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PROVINCE OF ONTARIO
DEPARTMENT OF MINES

P. R. 1951-6

Preliminary Report
on
Ground Investigation of Aeromagnetic Anomalies
on the Campbellford and
Bannockburn Sheets*

By **W. D. Harding**

Introduction

In the summer of 1950 the writer carried out ground investigations on a number of aeromagnetic anomalies situated in the area covered by the Campbellford and Bannockburn sheets, National Topographic Series, Department of National Defence, Ottawa. The anomalies examined are in Hastings and Peterborough counties and were defined as the result of a joint aeromagnetic survey, completed in 1949, by the Ontario Department of Mines and the Geological Survey of Canada. This survey, carried out with an air-borne magnetometer, covered the area contained in the Bancroft, Coe Hill, Bannockburn, and Campbellford sheets. The isomagnetic contours were superimposed upon these map sheets. Surface examinations of the anomalies in the area covered by the Bancroft and Coe Hill sheets were carried out in 1949 and 1950 by E. M. Abraham, geologist, Ontario Department of Mines. The results of Mr. Abraham's examinations have already been published, under the title "Geology in the Vicinity of Aeromagnetic Anomalies on the Bancroft and Coe Hill Sheets." This publication should be read in conjunction with the present report.

Iron Discovered by Drilling Anomaly

In the summer of 1950 the Bethlehem Steel Company discovered a body of magnetite by drilling on a magnetic anomaly of rather high intensity situated on the Ross Rogers farm about 1¼ miles southeast of Marmora. This anomaly is shown on the Campbellford sheet. Considerable interest in aeromagnetic survey work has been developed by prospecting companies as a result of this discovery, particularly in view of the fact that the magnetite discovered was not only not exposed at the surface but was hidden beneath from 100 to 200 feet or more of flat-lying Ordovician limestone.

Nature of Surface Investigations

The examination of individual anomalies by the writer was confined largely to observations relating to surface topography, geology, mineralization and magnetic minerals, and dip-needle readings. This work was carried out in much the same manner as that in the Bancroft and Coe Hill areas, which has already been described by Mr. Abraham. The results of the observations made by the writer are contained in the tables that form part of this report.

Acknowledgments

During the period of field work, which began in June and lasted to September, 1950, the writer was ably assisted by Graham MacDonald, of Queen's University, Kingston, Ont.

Information regarding the geology and mineral deposits of the Campbellford and Bannockburn sheets was obtained mainly from the following publications:—

E. LINDEMAN and L. L. BOLTON, "Iron Ore Occurrences in Canada," Vols. I and II, Mines Branch, Can. Dept. Mines, Ottawa, No. 217, 1917.

M. E. WILSON, Marmora Sheet, Geol. Surv. Can., map No. 560A, 1939.

JAS. E. THOMSON, "Mineral Occurrences in the North Hastings Area," Ont. Dept. Mines, Vol. LII, 1943, pt. 3.

Magnetite in Surface Rocks

Altogether 43 magnetic anomalies were examined by the writer. Of this number, 9 are shown on the Campbellford sheet and the remainder on the Bannockburn sheet. These anomalies might be attributed to the presence of magnetite or pyrrhotite or of both minerals. The surface examinations, however, revealed that pyrrhotite, which is weakly magnetic compared with magnetite, is not abundant in the sections examined. It is believed by the writer that in general the small amounts of pyrrhotite encountered have had little or no effect in producing the anomalies examined. Magnetite, however, occurs at widely scattered locations in the form of individual grains or blebs, disseminations, and less frequently in heavier concentrations such as lenses and irregular-shaped masses. It occurs in many types of rock including basic lava, quartzite, conglomerate, breccia, greywacke, and crystalline limestone, and in intrusive rocks ranging from granite and syenite to diorite and gabbro. In general the largest concentrations of magnetite appear to have formed either near the contacts between Grenville limestones and igneous intrusives or as segregations within masses of gabbro.

Magnetite bodies discovered in former years in the area examined by the writer include the Dominion iron mine, the Dufferin (Malone) mine, the Blairton iron mine, the Belmont iron mine, the Moore mine, and the Horton iron mine. All these bodies have been indicated by anomalies of various intensities on the aeromagnetic maps, and they are all either in the vicinity of limestone-igneous contacts or within the gabbro.

Owing to the limited time available, a number of anomalies in the northwestern part of the Bannockburn sheet, including Mag-Iron Mining and Milling, Limited (Tomahawk iron mine), were not examined.

