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REPORT
ON

PART I

WOMAN RIVER PROJECT
PORCUPINE MINING DIVISION
DISTRICT OF SUDBURY, ONTARIO

12 December 1975

W. G. Wahl Limited

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Suite 1101, 302 Bay Street
Toronto, Ontario
M5H 2P3

12 December 1975

Mr. J. F. Machamer
Manager of Exploration - Canada
U.S. Steel International Ltd.
12th Floor
7 King Street East
Toronto, Ont.

Dear Mr. Machamer:

Submitted herewith is our final report on:

PART I

WOMAN RIVER PROJECT
PORCUPINE MINING DIVISION
DISTRICT OF SUDBURY, ONTARIO

Part I consisted of a two phase exploration program covering seventy-four mineral claims and five patented mineral claims located in the four corners area of Mallard, Benton, Heenan and Marion townships. For ease of presentation only, the claims have been divided into five map areas lettered clockwise from the southeastern claims. This area is underlain by assorted acid to intermediate volcanic rocks, banded iron formation and younger granite and diorite. These rocks are folded into an anticlinal structure whose axial plane strikes and plunges steeply to the west-southwest and dips steeply to the north-northwest.

The first phase of this exploration program consisted of the establishment of a reconnaissance grid followed by an electromagnetic survey, the purpose of which was to define the regional extensions of known anomalous areas. Sixteen anomalous, conductive zones were mapped during the reconnaissance program, twelve of these zones were further defined during the second phase of the exploration program.

The second phase consisted of a detailed, systematic evaluation of these twelve zones. This entailed the development of a grid system normal to the regional strike of the conductor followed by an electromagnetic survey with Fraser Filtration Plots, a total magnetic field gradient study and a geological survey. As an integral part of the geological investigation, whole rock and soil geochemical samples were collected for analysis in an attempt to determine the causative body of the conductive zone.

The following is a breakdown of the twelve anomalous zones as to map area and inferred causative body.

MAP AREA "A"

The causative body of Anomaly 1 is thought to be a zone of sulphide mineralization associated with the contact between the highly chloritic dacite tuff mapped to the south and the sericitic rhyolite lapilli tuff mapped to the north.

The causative body of Anomaly 2 is thought to be a zone of disseminated sulphide mineralization associated with a dacite tuff horizon.

Anomalous rock geochemical results in zinc and copper are associated with both these anomalies.

MAP AREA "B"

The causative body of Anomalies 3 & 4 is thought to be a zone of sulphide mineralization associated with a chloritic andesite tuff. Anomalous rock geochemical results in zinc and copper are associated with both these anomalies.

MAP AREA "C"

The causative body of Anomaly 7 is thought to be the contact zone between the white to light-grey, banded chert and the overlying andesite.

The causative body of Anomaly 8 is a thinly banded iron formation containing numerous grey chert bands, with considerable pyrrhotite and pyrite.

In general, Goodwin has estimated the iron content to be 30 - 40 percent at the base of the formation and 5 - 10 percent at the top. The following table, after Goodwin, illustrates these relationships in descending stratigraphic sections.

Iron Formation, Underlying the Large Ridge in Claims WS 8 & 9

White to light-grey, banded chert	70 - 200 feet
Dark-grey, banded chert with jasper zones	300 - 600 feet
Dark-grey, banded chert with magnetite zones	100 - 600 feet
	470 - 1400 feet

MAP AREA "D"

The causative body of Anomaly 9 is the contact zone between the thinly banded jaspery iron formation and the overlying andesite.

The causative body of Anomaly 9a is thought to be a modestly mineralized grey chert horizon lying within the iron formation.

The causative body of Anomaly 10 is thought to be the southeastern contact zone between the iron formation and the underlying rhyolite breccia.

MAP AREA "E"

The causative body of Anomaly 11 is a banded jaspery iron formation containing numerous grey chert bands, with considerable disseminated pyrite.

The causative body of Anomaly 12 is a heavily pyritized grey chert containing up to 10 percent total sulphides.

It is recommended that the causative bodies of the twelve aforementioned anomalies be delineated by diamond drilling. It is also recommended that the iron formation be investigated by diamond drilling, in order to determine the tenor of iron present and thereby assess the economic significance of the iron range.

The total cost for Part II - Diamond Drill Program, is estimated to be $316,890.00.

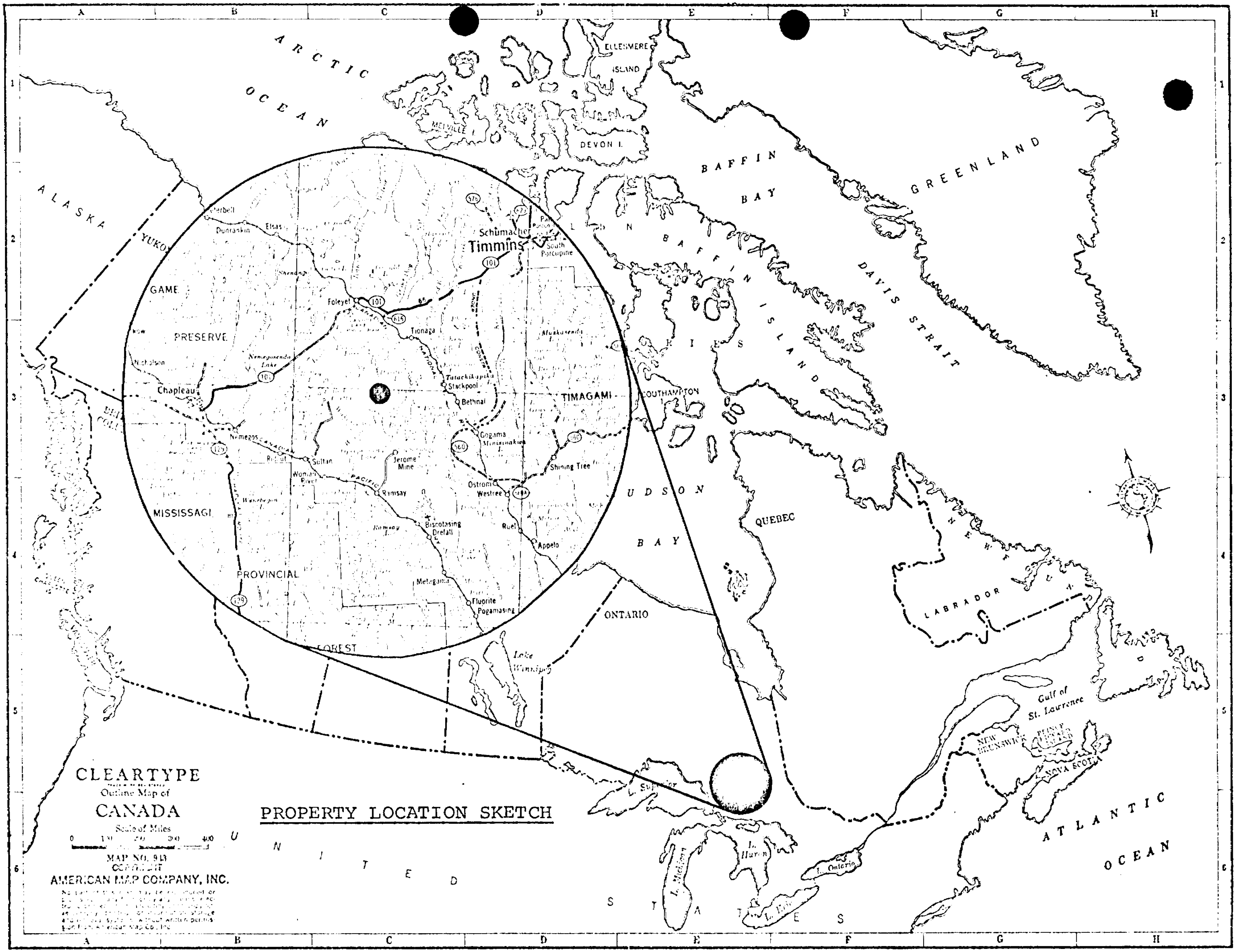
GENERAL

LOCATION

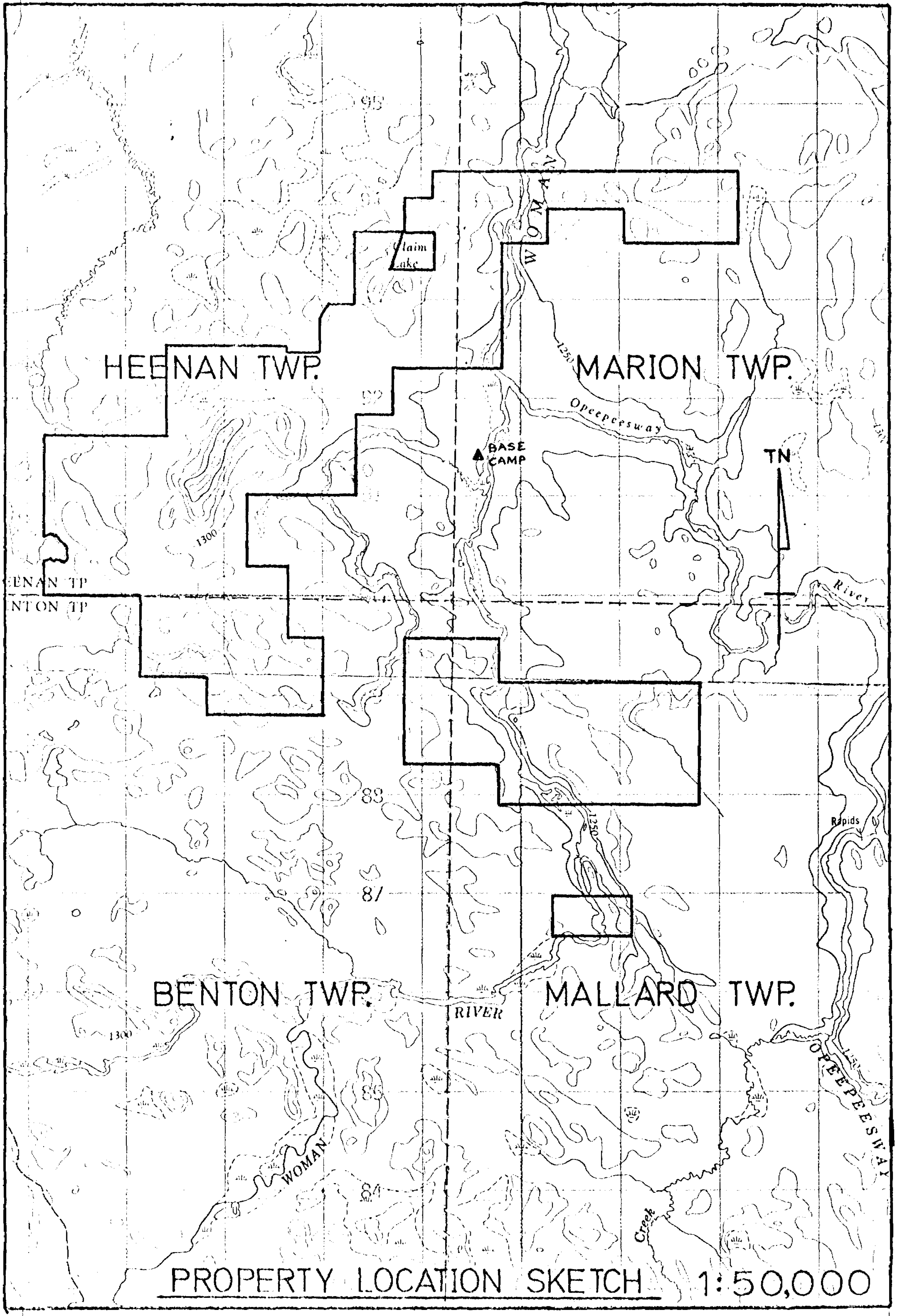
The Woman River Property is located in northeast-central Ontario within the Porcupine Mining Division in the District of Sudbury in Heenan, Marion, Mallard and Benton Townships. The property lies about 120 miles northeast of Sault Ste. Marie about midway between the towns of Chapleau and Gogama. Provincial Highway 101 passes 25 miles to the northwest and Provincial Highway 144 linking Timmins and Gogama passes about 30 miles to the east. Access to the property at the present time is via chartered air service out of Chapleau or Timmins. Private timber roads approach to within 2 miles of the property. (For index maps, see pages 2 through 4).

PROPERTY

The property consists of a group of five patented and seventy-four unpatented mining claims which encompass a total area of 3920 acres of 6.125 square miles. These claims are contiguous with two exceptions. The first is the claim block in Mallard Township which is separated from the main block by a set of six unpatented mining claims (410615 - 410619, 410657) held by Noranda Mines Limited. The second exception is a set of two claims which were staked over ground previously held by Woman River Gold Mines Ltd. to the south of the main block. A breakdown of claims by township is as follows:

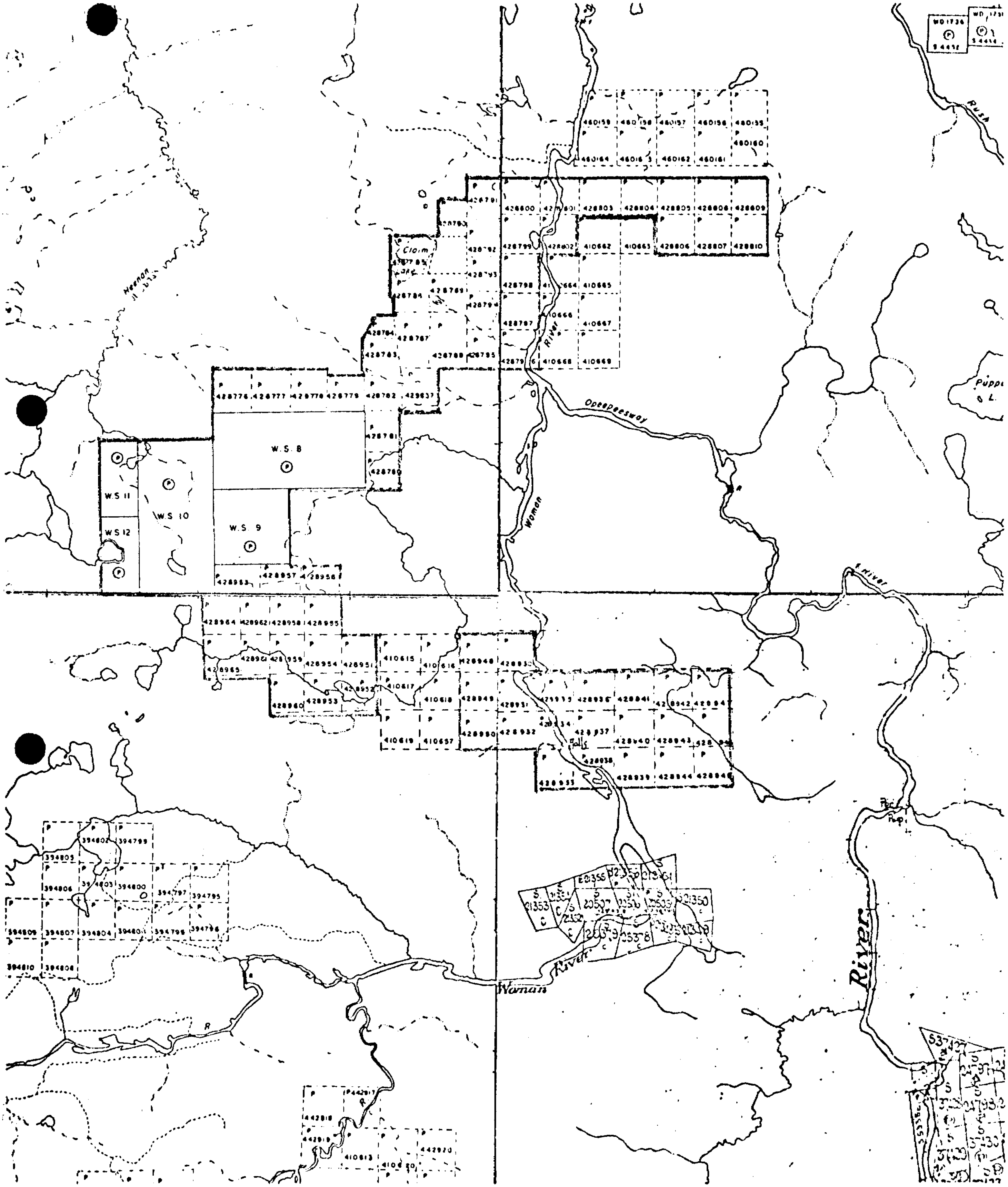


PROPERTY LOCATION SKETCH



PROPERTY LOCATION SKETCH 1:50,000

CLAIM LOCATION SKETCH



HEENAN TOWNSHIP

	Claim	Date of Patent or Recording	Area
Patented:	WS8	Dec. 1, 1908	320 acres
	WS9	Dec. 1, 1908	160 acres
	WS10	Nov. 26, 1908	320 acres
	WS11	Dec. 1, 1908	80 acres
	WS12	Dec. 1, 1908	80 acres
		Total:	960 acres
Unpatented:	428776-428795 (20 claims)	April 15, 1975	800 acres
	429837	July 22, 1975	40 acres
	428957-56 (2 claims)	April 15, 1975	80 acres
	428963	April 15, 1975	40 acres
		Total:	960 acres

MARION TOWNSHIP

Unpatented:	428796-428810 (15 claims)	April 15, 1975	600 acres

BENTON TOWNSHIP

Unpatented:	428948-428955 (8 claims)	April 15, 1975	320 acres
	428958-428962 (5 claims)	April 15, 1975	200 acres
	428964-428965 (2 claims)	April 15, 1975	80 acres
		Total:	600 acres

MALLARD TOWNSHIP

Unpatented:	428930-428947 (18 claims)	April 15, 1975	720 acres
	429838-429839 (2 claims)	July 22, 1975	80 acres
		Total:	800 acres

SUMMARY

Heenan Twp.	- 5 patented claims	960 acres
	- 24 unpatented claims	960 acres
Marion Twp.	- 15 unpatented claims	600 acres
Benton Twp.	- 15 unpatented claims	600 acres
Mallard Twp.	- 20 unpatented claims	800 acres
	Total:	3920 acres

TOPOGRAPHY AND DRAINAGE

The area in which the property is located has a mean elevation of 1300 feet above sea level and is generally an area of very low relief. Consequently large portions of the property are very poorly drained and are usually covered by extremely thick alder or cedar swamps making access very difficult and in a few cases impossible. Nevertheless, some topographic highs do occur on the property in the form of ridges underlain by iron formation. These ridges attain a maximum height of 280 feet above the local mean elevation, an example being the ridge in the central portion of the property in Heenan Township.

In some parts of the property, particularly in the south, there occurs an undulating topography of low relief caused by the presence of sandy knolls, the remnants of a glacial outwash plain.

The property lies north of the divide between the Great Lakes and Hudson's Bay watersheds and consequently all of the rivers flow in a northerly direction. The major link between the various portions of the property is the Woman River which roughly bisects it. This river is approximately 150 to 200 feet wide and in some places is suitable for landing a float plane.

The level of the river varies during the year and drops about 4 to 5 feet from break-up to the end of the summer season.

TRANSPORTATION

Railway lines pass to the east and to the south of the property. To the east is the CNR line which runs through Stackpool and passes within 23 miles of the property. Stackpool is approximately 150 miles by rail from the ore docks at Key Harbour on Georgian Bay. To the south is the main line of the CPR which runs through Bowden and passes within 20 miles of the property. Bowden is approximately 160 miles from Byng Inlet on Georgian Bay.

A rail line running from the property to the CNR line would traverse an area covered by ground moraine composed of silty to sandy till. This route would cross numerous rivers and ridges since it would run perpendicular to the regional glacial pattern. On the other hand, a rail line running from the property to the CPR line would traverse an area covered by lacustrine deposits composed of varved or massive clay, silt, and fine sand. This route would run sub-parallel to eskers occurring in Esther and Edith Townships and would also pass end moraines composed of sand, gravel and boulders in Edith Township. The right-of-way would run sub-parallel to many of the rivers in the area and would also run sub-parallel to the regional glacial pattern. This route would cross the divide between the Hudson Bay and Great Lakes watersheds near Bowden.

All factors taken into consideration it would seem that the route via Bowden on the CPR line would prove to be the most advantageous of the two barring unforeseen difficulties.

HISTORY

The earliest recorded documents show that the property was examined in 1906 by F.J. Katz and subsequently staked by a syndicate including such well known mining men as C.K. Leith and C.R. Van Hise of Madison, Wisconsin. During the latter part of the 1906 season and the entire 1907 season this group, under the field management of R.C. Allen, undertook an extensive evaluation of the Woman River iron range with respect to the iron ores. This evaluation incorporated reconnaissance dip-needle surveys, and regional and detailed geological mapping conducted in conjunction with surface trenching. During the 1907 season, 9344.2 feet of trenching and pitting was completed with the majority of the work being confined to mineral claims WS 7, 8, and 9. The trenches were extensively sampled, and the samples were analysed for Fe, P and S. These results were published by A.M. Goodwin in Geological Report No. 38 entitled Geology of Heenan and Marion Townships and the Northern Part of Genoa Township by the Ontario Department of Mines. Original comments by R.C. Allen are presented in the eighteenth annual report of the Ontario Bureau of Mines 1909 volume XVIII, Part 1, an excerpt from which reads as follows:

"Iron Ores: Locally, particularly in claims WS 11 and

12, iron ores occur. On these claims the ore is low grade, running as high as 43 per cent iron and, as shown by an average of 16 analyses, carrying a phosphorous content of .018. On claim WS 8, the most highly ferruginous areas coincide with those that are abundantly amphibole-bearing. Samples from these areas show an iron content varying up to 43 per cent, with an average phosphorous content of .0127. A small amount of sulphur is present as pyrite. An average of 8 determinations gave 1.184 per cent, but these samples were selected for analysis because of their relatively high sulphur content, which makes it certain that the figure stated is higher than the general average."

