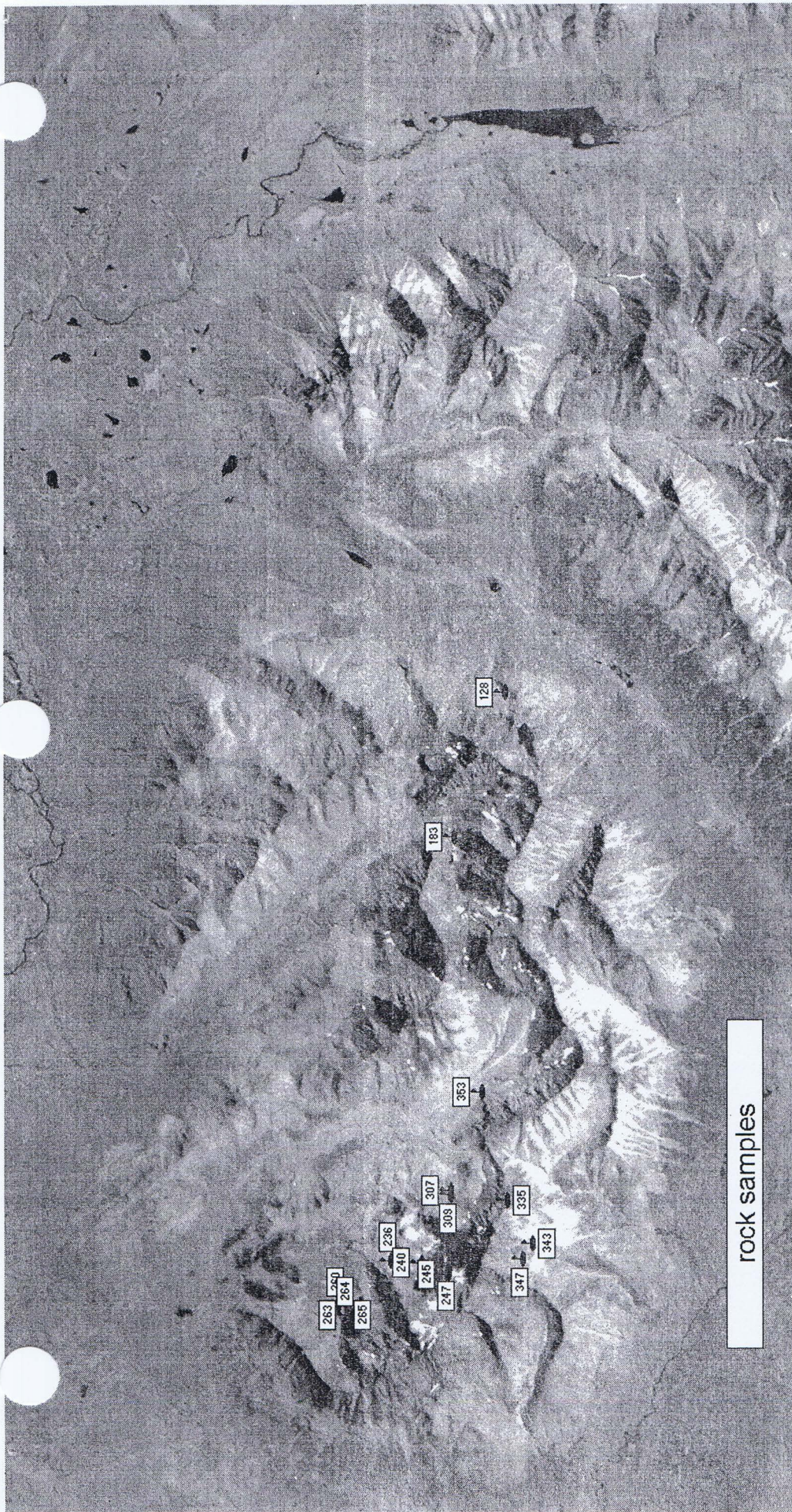
App. #8



App # 9

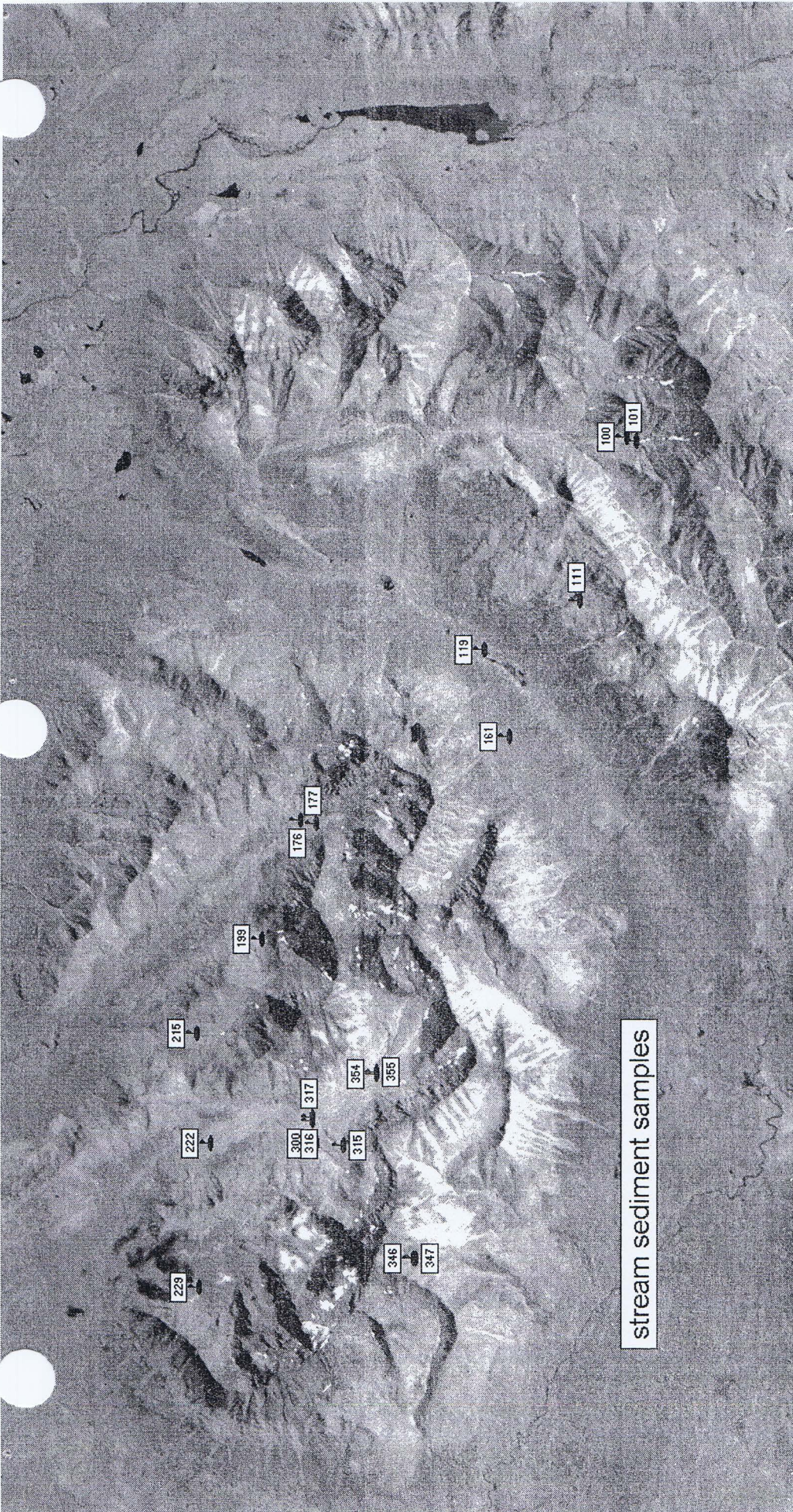


App. 10