Value of an Aeromagnetic Survey in the Search for Minerals

The value of an aeromagnetic survey in the search for minerals is twofold. First, it makes possible the discovery of a mineral body directly as the result of the investigation of an anomaly; the discovery of a body of magnetite on the Ross Rogers farm near Marmora by diamond-drilling is an example. The second factor in aiding the search for mineral is geological and is indirect. It involves the fact that the amounts of magnetite disseminated throughout certain types of rock in the area examined are consistently greater than the amounts contained in other rock types. The distribution of the isomagnetic lines, therefore, may indicate an increase in magnetic intensity along the margins of such magnetite-bearing rocks. The contours may also follow roughly along the contacts. Information of this kind, when used with caution, in conjunction with a knowledge of the

*Campbellford sheet No. 31 C/5 and Bannockburn sheet No. 31 C/12, published by the Geological Survey of Canada, Ottawa.

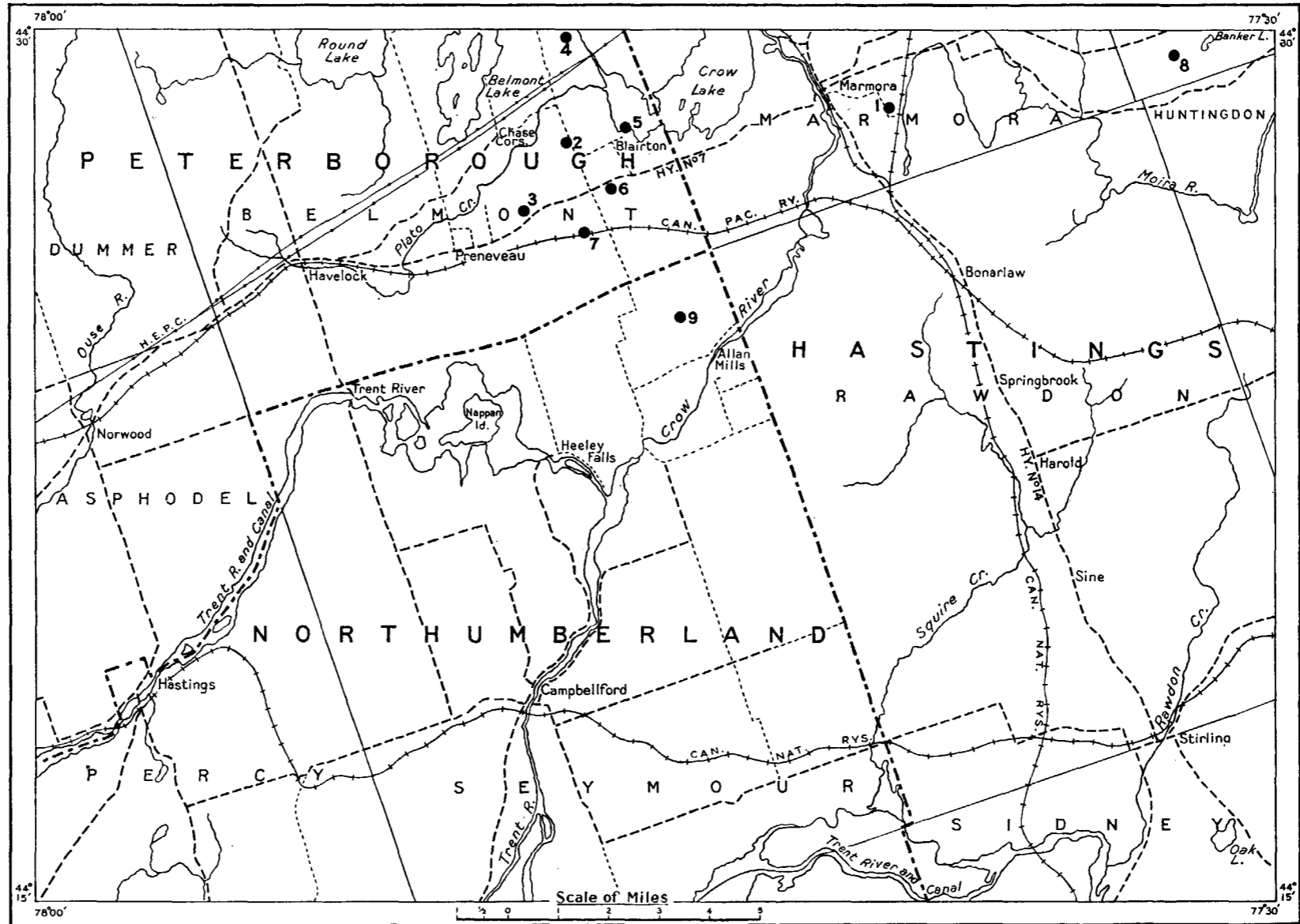
local geology, would constitute an aid to geological mapping. Exposed rock types may reasonably be supposed to extend into areas hidden by overburden or in some cases covered by surface rock formations. On this basis the Preveueau-Blairton body of basic lava may be assumed to cover an area larger than indicated by the surface outcrops. Similarly the dark brecciated beds of Precambrian sediment exposed along the telephone line to the west of Banker lake would appear to underlie most of an area that extends for about 4 miles north of Banker lake. Most of the gabbro rocks contain larger amounts of disseminated magnetite than the other igneous rocks of the examined area. The areas of gabbro, therefore, as for example the gabbro mass situated about 3 miles northwest of Millbridge, are areas of high magnetic intensity.