In 1908, encouraged by the initial work undertaken by the Leith-Van Hise syndicate, W.E. Smith of Sudbury staked 23 mineral claims covering the northeastern extension of the iron formation into Marion and Genoa townships. In 1910, about 4000 feet of diamond drilling was completed on this portion of the iron formation in the search for iron. During this drill program a little sphalerite, galena and chalcopyrite was intersected lying within the banded iron formation. Two years later a test pit was sunk to a depth of 8 feet on the best lead-zinc showing, at which depth a vein of almost solid galena, assaying 73.44 per cent lead and 6.01 per cent zinc, was encountered. The vein at the surface was 18 inches wide at the east side of the shaft and 6 inches wide at the west side. In the bottom of the shaft, the vein is 36 inches wide at the east side. Fifty feet east of the test pit there is an irregular band of sphalerite, galena and chalcopyrite in the iron formation, and another irregular band of stringers, 25 feet north of this point, in the same formation. This occurrence is described in greater detail in a paper by E. S. Moore, A Lead and Zinc Deposit in Keewatin Iron Formation, Trans. Can. Inst. Min. and Met., Montreal meeting March 1926. Despite considerable work done at that time, no continuity could be established to the vein.

During the late 20's and 30's the iron range received little if any attention except for isolated reports of gold occurrences lying within the iron formation. One such occurrence is located just east of Claim Lake and was examined by the well-known Canadian prospector Bob Campbell during the early 30's.

In 1946, the Fummerton Mining and Development Co. Ltd. staked a 16 claim block lying immediately south and west of Claim Lake in an attempt to trace the strike length extension of the gold occurrence previously mapped east of Claim Lake. During the summer of 1946 a detailed geological and magnetometer survey was completed with recommendation for a more intensive examination of the property; however, no additional work was undertaken on the property.

In 1950, renewed interest in the Genoa Township lead-zinc occurrence was expressed by Central Sudbury Lead-Zinc Mines Limited who carried out an extensive diamond drill program in the vicinity of the original high-grade discovery completing

23 holes for a total of 5,000 feet. Values of up to 5.6 per cent Pb and 12.56 per cent Zn over a core length of 8.8 feet were intersected during the course of the diamond drilling. A more complete tabulation of the diamond drill results are presented by A.M. Goodwin in Geological Report no. 38 by the Ontario Department of Mines.

During the 1950's little attention was being paid to the western end of the iron range in Heenan Township; all of the exploration activity was being concentrated on that portion of the iron range lying east of the Woman River. The main reason for this was that a good percentage of the original Leith-Van Hise syndicate ground was still held by Madison Mining Trustees under the old 1908 land patent.

In 1957 and 1958 Stackpool Mining Company Limited undertook an extensive diamond drill program consisting of 50 holes on that portion of the iron formation lying immediately east of the ground presently held by United States Steel International Limited. According to A. M. Goodwin, nine of the holes contained lead, zinc and copper mineralization one of which returned an 11-foot core-section running 1.55 percent Cu, 3.30 percent Zn and 0.44 ounces Au per ton.

In 1959, W. G. Wahl Limited acquired the rights to a portion of the old Leith-Van Hise ground, patented claims WS 8 through WS 12, from Madison Mining Trustee.

In January 1967, W. G. Wahl Limited staked the remaining portion of the iron range lying west of Woman River. During the 1967 summer season, W. G. Wahl Limited conducted a detailed vertical field magnetometer survey over the original 5 patented claims as well as the newly acquired ground to the north. In conjunction with the ground magnetics, several test pits were established in the iron formation to provide "bulk material" for metallurgical testing. The results of the limited test work showed that an acceptable concentrate can be made with the -325 mesh material. The complete metallurgical data is appended.

In the late 1960's U. S. Smelting, Mining and Refining Co. Ltd. carried out an airborne electromagnetic survey over the entire iron range utilizing the Mark V INPUT system. Geochemical, geological, electromagnetic and magnetic surveys were subsequently carried out on mineral claim WS 8 without the prior knowledge or consent of W. G. Wahl Limited. As a result, all of the data with the exception of the airborne data was not made available to W. G. Wahl Limited.

In 1973, Falconbridge Nickel Mines Limited conducted a detailed vertical field magnetometer survey over that portion of the iron range lying east of Claim Lake.

REGIONAL GEOLOGY

The property is underlain by rocks of Archean age consisting of acid to intermediate volcanic rocks, banded iron formation and basic volcanic rocks which have been intruded by acidic and basic rocks. These rocks are folded into an anticlinal structure whose axial plane strikes and plunges steeply to the west-southwest and dips steeply to the north-northwest. Numerous transverse faults transect the area.

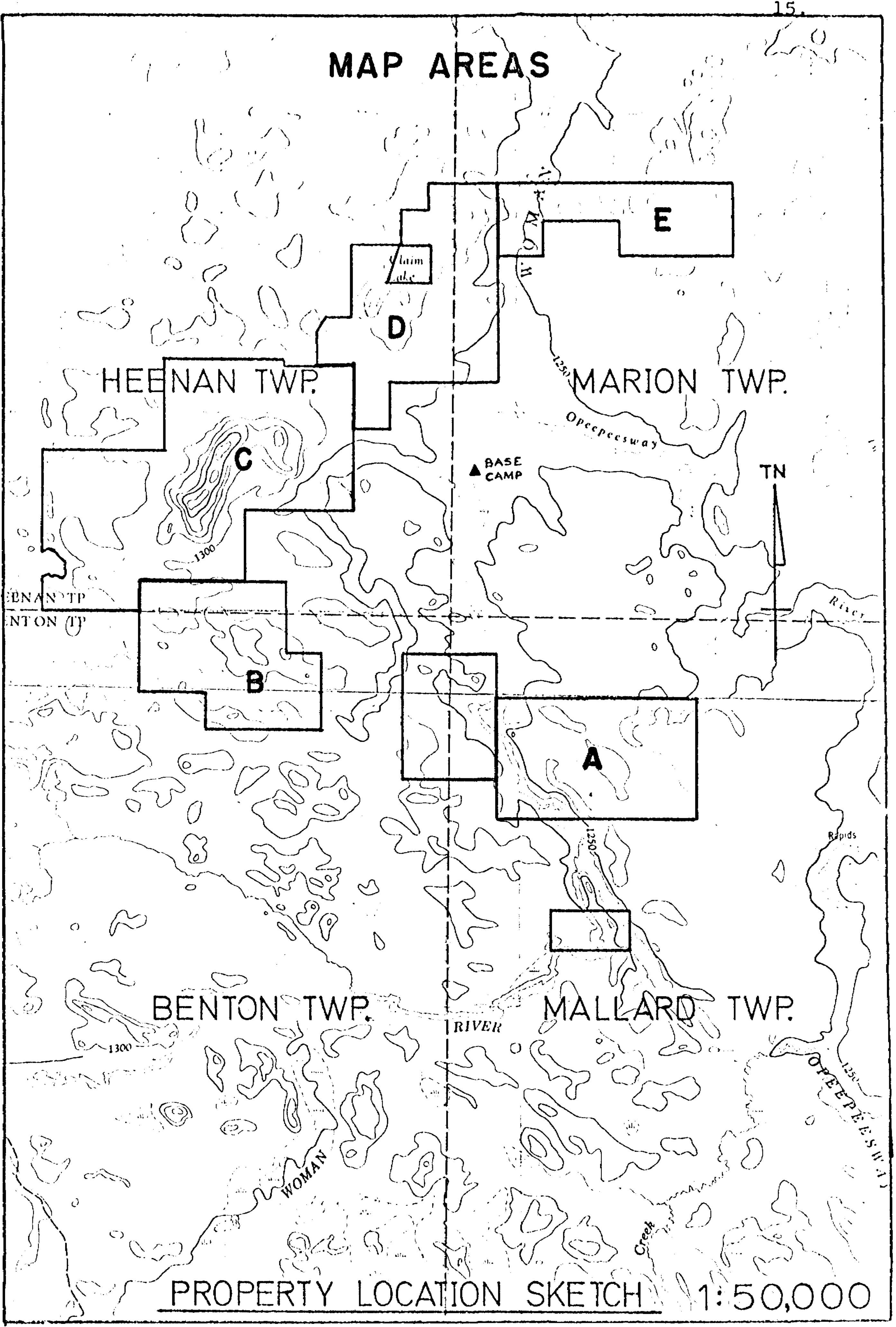
The acid to intermediate rock unit consists of rhyolite, dacite and trachyte pyroclastic rocks and flows. Rocks of a rhyolitic composition predominate. These exhibit great heterogeneity in composition and rock type indicating a complex effusive history. The presence of a large wedge of relatively coarse grained acid breccia immediately underlying the iron formation in Heenan Township tends to indicate the proximity of a volcanic centre.

The Woman River Iron Formation is composed of interbanded chert, jasper, and siliceous magnetite with siderite and pyritic chert occurring locally. The iron formation, where completely developed, exhibits a transition from iron rich units at the base of chert rich-iron poor units at the top of the formation.

Intermediate volcanic rocks overlie the iron formation. Within this unit individual flows are massive, pillowed, or brecciated and serve as stratigraphic marker horizons. The pillow structure of these flows has been distorted locally in conformity with the regional shearing in the area.

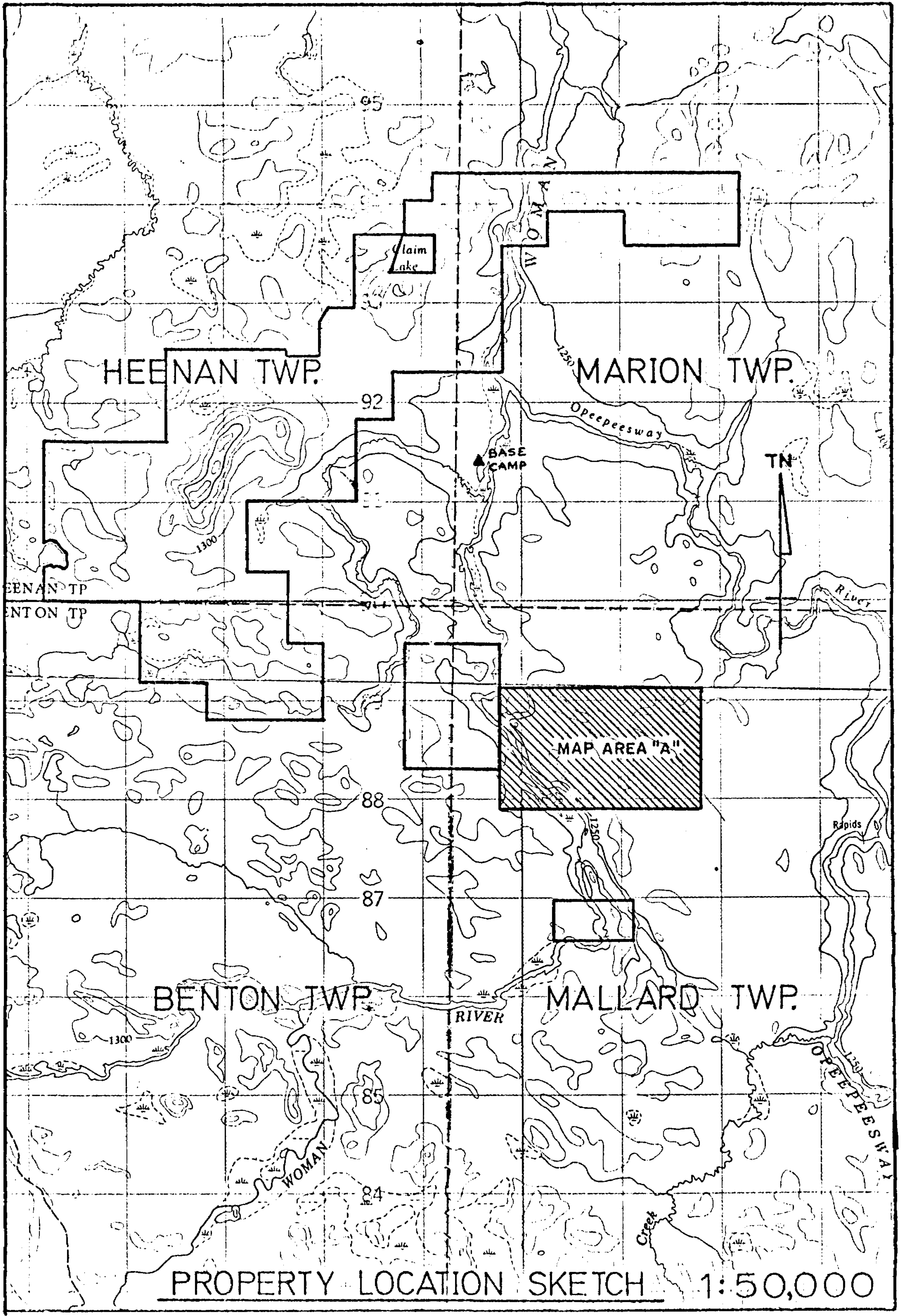
The detailed geological, geophysical and geochemical data mapped over the claims are presented in the following section of this report. For ease of presentation only, the claims have been divided into five map areas lettered clockwise from the southeastern claims as shown on the following sketch.

MAP AREAS



PROPERTY LOCATION SKETCH 1:50,000

MAP AREA "A"



PROPERTY LOCATION SKETCH 1:50,000

MAP AREA "A"

Map Area "A" pertains to that portion of Mallard Township covered by the following 15 mineral claims:

P 428933 - 428947 inclusive

RECONNAISSANCE PROGRAM

The reconnaissance program consisted of the establishment of a grid system over the entire map area followed by an electromagnetic VLF survey.

The grid system, comprising of 57,800 feet (17,617.44 meters), was established by W. G. Wahl Limited during the period from June 22 through June 25 utilizing the Topofil continuous chain method. The baseline was oriented east-west with grid lines trending due south at 400 foot (120 meter) intervals along the baseline. One hundred foot (30 meter) stations were established on all lines of the reconnaissance grid.

The electromagnetic survey was conducted by R. Bylo, B.A.Sc., G.E.I.T. during the period from June 23 to July 27, 1975 following the format outlined in Appendix I. A total of 1156 stations were occupied during the course of the survey. The electromagnetic data is presented on drawing no. 100.

The reconnaissance electromagnetic survey further defined the regional extensions of the anomalous zones identified on the airborne INPUT tapes.

ANOMALY 1

Anomaly 1 is centrally located within the survey area and was mapped striking N40°W exhibiting an inferred strike length of 2400 feet (730 meters). This bedrock conductor was selected for detailed investigation and will be discussed in the following section of the report.

ANOMALY 2

Anomaly 2 is located in the south central portion of the survey area and lies roughly parallel to and 600 feet (182 meters) southwest of Anomaly 1. This conductor exhibits a strike length of approximately 5000 feet (1524 meters); a portion of which has been selected for detailed investigation and will be discussed in the following section of the report.

DETAILED PROGRAM

The detailed program consisted of the establishment of a grid system normal to the strike of the anomalous zones as defined by the reconnaissance survey, followed by a comprehensive field examination. This comprehensive field examination consisted of a geological survey, an electromagnetic survey with Fraser Filtration Plots and a total magnetic field gradient study. In an attempt to further define the causative body of the anomalous zone, whole rock and soil geochemical samples were collected.

The detailed grid system comprising of 12,200 feet (3718 meters) was established by W. G. Wahl Limited during the period from July 9 to July 10, 1975. The baseline was oriented N45°W, from a point 1600 feet (480 meters) south along the claim line from the number 1 post of claim 428941, with grid lines trending northeast-southwest at 400 foot (120 meter) intervals along the baseline. One hundred foot stations were established on all lines of the detail grid. Stations were occupied on 50 foot intervals and critical points on 25 foot intervals.

GEOLOGY

The geological survey was conducted by D. G. Wahl, P.Eng. on July 12, 1975.

The geology as published by the Ontario Department of Mines was extended and further defined by the geophysical surveys and geological mapping.

Less than 3 percent of the area covered by the detailed grid was outcrop, the remaining 97 percent could be broken down as follows: 40 percent alder-cedar swamp and 57 percent various degrees of open bush. Despite the poor geologic control, two distinct rock units were mapped and their locations are shown on drawing 101.

The northeastern third of the detailed grid is mapped as highly schistose rhyolite lapilli tuff. A good exposure of this rock unit was mapped on line 480 m E at station 90 m N. This particular exposure is extremely good, exhibiting a pronounced bedding of S45°E which is parallel to the regional schistosity. The dip of the beds appears to be near vertical. Numerous rhyolitic fragments, up to 15 mm long, lying parallel to the bedding were also noted. The matrix is extremely fine grained and the rock unit as a whole has undergone considerable sericitization.

The southwestern two-thirds of the detailed grid is mapped as an intermediate tuff. Several good exposures of this rock unit were mapped during the course of the survey. The exposure mapped on line 480 m E at station 60 m N is noteworthy because of its close proximity to the rhyolite tuff exposure previously discussed at station 90 m N. This intermediate tuff is thought to be an ash of dacitic composition. The fragments are less than 4 mm in diameter and have a preferred bedding of S45°E exhibiting a near vertical dip. The rock unit as a whole has undergone considerable chloritization and kaolinization.

ELECTROMAGNETIC SURVEY

The electromagnetic survey was conducted by R. Bylo, B.A.Sc., G.E.I.T. on July 11, 1975 following the format outlined in Appendix I. Two hundred and forty-four stations were occupied during the course of the survey taking a total of 488 readings. The electromagnetic data was reduced to a local datum and adjusted for drift. The data is presented on drawing no. 102.

The detailed electromagnetic survey further defined the anomalous zones mapped during the reconnaissance survey.

Anomaly 1

This conductor lies roughly parallel to and 100 feet (30 meters) north of the baseline and is characterized by a sharp dip reversal of up to 40 degrees (+20 to -20) over 150 feet associated with a relative field strength of up to 240 percent. This figure represents a value of 150 percent above the local background. The electromagnetic data defined a vertically dipping conductive sheet estimated to be between 60 and 70 feet wide.

In order to fully assess the inphase dip angle response, these data were reduced by means of the Fraser Filtration Method thereby minimizing the background noise and the topographic effect. A complete discussion of the Fraser Filtration Method is appended in Appendix II. The reduced dip angle data, presented on drawing no. 103, indicates a definite termination of the anomaly on line 0, with moderate to strong conductivity recorded on lines 120 m E, 240 m E, 360 m E, 480 m E and 600 m E. The reconnaissance survey shows that the anomaly pinches at 400 feet (120 meters) southeast of line 600 m E.

Anomaly 2

This conductor lies roughly parallel to and 800 feet (240 meters) south of the baseline and is characterized by a sharp dip reversal of up to 54 degrees (+36 to -18) over 200 feet associated with a relative field strength of up to 260 percent which represents a value of 170 percent above the local background. The electromagnetic data defined a vertically dipping conductive sheet estimated to be between 50 and 60 feet wide.

The Fraser reduced inphase dip angle data, presented on drawing no. 103, showed moderate thickening and increased conductivity towards the southeast end of the anomaly.

TOTAL MAGNETIC FIELD GRADIENT STUDY

The total magnetic field gradient study was conducted by D. G. Wahl, P.Eng. on July 11, 1975 following the format outlined in Appendix III. A total of 138 stations were occupied during the course of the survey with 276 readings being recorded. The magnetic data was reduced to a local datum and adjusted for magnetic diurnal. The data is presented on drawing no. 104 as corrected station values and as a contoured interpretation of these data.

The rhyolite lapilli tuff, previously discussed, has a relatively low uniform magnetic relief in the range of 750 gammas. This figure represents an absolute value above a 59,000 gamma local background.

The dacite tuff occupying the southwestern two-thirds of the survey area is characterized by a moderately low background magnetic relief in the range of 850 gammas. However, the uniform magnetic relief mapped over the rhyolite tuff is not present over the dacite tuff. Lying within the dacite tuff are irregular, somewhat lenticular magnetic features in the range of 1000 to 6000 gammas above the local background, which are thought to represent individual tuff horizons containing a higher tenor of magnetite. There also appears to be a definite zoning within the dacite tuff horizon as the contact with the rhyolite is approached exhibiting a pronounced drop-off in magnetic susceptibility as soon as the rhyolite tuff horizon is encountered.

Anomaly 1, as defined by the electromagnetic survey, lies coincident to a zone of irregular magnetic relief in the range of 62,691 gammas which represents an above background magnetic relief of 3691 gammas. The horizontal and vertical magnetic gradients defined similar width and depth parameters to those defined by the electromagnetic response.