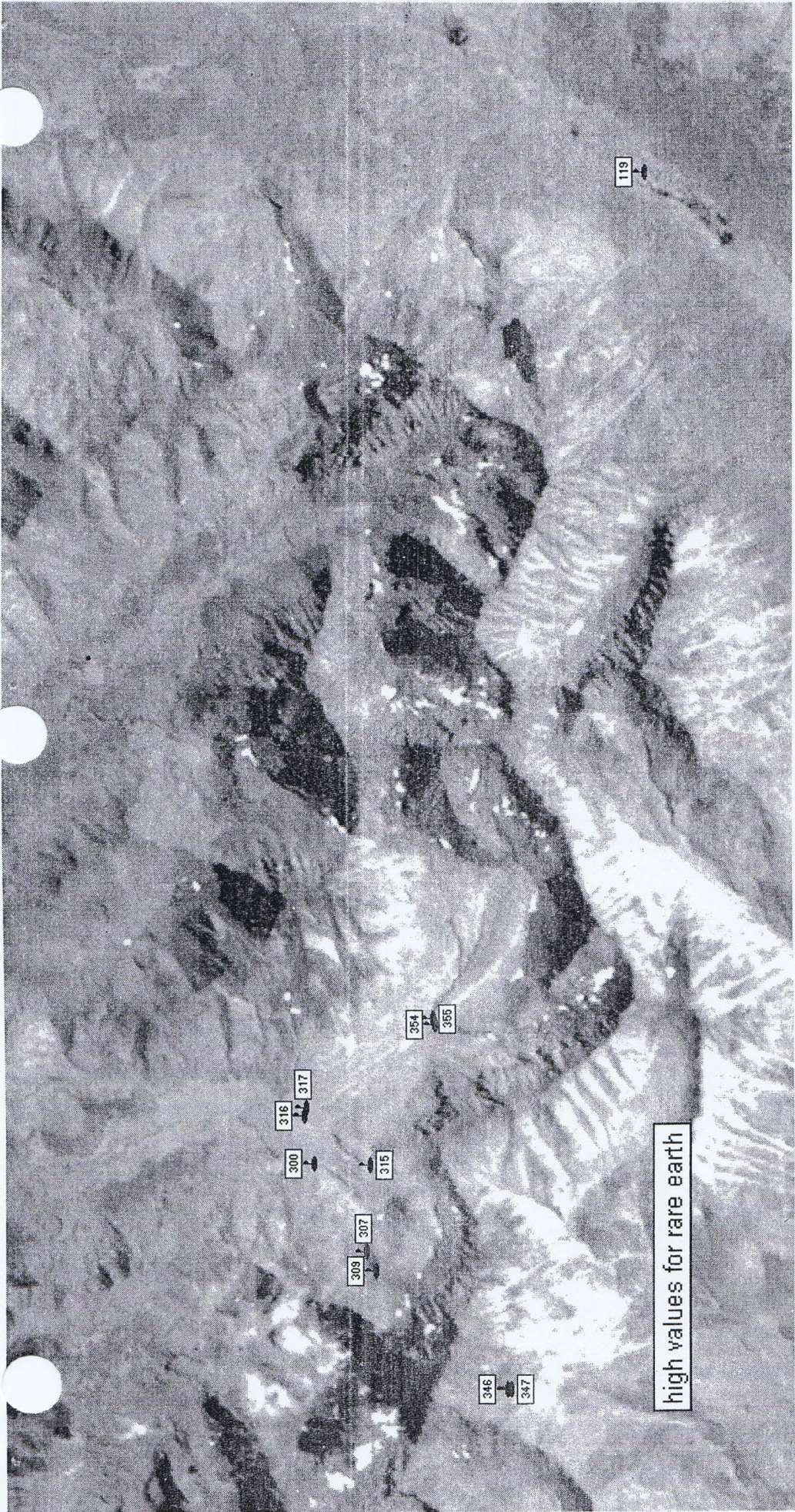
rock samples

App # 11



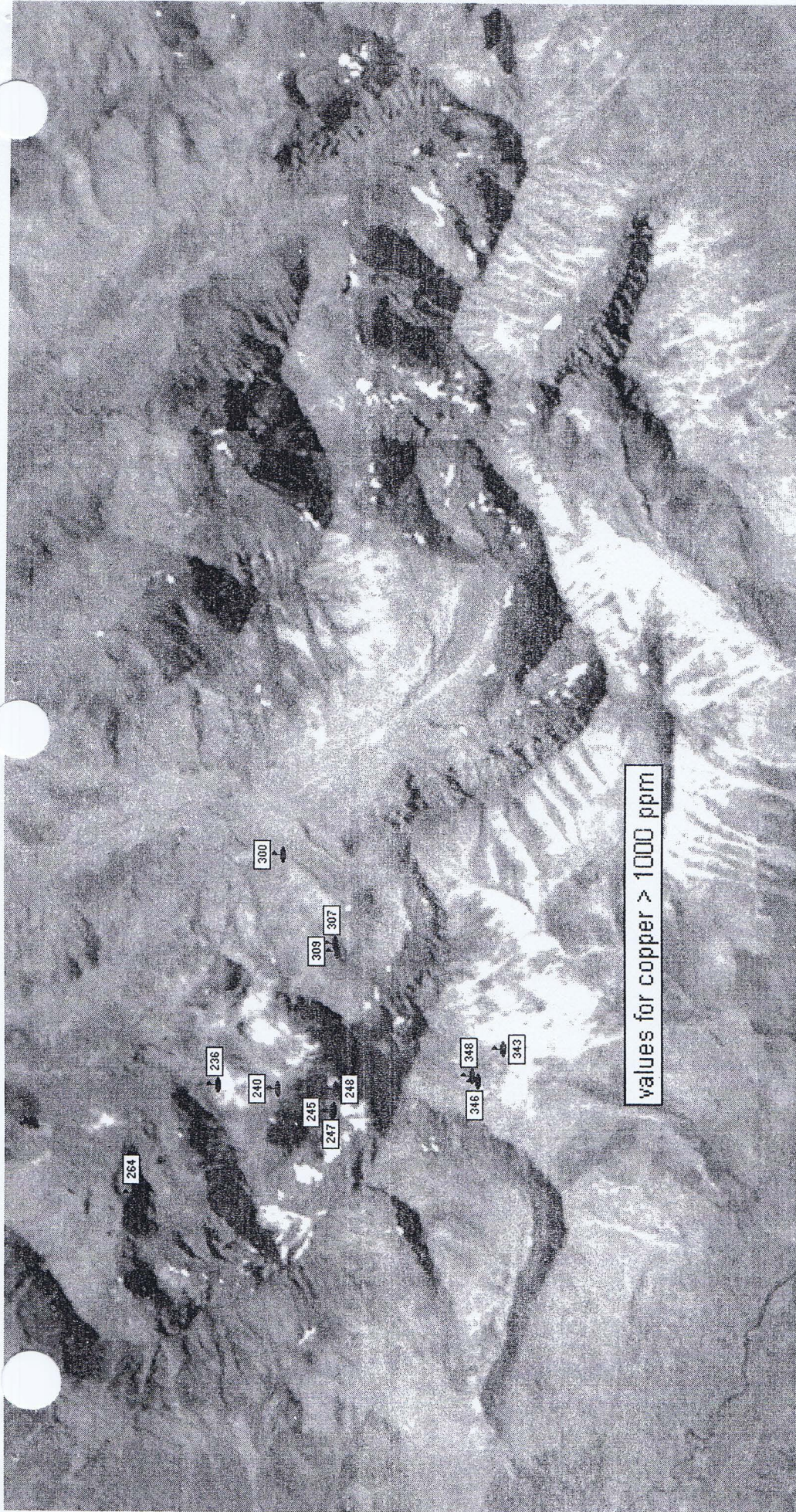
stream sediment samples