In general, the flat-lying Ordovician limestones are for practical purposes magnetically inert and may in most places be disregarded in their relationship to the magnetic contours.

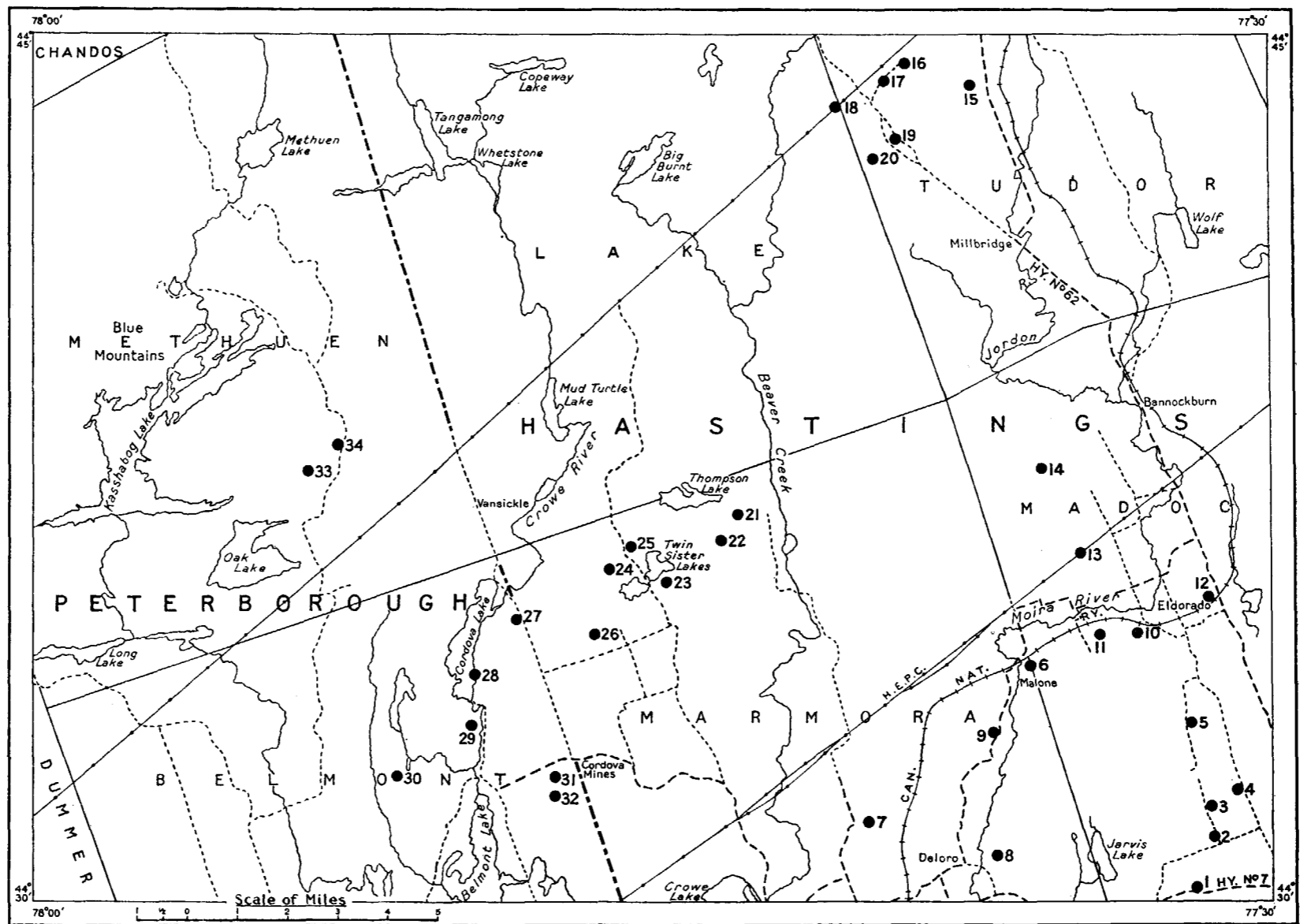
Facts Revealed by the Examination

The main facts revealed by the ground investigations of anomalies in the area covered by the Bancroft and Coe Hill sheets have been compiled by E. M. Abraham. Most of the points enumerated are applicable also to the examinations made by the writer in the area covered by the Bannockburn and Campbellford sheets. Additional facts compatible with the writer's observations in the last-mentioned areas are as follows:

1. The flat-lying Paleozoic rocks that occupy sections of the Campbellford and Bannockburn sheets are of low magnetic intensity and in general may be magnetically ignored.
2. The small amounts of pyrrhotite encountered suggest that this mineral was a very minor factor in causing any of the anomalies examined on the Bannockburn and Campbellford sheets.
3. The shape, direction of elongation, and other characteristics of an anomaly outlined by a dip needle will differ from one outlined by an air-borne magnetometer.
4. The most searching ground investigation of an anomaly without mining work will not yield enough facts to entirely dissipate speculation.



Key map showing the location of the aeromagnetic anomalies on the Campbellford Sheet.



Key map showing the location of the aeromagnetic anomalies on the Bannockburn Sheet.

AEROMAGNETIC ANOMALIES

CAMPBELLFORD SHEET

NUMBER	NAME OF ANOMALY	CHARACTER OF TERRAIN	GEOLOGY	AEROMAGNETIC FEATURES			DIP NEEDLE RESULTS	CAUSE OF ANOMALY	REMARKS
				Maximum Intensity (gammas)	Magnetic Relief (gammas)	Shape and Strike			
1	Rogers Farm, Marmora	Level and rolling surface, farm land and bush land.	The surface included within the contours of this anomaly is largely overburden. Flat-lying Ordovician limestones are exposed in the central and northern sections. Steeply-folded Grenville limestones and other Precambrian rocks are exposed near the point where No. 7 highway crosses the Canadian Pacific railway almost three-quarters of a mile to the northeast. These limestones are very low in magnetic minerals.	8500	6800	A symmetrical and almost circular-shaped anomaly of oval form. Longest axis north-westerly.	High positive (90°) and high negative readings were obtained in the vicinity.	Magnetite.	This anomaly was diamond-drilled by Bethlehem Steel Corporation in 1950-1951.