Anomaly 2, as defined by the electromagnetic survey, is associated with a zone of moderately high magnetic relief in the range of 60,431 gammas which represents a 450-500 gamma above background anomaly. The horizontal and vertical magnetic gradients delineate a zone of up to 90 feet wide.

GEOCHEMICAL INVESTIGATION

In an attempt to further define the causative bodies of the conductive zones, whole rock and soil geochemical samples were taken over these zones.

Anomaly 1 is located in a region of well drained relief within a well established regional drainage pattern which flows to the north. The vegetation in the vicinity of this anomaly is extremely sparce consisting of scrub secondary growth and isolated irregular stands of black spruce. The area appears to have been burned over quite recently but there is no supporting evidence for a fire. The area is clean of any dead falls, there are no charred remains of tree stumps and the soil shows no sign of having been scorched.

A total of 27 soil samples and 7 rock samples were taken for geochemical analysis, the results of which are presented in Appendix IV along with a description of the sample preparation and analytical procedures used. The geochemical sample locations are presented on drawing no. 101. The soil samples consisted of approximately 8 ounces of that material designated as the B-horizon or that material immediately underlying the humus fraction. The rock samples consisted of random chip samples taken from any rock exposure in the vicinity of a station location. In the area of Anomaly 1, the B-horizon was encountered approximately 4 to 6 inches below the surface, with the sample being taken at an average depth of 8 inches. In the area of Anomaly 2, the B-horizon was encountered at a depth of 10 inches.

Generally speaking the geochemical results were not as significant as one would have hoped due to the depth of the overburden and the sandy nature of the soil; however, several noticeable trends were established in relation to both the conductors.

In the case of Anomaly 1, moderately high zinc values in the soil bear a direct relationship to the conductor axis. These values are in excess of 20 ppm Zn up to a maximum of 35.9 ppm as returned in sample number 312 located on line 480 m E at station 60 m N. The regional background for zinc is in the range of 15 ppm. The remaining base metals, Cu and Pb, are not as definitive. The rock geochemical values; however, are extremely anomalous, especially in zinc. Three rock geochemical samples were taken on line 480 m E in the vicinity of the conductor axis, the results of which are tabulated below:

No.	Location	Rock Type	Cu ppm	Pb ppm	Zn ppm
316-R	L480mE/90mN	rhyolite tuff	34.6	2	162
314-R	L480mE/75mN	dacite tuff	104.0	< 2	226
313-R	L480mE/60mN	dacite tuff	44.3	6	729
	L480mE/45mN	conductor axis			

It can be seen that as the conductor is approached the zinc values climb from 162 ppm at station 90 m N to 729 ppm at station 60 m N which is only 15 meters north of the conductor axis. A slight increase is also noted in the lead values as the conductor axis is approached. The copper values are inconclusive, but they could represent a slight migration of the metal away from the conductor axis.

Rock sample number 333-R was taken on line 120 m E at the baseline. This sample is located 100 feet (30 meters) south of the conductor axis and returned values of 65.1 ppm copper, < 2 ppm lead and 295 ppm zinc. As was the case in samples discussed above, the copper and lead values do not appear to be as definitive as the zinc value.

At Anomaly 2, only limited inconclusive information could be obtained because of the extremely swampy conditions that exist in the southwestern portion of the property. However, two rock samples were taken for analysis which were in close proximity to the conductor axis.

No.	Location	Rock Type	Cu ppm	Pb ppm	Zn ppm
303	L600mE/235mS	dacite tuff	244	< 2	237
306	L600mE/260mS	dacite tuff	201	< 2	219

The conductor axis was mapped on line 600 m E at station 240 m S. It can be seen that there is an apparent increase in both the zinc and copper values as the conductor axis is approached. The lead values do not show any definitive results.

CONCLUSIONS

The two anomalous, conductive zones identified during the reconnaissance survey were further defined during the course of the detailed program.

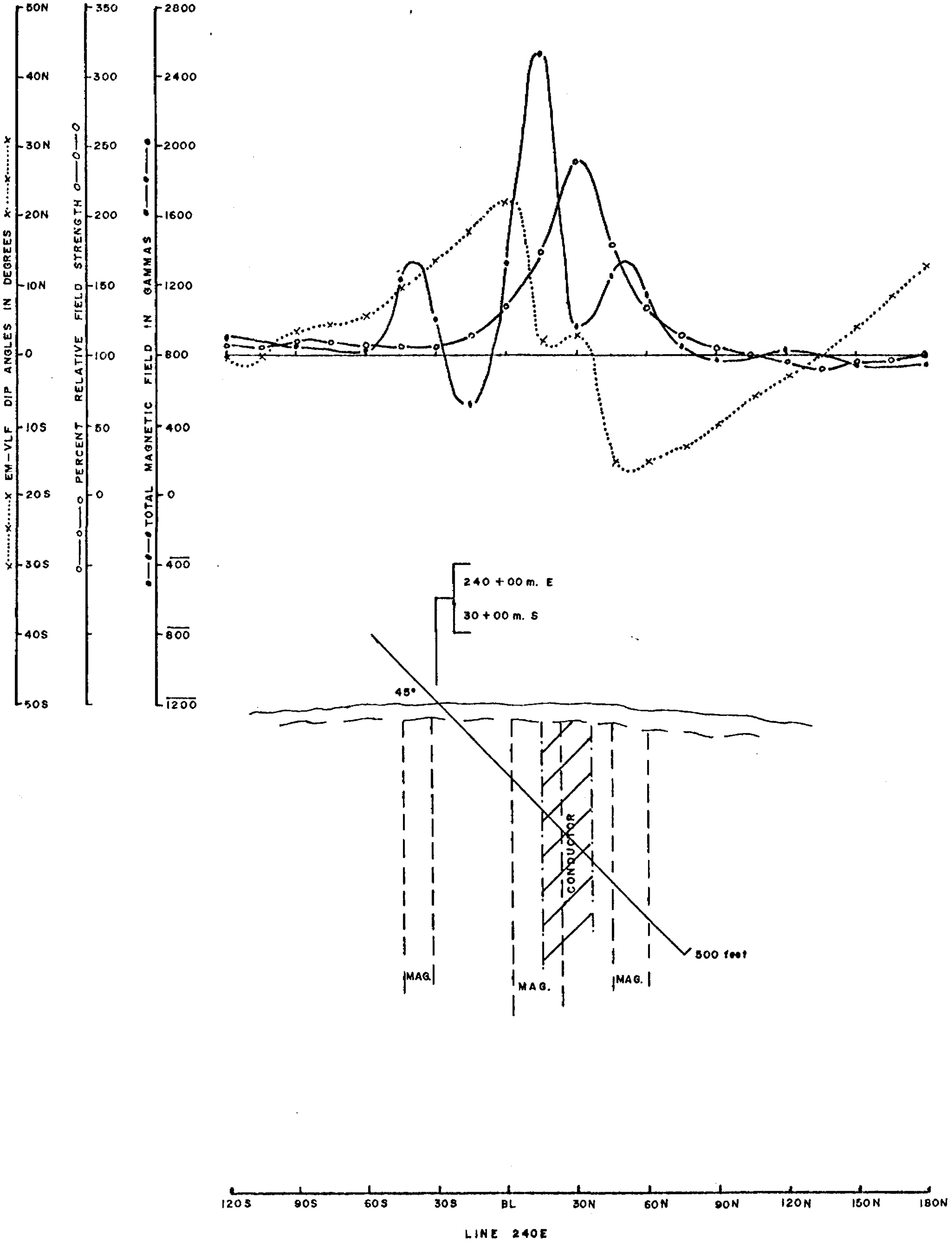
The causative body of Anomaly 1 is thought to be a zone of sulphide mineralization associated with the contact between the highly chloritic dacite tuff mapped to the south and the sericitic rhyolite lapilli tuff mapped to the north. This conductive zone, striking S45°E is estimated to be up to 70 feet (21 meters) wide and up to 1600 feet (487 meters) long exhibiting a near vertical dip. The total magnetic field gradient study indicates a slight increase in the magnetic susceptibility as the contact is approached. This is thought to be a reflection of an increase in the tenor of magnetite as the contact is approached. The anomalous geochemical results associated with the conductor lends supporting evidence for the existence of base metal sulphides within the mineralized zone.

The causative body of Anomaly 2 is thought to be a zone of disseminated sulphide mineralization associated with a dacite tuff horizon. This conductive zone, striking approximately S45°E, is estimated to be up to 60 feet (18 meters) wide and up to 5000 feet (1524) meters) long exhibiting a near vertical dip. The total magnetic field gradient study indicates a slight difference in the magnetic susceptibility along strike which is thought to reflect a difference in the tenor of magnetite within the zone along strike. The anomalous rock geochemical results associated with the conductor indicate the existence of base metal sulphides within the mineralized zone.

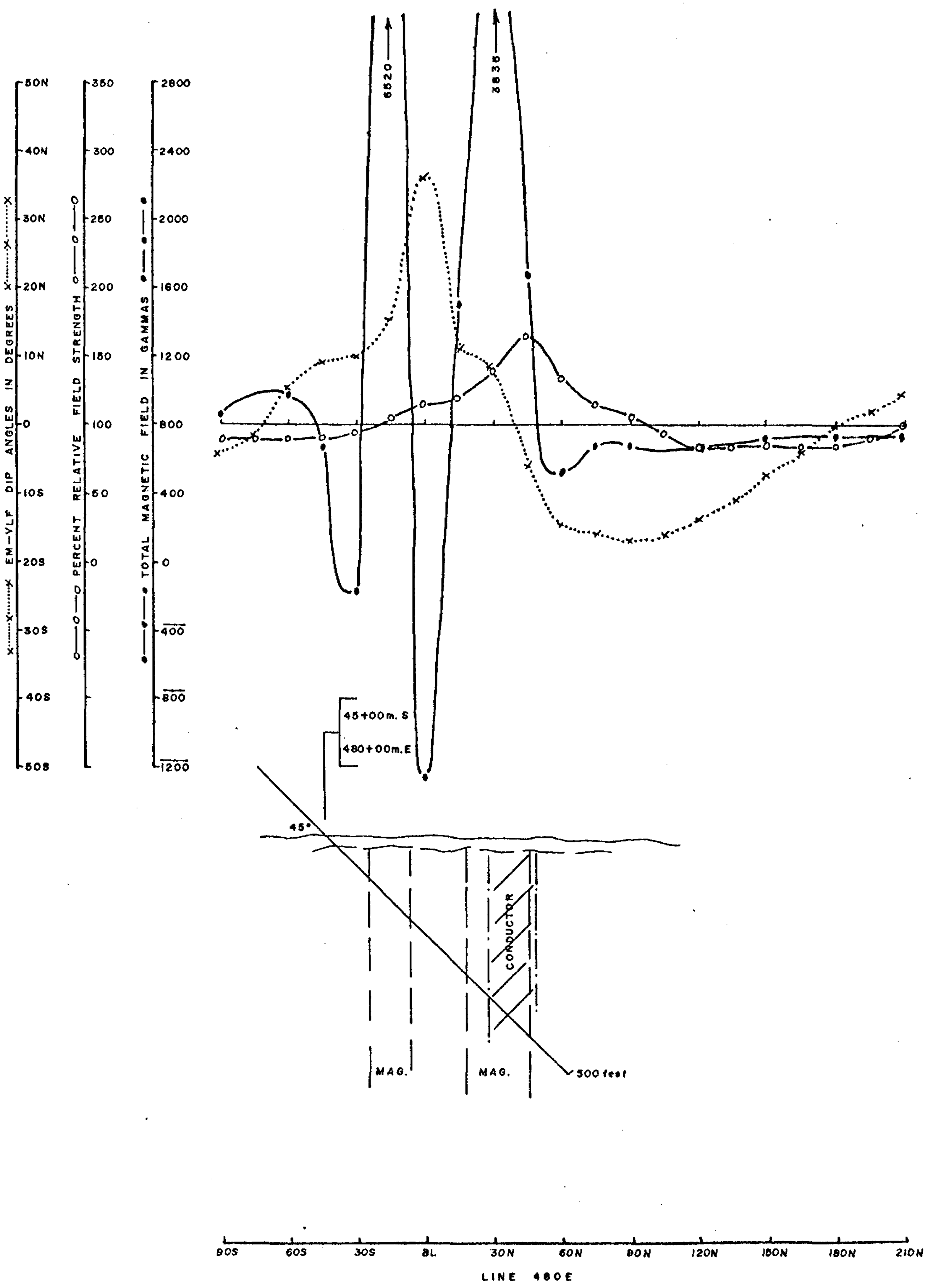
RECOMMENDATION

It is recommended that Anomaly 1 and Anomaly 2 be investigated by diamond drilling as shown on the following drill sections.

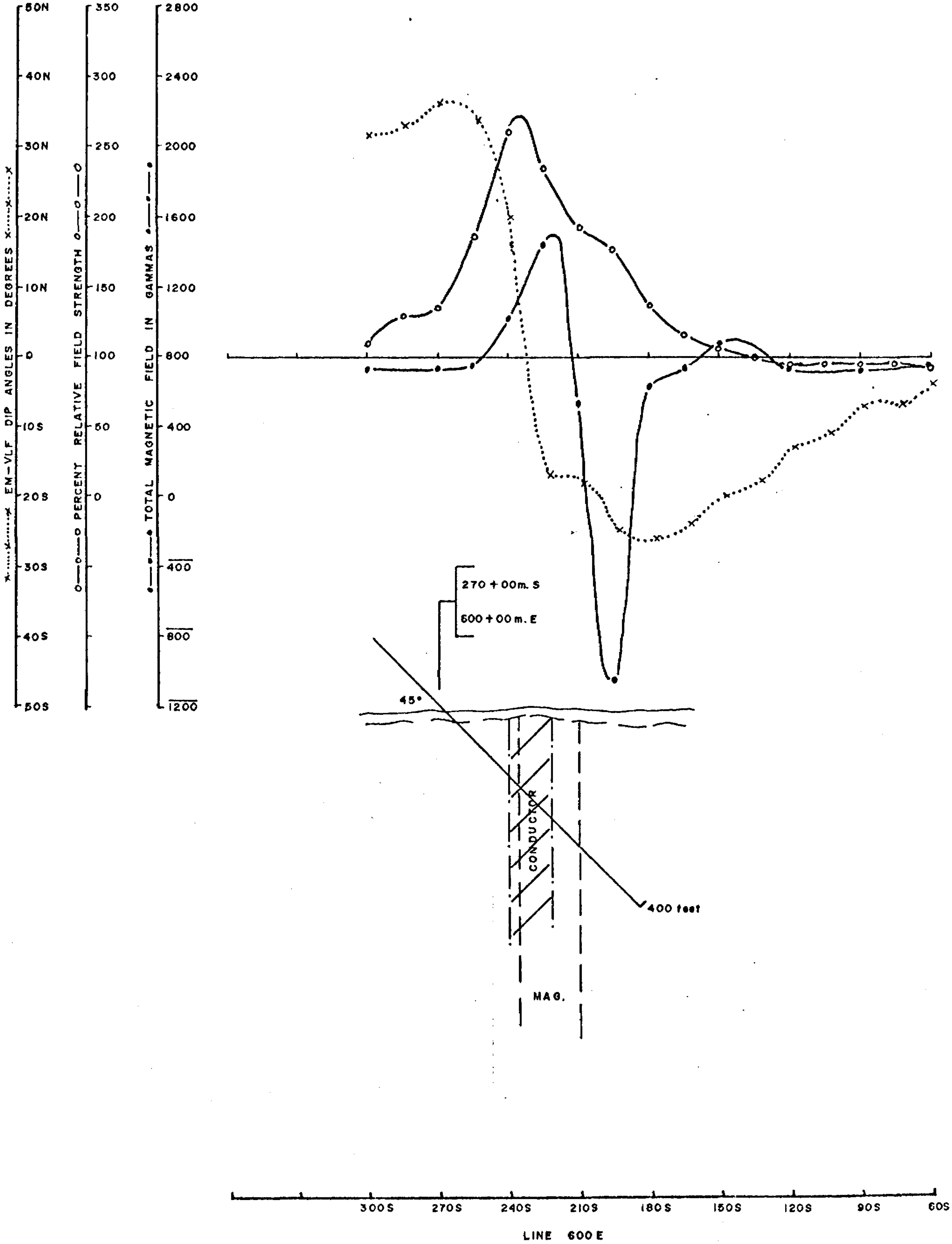
MALLARD TOWNSHIP
ANOMALY No. 1



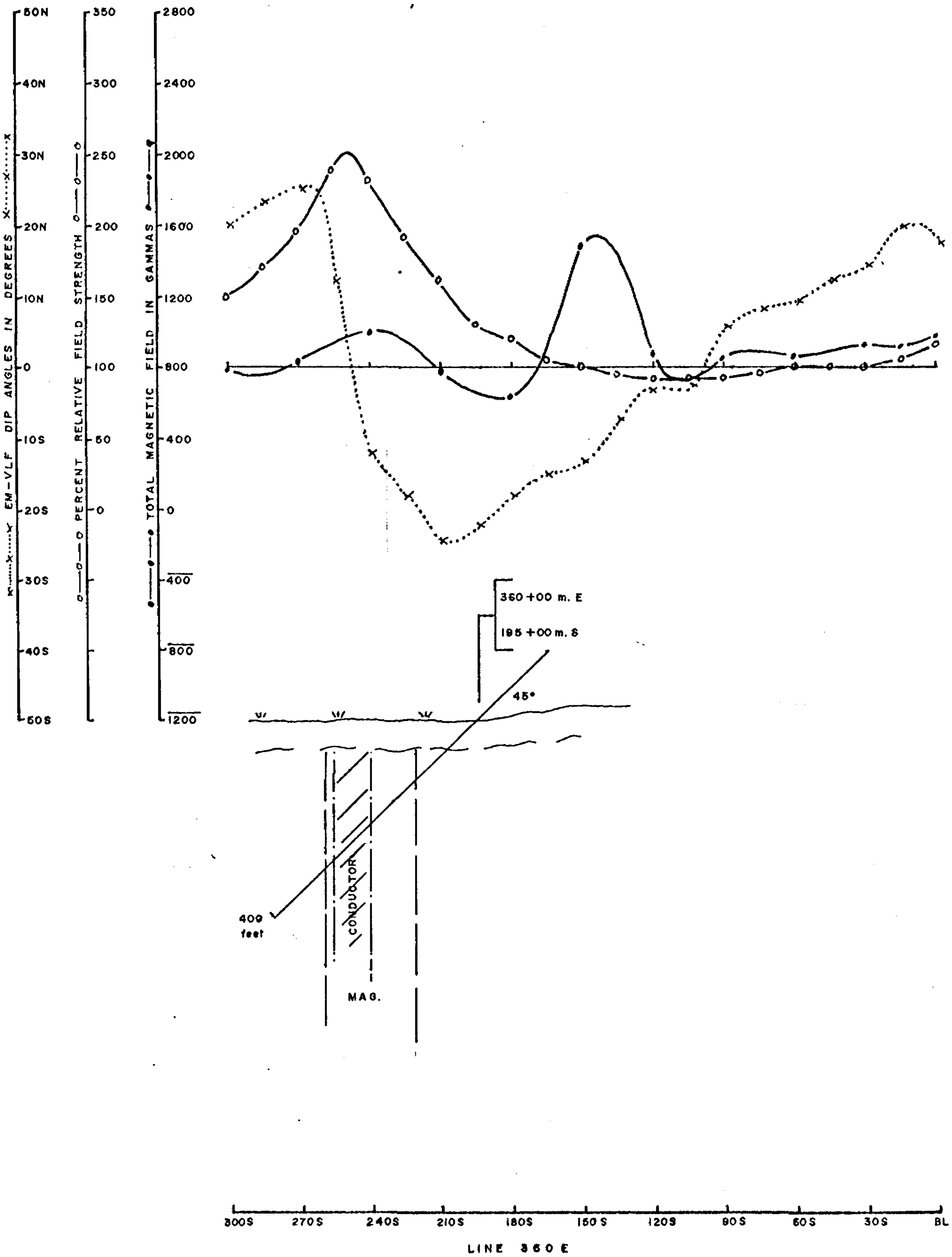
MALLARD TOWNSHIP
ANOMALY No. 1



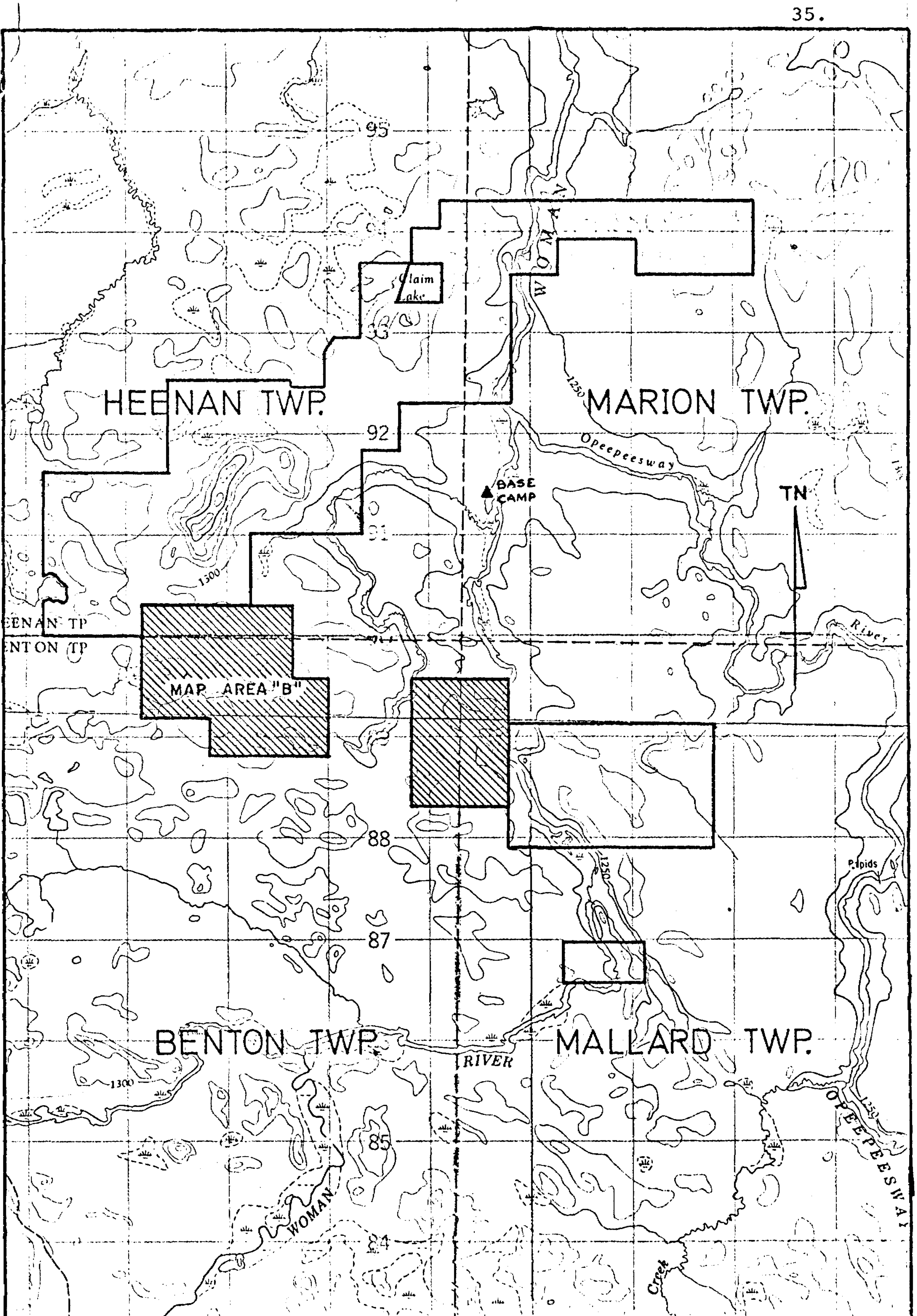
MALLARD TOWNSHIP
ANOMALY No. 2



MALLARD TOWNSHIP
ANOMALY No. 2



MAP AREA "B"