App. # 12



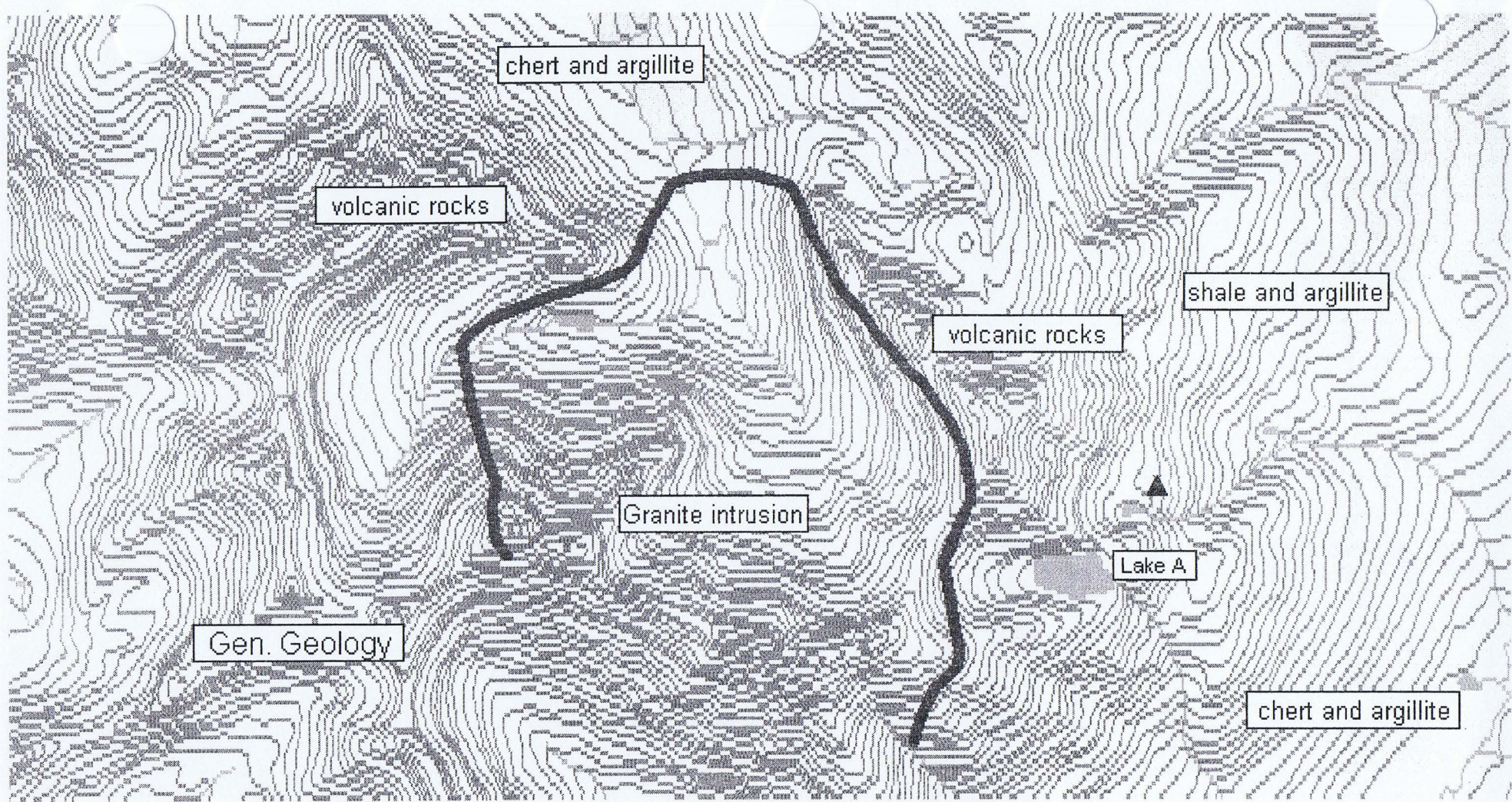
high values for rare earth

App. # 13



values for copper > 1000 ppm

App. # 14



App #15



App # 16

GEOCHEMICAL ANALYSIS CERTIFICATE

Mueller, Heiko PROJECT 03/032 File # A304422 (a)