2	Freeman Corners. The maximum intensity section of a large anomalous area, which extends from Preneveau to Blairton.	Level and rolling surface, mostly bush land.	The only rocks exposed are flat-lying Ordovician limestones. These rocks may possibly be underlain by basic magnetite-bearing lavas similar to those exposed in the Preneveau-Chase Corners-Crow River belt to the west.	4700	3000	Oval, longest axis almost north.	In the inner contour area readings mostly +14° to +24°.	Undetermined	
3	Part of the Preneveau-Blairton anomaly.	Rolling surface, some low ground, farm land, partly pasture.	A single outcrop of fine-textured basic lava (part of the Preneveau-Chase Corners and Crow River belt of lavas) surrounded by overburden.	4300	2600	Oval-elongated, almost north.	Mostly +11° to +20°	Probably disseminated magnetite.	
4	Part of the Preneveau-Blairton anomaly.	Rough surface, rock ridge striking about N. 25° E.	The highest intensity contours of this anomaly are situated on the northern part of the Preneveau-Chase Corners-Crow River belt of basic lavas. These rocks strike generally N. 25° E. and dip steeply to the southeast. They contain small lenses and disseminations of magnetite.	3600	1900	Oval-elongated, almost north.	Mostly +15° to +35°.	Probably disseminated magnetite.	
5	Blairton Iron Mine. Part of the Preneveau-Blairton anomaly.	Hillside, uneven surface.	The Blairton iron mine consists of a body of magnetite situated at the contact between Grenville crystalline limestone to the west and intrusive diorite to the east.	4000	2300	Oval-elongated, almost north.	Up to +90°.	Heavy magnetite.	The extension of the magnetite bearing zone at the Blairton iron mine is obscured to the north by the waters of Crow lake and to the south by overburden.
6	One mile south of the Blairton Iron Mine. Part of the Preneveau-Blairton anomaly.	Level and rolling farm land and bush land.	No rock exposed.	3800	2100	Oval-elongated, northeast.	Generally from +7° to +20°.	Undetermined	