PROPERTY LOCATION SKETCH 1:50,000

MAP AREA "B"

Map Area B adjoins Map Area A to the west and pertains to that portion of Mallard, Benton and Heenan townships covered by the following 21 mineral claims:

Mallard	P	428930 - 428932	inclusive
Benton	P	428948 - 428955	
	P	428958 - 428962	inclusive
	P	428964 - 428965	
Heenan	P	428956 - 428957	inclusive
	P	428963	

RECONNAISSANCE PROGRAM

A reconnaissance program was undertaken in a similar manner to that outlined for Map Area A.

A grid system, comprising of 90,840 feet (27,688 meters) was established by W. G. Wahl Limited during the period from June 26 through July 3 utilizing the Topofil continuous chain method. The baseline was oriented east-west with grid lines trending north-south at 400 foot (120 meter) intervals along the baseline. One hundred foot (30 meter) stations were established on all lines of the reconnaissance grid.

The electromagnetic survey was conducted by R. Bylo, B.A.Sc. and D. G. Wahl, P.Eng. during the period from July 3 to July 4 1975 following the format outlined in Appendix I. A total of 1816 stations were occupied during the course of the survey. The electromagnetic data is presented on drawing no. 105.

The reconnaissance electromagnetic survey further defined the regional extensions of the anomalous zone identified on the airborne INPUT tapes.

ANOMALY 3

Anomaly 3 is centrally located within the survey area and was mapped striking N58°W exhibiting an inferred strike length of 1000 feet (304 meters) before the anomaly trends on to ground held by Noranda. The Noranda ground consists of a 6 claim block occupying the east central portion of the map area. A portion of the anomaly was selected for detailed investigation and will be discussed in the following section of the report.

ANOMALY 4

Anomaly 4 represents a one line anomaly located approximately 1000 feet (304 meters) west of Anomaly 3. This conductor exhibits a limited strike length of approximately 800 feet (243 meters), a portion of which has been selected for detailed investigation and will be discussed in the following section of the report.

ANOMALY 5

Anomaly 5 is located in the west central portion of the survey area and lies sub-parallel to and 3000 feet (914 meters) northwest of Anomaly 3. This conductor exhibits a strike length of approximately 4000 feet (1219 meters) and is thought to be caused by a flat lying clay deposit.

DETAILED PROGRAM

A detailed examination of Anomalies 3 and 4 was undertaken in exactly the same manner as that outlined for Map Area A.

The detailed grid system, comprising of 5500 feet (1676 meters) including the baseline, was established by W. G. Wahl Limited during the period from July 11 to July 12, 1975. The baseline was oriented N65°W from a point 1200 feet (365 meters) south along the claim line from the number 1 post of claim 428951, with grid lines trending northeast-southwest at 400 feet (120 meter) intervals along the baseline. One hundred foot (30 meter) stations were established on all lines of the detailed grid.

GEOLOGY

The geological survey was conducted by D. G. Wahl, P.Eng. on July 13 1975.

The geology as published by the Ontario Department of Mines was extended and further defined by the geophysical surveys and geological mapping

Less than 5 percent of the area covered by the detailed grid was outcrop with the remaining 95 percent divided equally between alder-willow swamps and dense stands of balsam and spruce.

Two distinct rock units were mapped during the course of the geological investigation and are shown on drawing no. 106. Almost the entire grid area is mapped as an intermediate tuff with a quartz feldspar porphyry occurrence mapped on the northeastern extension of line 116 m E.

The intermediate tuff, thought to be andesitic in composition, is characterized by a visual absence of quartz and a predominance of feldspar. The rock texture of this unit varies from fine-grained to aphanitic. The major alteration noted was chloritization, which appears to be uniform throughout the map area.

The quartz feldspar porphyry occurrence mapped on line 116 m E at station 90 m N is characterized by a pale grey appearance on the weathered surface, exhibiting many phenocrysts of quartz, plagioclase and orthoclase in a fine-grained matrix of similar composition. This rock unit is thought to be an intercalated acidic flow lying within the andesite tuff horizon.

ELECTROMAGNETIC SURVEY

The electromagnetic survey was conducted by R. Bylo, B.A.Sc., G.E.I.T. on July 13, 1975 following the format outlined in Appendix I. A total of 76 stations were occupied during the course of the survey with a total of 152 readings being recorded. The electromagnetic data was reduced to a local datum and adjusted for drift. The data is presented on drawing no. 107.

The detailed electromagnetic survey further defined selected anomalous zones mapped during the reconnaissance survey.

Anomaly 3

This conductor lies sub-parallel to and 100 feet (30 meters) south of the baseline no. 1 and is characterized on line 236 m E by a sharp dip reversal of 44 degrees (+26 to -18) over 200 feet (60 meters) associated with a relative field strength of 260 percent. This figure represents a value of 160 percent above the local background. The electromagnetic data defined a vertically dipping conductive sheet estimated to be between 50 and 60 feet wide.

As was the case in Map Area A, the inphase dip angle data were reduced by means of the Fraser Filtration Method. The reduced dip angle data presented on drawing no. 107 indicate an apparent increase in the conductivity towards line 360 m E and the eastern boundary with Noranda.

Anomaly 4

This conductor lies roughly parallel to and 50 feet (15 meters) north of baseline no. 2 and is characterized on line 120 m W by a sharp dip reversal of 42 degrees (+29 to -13) over 150 feet associated with a relative field strength of 240 percent. This figure represents a value of 140 percent above the local background. The electromagnetic data defined a steeply dipping conductive sheet estimated to be up to 75 feet (22 meters) wide.

The Fraser reduced inphase dip angle data, presented on drawing 107, indicates a relatively short strike length of approximately 600 feet (180 meters).

TOTAL MAGNETIC FIELD GRADIENT STUDY

The total magnetic field gradient study was conducted by D. G. Wahl, P.Eng. on July 13, 1975 following the format outlined in Appendix III. A total of 58 stations were occupied during the course of the survey with 116 readings being recorded. The magnetic data was reduced to a local datum and adjusted for magnetic diurnal. The data is presented on drawing no. 106 as corrected station values and as a contoured interpretation of these data.

The andesite tuff, previously discussed, is characterized by a moderately low magnetic relief in the range of 900 gammas. This figure represents an absolute value above a 59,000 gamma local background. Associated with this area of low magnetic relief are narrow lenticular magnetic expressions of up to 4000 gammas above local background which are thought to represent individual tuff horizons containing a higher tenor of magnetite.

The intercalated acidic flow mapped on line 116 m E is characterized by low uniform background magnetic relief in the range of 750 gammas. This particular rock unit was not traversed in enough detail to determine if any zoning exists within the flow.

Anomaly 3, as defined by the electromagnetic survey, lies on the southern flank of a zone of irregular magnetic relief in the range of 63,013 gammas which represents an above background magnetic relief of 4013 gammas. On line 236 m E this anomaly lies coincident with an isolated zone of moderately high magnetic relief of 1963 gammas. At this location the horizontal and vertical gradients of the total magnetic field have defined the zone to be up to 75 feet wide.

Anomaly 4, as defined by the electromagnetic survey, is on the southern flank of a zone of moderately high magnetic relief in the range of 61,117 gammas which represents an above background magnetic relief of 2117 gammas. On line 120 m W at station 30 m N the conductor appears to be associated with a zone of extremely low magnetic relief exhibiting total magnetic field intensity of only 2 gammas above the local background of 59,000 gammas. This extremely low relief is thought to be a reflection of a strong magnetic dipole in the vicinity of station 30 m N.

GEOCHEMICAL INVESTIGATION

Whole rock and soil geochemical samples were taken over the conductive zones in an attempt to further define the causative bodies of these zones.

Anomaly 3 is located in a region of moderately well drained relief within a well established regional drainage pattern which flows to the southeast. The vegetation in the vicinity of this anomaly is extremely varied consisting of dense stands of black spruce and balsam to alder-willow swamps.

A total of 39 soil samples and 11 rock samples were taken for geochemical analysis, the results of which are presented in Appendix IV, along with a description of the sample preparation and analytical procedures used. The geochemical sample locations are presented on drawing no. 106.

The soil and rock geochemical samples were collected in exactly the same manner as that described for Map Area A. In the area of Anomaly 3, the B-horizon was encountered approximately 6 to 8 inches below the surface with the sample being taken at an average depth of 10 inches. In the vicinity of Anomaly 4 the B-horizon was never encountered due to the extremely swampy conditions.

As was found to be the case in Map Area A, the soil geochemical results were not as significant as one would have hoped. The whole rock geochemical results on the other hand are significant and several noticeable trends were established in relation to both conductors.

In the case of Anomaly 3, five rock geochemical samples were taken on line 116 m E in the vicinity of the conductor axis, the results of which are tabulated below:

No.	Location	Rock Type	Cu ppm	Pb ppm	Zn ppm	Ni ppm
273-R	L116mE/60mN	acid flow	150	24	172	19
269-R	L116mE/B.L.	andesite tuff	190	< 2	208	45
275-R	L116mE/30mS	andesite tuff	161	6	303	46
	L116mE/35mS	conductor axis				
278-R	L116mE/60mS	andesite tuff	165	4	228	98
280-R	L116mE/90mS	andesite tuff	177	< 2	154	32

It will be noted that with the exception of sample 273-R, all of the samples were taken within the same rock unit and these samples represent a traverse normal to the strike of the bedding. As the conductor is approached from the north, the zinc data shows an increase from 172 ppm at station 60 m N to 303 ppm at station 30 m S. The conductor axis is located at station 35 m S from which point the data shows a decrease from the anomalous value recorded just north of the conductor axis, to 154 ppm at station 90 m S. This anomalous asymmetrical relationship also exists for both the lead and nickel values. The copper geochemical values exhibit a similar profile but in a negative sense. That is to say, the copper values show a gradual decrease from 190 ppm obtained at the baseline to a low of 161 ppm at station 30 m S located 5 meters north of the conductor axis. Once the conductor axis is crossed, the copper values show a gradual increase to 177 ppm obtained at station

90 m S. This depressed copper relationship is not unique to Anomaly 3 but has been well documented* at the Brunswick No. 12 massive Pb-Zn deposit of the Bathurst Camp. At this deposit the hanging wall basic volcanics are noticeably deficient in copper immediately overlying the ore zone. This same relationship also exists in the Cu-Zn deposits of Cyprus.

In the case of Anomaly 4, only limited inconclusive information could be obtained because of the extremely swampy conditions which exist in the area. One sample, 255-R, taken on line 120 W at the baseline was either lost in transit or lost at the research laboratory as no record of that sample can be found once it left the field camp. The following three samples however, were taken from what is thought to be the overlying tuff horizon.

No.	Location	Rock Type	Cu ppm	Pb ppm	Zn ppm
247-R	L240mW/60mN	andesite tuff	229	6	260
258-R	L120mW/60mN	andesite tuff	258	32	289
262-R	L0/30mN	andesite tuff	229	6	279

These data show the strong continuity of the base metal values within a particular tuff horizon. The copper and zinc values only vary 29 ppm along a strike length of 800 feet.

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* Wahl, J.L. et al. Anomalous element distribution in rocks around Key Anacon, Heath Steele B-Zone, and Brunswick No. 12 Sulphide Deposits. C.I.M. Annual Meeting, 1975.

It seems more than fortuitous that sample no. 258-R, exhibiting the most anomalous conditions of the three samples was obtained just north of the most favourable electromagnetic response recorded over Anomaly 4.

CONCLUSION

The two anomalous, conductive zones identified during the reconnaissance survey were further defined during the course of the detailed program.

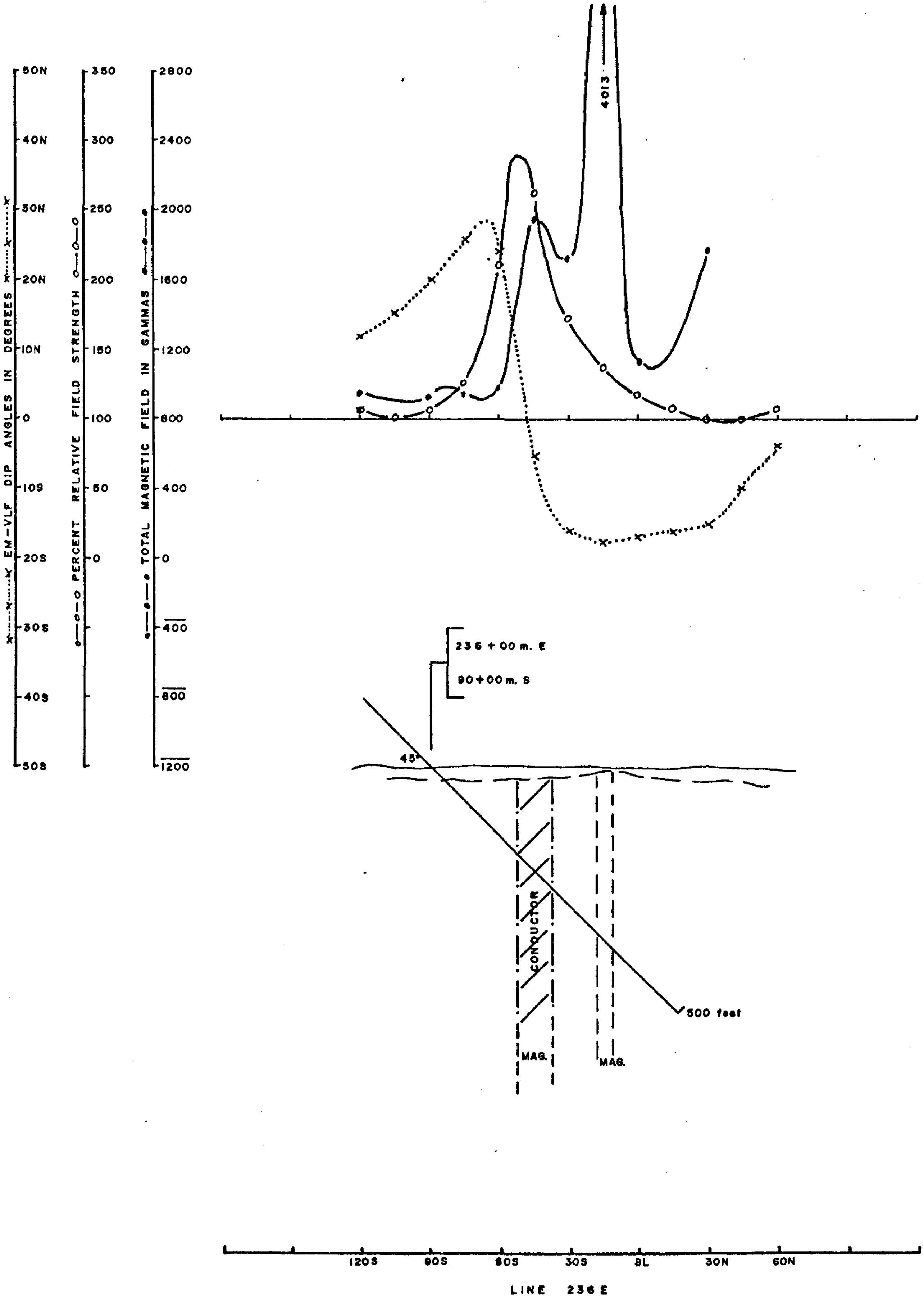
The causative body of Anomaly 3 is thought to be a zone of sulphide mineralization associated with a chloritic andesite tuff. This conductive zone, striking N58°W is estimated to be up to 60 feet (18 meters) wide and in excess of 1000 feet (304 meters) long exhibiting a near vertical dip before the anomaly was traced into ground held by Noranda. Noranda's field crews also mapped this conductor using a large vertical loop electromagnetic survey unit. In general, the total magnetic field gradient study indicates a flanking relationship relative to the conductor axis, except on line 236 m E where a direct magnetic correlation was observed. The anomalous geochemical results associated with the conductor lends supporting evidence for the existence of base metal sulphides within the mineralized zones.

The causative body of Anomaly 4 is thought to be a zone of sulphide mineralization associated with a chloritic andesite tuff. This conductive zone, striking N58°W, is estimated to be up to 75 feet (22 meters) wide and of limited strike length exhibiting a near vertical dip. The total magnetic field study indicates a northerly flanking magnetic relationship relative to the conductor. The anomalous rock geochemical results associated with the related tuff horizon indicate the probable existence of base metal sulphides within the mineralized zone.

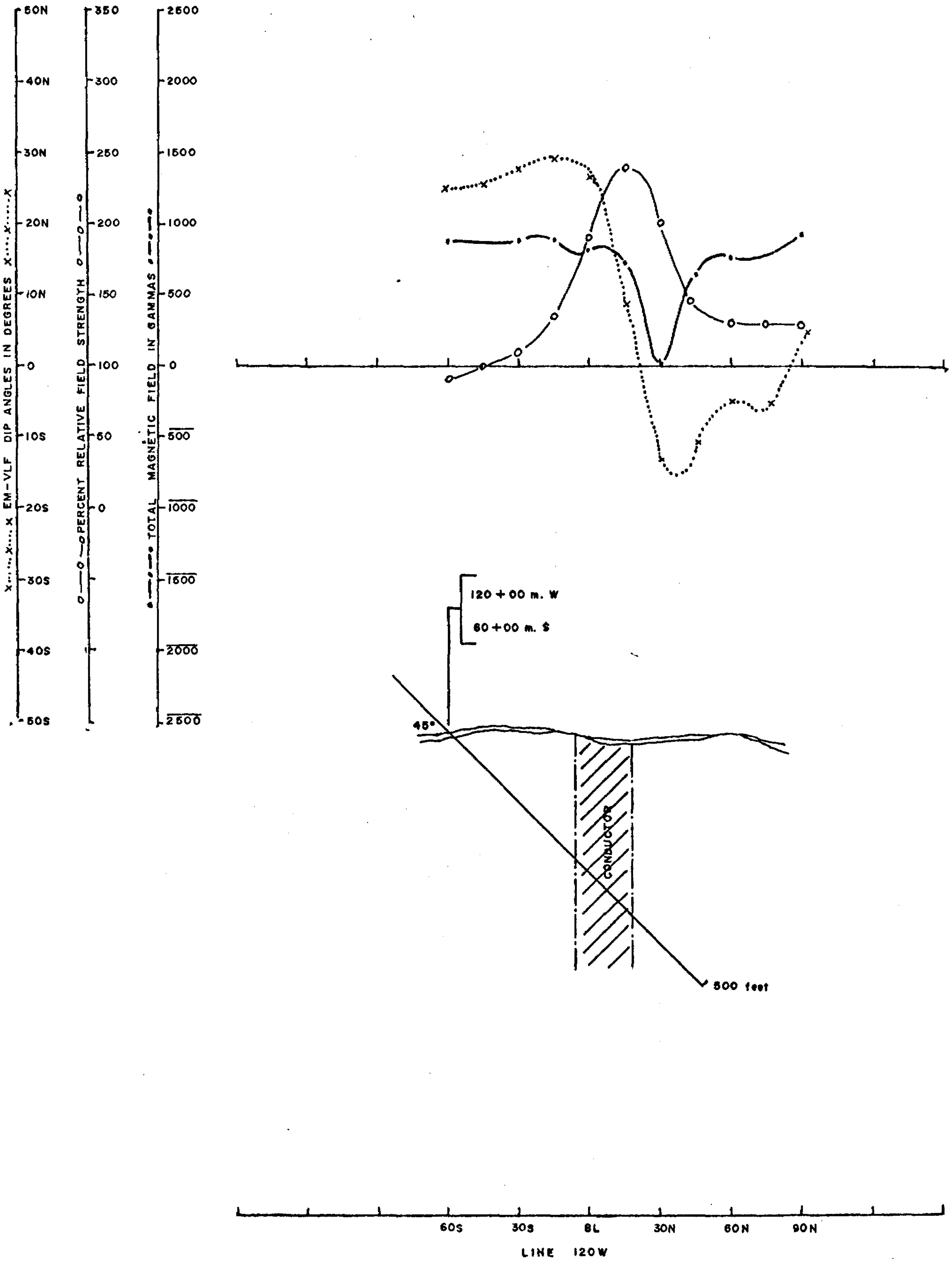
RECOMMENDATION

It is recommended that Anomaly 3 and Anomaly 4 be investigated by diamond drilling as shown on the following drill sections.