Box 30014, Whitehorse YT Y1A 5M2 Submitted by: Heiko Mueller



SAMPLE#	Ba	Co	Cs	Ga	Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
101	5980.4	16.6	5.1	12.5	3.2	19.0	82.5	4	119.7	1.2	8.6	9.3	322	1.5	116.4	32.6	29.0	56.6	7.33	30.5	6.3	1.60	6.41	.97	5.57	1.17	3.37	.50	3.16	.52
111	1199.2	23.8	15.7	24.6	4.7	27.4	162.3	6	130.3	1.6	15.4	3.8	151	2.6	169.8	34.5	54.7	131.9	14.07	55.8	10.3	2.17	8.25	1.29	7.01	1.30	3.83	.53	3.46	.54
119	3403.2	298.6	6.2	21.0	3.6	22.3	111.0	8	127.6	1.3	10.4	8.8	282	1.7	129.7	196.4	47.8	104.9	13.68	63.1	15.0	4.27	28.97	4.91	24.85	5.38	14.08	1.75	9.84	1.54
161	767.7	12.5	10.5	18.5	8.6	12.1	112.2	4	269.9	.8	30.7	6.5	121	17.1	316.4	24.4	82.8	185.8	17.51	60.6	9.1	1.75	5.69	.97	4.86	.89	2.63	.39	2.50	.39
176	1009.1	26.7	10.4	27.1	4.5	20.8	152.6	7	128.8	1.4	19.1	3.4	118	2.3	160.3	31.6	59.7	142.7	14.71	57.7	9.6	1.79	7.27	1.11	6.19	1.22	3.31	.50	3.41	.50
199	1054.8	179.3	10.5	26.4	5.3	33.5	122.0	8	220.9	2.1	18.8	7.3	153	4.0	199.6	45.4	79.7	192.8	19.08	74.9	12.4	2.78	10.27	1.63	8.59	1.66	4.49	.63	4.21	.64
215	1208.9	26.2	10.0	24.9	5.1	24.9	140.3	4	178.6	1.7	17.7	4.1	156	2.5	174.2	29.6	56.4	131.6	13.80	52.6	9.0	1.91	7.12	1.07	5.65	1.11	3.12	.46	3.00	.44
222	975.8	29.0	14.8	24.2	7.9	73.4	109.3	7	191.3	4.2	16.1	5.2	251	2.5	312.7	42.0	82.2	194.1	21.70	88.9	14.9	3.73	12.30	1.69	8.50	1.58	4.01	.54	3.72	.51
223	971.9	103.9	11.0	28.1	4.6	24.7	160.3	6	121.3	1.6	19.9	3.5	121	3.8	173.2	38.2	78.0	208.7	19.56	74.9	12.5	2.70	10.17	1.47	7.65	1.36	3.74	.55	3.27	.52
229	888.5	98.8	25.6	25.6	5.2	17.9	153.6	19	181.5	1.2	20.4	9.1	122	21.1	181.4	38.8	65.4	146.6	16.15	62.7	11.6	2.46	10.44	1.52	7.82	1.43	4.07	.61	3.76	.56
300	743.1	128.6	11.2	17.6	3.8	19.3	98.0	8	89.4	1.2	11.0	3.2	90	5.0	124.2	148.6	120.7	222.1	38.87	170.3	30.0	9.28	37.64	5.16	23.05	4.12	9.74	1.05	5.56	.77
315	1257.6	76.3	5.6	28.4	11.4	110.2	65.8	6	246.0	6.3	15.4	4.0	302	2.7	437.6	47.1	101.5	262.2	28.59	117.2	19.6	5.41	16.25	2.21	10.51	1.79	4.52	.58	3.59	.50
RE 315	1215.7	75.3	5.7	28.3	11.4	110.8	65.6	6	249.1	6.3	15.8	4.1	303	2.9	445.1	47.3	101.9	265.4	28.57	118.2	19.6	5.42	15.89	2.18	10.61	1.79	4.32	.60	3.65	.50
316	969.3	68.6	7.3	26.8	9.5	87.5	85.5	8	193.2	5.1	15.6	4.0	249	3.1	373.3	42.3	93.8	236.6	25.50	100.9	17.0	4.56	14.47	1.96	9.57	1.62	4.26	.55	3.31	.49
317	1281.0	64.5	5.6	24.3	11.5	122.1	62.5	9	287.9	7.1	14.7	5.5	313	2.4	449.8	52.2	108.3	270.6	30.39	125.7	20.8	5.67	17.73	2.39	11.49	1.90	4.86	.60	3.78	.56
346	310.1	82.9	11.1	20.6	7.5	80.4	66.0	11	151.0	4.5	10.0	5.7	276	34.2	292.3	33.5	72.7	188.5	21.59	90.7	17.0	5.04	13.71	1.89	8.91	1.40	3.54	.43	2.68	.38
348	558.7	31.3	7.8	23.0	5.1	21.9	114.5	4	146.3	1.4	31.0	5.7	119	17.7	176.1	30.6	71.9	166.2	17.59	67.4	11.4	2.49	9.19	1.28	6.63	1.19	3.28	.48	3.04	.46
354	1258.3	39.8	10.9	25.1	9.9	106.8	90.2	7	151.4	6.1	13.7	6.4	334	2.2	405.9	48.3	95.0	232.3	25.68	105.4	17.6	4.73	14.76	2.05	9.95	1.75	4.56	.62	3.84	.55
355	1503.8	100.8	5.8	26.7	12.7	126.8	51.3	7	322.0	7.7	14.2	8.0	432	2.3	489.5	61.9	109.5	272.4	31.42	131.9	22.1	6.49	19.47	2.79	13.27	2.27	5.66	.71	4.20	.62
STANDARD	411.8	18.9	3.7	18.9	11.8	26.7	22.4	11	297.8	4.3	11.6	10.7	129	10.6	357.3	27.1	10.5	24.1	3.05	14.3	3.4	1.07	3.82	.70	4.25	.97	2.83	.44	2.98	.44

Standard is STANDARD SO-17.

GROUP 4B - REE - 0.200 GM BY LiBO2 FUSION, ICP/MS FINISHED.