7	Part of the Preneveau-Blairton anomaly.	Level bush land and pasture land.	No rock exposed.	3900	2200	Oval-elongated, northeast.		Undetermined	
8	Dominion Iron Mine, Part of Banker Lake-Eldorado anomaly.	Rough surface, rocky hummocks covered with light bush. The inner (4000) contour parallels a rocky ridge and a telephone line.	The northern part of the area of maximum intensity lies along the southern flank of a steep hill composed mostly of Precambrian conglomerate and greywacke with minor beds of quartzite, crystalline limestone, and lava. These rocks contain varying amounts of disseminated magnetite. The beds have been steeply folded. They strike northeasterly. The low ground to the south of the hill consists mainly of overburden in which are exposed scattered outcrops of flat-lying Ordovician limestone.	4000	2300	The contour of maximum magnetic intensity is of elliptical shape. Long axis strikes N. 75° E.	Dip needle readings suggest that the area of maximum magnetic intensity is situated somewhat farther north than was indicated by the aeromagnetic survey.	Disseminated magnetite. Much visible magnetite is exposed in the pits of the old Dominion iron mine situated a few yards south of the power line and north of this anomaly.	
9	Northwest of Allan Mills	Rolling bush land and open farm land with low hills.	The central and northern part of the anomalous area is underlain by flat-lying Ordovician limestone. Elsewhere in the vicinity the bed rocks are obscured by overburden. Precambrian rocks containing disseminated magnetite are exposed at Allan Mills about one mile to the southeast. These rocks strike N. 30° W.	2600	900	Oval, longest axis a few degrees west of north.	+22° (maximum).	Undetermined	
10	Banker Lake, Part of Banker Lake-Eldorado anomaly.	Rocky ridge covered with light bush.	This anomaly is situated on a rocky ridge, which lies immediately north of No. 7 highway. The ridge is composed mostly of beds of conglomerate and greywacke of vertical dips, which strike approximately northeast. They are an extension of the sediments exposed in the vicinity of anomaly No. 3 described above. They are black in colour, highly altered, and may include some volcanics. They contain small varying amounts of visible disseminated magnetite.	3900	2200	Oval-distorted, about east.	+11° to +26°.	Disseminated magnetite.	