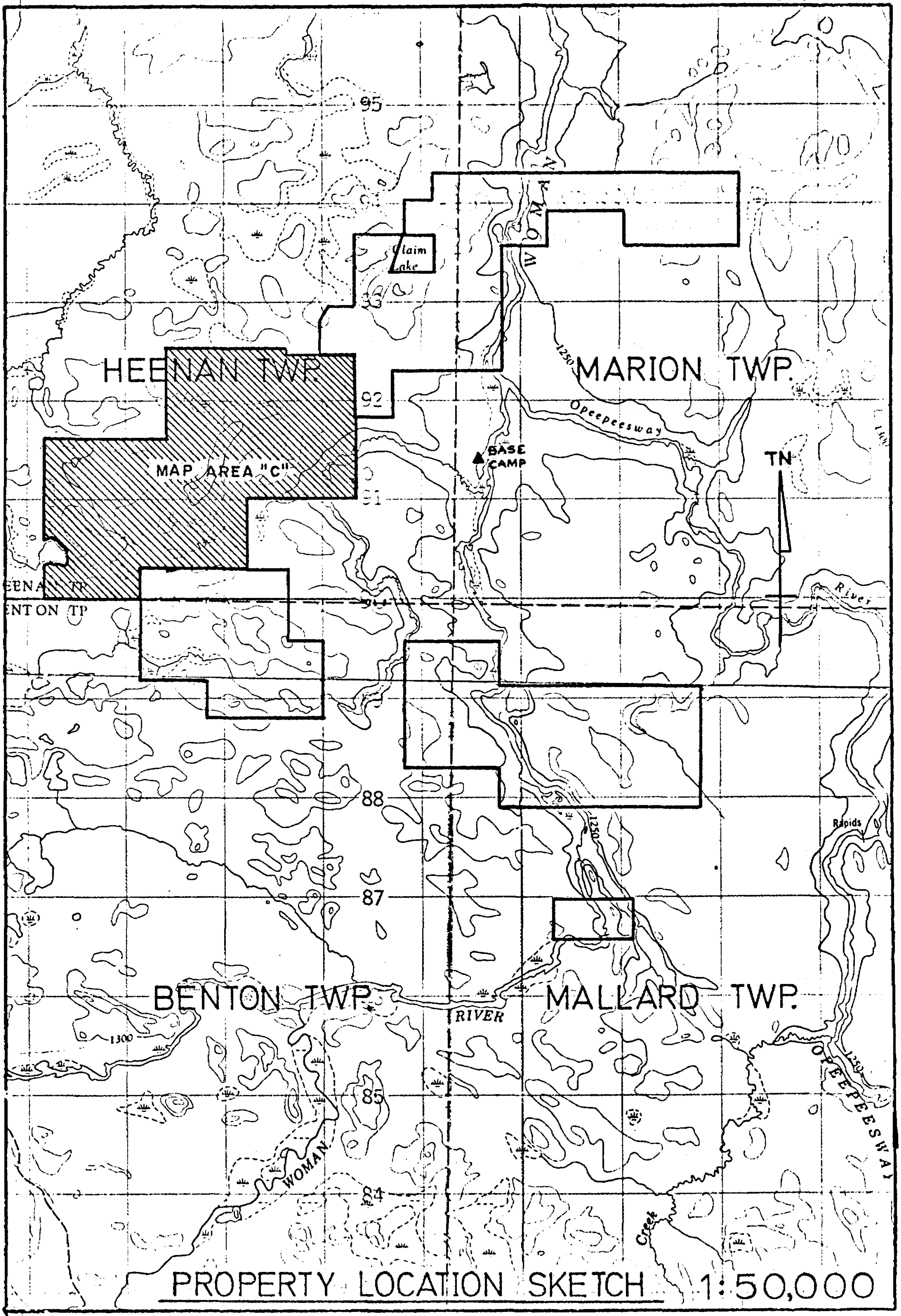
BENTON TOWNSHIP
ANOMALY No. 3



BENTON TOWNSHIP
ANOMALY No. 4



MAP AREA "C"



PROPERTY LOCATION SKETCH 1:50,000

MAP AREA "C"

Map Area C adjoins, and lies immediately north of Map Area B and pertains to that portion of Heenan Township covered by the following 5 patented claims and 7 unpatented mineral claims.

Heenan	WS 8 - WS 12	inclusive
	428780 - 428782	inclusive
	428776 - 428779	inclusive

RECONNAISSANCE PROGRAM

A reconnaissance program was undertaken in a similar manner to that outlined for Map Area A.

A grid system, comprising of 55,800 feet (17,000 meters) was established by W. G. Wahl Limited during the period from June 8 through June 16 utilizing the old U.S. Smelting, Refining and Mining Company lines and the Topofil continuous chain method. The U.S. Smelting baseline was established at a slight angle to the Ontario Department of Mines baseline established by A. M. Goodwin in 1961. The grid lines were established at 400 foot (120 meter) intervals along the baseline. One hundred foot (30 meter) stations were established on all lines of the reconnaissance grid.

The electromagnetic survey was initiated by R. Bylo, B.A.Sc. during the period from June 9 through June 12 and completed during the period from June 17 through June 19 1975 following the format outlined in Appendix I. A total of 928 stations were occupied during the course of the survey. The electromagnetic data is presented on drawing 108.

The reconnaissance electromagnetic survey further defined the regional extensions of the anomalous zones identified on the airborne INPUT tapes.

ANOMALY 6

Anomaly 6 is located immediately northwest of Canoe Lake and was mapped striking N45°W with an inferred strike length of 1600 feet (490 meters). This anomaly is thought to be the northwestern extension of Anomaly 5 previously discussed in Map Area B.

ANOMALY 7

Anomaly 7 lies sub-parallel to and approximately 100 feet (30 meters) southeast of the baseline and was mapped on lines 20 S and 24 S. This conductor exhibits a strike length of 1200 feet (360 meters) a portion of which has been selected for detailed investigation and will be discussed in a later section of the report.

ANOMALY 8

Anomaly 8 was mapped on lines W.G.W. 92 S and W.G.W. 96 S lying sub-parallel to and 2500 feet (760 meters) southeast of the baseline. This conductor exhibits a strike length of 1000 feet (300 meters) a portion of which has been selected for detailed investigation.

DETAILED PROGRAM

A detailed examination of Anomalies 7 and 8 was undertaken in exactly the same manner as that outlined for Map Area A. However, to facilitate coverage of these anomalies, two detailed grids were established. The Ridge Back Grid is centrally located within the map area and details Anomaly 7. The Foothill Grid is located in the northeast corner of the map area and details Anomaly 8.

RIDGE BACK GRID

The Ridge Back Grid consists of two detailed profiles established normal to the strike of Anomaly 7 utilizing reconnaissance lines 20 S and 24 S. One hundred foot (30 meter) stations were established on the detail profiles with readings being observed at 50 foot (15 meter) intervals.

GEOLOGY

The geological survey was conducted by D. G. Wahl, P.Eng. on July 7, 1975.

The geology as published by the Ontario Department of Mines was extended and further defined by the geophysical surveys and geological mapping.

Approximately 10 percent of the area covered by the detailed profiles is outcrop, the remaining 90 percent consists of open stands of jack pine and spruce. Three distinct rock units were mapped during the geological investigation, the locations of which are shown on drawings 110 and 102.

The northern extensions of the detailed profiles are mapped as massive intermediate lavas of andesitic composition. The rock unit ranges from a fine-grained, less than 1 mm particle size, to a somewhat massive unit exhibiting an aphanitic texture. The main mineral constituent is greenish hornblende, with actinolite, chlorite, some epidote and carbonate, and small quantities of plagioclase feldspar, and quartz.

The central portion of the profiles are mapped as banded iron formation. The iron formation, where it is completely developed, displays an upward transition from siliceous magnetite-siderite phase at the base, through jaspery chert and grey-banded chert, to light-grey, banded chert with negligible iron content at the top. The jasper zone consists of red hematitic chert bands, up to 1 inch thick, alternating with grey to black inter-bands, one-quarter to one-half inch thick composed of chert with more or less disseminated magnetite and hematite. The jasper zone grades into and contains zones of dark-grey, banded chert in which grey chert layers, up to two inches thick, alternate either with dark-grey to black, magnetite-rich cherty layers, one-quarter to one-half inch thick, or with thin, magnetite-rich parting seams. The grey chert bands locally contain considerable disseminated pyrite. In general, Goodwin has estimated the iron content to be 30 - 40 percent at the base of the formation and 5 - 10 percent at the top. The following table, after Goodwin, illustrates these relationships in descending stratigraphic sections.

Iron Formation, Underlying the Large Ridge in Claims WS 8 & 9

White to light-grey, banded chert	70 - 200 feet
Dark-grey, banded chert with jasper zones	300 - 600
Dark-grey, banded chert with magnetite zones	100 - 600
	470 - 1400 feet

The southeastern extension of the profiles are mapped as rhyolite breccia which is characterized on line 20 S at station 4 SE by numerous poorly sorted angular to sub-angular acid fragments, up to two inches in diameter, in a dense matrix of the same composition.

ELECTROMAGNETIC SURVEY

The electromagnetic data was recorded by R. Bylo, B.A.Sc. on July 7, 1975 following the format outlined in Appendix I. Thirty stations were occupied during the course of the survey with a total of 60 readings being observed. The electromagnetic data was reduced to a local datum and adjusted for drift. The data is presented on drawings 109 and 111.

The detailed electromagnetic survey further defined the anomalous zone mapped during the reconnaissance survey.

Anomaly 7

This conductor lies sub-parallel to and slightly southeast of the baseline and is characterized by a dip reversal of up to 37 degrees (+8 to -29) over 200 feet (60 meters) associated with a relative field strength of up to 150 percent. This figure represents a value of 40 percent above the local background. The electromagnetic data defined a steeply dipping, poorly conductive sheet estimated to be up to 100 feet (30 meters) wide. The Fraser reduced inphase dip angle data, presented on drawings 109 and 111, indicate a low uniform conductivity associated with this conductor.

TOTAL MAGNETIC FIELD GRADIENT STUDY

The total magnetic field study was not undertaken at this time because of the magnetic data available on file with W. G. Wahl Limited. This ground magnetic data*, presented on drawings 110 and 112, was recorded at 50 foot (15 meter) intervals on all lines of the established grid during the 1967 summer season, employing a Sharpe Fluxgate vertical field magnetometer.

The intermediate volcanic rocks previously discussed are characterized by moderately low uniform magnetic relief in

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* The entire report is appended.

the range of 59,000 gammas.

The banded iron formation is characterized by extremely high magnetic relief in the range of 80,000 gammas with localized magnetic intensities in excess of 100,000 gammas.

The rhyolite breccia mapped on the southeastern extensions of the profile lines is characterized by an average magnetic intensity of 6,000 gammas. This figure represents an absolute value above a 59,000 gamma background.

Anomaly 7, as previously defined by the electromagnetic survey, lies on the north flank of a zone of extremely high magnetic relief in the range of 80,000 gammas.

GEOCHEMICAL INVESTIGATION

Whole rock and soil geochemical samples were taken over the conductive zone in an attempt to further define the causative body of the anomalous zone.

Anomaly 7 is located in a region of extremely well drained relief within a well defined drainage pattern. The vegetation in the vicinity of this anomaly consists of open stands of jack pine and black spruce.

A total of 16 soil samples and 6 rock samples were taken for geochemical analysis, the results of which are presented in Appendix IV, along with a description of the analytical procedures used. The geochemical samples are presented on drawings 110 and 112.

The soil and rock geochemical samples were collected in exactly the same manner as that described for Map Area A. The B-horizon was extremely shallow and was encountered approximately three inches below the surface with the samples being taken at an average depth of four inches.

The soil geochemical data maps low, below background base metal content in the soils above the iron formation and exhibits no apparent preferential zoning of metal sulphides within the iron formation.

The rock geochemical data confirms the results concluded from the soil geochemical results. The rock geochemical results also confirm the iron content-stratigraphic relationship examined by Goodwin as shown by the following results.

No.	Location	Rock Type	% Fe
419	L20S/3S	iron formation banded chert with magnetite	38.8
416	L24S/1S	iron formation banded chert with jasper zones	22.3
426	L24S/1S	iron formation banded chert with jasper zones	16.4

It will be noted that sample 419, taken from the base of the iron formation, exhibits a higher iron content than either samples 416 or 426, taken from different horizons higher up the stratigraphic sequence.

CONCLUSIONS

The anomalous, conductive zone identified during the reconnaissance survey was further defined during the course of the detailed program.

The causative body of Anomaly 7 is thought to be the contact zone between the white to light-grey, banded chert and the overlying andesite.

RECOMMENDATIONS

It is recommended that the iron formation be investigated by diamond drilling, as per the following sections, in order to determine the tenor of iron present and thereby assess the economic significance of the iron range.

FOOTHILL GRID

The Foothill Grid comprising of 4600 feet (1400 meters) including the baseline was established by W. G. Wahl Limited on July 13, 1975. The baseline was oriented N67°E from a point 2700 feet (820 meters) south along W.G.W. line 96 S, with grid lines trending N23°W at 400 foot (120 meter) intervals along the baseline. One hundred (30 meter) stations were established on all lines of the established grid.

GEOLOGY

The geological survey was conducted by D. G. Wahl, P.Eng. on July 14, 1975.

The geology as published by the Ontario Department of Mines was extended and further defined by the geophysical surveys and geological mapping.

Approximately 10 percent of the total area covered by the detailed grid is outcrop, the remaining 90 percent can be broken down as follows: 70 percent open stands of black spruce and 20 percent alder-willow swamp.

All of the outcrop shown on drawing 113 is mapped as iron formation, which has been discussed at length in the preceding section of this report.

ELECTROMAGNETIC SURVEY

The electromagnetic survey was conducted by R. Bylo, B.A.Sc. on July 14, 1975 following the format outlined in Appendix I.

Sixty-eight stations were occupied during the course of the survey taking a total of 136 readings. The electromagnetic data was reduced to a local datum and adjusted for drift. The data is presented on drawing 113.

The detailed electromagnetic survey further defined the anomalous zones mapped during the reconnaissance survey.

Anomaly 8

This conductor lies roughly parallel to and 250 feet (75 meters) north of the baseline and is characterized on line

240 m E by a strong dip reversal of 56 degrees (+26 to -30) over 250 feet (75 meters) associated with a relative field strength of 310 percent. This figure represents a value of 110 percent above local background. The electromagnetic data defined a vertically dipping conductive sheet estimated to be up to 125 feet (45 meters) wide.

The Fraser reduced inphase dip angle data presented on drawing 113 indicates an abrupt termination of the conductivity on lines 0 and 480 m E.

TOTAL MAGNETIC FIELD GRADIENT STUDY

The total magnetic field gradient study was conducted by D. G. Wahl, P.Eng. on July 14, 1975 following the format outlined in Appendix III. A total of 68 stations were occupied during the course of the survey taking a total of 136 readings. The magnetic data was reduced to a local datum and adjusted for magnetic diurnal. The data is presented on drawing 113 as corrected station values and as a contoured interpretation of these data.

The banded iron formation is characterized on line 240 m E by high magnetic relief in the range of 15,489 gammas which represents an absolute intensity above a 61,000 gamma background.

Anomaly 8 as previously defined, lies coincident to a zone of high magnetic relief in the range of 76,000 gammas.

The magnetic data also defined two major parallel fault zones striking N50°W transecting the detailed grid in a northwest-southeasterly direction crossing the baseline at station 480 E and 120 E. These fault zones define the eastern and western extent of the iron formation and are characterized by regions of below background magnetic relief.

GEOCHEMICAL INVESTIGATION

Whole rock and soil geochemical samples were taken over the conductive zone in an attempt to further define the causative body of the anomalous zone.

Anomaly 8 is located in a region of extremely well drained relief within a well defined drainage pattern. The vegetation in the vicinity of this anomaly consists of open stands of black spruce and balsam.

A total of 23 soil samples and 13 rock samples were taken for geochemical analysis, the results of which are presented in Appendix IV, along with a description of the analytical procedures used. The geochemical samples are presented on drawing no. 113. The soil and rock geochemical samples were collected in exactly the same manner as that described for Map Area A. The B-horizon was extremely shallow overlying the iron formation; however, on line 480 m E extremely swampy conditions made soil sampling impossible. The samples were taken from an average depth of five inches.

Geochemically similar results were obtained over the iron formation in both soils and rocks as were reported over the iron formation mapped and previously discussed on the Ridge Back Grid.

CONCLUSIONS

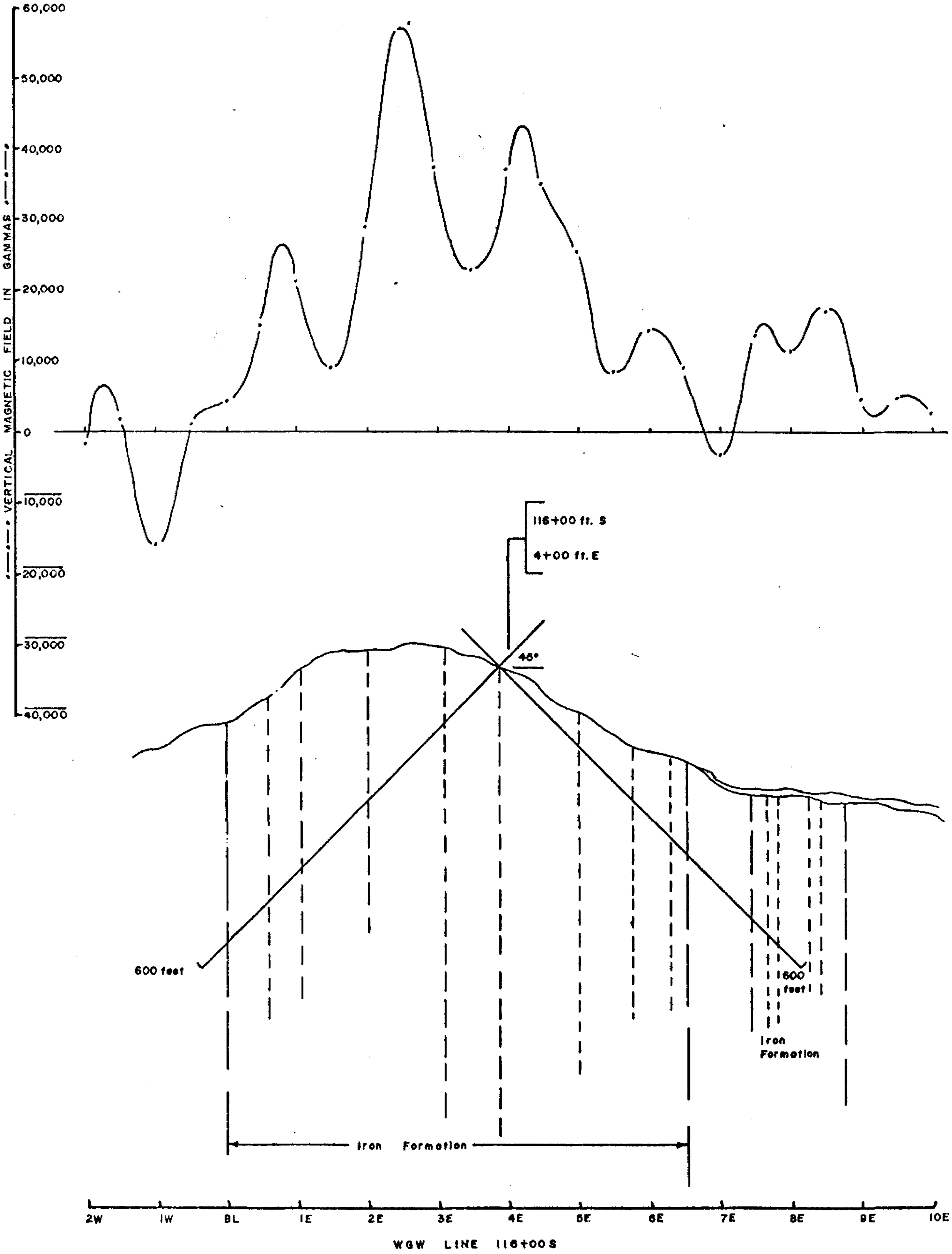
The anomalous, conductive zone identified during the reconnaissance survey was further defined during the course of the detailed program.

