

July 21/57

APPENDIX IV
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~~PBC & ORS AIRWAYS CO. LTD.~~
SUMMARY REPORT ON THE GAL PROPERTY, YUKON TERR.
BY V.S. PAPERIK

A	N
W.S.R.	✓
R.I.B.	
E.O.C.	✓
H.A.P.	✓
R.D.S.	
G.P.R.	
E.I.D.	
J.I.K.	
(E.C.)	

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1. Location & Access. The Gal Property lies at about 62° 22' N. lat. and 133° 16' W. long. It is situated 8 miles N.E. of the Pelly River and about 12 miles N.W. of the Vangorda Creek camp. The property is fairly easily accessible from the Vangorda camp by a tractor road, soft and boggy in places but passable. This road crosses four major creeks, (including the Vangorda), which are not bridged and may cause some difficulty in the high water season. A good campsite lies at the end of the road, on the right bank of Diefenbaker Creek near its confluence with Rose Creek.

2. Claims and Their Standing. The property consists of 20 claims, staked for the company on July 30th, 1956 by A. Kulan, K. Willison, E. Sommer, J. Johnson and J. Paxton. The claim-lines are, with one exception, well cut and straight, and run northwesterly. Sufficient work has been done on the property this year to keep the claims in good standing for a year or more.

3. Topography. The claims lie on a ridge between two creeks (St. Laurent Creek and Diefenbaker Creek), extending from the steep and narrow Coldwell Mountain about 5000 ft. high downhill for a distance of 9000 ft. A long, narrow V-shaped swamp extends from the base of the mountain both to the northwest and southwest, draining into both creeks. Its apex lies on Gal No. 3 M.C. and three rusty showings are found in this area, on the shore of a small swampy lake.

Most of the property is covered by thick buckbrush and moss; a smaller part of it is timbered; only the top of the ridge is reasonably bare. Outcrops are scarce and widely separated, which makes geological mapping rather difficult.

4. Geology. (a) Sedimentary rocks -- The greater part of the property is underlain by limy and siliceous sedimentary rocks, including some minor argillitic beds. The sediments are thin-bedded and gently folded except in the vicinity of probable faults, where drag-folding is evident. The prevalent strike is westerly to northwesterly, with gentle dips (10°-20°) N.E. and S.W. Weak regional metamorphism has developed abundant sericite and epidote and distinct schistosity in parts of the sediments, but even the sericitic sections do not appear to be a good equivalent of the sericite schist of Vangorda Creek. These rocks have been

thermally metamorphosed to hornfelses near basis intrusives.

(b) Basic intrusive rocks -- Basic igneous rocks intrude the sediments in a north-westerly - trending belt 500-1000 ft. wide near the western boundary of the property. The intrusive rocks are medium-grained, dark greenish grey, strongly altered, and resemble closely the gabbroic or dioritic rocks found on the Vangorda property.

(c) Granite -- The top of Coldwell Mtn., near the eastern boundary of the group, and the adjoining area is underlain by granitic rocks. The texture of the granite varies from medium-grained to very coarse-grained. Porphyritic phase is well developed, and narrow dykes of pegmatite and aplite cut the immediately adjoining rocks.

Part of the sediments intruded by the granite is metamorphosed to a biotite-sericite schist, biotite predominating.

(d) Biotite-hornblende porphyry -- Two dykes of a dark grey porphyritic rock were found near the western and eastern boundaries of the group. Both dykes are fairly narrow (3 ft. and 10 ft. respectively) and trend northwesterly; their dips could not be determined. The rock is fine-grained and contains small but well-formed phenocrysts of biotite and hornblende. Some magnetite is probably present in the groundmass. A similar rock is found near the top of Coldwell Mtn.

5. Mineralization. The rusty gossan zones near the small lake on Gal No. 3, and limonite stain in the swamp are the only visible evidences of mineralization on the property. No sulphides were found, either in place or in float. Two samples of the gossan were sent for assay (G-1, G-2), but the results are not yet known. The rocks on the property are frequently cut by quartz veins from a few inches to one foot thick, and quartz boulders up to 10" in diameter are common in the creeks and in the overburden. But although the quartz is commonly rusty, no visible sulphides were found in it. One sample from a quartz vein (G-801) was sent out to be assayed for gold; the result is not yet known.

6. Geochemical Survey. In connection with the geological mapping, a geochemical survey was carried out on the whole property with the exception of the four claims on Coldwell Mtn. (Gal 9-12 N.C.) The cold extraction method (Chisholm - Bloom) was used in testing samples.

Minor modifications were introduced into the sampling system. For example, it was found impossible to collect samples from a uniform 2 ft. depth, due to thinness of the overburden in some places and permafrost in others. Also, the sampling rods were found impractical in the swampy ground due to the small quantity of soil recovered and to the unavoidable contamination and difficult cleaning of the small opening in the rod. For these reasons, picks were used for sampling, samples were taken from a depth of 6 - 10 inches, and tested in the camp rather than in the field. This method, while perhaps cruder than that recommended in the company instructions, was found quite effective. This is shown by the fairly good agreement of the more important geochemical and geophysical anomalies. Sampling intervals were 200 ft. in the central part of the property, 300 and 500 ft. in the outlying areas.