AEROMAGNETIC ANOMALIES BANNOCKBURN SHEET

NUMBER	NAME OF ANOMALY	CHARACTER OF TERRAIN	GEOLOGY	AEROMAGNETIC FEATURES			DIP NEEDLE RESULTS	CAUSE OF ANOMALY	REMARKS
				Maximum Intensity (gammas)	Magnetic Relief (gammas)	Shape and Strike			
1	Banker Lake, Part of the Banker Lake-Eldorado anomaly.	Rocky ridge covered with light bush.	This anomaly is situated on a rocky ridge which lies immediately north of No. 7 highway. The ridge is composed mostly of beds of Precambrian conglomerate and greywacke of vertical dip, which strike approximately northeast. These rocks are an extension of the sediments exposed in the vicinity of anomaly No. 8, Campbellford Sheet, described above. They are black in colour, highly altered, and may include some volcanics. They contain small, varying amounts of visible disseminated magnetite.	3900	2200	Oval-distorted, strike about east.	+ 11° to + 26°.	Disseminated magnetite.	
2	Part of Banker Lake-Eldorado anomaly.	Uneven surface, hummocky pasture land, and some bush land.	The eastern part of this anomaly is occupied by a ridge of dark-coloured Precambrian sedimentary rocks similar to the Banker lake sediments. The original beds which contained lenses of magnetite have been crumpled by folding. The resulting rock, which is a breccia, contains small fragments of magnetite. The only other exposed rock is Ordovician limestone, which outcrops in low ground at a creek. The western part of the anomaly is covered by overburden.	3500	1800	Lens-shaped, N.75°E.	Range mostly from + 10° to +24°.	Probably fragments and lenses of magnetite.	
3	Part of Banker Lake-Eldorado anomaly.	Level and rolling surface, open pasture land, and light bush.	No rock. Brecciated Precambrian sediments containing small amounts of magnetite are exposed at the east end and to the south. Similar rocks may underlie this anomaly.	3600	1900	Lens-shaped, north.	+ 11° to + 29°.	Unknown.	
4	Part of Banker Lake-Eldorado anomaly.	Level cultivated farm land and low rock ridges.	Dark-coloured highly-metamorphosed Precambrian sediments, containing disseminated magnetite, and Ordovician limestone are exposed near the centre of this anomaly.	3600	1900	Lens-shaped, north.		Probably disseminated magnetite.	
5	John Caskey Farm, Part of Banker Lake-Eldorado anomaly.	Rolling farm and pasture land with some low rock outcrops.	The inner contour of this anomaly lies on farm land where no rock is exposed. A short distance to the north, and within the anomalous area, highly-altered Precambrian rocks, including mostly sediments but possibly also lavas, which contain small amounts of disseminated magnetite, are in contact with intrusive pink granite. The sediments in places strike almost north, and dip steeply to the west.	3900	2200	Oval, N.45°W.	+ 12° to + 33°.	Probably disseminated magnetite.	
6	Dufferin (Malone) Iron Mine.	Moderately rough surface, hilly, farm land, pasture land, bush.	Vertically-dipping Grenville crystalline limestones, which strike from N. 75° E. to east, are exposed in a ridge on which is situated the Malone iron mine. Magnetite, in varying amounts, occurs within the limestone beds in the form of blebs, lenses, and disseminations. Some limestone beds contain small amounts of pyrrhotite. The largest bodies of magnetite, in which the pits of the Malone iron mine are situated, lie to the north of the contour of maximum intensity.	2300	600	Round.	Highest readings were obtained in the vicinity of the pits of the Malone iron mine situated to the north of the contour of maximum intensity.	Magnetite.	Dufferin iron mine is a former producer of magnetite ore.
7	Northwest of Marmora Station	Hummocks of overburden, mostly pasture land and farm land.	No rock exposed.	1900	200	Circular, distorted.	Low readings.	Unknown.	
8	Deloro.	Low ground, partly swamp (valley of Moira river), flanked on east by rocky ridge.	Eastern part of anomalous area lies on the west flank of a rocky ridge, in diorite. The diorite changes gradually eastward into syenite and granite. Inclusions of sediments which contain disseminated magnetite occur within the diorite and syenite. The distribution of the rocks in the vicinity suggests that this anomaly is situated close to a contact between sediments and igneous rocks.	2500	800	Oval, north.	Highest readings obtained on low ground where inclusions of sediment occur within the diorite and syenite.	Probably disseminated magnetite.	
9	Malone South.	Rolling open farm land and pasture land. Some low rock hummocks and some bush land.	Scattered outcrops of Precambrian diorite grading into syenite and gabbro. These rocks contain magnetite in the form of disseminations and small lenses. Over small sections, the rocks contain up to 3% magnetite. Arsenopyrite occurs in the vicinity.	2400	700	Distorted oval, north-east.	Mostly + 5° to + 20°. Higher readings where lenses of magnetite are visible.	Disseminated magnetite.	

AEROMAGNETIC ANOMALIES

BANNOCKBURN SHEET (continued)