- SAMPLE TYPE: SED. SS80 60C

Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: SEP 19 2003 DATE REPORT MAILED: *Oct 7/2003* SIGNED BY: *[Signature]* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

GEOCHEMICAL ANALYSIS CERTIFICATE

Mueller, Heiko PROJECT 03/032 File # A304422 (b)
Box 30014, Whitehorse YT Y1A 5M2 Submitted by: Heiko Mueller



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	As ppm	Cd ppm	Sb ppm	Bi ppm	Ag ppm	Au ppb	Hg ppm	Tl ppm	Se ppm
101	14.0	152.8	28.5	262	56.6	17.2	1.3	3.9	.2	.9	8.9	.31	.3	6.2
111	1.8	57.2	37.1	144	33.2	11.2	1.8	.6	.5	.1	19.9	.07	.2	.7
119	10.3	340.4	19.8	5890	1416.9	14.8	117.9	2.1	3.2	.4	7.8	.20	.3	4.0
161	3.6	26.9	29.0	65	9.2	57.0	.4	2.9	3.2	.1	8.1	.03	.2	<.5
176	2.3	79.1	45.6	126	45.9	30.8	.1	.7	.6	<.1	23.4	.04	.1	<.5
199	8.4	134.4	102.0	674	374.8	305.0	6.1	4.5	1.1	.3	74.4	.07	.9	.7
215	2.9	73.0	56.1	167	42.8	57.7	.5	1.8	1.4	.2	6.0	.03	.1	.7
222	2.0	124.8	59.2	227	70.3	122.0	1.2	1.9	1.6	.3	22.9	.08	.1	1.8
223	2.1	556.5	24.8	129	127.4	29.3	.2	1.0	5.0	.1	30.3	.02	.1	.5
229	62.0	326.3	169.2	313	162.0	386.8	1.9	9.7	6.6	.5	146.5	.43	.2	1.4
300	3.9	3508.2	41.3	221	231.9	45.0	.5	1.2	6.6	.2	45.8	.09	.3	2.0
315	3.5	173.4	98.0	301	118.6	50.1	1.5	1.9	1.6	.2	17.6	.06	.2	.7
RE 315	3.9	173.5	107.0	298	123.6	51.3	1.4	1.9	1.5	.2	18.3	.06	.3	.9
316	3.1	173.8	64.7	261	116.8	46.5	1.4	1.8	1.6	.2	25.1	.06	.2	.7
317	4.4	112.2	64.7	411	138.7	289.5	2.9	4.0	.9	.3	18.6	.07	.2	1.6
346	2.7	1455.1	12.2	58	235.6	29.4	.3	.9	25.5	1.0	24.0	.03	.5	4.9
348	3.8	1407.9	21.8	52	62.6	81.5	<.1	2.7	23.6	.2	38.1	.02	.2	2.2
354	3.8	107.4	83.4	302	82.0	243.5	1.2	4.5	1.8	.4	16.3	.13	.2	1.7
355	7.2	149.5	90.2	632	230.6	484.0	5.5	5.6	1.2	.5	17.7	.07	.3	2.2
STANDARD DS5	12.7	146.3	26.0	141	24.6	18.6	5.7	3.5	6.3	.3	41.8	.18	1.0	5.0

GROUP 1DX - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-MS.
UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.
- SAMPLE TYPE: SED. SS80 60C Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: SEP 19 2003 DATE REPORT MAILED: Oct 7/2003 SIGNED BY: [Signature] D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



GEOCHEMICAL ANALYSIS CERTIFICATE

Mueller, Heiko PROJECT 03/032 File # A304421 (a)

Box 30014, Whitehorse YT Y1A 5M2 Submitted by: Heiko Mueller

SAMPLE#	Ba ppm	Co ppm	Cs ppm	Ga ppm	Hf ppm	Nb ppm	Rb ppm	Sn ppm	Sr ppm	Ta ppm	Th ppm	U ppm	V ppm	W ppm	Zr ppm	Y ppm	La ppm	Ce ppm	Pr ppm	Nd ppm	Sm ppm	Eu ppm	Gd ppm	Tb ppm	Dy ppm	Ho ppm	Er ppm	Tm ppm	Yb ppm	Lu ppm
100	84.7	27.2	.2	.6	<.5	<.5	2.0	2	30.1	<.1	.2	3.8	8	<.1	3.6	26.9	2.5	3.9	.51	2.5	.9	.41	3.30	.37	2.06	.42	1.10	.12	.67	.11
128	1076.0	23.7	3.5	24.1	5.1	24.6	38.7	3	80.6	1.5	7.7	2.2	160	1.1	186.2	32.2	37.7	73.1	8.51	36.7	7.3	2.02	7.00	1.11	6.52	1.18	3.17	.44	2.77	.39
136	468.4	115.0	.9	29.6	10.4	103.2	5.9	8	229.0	6.1	11.8	2.5	604	2.1	361.3	34.3	80.3	185.4	20.66	91.1	15.4	4.45	11.59	1.64	8.60	1.28	2.98	.38	2.09	.27
177	788.2	20.4	12.9	22.8	5.6	23.1	106.8	4	258.4	1.5	16.9	17.1	173	7.4	204.9	28.6	59.3	113.4	12.88	50.5	8.9	1.94	6.44	.95	5.86	1.09	2.86	.41	2.75	.38
STANDARD SO-17	409.0	18.0	3.7	18.5	11.7	24.9	22.1	10	296.0	4.1	11.1	11.0	127	10.2	351.8	28.6	11.4	23.3	2.97	13.7	3.3	1.02	3.79	.68	4.26	.94	2.72	.44	2.91	.43

GROUP 4B - REE - 0.200 GM BY LiBO2 FUSION, ICP/MS FINISHED.
- SAMPLE TYPE: SOIL SS80 60C

DATE RECEIVED: SEP 19 2003 DATE REPORT MAILED: *Oct 11/2003* SIGNED BY: *[Signature]* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