The causative body of Anomaly 8 is a thinly banded iron formation containing numerous grey chert bands, with considerable pyrrhotite and pyrite.

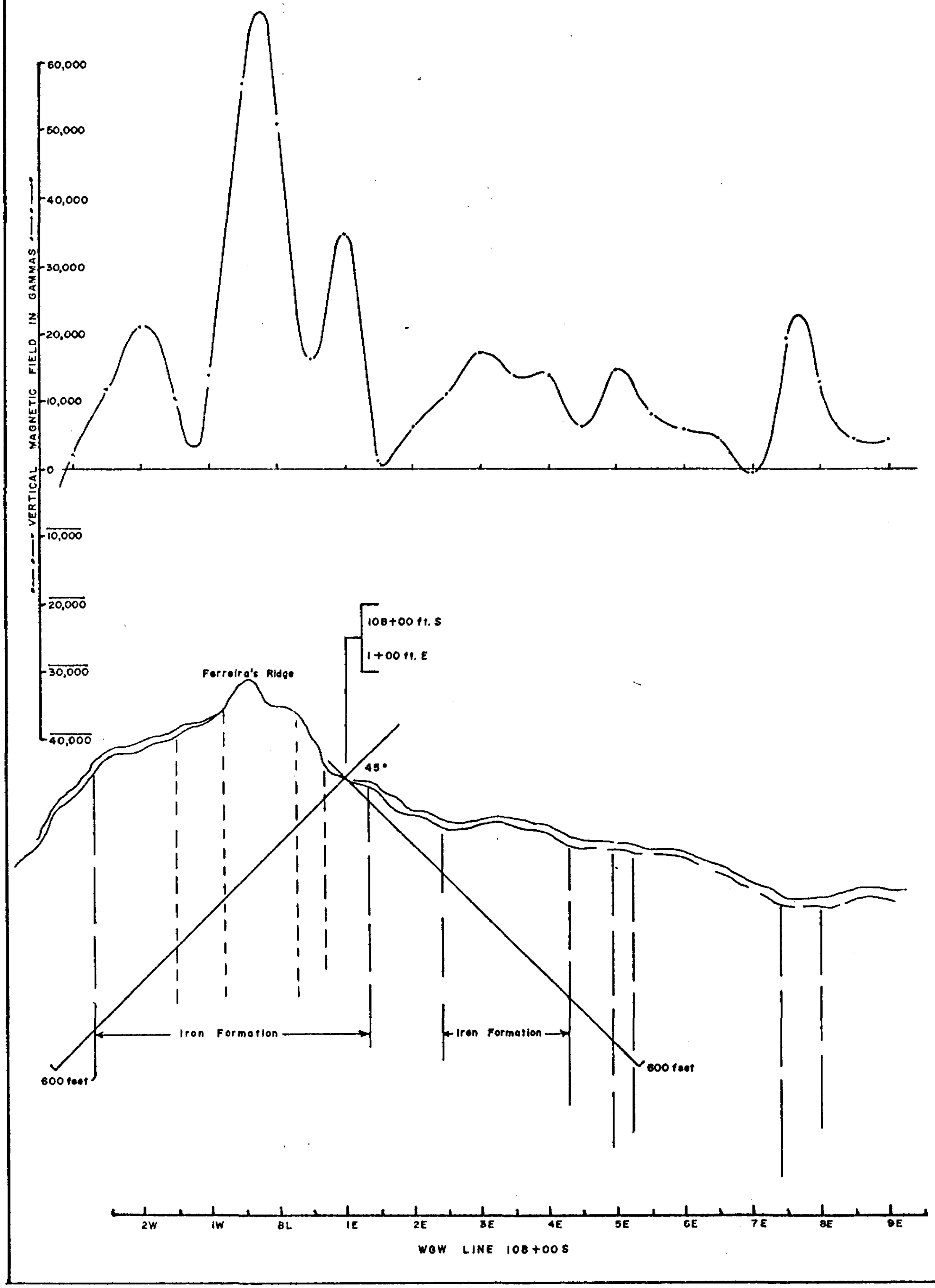
RECOMMENDATIONS

It is recommended that the iron formation be investigated by diamond drilling, as per the following sections, in order to determine the tenor of iron present and thereby assess the economic significance of the iron range.

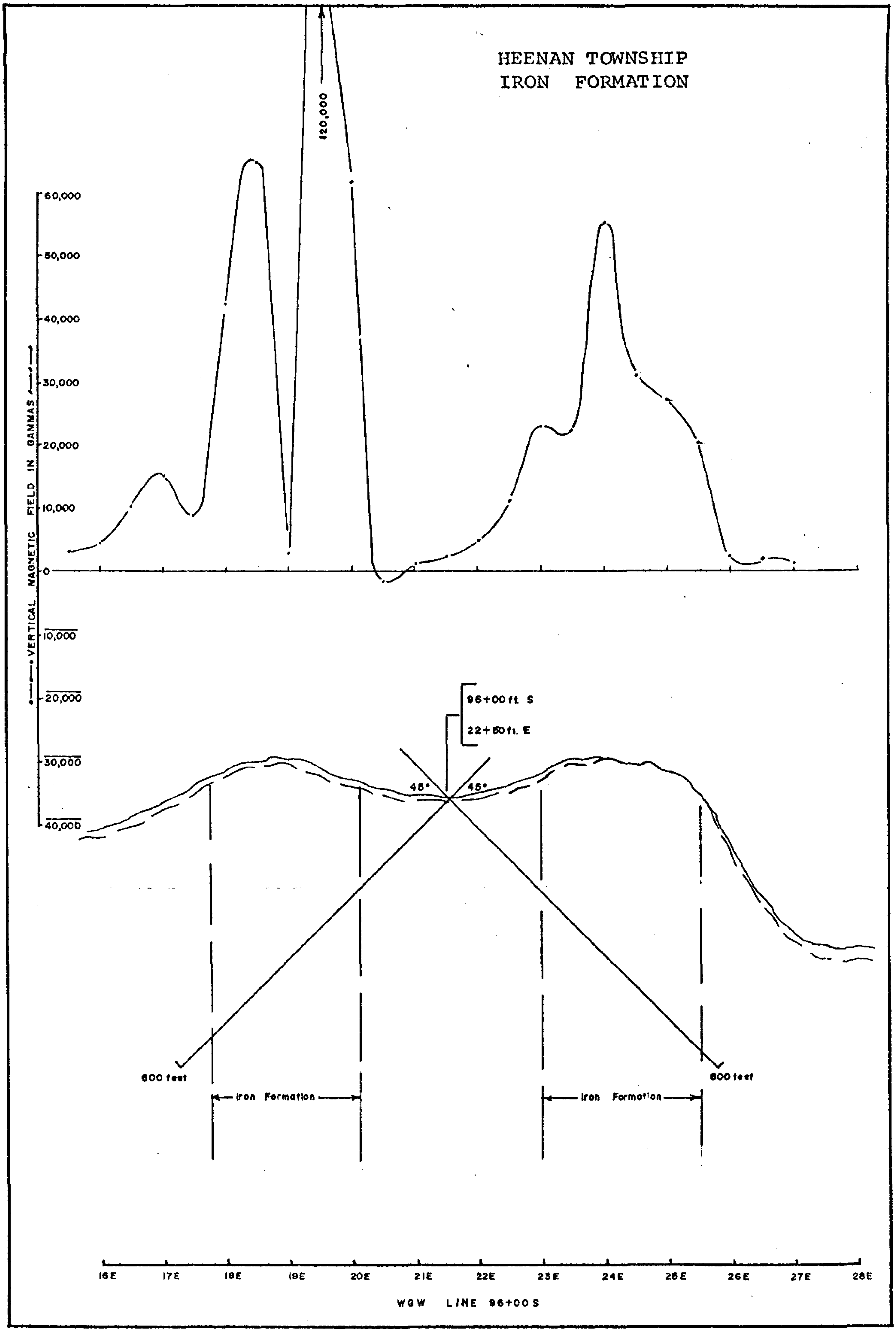
HEENAN TOWNSHIP
IRON FORMATION



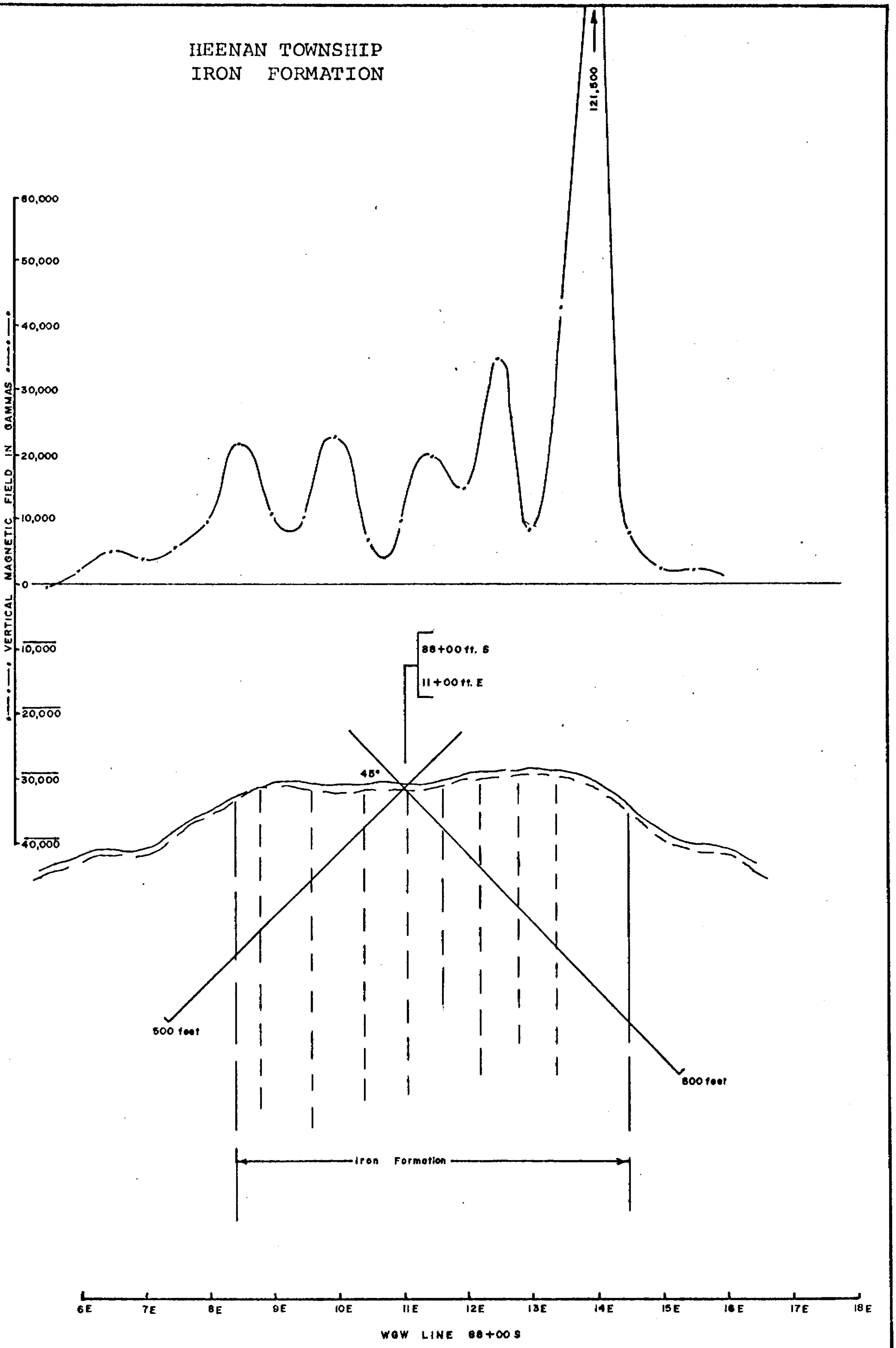
HEENAN TOWNSHIP
IRON FORMATION



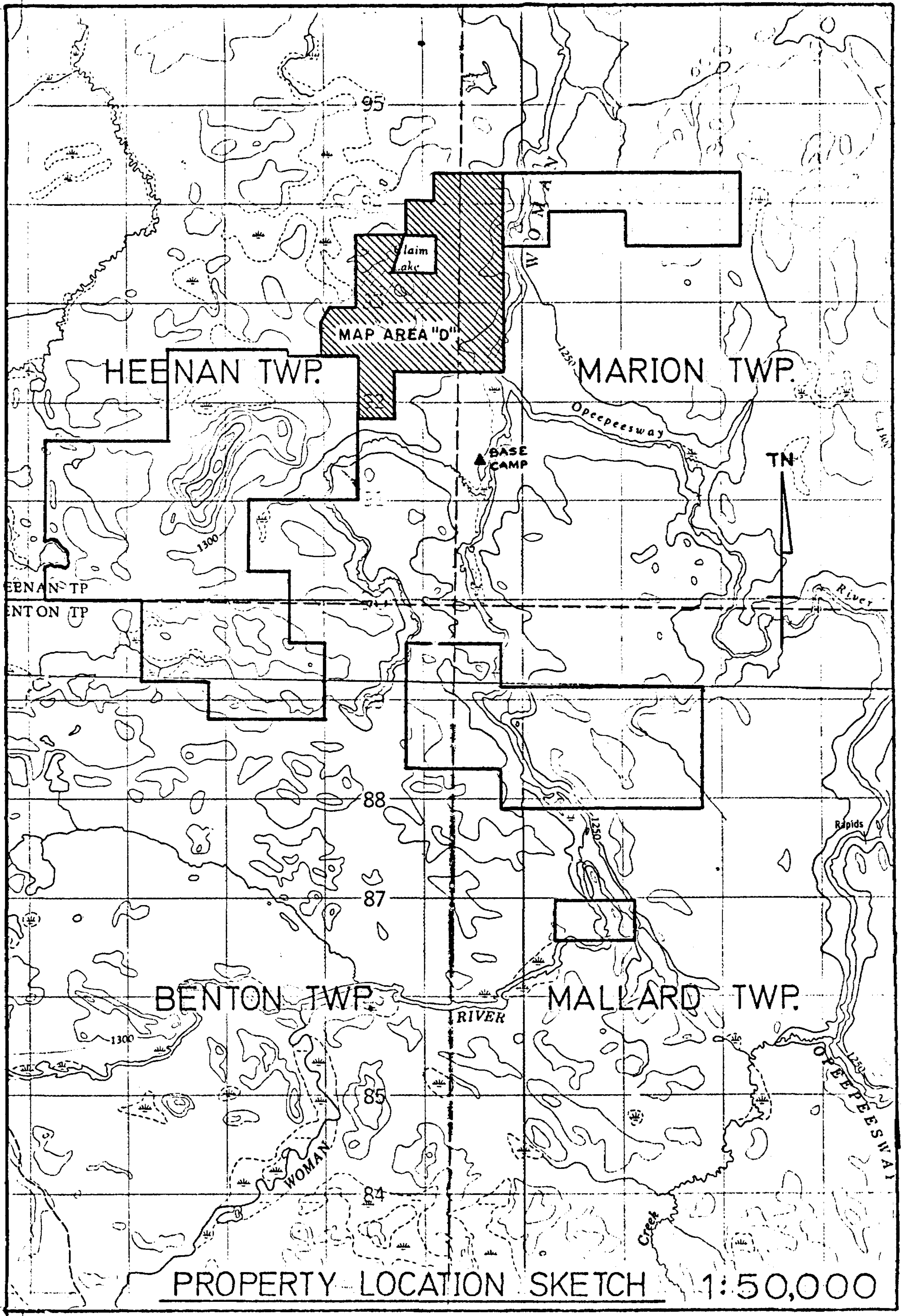
HEENAN TOWNSHIP
IRON FORMATION



HEENAN TOWNSHIP
IRON FORMATION



MAP AREA "D"



PROPERTY LOCATION SKETCH 1:50,000

MAP AREA "D"

Map Area D adjoins Map Area C to the south and Map Area E to the east and pertains to that portion of Heenan and Marion townships covered by the following 19 mineral claims:

Heenan	428783 - 428795 429837	inclusive
Marion	428796 - 428800	inclusive

RECONNAISSANCE PROGRAM

A reconnaissance program was undertaken in a similar manner to that outlined for Map Area A.

A grid system, comprising of 69,200 feet (21,092 meters) was established by W. G. Wahl Limited during the period from May 29 through June 7, 1975 utilizing the old Falconbridge lines and the Topofil continuous chain method. The Ontario Department of Mines baseline, established by A. M. Goodwin in 1961, was located and refurbished. Grid lines were established normal to the baseline trending S47°E at 400 foot (120 meter) intervals along the baseline. One hundred foot (30 meter) stations were established on all lines of the reconnaissance grid.

The electromagnetic survey was conducted by R. Bylo, B.A.Sc. during the period from May 30 to June 8, 1975 following the format outlined in Appendix I. A total of 1384 stations were occupied during the course of the survey. The electromagnetic data is presented on drawing no. 114.

The reconnaissance electromagnetic survey further defined the regional extensions of the anomalous zones identified on the airborne INPUT map.

ANOMALY 9

Anomaly 9 is located approximately 1000 feet south of Claim Lake and was mapped striking due east, with an inferred strike length of 1000 feet (304 meters) before the anomaly trends off the property. A portion of this anomaly was selected for detailed investigation and will be discussed in the later section of the report.

ANOMALY 9a

Anomaly 9a lies sub-parallel to and approximately 250 feet (76 meters) south of Anomaly 9. This conductor exhibits a strike length of 2200 feet (670 meters) and is thought to be structurally related to Anomaly 9 and will be discussed in a later section of the report.

ANOMALY 10

Anomaly 10 is located approximately 1800 feet (548 meters) south of Claim Lake, and was mapped striking N45°E exhibiting a limited strike length of approximately 800 feet (243 meters). This anomaly has been selected for detailed investigation and will be discussed in a later section of the report.

ANOMALY 11

Anomaly 11 is located in the north central portion of the map area and lies roughly parallel to and 300 feet (90 meters) south of the baseline, and has a strike length of approximately 4000 feet (1219 meters). The northeastern extension of this anomaly strikes due east, parallel to Goodwin's Marion Township baseline. Anomaly 11 will be discussed in a later section of the report.

ANOMALY 12

Anomaly 12 lies sub-parallel to and 600 feet (180 meters) south of Anomaly 11. This conductor, exhibiting a limited strike length of approximately 400 feet (120 meters), has been selected for detailed investigation and will be discussed in a later section of the report.

DETAILED PROGRAM

A detailed examination of Anomalies 9, 9a, 10, 11 and 12 was undertaken in exactly the same manner as that outlined for Map Area A. However, to facilitate coverage of these anomalies, two detailed grids were established. The Claim Lake grid is located just south of Claim Lake and details Anomalies 9, 9a and 10. The Boundary Grid is located in the northeast sector of the map area and straddles the boundary between Marion and Heenan townships. This grid maps Anomalies 11 and 12.

CLAIM LAKE GRID

The Claim Lake Grid comprising of 8525 feet (2598 meters) including the baseline was established utilizing the original reconnaissance lines. One hundred foot (30 meter) stations were established on all lines of the detailed grid with readings being observed at 50 foot (15 meter) intervals.

GEOLOGY

The geological survey was conducted by D. G. Wahl, P.Eng. on July 8, 1975.

The geology as published by the Ontario Department of Mines was extended and further defined by the geophysical surveys and geological mapping.

Approximately 5 percent of the area covered by the detailed grid was outcrop with the remaining 95 percent divided equally between alder-willow swamps and dense stands of young balsam. Three distinct rock units were mapped during the course of the geological investigation and are shown on drawing no. 115.

The northern one-quarter of the detailed grid is mapped as an intermediate volcanic lava with isolated tuffaceous beds thought to be andesitic in composition. The rock unit ranges from a fine-grained, less than 1 mm particle size, to a somewhat massive unit exhibiting an aphanitic texture. The main mineral constituent is greenish hornblende, with actinolite, chlorite ?

and some epidote and a little quartz. Trace amounts of pyrite were also noted in the more tuffaceous areas.

The central portion of the detailed grid is mapped as a thinly banded, jaspery iron formation. The typical jasper consists of red hematitic chert bands, up to 1 inch thick, alternating with grey to black interbands, one-quarter to one-half inch thick, composed of chert with more or less disseminated magnetite and hematite. The jasper zones grade into and contain zones of dark-grey, banded chert in which grey chert layers, up to two inches thick, alternate either with dark-grey to black, magnetite-rich cherty layers, one-quarter to one-half inch thick, or with thin magnetite-rich parting seams. The grey chert bands locally contain considerable disseminated pyrite.