NUMBER	NAME OF ANOMALY	CHARACTER OF TERRAIN	GEOLOGY	AEROMAGNETIC FEATURES			DIP NEEDLE RESULTS	CAUSE OF ANOMALY	REMARKS
				Maximum Intensity (gammas)	Magnetic Relief (gammas)	Shape and Strike			
10	South of Railway, East	Uneven surface, hills and valleys, pasture, cultivated land, and patches of bush.	Scattered low exposures of Precambrian granite. This granite is composed almost entirely of pink feldspar and quartz and is cut by very small veinlets, which contain hematite, garnet, and magnetite. A little magnetite was identified in the overburden.	2200	500	Oval, northwest.	Mostly +9° to +18°.	Undetermined	
11	South of Railway, West	Open pasture land, scattered patches lightly wooded, rolling surface, low hills.	Numerous scattered outcrops of Precambrian granite overlain by a small patch of Ordovician limestone. Magnetite is disseminated locally within the granite and constitutes as much as 2% of the rock over very small sections. A quarter of a mile north of the 2100g contour a pit has been sunk in a body of magnetite and pyrrhotite. The pit lies at the contact between the granite (diorite) and Grenville crystalline limestone.	2100	400	Irregular, northwest.	Mostly +5° to +15°.	Magnetite.	Heaviest concentration of magnetite observed was at a pit situated to the north of this anomaly.
12	Eldorado.	Rocky ridge striking S. 75° W., open pasture land, patches of bush.	White Grenville crystalline limestone dipping almost vertically and striking almost east-west is cut by a mass of granite. Near the contact the limestones contain pyrite, chalcopyrite, magnetite, hematite, and siderite. The Moore copper-iron mine and the Richardson gold mine are situated along this mineralized zone.	2300	600	Pear-shaped.	Maximum dips of from +80° to +90° were obtained at the Moore copper-iron mine.	Magnetite.	Old pits and shafts are situated within the anomalous area.
13	Power Line.	Level farm land	No rock exposed. Ordovician limestone is exposed about 1/8 mile to the northwest and granite and syenite are exposed about 1/8 mile to the southeast.	3300	1600	Circular.	+10° to +25°.	Unknown.	
14	Moss Marsh.	A basin of level swamp and muskeg, partly water, inaccessible on foot. Basin over half a mile in diameter and is surrounded by hills of rock.	No rock is exposed in the basin in the section covered by the centre contour of the anomaly. The basin is surrounded by a circular hill or rim, the outer part of which is composed of granite and syenite containing very small amounts of magnetite. These rocks pass gradually into diorite and gabbro and at the same time show an increase in disseminated magnetite towards the centre of the basin. Centre of anomalous area is probably underlain by gabbro containing magnetite.	7600	5900	Circular.	On account of water and muskeg no readings were taken closer than 1/4 mile from the centre contour. Those recorded range from +15° to +45°.	Magnetite.	
15	Jordan Creek.	Uneven surface, hummocks of rock and overburden, bush land.	Diorite and gabbro, containing as high as 1% disseminated magnetite.	2900	1200	Lenticular N.20°E.	Scattered erratic readings +12° to +28°.	Magnetite.	
16	North of Fire Tower.	High ground, level and rolling surface with low rock outcrops, farm land and bush land.	Gabbro and diorite, containing very small amounts of magnetite.	2600	900	Distorted oval, north-east.	+9° to +20°.	Undetermined	
17	West of Fire Tower.	Mostly bush land, scattered rock hummocks.	Gabbro, containing small amounts of disseminated pyrite and magnetite.	2700	1000	Distorted oval.	+8° to +27°. Highest readings obtained over a carbonated shear zone in gabbro.	Undetermined	
18	Horton Iron Mine	Rough surface, hills and valleys.	Gabbro, containing magnetite.	3100	1400	Circular, distorted, triangular.		Magnetite.	Small shaft reported to be about 50 feet deep, has been sunk on lens of magnetite. Also pits have been sunk in side of a hill.
19	Old Hastings Road	Hilly, rough surface, much exposed rock.	Rocks are all gabbro. Small amounts of magnetite are disseminated in widespread manner throughout the gabbro. Larger amounts of magnetite occur within the gabbro in scattered places in the form of lenses and disseminations in bands. Shear zones containing carbonate minerals occur within the gabbro at a few places.	3900	2200	Distorted oval.	+12° to +90°.	Magnetite.	A shallow pit sunk in a lens of magnetite situated 180 ft. east of the road, at a location about half a mile S.E. of the centre contour, suggests that prospecting for iron was carried out in that section many years ago.
20	Old Hastings Road, West	Rough surface, hilly.	Gabbro.	2900	1200	Distorted oval, N.W.	No reading taken.	Undetermined	
21	Thompson Lake.	Mostly low ground and swamp.	Precambrian sediments, including quartzite, calcareous quartzite, slate, and greywacke. Strike N.40° E. to N.60° E. Dip almost vertical. Magnetite identified but negligible in amount.	2500	800	Distorted oval, N.45°E.	+10° to +16°.	Unknown.	

AEROMAGNETIC ANOMALIES BANNOCKBURN SHEET (continued)