GEOCHEMICAL ANALY. CERTIFICATE

Mueller, Heiko PROJECT 03/032 File # A304421 (b)
Box 30014, Whitehorse YT Y1A 5M2 Submitted by: Heiko Mueller



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	As ppm	Cd ppm	Sb ppm	Bi ppm	Ag ppm	Au ppb	Hg ppm	Tl ppm	Se ppm
100	11.4	1.6	.7	1094	173.9	79.1	.1	.1	.1	<.1	<.5	.02	<.1	<.5
128	1.2	43.9	6.6	127	37.7	5.5	.3	.6	.2	<.1	<.5	.03	.1	<.5
136	.2	148.9	3.2	103	405.3	10.1	.1	3.0	.2	<.1	<.5	.02	.4	<.5
177	3.6	33.7	38.0	101	26.3	193.1	.3	10.7	1.8	.2	15.5	.05	.3	.6
STANDARD DS5	12.1	138.7	23.9	137	24.4	18.0	5.3	3.4	5.9	.3	39.6	.16	1.0	5.1

GROUP 1DX - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-MS.
UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.
- SAMPLE TYPE: SOIL SS80 60C

DATE RECEIVED: SEP 19 2003 DATE REPORT MAILED: *Oct 11/2003* SIGNED BY: *[Signature]* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

GEOCHEMICAL ANALYSIS CERTIFICATE

Mueller, Heiko PROJECT 03/032 File # A304423 (a)
 Box 30014, Whitehorse YT Y1A 5M2 Submitted by: Heiko Mueller



SAMPLE#	Ba	Co	Cs	Ga	Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SI	156.2	.6	<.1	2.1	2.2	.5	3.1	2	168.4	<.1	.3	.4	6	.1	87.7	2.9	2.0	3.4	.47	1.7	.3	.22	.40	.09	.45	.08	.27	<.05	.30	.05
183	728.3	10.7	5.2	19.1	4.8	9.0	112.7	2	296.2	.6	15.6	2.8	101	.5	169.9	17.9	45.4	81.2	8.71	31.8	5.5	1.15	3.50	.54	3.25	.57	1.64	.22	1.79	.24
236	310.5	45.2	2.1	14.6	2.2	7.1	52.4	1	21.8	.5	7.8	.9	50	2.3	74.9	13.1	13.6	25.9	2.94	10.7	2.0	.38	1.76	.31	2.04	.42	1.29	.20	1.26	.20
240	125.3	9.2	1.5	7.8	6.0	5.2	39.6	<1	18.5	.3	7.9	1.1	25	13.1	214.0	14.4	15.2	33.2	3.76	14.1	2.7	.48	2.52	.37	2.18	.42	1.24	.20	1.29	.18
245	75.5	61.4	.7	5.6	7.7	7.6	18.1	<1	65.9	.6	9.4	2.6	21	42.8	292.7	32.9	50.2	109.9	11.37	45.0	8.2	.99	6.59	.95	5.29	.94	2.64	.41	2.49	.34
247	3.1	22.2	<.1	13.3	1.6	1.5	<.5	17	5.8	<.1	1.2	6.5	18	165.3	52.6	13.7	4.2	32.8	1.76	7.6	1.8	1.88	2.02	.33	2.08	.40	1.04	.13	.95	.14
248	5.2	20.9	.2	29.4	.9	1.2	1.4	57	7.8	<.1	2.4	8.7	39	109.1	35.5	22.8	9.3	24.7	3.69	18.7	4.2	3.02	4.17	.62	3.53	.62	1.78	.25	1.68	.25
260	59.5	15.0	.4	9.0	1.5	4.6	7.2	2	10.7	.3	5.9	1.5	28	5.6	53.9	9.8	21.3	38.0	4.18	14.9	2.3	.42	1.78	.29	1.71	.30	.98	.16	.99	.14
263	187.1	44.2	.4	8.0	.9	3.5	7.6	<1	33.7	.2	3.3	.7	25	1.8	32.0	6.8	16.7	29.6	3.32	12.7	2.2	.46	1.31	.22	1.30	.22	.65	.11	.64	.09
264	1882.1	107.6	1.9	15.0	2.0	8.1	64.0	2	69.3	.5	8.4	1.6	44	4.0	62.8	42.8	27.3	49.1	5.61	21.1	4.3	.90	7.18	1.34	7.76	1.30	3.26	.44	2.66	.32
265	18.3	23.6	.3	5.4	.8	2.4	1.6	<1	9.8	.1	2.6	.7	21	.8	27.6	7.7	8.9	15.6	1.81	7.0	1.5	.31	1.55	.26	1.36	.24	.74	.10	.74	.10
307	175.1	66.7	23.5	23.4	12.8	122.8	254.1	15	415.4	7.3	11.1	2.9	303	64.9	500.7	44.2	95.8	215.8	24.93	111.8	19.1	6.09	14.88	1.98	10.18	1.57	3.85	.49	2.84	.38
RE 307	184.7	70.7	24.9	25.3	13.5	127.6	265.3	16	442.5	7.8	11.8	3.1	314	64.4	526.1	46.6	101.0	227.4	26.79	121.1	20.2	6.48	15.81	2.16	10.79	1.69	3.92	.50	2.83	.39
309	704.3	52.1	18.3	19.9	9.0	81.5	143.4	4	202.9	4.1	7.2	6.3	231	30.4	354.2	38.1	78.2	160.0	17.98	79.5	14.1	5.24	12.23	1.59	8.28	1.32	3.29	.40	2.58	.35
335	886.4	56.2	2.7	19.8	9.6	92.9	32.3	3	302.0	5.0	8.2	1.6	226	2.6	369.8	31.8	83.4	177.4	20.74	90.8	14.6	3.92	10.85	1.48	7.50	1.11	2.65	.33	2.22	.27
343	125.1	82.2	15.6	16.6	4.4	31.8	75.2	9	121.0	1.7	3.8	1.2	249	16.0	155.8	14.9	26.7	52.3	6.50	30.4	5.6	1.89	5.00	.66	3.59	.57	1.33	.17	.89	.12
347	209.6	41.0	6.2	14.5	4.8	48.1	17.8	5	470.4	2.3	4.7	1.4	263	2.8	187.3	18.0	38.0	74.9	8.80	38.4	6.7	1.98	5.50	.78	4.32	.69	1.70	.23	1.36	.18
353	20.9	1.4	.2	.6	<.5	.8	1.0	1	77.2	<.1	<.1	.3	9	.7	5.2	.9	1.4	2.1	.23	.8	.1	<.05	.18	.02	.13	<.05	.06	<.05	<.05	<.01
STANDARD	409.0	18.0	3.7	18.5	11.7	24.9	22.1	10	296.0	4.1	11.1	11.0	127	10.2	351.8	28.6	11.4	23.3	2.97	13.7	3.3	1.02	3.79	.68	4.26	.94	2.72	.44	2.91	.43