The greatest number of samples with a high metal content (over 200 ppm) was found in the swamp, throughout its length. Since the main direction of drainage in the swamp is away from the rusty showings on Gal No. 3, this was to be expected; the concentration of base metals in the swamp is thus clearly of a transported nature. However, the relative concentration of high values in the N.E. corner of Gal No. 3 M.C. may be more significant. This area lies above the swamp near its apex, and may possibly be the source of the iron oxide found on the shore of the lake. It was not explored more closely due to thick overburden.

The only other definite anomaly is located near the S.E. corner of Gal No. 16 M.C. This area lies on a low ridge, is fairly dry and about 200 ft. distant from the nearest flowing water, so that the concentration of base-metal ions is probably residual. The bedrock here is overlain by more than 30 ft. of overburden and was not reached. A six-foot pit dug in the overburden yielded many quartz boulders and some crumbly fragments of iron oxide, one of which was tested chemically and gave close to 1000 ppm Zn or equivalent.

Other, less definite anomalies are outlined on the accompanying map.

7. Geophysical Survey. (a) Magnetometric -- Fourteen of the 20 claims were surveyed with an Askania Magnetometer. The resulting map shows a number of moderate magnetic highs and lows, arranged very roughly in a northerly and a westerly trend, and two prominent magnetic highs. One of the latter, situated on Gal No. 2 M.C., may be disregarded. It lies near a

dyke of hornblende porphyry which outcrops in the area, and probably reflects merely the magnetite content of the dyke. No chemical anomaly was found in this area. The moderate N.W.-trending magnetic high near the western boundary of the property has a similar cause, since it coincides with the basic intrusive rocks which probably contain some magnetite.

The other prominent magnetic high, in the S.E. corner of Gal No. 16, coincides with a chemical anomaly and may indicate the presence of magnetic sulphides below the overburden.

The much less distinct high near the N.E. corner of Gal No. 3, in connection with the concentration of relatively high chemical values there, may also be significant. The other moderate magnetic anomalies do not appear to have any distinct connection with geochemical results and their significance cannot be assessed on the basis of the present information.

(b) Electromagnetic -- In addition to the magnetometric survey, the more interesting parts of the property were surveyed with the Ronka Electromagnetic Loop. The results are enclosed with this report. The most prominent change of phase-readings was recorded again in the vicinity of the magnetic and chemical anomaly on Gal No. 16 M.C.

8. Drilling. An attempt was made to explore some of the anomalies by drilling. This was completely unsuccessful due to two main reasons: a) the portable Packsack drill which we used was unable to penetrate more than 30-35 ft. of overburden. Casing could not be lowered more than about 15-20 ft., and when we tried to continue without casing, the hole invariably caved in. b) The low ridges forming most of the property are completely dry, and our light pump and 200 ft. of $\frac{1}{2}$ " hose could not supply a sufficient quantity of water from distant water holes. The lack of water made most of the property impossible to drill with our equipment.

Of the four holes attempted, holes G-1 and G-2 were collared on two of the gossan showings on Gal No. 3, and drilled to 15 ft. and 24 ft. respectively without reaching bedrock. Hole G-3 located on one of J. Paxton's chemical anomalies of 1956 on Gal No. 18 M.C. cut the bedrock at 8 ft. and penetrated 10 ft. of unmineralized sericitic sediments before it caved in. Hole G-4 was collared on the magnetic and chemical anomaly in the S.E. corner of Gal No. 16 and reached a depth of 33 ft. without cutting bedrock. Further attempts at drilling were then abandoned.

9. Conclusions and Recommendations. Our investigation has indicated the presence of some base-metal sulphides, probably with pyrrhotite and/or magnetite. The nature and extent of the mineralization was not determined due to our inadequate drilling equipment. The EM survey shows that the conductive (sulphide) bodies are small and discontinuous, and the writer believes that they are not of a sufficient size to justify any considerable expense for their development. However, if further exploration is intended, the following recommendations may facilitate the work:

1. A drilling program would require a machine capable of penetrating at least 50 ft. of overburden. As the rock does not core well, AX would be preferable.

2. A pump or combination of pumps capable of pushing water uphill for 1000 - 1500 ft., and the appropriate length of hose, would be necessary. Even so, some parts of the property would remain out of reach.

3. The anomalies on Gal No. 16 and Gal No. 3 M.C. would be the best places to drill. Some attention should be paid to the possibility of their connection.

4. The following claims are not likely to contain any economic mineralization and may be safely disregarded in an eventual future work: Gal 10, 12, 13, 15, 17, 19 and 20 M.C.

10. Acknowledgment. The writer wishes to acknowledge the competent professional work done by D.A. Lockie, geologist, and G. Penikis, geophysicist, during the exploration of this property.

Vangorda Creek Camp,
July 21, 1957

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