The southern one-quarter of the detail grid is mapped as a rhyolite breccia. In general, breccia fragments increase in abundance, size and acidity towards the iron formation. Characteristically, the outcrop mapped on line 8+00 N contains numerous poorly sorted angular to sub-angular acid fragments up to four inches in diameter, which tends to indicate not only a close proximity to the source vents, but also that negligible or limited abrasion has taken place during transportation.

ELECTROMAGNETIC SURVEY

The electromagnetic survey was conducted by R. Bylo, B.A.Sc. on July 8, following the format outlined in Appendix I.

A total of 170 stations were occupied during the course of the survey with a total of 340 readings being observed. The electromagnetic data was reduced to a local datum and adjusted for drift. The data is presented on drawing no. 116.

The detailed electromagnetic survey further defined selected anomalous zones mapped during the reconnaissance survey.

Anomaly 9

This conductor was mapped cutting diagonally across the northern tip of the detailed grid and is characterized on line 28 N by a modest dip reversal of 17 degrees (+5 to -12) over 250 feet (75 meters) associated with a relative field strength of 210 percent. This figure represents a value of 110 percent above the local background. The electromagnetic data defines a vertically dipping, poorly conductive sheet estimated to be of limited width extent.

Anomaly 9a

This conductor was mapped lying sub-parallel to and 200 feet (60 meters) south of Anomaly 9a and is characterized on line 20 N by a modest dip reversal of 15 degrees (+7 to -8) over 200 feet (60 meters) associated with a relative field strength of 170 percent. This figure represents a value of 70 percent above the local background. The electromagnetic data defines a conductive zone of limited conductivity.

The Fraser reduced inphase dip angle data, presented on drawing no. 117, indicates a slight increase in conductivity towards the west.

Anomaly 10

This conductor was mapped lying parallel to and 500 feet (150 meters) southeast of the baseline and is characterized on line 20 N by an inferred dip reversal of 22 degrees (+22 to 0) over 150 feet (45 meters) associated with a relative field strength of 175 percent. This figure represents a value of 75 percent above the local background. The electromagnetic data defined a conductive zone of limited conductivity.

The Fraser reduced inphase dip angle data indicates that Anomaly 10 is of limited strike length extent.

TOTAL MAGNETIC FIELD GRADIENT STUDY

The total magnetic field gradient study was not undertaken at this time because of the excellent vertical magnetic field data available on file with the Ontario Department of Mines. This ground magnetic data, presented on drawing no. 118, was recorded at 50 foot (15 meter) intervals on all lines by Falconbridge Nickel Mines Limited during the 1973 summer season, employing a McPhar M-700 vertical field magnetometer.

The intermediate volcanic rocks previously discussed are characterized by moderately low uniform magnetic relief in the range of 1000 to 2000 gammas. This figure represents an absolute value above a 59,000 gamma background.

The banded iron formation is characterized by high magnetic relief in the range of 22,830 to 43,970 gammas.

The rhyolite breccia mapped in on the southern extension of line 8 N is characterized by relatively uniform magnetic relief in the range of 2000 to 4000 gammas.

The magnetic data also maps a major structural break transecting the southern portion of the map area, crossing the baseline at station 10 N. This structural break is thought to be a major fault zone striking almost due east and is characterized by a zone of extremely low magnetic relief in the range of 4820 gammas.

Anomaly 9, as defined by the electromagnetic survey, lies on the north flank of a zone of extremely high magnetic relief in the range of 30,980 gammas.

Anomaly 9a, as previously defined, lies coincident with a zone of high magnetic relief in the range of 20,000 gammas which represents an absolute value above a background of 59,000 gammas.

Anomaly 10 lies on the southern flank of a zone of high magnetic relief in the range of 20,000 gammas which as mentioned previously represents an absolute value above local background.

GEOCHEMICAL INVESTIGATION

Whole rock and soil geochemical samples were taken over the conductive zones in an attempt to further define the causative bodies of these zones.

All of the anomalies are located in a region of poorly drained relief within a complex regional drainage pattern which flows to the southeast. The vegetation in the vicinity of these anomalies consists of limited dense stands of young balsam within an extensive alder-willow swamp.

A total of 53 soil samples and 14 rock samples were taken for geochemical analysis, the results of which are presented in Appendix IV, along with a description of the analytical procedures used. The geochemical sample locations are presented on drawing no. 115.

The soil and rock geochemical samples were collected in exactly the same manner as that described for Map Area A. Due to the extremely swampy conditions present throughout the detailed grid area, the B-horizon sample depth varied greatly with each soil sample.

As was found to be the case in Map Area A, the soil geochemical results were not as significant as one would have hoped. Due to the sparce density of outcrop in the vicinity of the anomalous zones, the limited rock geochemical results were unable to shed any light as to the causative bodies of the moderately conductive zones.

CONCLUSIONS

The three anomalous, conductive zones identified during the reconnaissance survey were further defined during the course of the detailed program.

The causative body of Anomaly 9 is the contact zone between the thinly banded jaspery iron formation and the overlying andesite as mapped on line 28 N at station 120 m E.

The causative body of Anomaly 9a is thought to be a modestly mineralized grey chert horizon lying within the iron formation.

The causative body of Anomaly 10 is thought to be the southeastern contact zone between the iron formation and the underlying rhyolite breccia.

RECOMMENDATIONS

It is recommended that no further work be undertaken on Anomalies 9, 9a and 10 at this time.

BOUNDARY GRID

The Boundary Grid comprising of 7900 feet (2407 meters) including the baseline, was established by W. G. Wahl Limited during the period from July 5 to July 6, 1975. The baseline was oriented due east from Falconbridge line 64 N and the Goodwin baseline with grid lines trending north-south at 400 foot (120 meter) intervals along the baseline. One hundred foot (30 meter) stations were established on all lines of the detailed grid.

GEOLOGY

The geological survey was conducted by R. Bylo, B.A.Sc. on July 15, 1975.

The geology as published by the Ontario Department of Mines was extended and further defined by the geophysical surveys and geological mapping.

Less than 3 percent of the total area covered by the detailed grid is outcrop, the remaining 97 percent consists of dense black spruce and balsam stands with only limited alder-willow swamp encountered in the northwestern sector of the detailed area. The majority of the outcrop shown on drawing no. 119 is located in the southwest quarter of the detailed grid and consists of a finely banded jaspery iron formation. This iron formation is exactly the same in all respects as that mapped on the Claim Lake Grid and which has been discussed at great length in a preceding section of this report.

A small outcrop of andesite was mapped on the southern extension of line 240 m E.

ELECTROMAGNETIC SURVEY

The electromagnetic survey was conducted by R. Bylo, B.A.Sc. on July 16, 1975 following the format outlined in

Appendix I.

One hundred and fifty-eight stations were occupied during the course of the survey taking a total of 316 readings. The electromagnetic data was reduced to a local datum and adjusted for drift. The data is presented on drawing no. 120.

The detailed electromagnetic survey further defined the anomalous zones mapped during the reconnaissance survey.

Anomaly 11

This conductor lies sub-parallel to and approximately 100 feet (30 meters) north of the baseline and is characterized on line 240 m E by a sharp dip reversal of 61 degrees (+24 to -37) over 400 feet associated with a relative field strength of up to 225 percent. This figure represents a value of 125 percent above the local background. The electromagnetic data defined a vertically dipping moderately conductive sheet estimated to be 200 feet (60 meters) wide.

The Fraser reduced inphase dip angle data presented on drawing 120 indicates uniform conductivity across the entire conductor.

Anomaly 12

This conductor lies approximately 500 feet (150 meters) south of the baseline and was mapped between lines 240 m E and 360 m E. The orientation of this conductor is such that reconnaissance lines traversed the anomaly normal to the strike; thereby, achieving the most diagnostic geophysical response. This conductor is characterized on reconnaissance line 68 N by a sharp dip reversal of 45 degrees (+42 to -3) over 150 feet (45 meters) associated with a relative field strength response of up to 230 percent which represents a value of 130 percent above local background. On the detailed grid, inferred dip reversals were recorded on lines 240 m E and 360 m E at stations 150 m S and 120 m S respectively. The electromagnetic data defined an arcuate shaped, near vertical conductive sheet estimated to be up to 50 feet (15 meters) wide and up to 400 feet (120 meters) long.

The Fraser reduced, inphase dip angle data indicates that this anomaly lies south of, and does not appear to be directly related to the main iron formation mapped by Anomaly 11.

TOTAL MAGNETIC FIELD GRADIENT STUDY

A total magnetic field gradient study was not undertaken, as was the case for the Claim Lake Grid, because of the excellent vertical magnetic field data available on file with the Ontario Department of Mines. This ground magnetic data, shown on drawing no. 119, was recorded at 50 foot (15 meter) intervals on all lines by Falconbridge Nickel Mines Limited during the 1973 summer season, employing a McPhar M-700 vertical field magnetometer.

The banded iron formation is characterized by high magnetic relief in the range of 20,000 to 30,000 gammas recorded above a local background of 59,000 gammas.

A large magnetic dipole was mapped lying immediately north of the iron formation. This area is thought to be underlain by an intermediate volcanic lava similar to that mapped overlying the iron formation on the Claim Lake Grid.

GEOCHEMICAL INVESTIGATION

Whole rock and soil geochemical samples were taken over the conductive zones in an attempt to further define the causative bodies of these zones.

Both Anomalies 11 and 12 are located in a region of well drained relief. The vegetation in the vicinity of these anomalies consists of dense stands of young balsam. The sand ridges in the eastern one-half of the grid area are covered with open stands of black spruce and jack pine.

A total of 52 soil samples and 8 rock samples were taken for geochemical analysis, the results of which are presented in Appendix IV, along with a description of the analytical procedures used. The geochemical sample locations are presented on drawing no. 119.

The soil and rock geochemical samples were collected in exactly the same manner as that described for Map Area A. However, due to the great thickness of sand present in the eastern sector of the grid, soil samples were collected at 200 foot (60 meter) intervals instead of the normal 100 foot (30 meter) intervals.

The geochemical soil results taken on the western half of the grid identified Anomaly 11 as being slightly anomalous in copper and zinc; however, the results have to be considered inconclusive in the light of the rock geochemical results obtained in the same vicinity. The following rock geochemical samples were taken coincident with the conductor axis of Anomaly 11.

No.	Location	Rock Type	Cu ppm	Pb ppm	Zn ppm	Fe %
341-R	L120mE/B.L.	iron formation	46.2	8	129	23.8
358-R	L240mE/60mN	iron formation	39.5	2	146	30.9
365-R	L360mE/30mN	iron formation	27.3	< 2	216	38.5

It will be noted that all three samples are of the same rock type; that is, a thinly banded iron formation containing differing amounts of pyrite and pyrrhotite. The geochemical data shows that the base metal content within this portion of the iron formation is low but that these values appear to be uniformly distributed along strike. The iron content is high ranging from 23.8 percent in sample 341-R to 38.5 percent in sample 365-R.

A rock geochemical sample taken coincident to the conductor axis of Anomaly 12 returned the following results:

No.	Location	Rock Type	Cu ppm	Pb ppm	Zn ppm
433-R	68 N/10 E	pyritized cherty iron formation	64.5	4	139

A five pound bulk sample of this material returned 50 ppb (0.0015 oz/ton) gold.

CONCLUSIONS

The anomalous, conductive zones identified during the reconnaissance survey were further defined during the course of the detailed program.

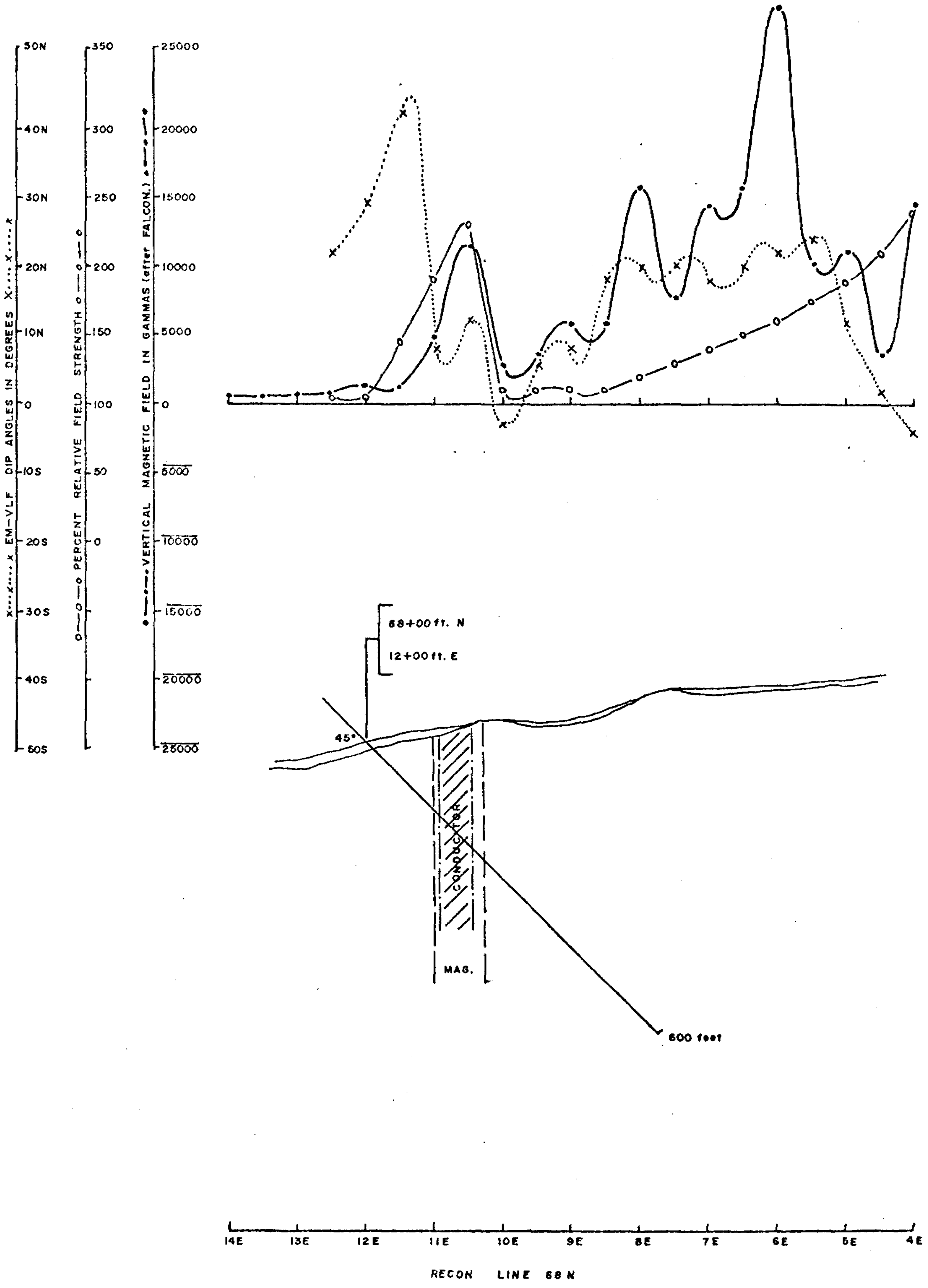
The causative body of Anomaly 11 is a banded jaspery iron formation containing numerous grey chert bands, with considerable disseminated pyrite.

The causative body of Anomaly 12 is a heavily pyritized grey chert containing up to 10 percent total sulphides. This zone is thought to be arcuate in configuration exhibiting a near vertical dip and estimated to be up to 50 feet (15 meters) wide and up to 400 feet (120 meters) long.

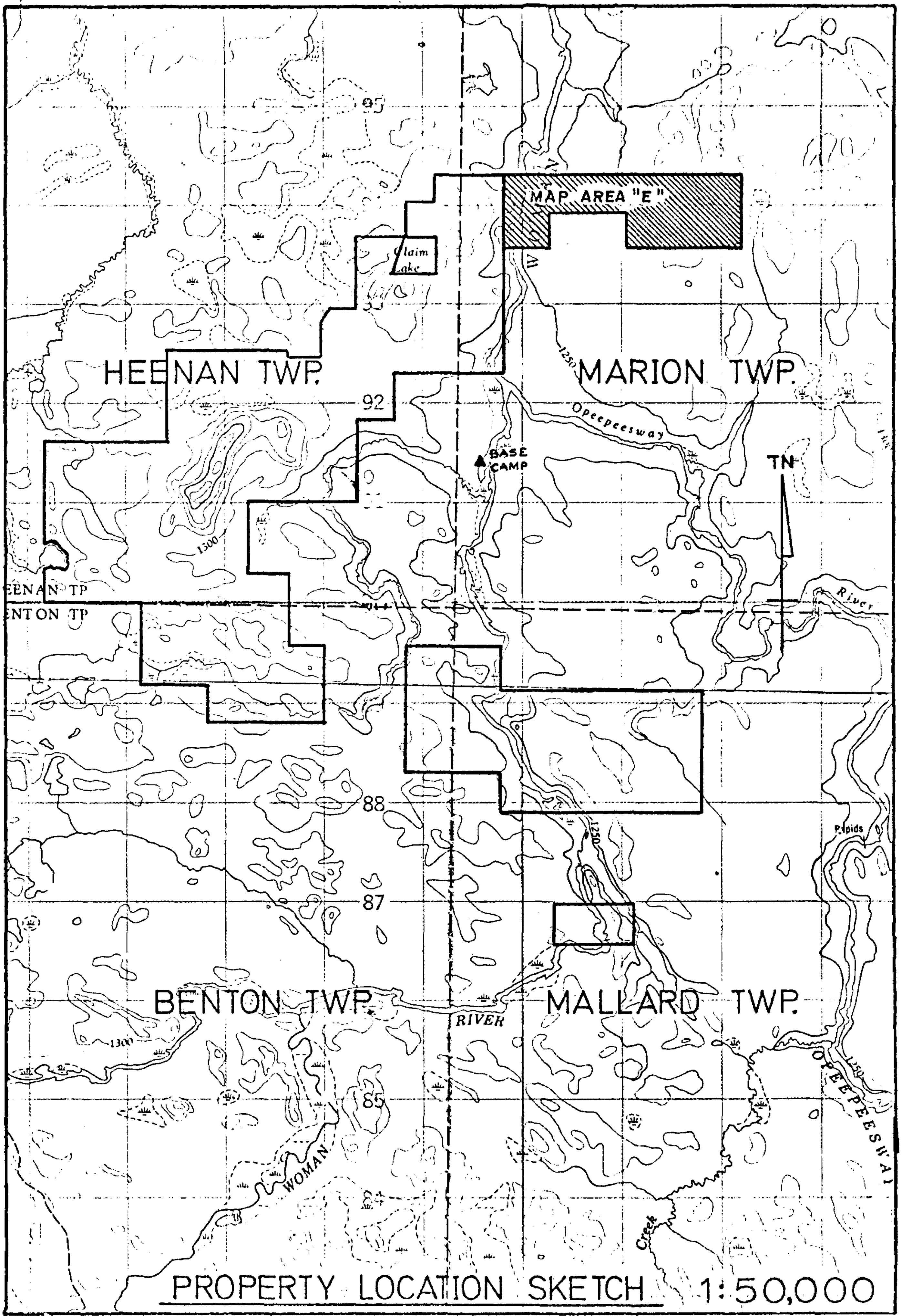
RECOMMENDATION

It is recommended that Anomaly 12 be investigated by diamond drilling as shown on the following sketch.

MARION TOWNSHIP
ANOMALY No. 12



MAP AREA "E"



PROPERTY LOCATION SKETCH 1:50,000

MAP AREA "E"

Map Area E is east of Map Area D and pertains to that portion of Marion Township covered by the following 10 mineral claims:

P 428801 - P 428810

RECONNAISSANCE PROGRAM

A reconnaissance program was undertaken in a similar manner to that outlined for Map Area A.

A grid system comprising of 49,500 feet (15,087 meters) including the baseline was established by W. G. Wahl Limited during the period from June 7 through June 8 utilizing the Topofil continuous chain method. The Ontario Department of Mines baseline, established by A. M. Goodwin in 1961, was located and refurbished. This baseline trends due east from a point on the east bank of the Woman River, located approximately 7,000 feet (2,133 meters) north of the Opeepeesway River junction. Grid lines trending north-south were established at 400 feet (120 meter) intervals along the baseline. One hundred foot (30 meter) stations were established on all lines of the reconnaissance grid.

The electromagnetic survey was initiated by R. Bylo, B.A.Sc. during the period from June 20 through June 22 and was completed during the period from June 28 through June 30, 1975 following the format outlined in Appendix I. A total of 990 stations were occupied during the course of the survey. The electromagnetic data is presented on drawing no. 121.

The reconnaissance electromagnetic survey further defined the regional extensions of the anomalous zones identified on the airborne INPUT tapes.

ANOMALY 13

This crescent shaped anomaly is centrally located within the survey area and was mapped striking in an easterly direction exhibiting an inferred strike length of 4500 feet (1371 meters). Anomaly 13 appears to be open at both ends. The central portion of this anomaly was selected for detailed investigation and will be discussed in the following section of the report.