Standard is STANDARD SO-17.

GROUP 4B - REE - 0.200 GM BY LIBO2 FUSION, ICP/MS FINISHED.

- SAMPLE TYPE: ROCK R150 60C

Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: SEP 19 2003 DATE REPORT MAILED: *Oct 10/2003* SIGNED BY: *[Signature]* .D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

GEOCHEMICAL ANALYSIS CERTIFICATE

Mueller, Heiko PROJECT 03/032 File # A304423
Box 30014, Whitehorse YT Y1A 5M2 Submitted by: Heiko Mueller

(b)



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	As ppm	Cd ppm	Sb ppm	Bi ppm	Ag ppm	Au ppb	Hg ppm	Tl ppm	Se ppm
SI	.1	1.9	.7	3	.5	<.5	<.1	<.1	<.1	<.1	<.5	<.01	<.1	<.5
183	.2	24.5	7.8	51	3.9	5.3	<.1	2.3	.1	<.1	.6	.01	.2	<.5
236	.9	1357.3	7.1	41	35.7	47.6	<.1	<.1	1.0	.5	112.6	.01	<.1	3.7
240	10.9	1015.7	3.7	19	11.6	10.7	<.1	.1	1.2	.3	127.6	<.01	<.1	1.3
245	1.3	1165.1	27.7	12	12.2	268.1	.1	7.1	11.6	.8	155.2	.04	.2	18.1
247	1.3	5228.2	1.6	9	24.5	3.1	.1	.1	5.2	.8	11.5	.06	<.1	7.7
248	1.5	4258.2	1.9	10	17.7	5.1	.1	.1	7.1	.6	11.4	.02	<.1	8.3
260	.5	639.4	19.8	91	10.4	6.3	.1	.3	.9	.4	3.3	<.01	<.1	.7
263	.7	174.6	5.8	60	22.9	2.4	<.1	.2	.8	.1	9.1	<.01	<.1	.7
264	.5	1454.4	9.2	55	81.8	2.4	<.1	.1	5.7	.5	13.6	.10	.6	9.6
265	.6	273.3	1.2	42	15.9	.7	<.1	<.1	.2	<.1	1.7	<.01	<.1	1.0
307	8.6	1091.8	9.1	35	15.3	.8	.1	.6	19.1	.3	11.1	<.01	.9	5.8
RE 307	8.8	1121.8	9.3	37	14.4	<.5	.1	.7	22.5	.3	9.7	.01	1.1	6.1
309	.7	2986.1	15.9	32	24.5	<.5	<.1	.8	536.4	.6	29.9	<.01	1.6	12.4
335	.2	80.0	2.9	39	12.6	85.8	.1	.5	58.0	<.1	540.8	<.01	.1	.6
343	.8	1527.1	2.5	29	529.5	1.6	<.1	.3	7.9	.3	19.0	<.01	.9	10.1
347	.1	67.9	2.1	29	155.3	3.4	<.1	.4	.7	<.1	6.1	<.01	.1	.7
353	1.6	19.3	3.2	3	5.4	.7	<.1	.1	.9	<.1	<.5	.01	<.1	<.5
STANDARD DS5	12.2	138.6	23.1	134	24.1	18.1	5.4	3.4	5.8	.3	43.5	.16	1.0	5.1

GROUP 1DX - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-MS.
UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.
- SAMPLE TYPE: ROCK R150 60C Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: SEP 19 2003 DATE REPORT MAILED: *Oct 10/2003* SIGNED BY: *[Signature]* D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

YUKON ENVIRONMENTAL & RESEARCH LTD. Whitehorse, Yukon Y1A 2C6