NUMBER	NAME OF ANOMALY	CHARACTER OF TERRAIN	GEOLOGY	AEROMAGNETIC FEATURES			DIP NEEDLE RESULTS	CAUSE OF ANOMALY	REMARKS
				Maximum Intensity (gammas)	Magnetic Relief (gammas)	Shape and Strike			
22	R. Bonter.	All bushland, hummocky surface, much overburden, and numerous rock outcrops.	Beds of quartzite, greywacke, and calcareous shale aggregating altogether a width of about a quarter of a mile. The beds are locally much contorted. In general they dip steeply and strike northeasterly. Magnetite occurs as lenses. Thin beds, and disseminations within the quartzite. This sedimentary belt is flanked on the northwest and southeast by basic lavas.	3000	1300	Inner contours almost circular.	+ 11° to + 45°.	Magnetite.	
23	Twin Sister Lakes, East	Rolling surface, light bush, open patches, low rock outcrops.	Belt of Precambrian sediments about ¼ mile wide consisting mostly of rusty weathering quartzite and greywacke. The beds are almost vertical and strike about east. The belt is flanked on the north and south by lavas. The quartzites within the belt contain small lenses and disseminations of magnetite.	2600	900	Oval, east.	+ 7° to + 25°.	Magnetite.	
24	Twin Sister Lakes, West	Uneven surface, rock hummocks.	A narrow belt of Precambrian sediments including rusty weathering quartzites which strike east. Basic lavas and granites occur in the vicinity.	2300	600	Oval, east.	+ 9° to + 22°. The meagre amount of magnetite visible was too small to affect the dip needle.	Unknown.	
25	Twin Sister Lakes, North	Bush land, rough surface with numerous hummocks of rock.	Rocks are basic lavas resembling andesites and basalts. They are steeply folded, dipping steeply to the south, and striking in a northwesterly direction. Amount of magnetite visible is almost negligible.	2550	850	Oval, northwesterly	+ 8° to + 18°.	Unknown.	
26	Southwest of Twin Sister Lakes	Low rolling bush land, partly swampy with many low rock exposures.	Rusty weathering Precambrian quartzite containing minute amounts of pyrite and magnetite. Beds strike about east and are approximately vertical.	2200	500	Almost circular.	+ 8° to + 14°.	Unknown.	
27	Cordova Mines, Vansickle Road	Anomaly is situated on a hill, bush land with open sections of pasture land.	Precambrian quartzites, greywackes, and crystalline limestones strike northeasterly and dip almost vertically. Magnetite is disseminated within rusty-weathering beds of quartzite and represents as much as 10% of the total rock over very small sections.	3000	1300	Oval, northeast	+ 10° to + 55°.	Magnetite.	
28	Cordova Lake	Uneven surface, covered with light bush.	Precambrian sediments including quartzite, greywacke, and lenses of crystalline limestone are exposed in the anomaly area on the east shore of Belmont lake. Some of the bands of quartzite contain visible disseminated magnetite. Lava rocks are exposed to the east of the sediment.	2300	600	Circular	Low dips.	Unknown.	
29	Crow River	Much level bush land with some hummocks of rock and overburden.	The rocks are all basic fine-textured lavas, some phases of which are schist. These rocks strike mostly from N. 15° E. to N. 50° E. They dip almost vertically. They contain small amounts of disseminated magnetite and meagre amounts of pyrite.	3000	1300	Oval, almost north	+ 6° to + 16°.	Probably magnetite.	
30	Otter Creek	All bushland, uneven surface, many rock outcrops.	Dark, fine-textured Precambrian lavas, which strike northeastward and dip to the southeast. They contain meagre disseminations of pyrite and magnetite.	2800	1100	Circular.	Low readings.	Undetermined.	
31	Cordova Mines	Rolling and level surface, open pasture land.	Coarse-textured diorite, containing up to 2% disseminated magnetite. Granite intrusions occur in the vicinity.	2300	600	Circular.	Low readings.	Magnetite.	
32	Belmont Iron Mine	Uneven pasture land, partly wooded, scattered rock exposures.	Centre of this anomaly lies close to the pit and shaft of the Belmont iron mine. This magnetite deposit lies along the contact between diorite to the east and basic lavas to the west. Much magnetite visible on surface.	3000	1300	Circular.	Maximum + 90°.	Magnetite.	
33	Northeast of Oak Lake.	Rolling bush land covered with light second growth. Some open patches, much swamp and muskeg, low rock outcrops.	The section covered by this anomalous area is underlain largely by gabbro. The gabbro contains inclusions of sediments and small amounts of disseminated magnetite. Locally it grades into syenite and granite. Much of the anomaly area is covered by open marsh.	6200	4500	Distorted, oval, northeast.	Mostly between + 10° and + 36°.	Undetermined.	
34	East of Blue Lake	Level and rolling surface, mostly open marsh land, low rock outcrops.	Scattered outcrops of gabbro grading into diorite and granite, small amounts of disseminated magnetite.	6000	4300	Inner contour oval, east.	Mostly between + 10° and + 32°.	Unknown.	