ANOMALY 14

Anomaly 14 was mapped on line 120 m NE, 1300 feet (396 meters) south of the baseline. This particular anomaly is of further interest in that it lies within a sheared rhyolite, underlying the main iron formation. However, at the time of the reconnaissance survey the ground was extremely swampy and detailed work was impossible.

ANOMALY 15

Anomaly 15 lies in the southeastern corner of the survey area and was mapped striking in an easterly to southeasterly direction exhibiting an inferred strike length of 2000 feet (609 meters). As was the case with Anomaly 14, the extremely swampy conditions prevented any detailed examination at this time.

DETAILED PROGRAM

A detailed examination of Anomaly 13 was undertaken in exactly the same manner as that outlined for Map Area A.

The detailed grid system, comprising of 8800 feet (2682 meters) including the baseline, was established by W. G. Wahl Limited during the period from July 7 through July 8, 1975. The baseline and grid lines were established in the same configuration as the reconnaissance grid. One hundred foot (30 meter) stations were established on all lines of the detailed grid.

GEOLOGY

The geological survey was conducted by D. G. Wahl, P.Eng. on July 9 1975.

The geology as published by the Ontario Department of Mines was extended and further defined by the geophysical surveys and geological mapping.

Less than 5 percent of the area covered by the detailed grid was outcrop, with the remaining 95 percent consisting of dense cedar swamps and open stands of spruce and balsam. Four distinct rock units were identified during the course of the geological investigation and are presented on drawing no. 122.

The northern one-third of the detailed grid is mapped as intermediate volcanic lava with isolated tuffaceous beds thought to be andesitic in composition. The rock unit ranges from a fine-grained, less than 1 mm particle size, to a somewhat massive unit exhibiting an aphanitic texture. The main mineral constituent is greenish hornblende, with actinolite, chlorite and some epidote, carbonate, small quantities of plagioclase and a little quartz. Trace amounts of pyrite were noted in the more tuffaceous areas.

The central one-third of the detail grid is mapped as a thinly banded, jaspery iron formation. The jasper zone consists of red hematitic chert bands, up to 1 inch thick, alternating with grey to black interbands, one-quarter to one-half inch thick composed of chert with more or less disseminated magnetite and hematite. The jasper zone grades into and contains zones of dark-grey, banded chert in which grey chert layers, up to two inches thick, alternate either with dark-grey to black, magnetite-rich cherty layers, one-quarter to one-half inch thick, or with thin, magnetite-rich parting seams. The grey chert bands locally contain considerable disseminated pyrite.

The southern one-third of the detail grid is mapped as an acid flow which has been intruded by a diorite mass.

The acid flow (quartz-feldspar porphyry) occurrence mapped on line 1080 m E is characterized by a pale grey appearance on the weathered surface, exhibiting many equigranular phenocrysts of quartz, plagioclase and orthoclase in a fine-grained matrix of similar composition.

The diorite intrusive into the acid flow is a grey-green, fine- to medium-grained, mottled textured rock composed of interlocking aggregates of relatively fresh, euhedral oligoclase-andesine and somewhat chloritized amphibole, with accessory ilmenite, pyrite and quartz.

ELECTROMAGNETIC SURVEY

The electromagnetic survey was conducted by R. Bylo, B.A.Sc. on July 10, 1975 following the format outlined in Appendix I. A total of 108 stations were occupied during the course of the survey with a total of 216 readings being observed. The electromagnetic data was reduced to a local datum and adjusted for drift. The data is presented on drawing no. 123.

The detailed electromagnetic survey further defined the main anomalous zone mapped during the reconnaissance survey.

Anomaly 13

This arcuate conductor lies sub-parallel to and astride the baseline and is characterized on line 960 m E by a moderate dip reversal of 36 degrees (+18 to -18) over 150 feet (45 meters) associated with a relative field strength of 175 percent. This figure represents a value of 75 percent above the local background. The electromagnetic data defines a steeply dipping moderately conductive sheet estimated to be up to 75 feet (22 meters) wide.

The northwest extension of this anomaly maps a major structural break transecting the western portion of the map area, crossing the baseline station 570 m E. This break has been mapped by A. M. Goodwin as a regional fault zone striking approximately N50°W.

The Fraser reduced inphase dip angle data, presented on drawing no. 124 indicates a relatively broad zone of low conductivity.

TOTAL MAGNETIC FIELD GRADIENT STUDY

The total magnetic field gradient study was conducted by D. G. Wahl, P.Eng. on July 10 1975 following the format outlined in Appendix III. A total of 108 stations were occupied during the course of the survey with a total of 216 readings being recorded. The magnetic data was reduced to a local datum and adjusted for magnetic diurnal. The data is presented on drawing no. 125 as corrected station values and as a contoured interpretation of these data.

The massive andesite, previously discussed, is characterized by a moderately low uniform magnetic relief in the range of 1000 to 1500 gammas. This figure represents an absolute value above a 59,000 gamma local background. A large magnetic dipole was mapped lying within the andesite immediately north of the iron formation on the baseline between lines 720 m E and 1200 m E.

The iron formation is characterized by high, extremely erratic magnetic relief in the range of 938 to 13,131 gammas. As previously mentioned these values have been regionally reduced and represent an absolute value relative to a background intensity of 59,000 gammas.

The acid volcanics mapped at station 120 m S on line 1080 m E are characterized by a moderate magnetic relief in the range of 1500 gammas above local background. This unit has been extended to include the southern extensions of line 840 m E and line 960 m E.

The diorite intrusive mapped at stations 90 m S and 120 m S on line 1200 m E is characterized by a moderately high magnetic relief in the range of 3500 to 3900.

The magnetic data also defined the fault zone previously mapped by the electromagnetic survey. This fault zone is characterized by a region of below background magnetic relief in the range of 4736 gammas.

Anomaly 13, as defined by the electromagnetic survey, is coincident with the iron formation.

GEOCHEMICAL INVESTIGATION

Whole rock and soil geochemical samples were taken over the conductor in an attempt to further define the causative body.

Anomaly 13 is located in a region of well drained relief within a well established regional drainage pattern which flows to the northwest. The vegetation in the vicinity of this anomaly consists of generally clean open stands of spruce and balsam; however, a dense cedar swamp was encountered on the north extensions of lines 480 m E and 600 m E.

A total of 46 soil samples and 13 rock samples were taken for geochemical analysis, the results of which are presented in Appendix IV, along with a description of the sample preparation and analytical procedures used. The geochemical sample locations are presented on drawing no. 122.

The soil and rock geochemical samples were collected in exactly the same manner as that described for the preceding map area. In the area of Anomaly 13, the B-horizon was encountered approximately four to six inches below the surface with the samples being taken at an average depth of eight inches. Geochemical coverage was impossible in the extremely swampy areas encountered on the northern extensions of lines 480 m E and 600 m E.

As was found in the previous map areas, the soil geochemical results were not as significant as one would have hoped.

The whole rock results, on the other hand, are significant and several noticeable trends were established in relation to the anomalous zone. Of the 13 rock samples collected, the following samples were taken coincident with the conductor axis.

No.	Location	Rock Type	Cu ppm	Pb ppm	Zn ppm	Fe %
188-R	L180mE/60mN	iron formation	77.6	< 2	113	30.0
192-R	L120mE/30mN	iron formation	52.5	< 2	139	30.8
205-R	L1200mE/45mS	iron formation	89.0	6	180	26.8
222-R	L960mE/90mS	iron formation	70.7	2	174	14.8
228-R	L840mE/60mW	iron formation	74.8	10	90	13.3

It will be noted that all of the five samples are of the same rock type; that is, a finely banded jaspery iron formation containing varying amounts of pyrite and pyrrhotite. The geochemical data shows that the base metal content within the iron formation is fairly low but that these values are uniformly distributed throughout. In general, the lead values appear to have a slightly higher threshold value within the iron formation than within the basic volcanics of Map Areas A and B.

CONCLUSIONS

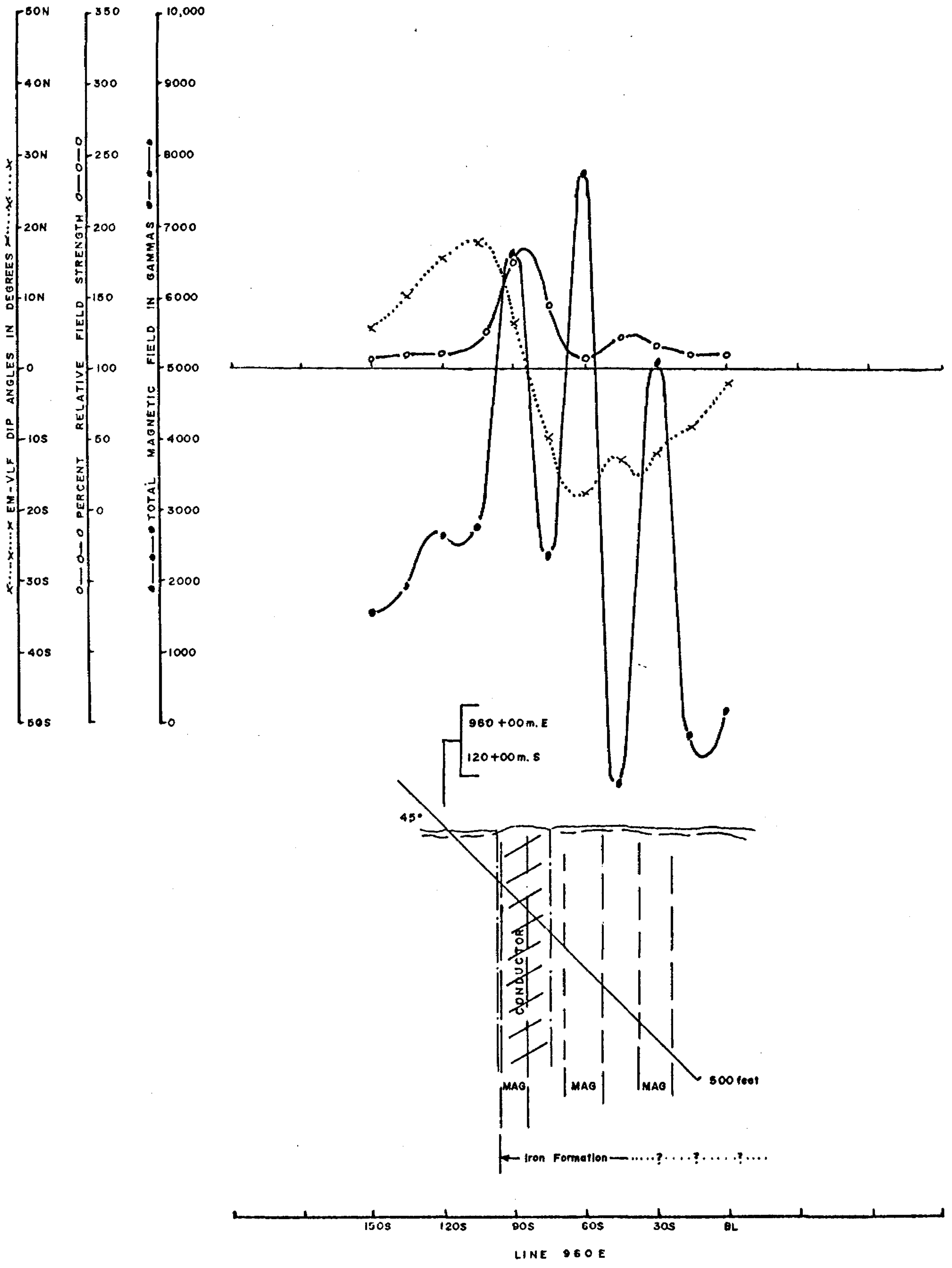
The anomalous, conductive zone identified during the reconnaissance survey was further defined during the course of the detailed program.

The causative body of Anomaly 13 is a finely banded jaspery iron formation containing differing amounts of pyrite and pyrrhotite, estimated to be up to 75 feet (22 meters) wide lying within the stratigraphically thicker Woman River iron range.

RECOMMENDATIONS

It is recommended that Anomaly 13 be investigated by diamond drilling, as shown on the following sketches, in order to fully assess the gold potential of the iron formation.

MARION TOWNSHIP
ANOMALY No. 13



COST ESTIMATE

PHASE II - DIAMOND DRILLING

Costs based on a total of 8,700 feet of diamond drilling.

PART I

1. PERSONNEL

    1 geologist
    2 prospectors

2. PROGRAMME

    i) spot diamond drill holes
    ii) clear drill sites for helicopter moves
    iii) cut snowmobile trails from camp to drill sites

3. COST

    i) Salaries

1 geologist 15 days @ $150/day	$2,250.00	
1 prospector 15 days @ $100/day	1,500.00	
1 prospector 15 days @ $100/day	1,500.00	$ 5,250.00

    ii) Field Expenses

food 3 men 15 days @ $12/d/man	540.00		
mob. & demob. (Toronto/ Timmins/Base camp return)	1,500.00		
misc. (heater fuel, etc.)	100.00		
skidoo rental - 2 months	500.00	2,640.00	
			$7,890.00

PART 2

1. PERSONNEL

1 geologist
1 expediter

2. PROGRAMME

drilling (2 drills - 50'/shift) 8700 ft. @ $30/ft. (helicopter support)	$261,000.00

3. COST

i) Salaries			
1 geologist 90 days @ $150/day	$13,500.00		
1 expediter 90 days @ $150/day	13,500.00	27,000.00	
ii) Field Expenses			
Assay & testing (metallurgical & petrographical) including shipping	10,000.00		
Misc. & contingencies	1,000.00	11,000.00	
iii) Project supervision & co-ordination & final report		10,000.00	309,000.00
		TOTAL	$316,890.00

All of which is respectfully submitted.

Yours very truly,

W. G. WAHL LIMITED

David G. Wahl
Consulting Engineer

APPENDIX IV

GEOCHEMICAL INVESTIGATION

BARRINGER RESEARCH

ANALYTICAL PROCEDURES
FOR W. G. WAHL LIMITED
WOMAN RIVER SAMPLES

A. SAMPLE PREPARATION

Soils

1. Sample was first sieved to -80 mesh.

2. 250 mg. of the -80 mesh fraction was then weighed into a 18 mm test tube.

3. 0.5 mls. concentrated HNO_3 and 2.0 mls. concentrated $HClO_4$ were added to the sample.

4. The solution was then heated in an aluminum block over medium heat for 4 hours.

5. The solution was allowed to cool and then diluted to 5 mls. by the addition of demineralized distilled water.

6. The sample was then agitated and allowed to settle for 2 hours.

7. The sample was then analyzed.

Rocks

1. Sample was first ground and sieved to -80 mesh.

2. 250 mg. of the -80 mesh fraction was then weighed into teflon beakers.

3. 7.5 mls. concentrated HF and 2.5 mls. of a HNO_3 - $HClO_4$ mixture were added to the sample (3:2 mixture of nitric to perchloric).

4. The teflon beaker was then covered with a teflon watch glass and warmed in a sandbath at 60°C for 2 hours.

5. The watch glass was then removed and the sample was evaporated to dryness (approximately 4 hours).

6. 2.5 ml. of the HNO_3 - $HClO_4$ mixture was then added to the residue and evaporated to dryness. This step was taken to remove all traces of HF from the residue (approx. 4 hours).

7. The residue was then taken up in 10 mls. of 1M HCl and warmed if necessary to dissolve it.

8. The solution was then transferred to a 25 ml. volumetric flask and diluted to 25 mls. using demineralized distilled water.

9. The sample was then analyzed.

B. MRFAPE ANALYSIS

1. Standard solutions were first run with the instrument in the standardisation mode.

2. The solutions from A were analyzed in a radio frequency inductively coupled plasma manufactured by Applied Research Laboratories, Sunland, California, and International Plasma Corporation. (For more information on instrumentation and instrumental parameters see G. F. Larson, Y. A. Fassel et al., "ICPlasma - Optical Emission Analytical Spectroscopy. A Study of some inter-element effects", Analytical Chemistry, 47 (1975): 238-243).

3. Data were fed into and processed by a programmable Hewlett-Packard 9821-A calculator. Results were printed out in ppm.

NOTES: 1. Mo, U, W, Se, Te, B, Au, Sn, Rb, Eu, As -- not detected

2. Cd in samples 190 onward probably have a high blank

W. G. WAHL LTD. - SOILS RFWO NO: 137

MATRIX: HCLO4 ANALYSIS DATE: 101075 TAPE NO: 27 FILE NO:

CLIENT SAMPLE NO	AL %	CA %	FE %	MG %	CD PPM	NI PPM	SI PPM	ZN PPM
100	.948	.254	1.36	.202	N.D.	36.5	37	25.9
101	1.08	.207	.954	.176	N.D.	38.6	43	26.3
102	1.12	.179	1.88	.158	N.D.	23.0	37	25.9
103	1.63	.175	1.77	.142	N.D.	22.0	39	31.3
104	1.43	.244	2.56	.221	N.D.	29.4	42	31.6
105	1.39	.387	1.24	.242	N.D.	35.9	50	41.5
106	.577	.102	.270	.0519	N.D.	13.9	64	12.6
107	2.76	.143	2.62	.155	N.D.	37.7	45	39.8
108	.970	.0848	4.06	.0854	N.D.	22.1	76	35.1
109	1.40	.345	4.78	.549	N.D.	34.5	50	48.8
110	1.79	.228	1.45	.187	N.D.	34.7	70.	46.5
111	1.28	.271	2.08	.262	N.D.	30.8	72	55.3
112	1.69	.254	1.45	.220	N.D.	29.0	64	31.8
113	2.22	.241	1.81	.210	N.D.	53.4	53	33.8
115	.962	.226	1.40	.164	N.D.	85.9	64	67.9
117	1.76	.207	2.00	.208	N.D.	54.9	53	204
118	1.66	.256	1.80	.229	N.D.	42.2	50	52.5
120	1.33	.226	1.33	.200	N.D.	65.2	53	31.8
121	.973	.224	1.91	.187	N.D.	34.5	64	42.6
124	1.62	.241	1.36	.189	N.D.	23.5	53	24.1
125	1.30	.213	1.07	.145	N.D.	46.2	75	25.9
126	2.02	.259	1.73	.161	N.D.	89.2	89	29.4
128	1.32	.256	1.06	.148	N.D.	38.5	76	28.8
129	1.66	.250	1.32	.176	N.D.	38.1	71	21.8
130	1.63	.238	1.50	.179	N.D.	20.2	74	20.4
132	1.12	.280	1.88	.231	N.D.	21.4	50	21.8
133	.954	.183	1.65	.131	N.D.	295	42	55.3
134	1.33	.217	1.74	.220	N.D.	26.0	64	24.1
135	1.65	.254	1.98	.217	N.D.	24.5	92	32.7
136	1.19	.300	1.36	.227	N.D.	18.2	64	26.6
137	.755	.322	.841	.197	N.D.	18.2	90	16.2
139	1.31	.271	1.19	.197	N.D.	22.4	71	29.6
140	.947	.354	1.43	.211	N.D.	13.9	52	20.8
142	1.10	.379	1.03	.236	N.D.	19.3	64	21.9
143	.964	.377	.996	.288	N.D.	15.3	45	18.6
144	1.21	.222	1.58	.247	N.D.	19.3	50	19.1
145	1.09	.248	1.98	.309	N.D.	19.3	22	21.4
146	.780	.158	.650	.0680	N.D.	22.5	50	16.4
147	1.75	.214	2.94	.261	N.D.	35.9	53	33.8
148	1.24	.211	1.53	.179	N.D.	28.7	53	29.1

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149	1.41	.246	1.75	.197	N.D.	30.5	70	29.6
150	1.68	.288	1.82	.246	N.D.	37.9	37	41.3
151	1.64	.228	1.54	.209	N.D.	36.7	64	26.1
152	1.27	.389	1.06	.237	N.D.	30.0	45	24.1
153	.796	.266	1.78	.241	N.D.	29.4	39	26.1
154	1.41	.125	1.79	.189	N.D.	29.1	35	37.1
155	2.62	.196	2.36	.241	N.D.	44.9	48	46.3
157	1.56	.162	1.27	.173	N.D.	29.4	48	32.4
159	1.73	.254	1.53	.239	N.D.	38.6	38	25.9
160	.874	.299	1.04	.158	N.D.	8.6	100	16.4
162	.514	.0874	4.10	.0518	N.D.	22.4	53	29.6
164	1.10	.209	1.34	.164	N.D.	31.3	50	38.3
166	1.31	.254	1.32	.232	N.D.	35.1	43	26.1
167	1.25	.249	.814	.189	N.D.	26.0	53	31.6
168	.866	.449	.617	.174	N.D.	24.5	50	24.0
169	1.29	.230	1.64	.192	N.D.	30.1	48	20.4
170	1.19	.0843	2.30	.155	N.D.	21.8	45	39.6
172	.849	.128	1.09	.160	N.D.	21.8	50	21.8
174	1.88	.175	2.86	.164	N.D.	28.7	76	23.0
176	1.51	.289	1.35	.252	N.D.	31.5	52	27.4
177	1.72	.359	2.00	.323	N.D.	34.3	75	29.5
178	1.58	.368	1.61	.272	N.D.	33.4	75	32.4
179	2.34	.313	2.06	.320	N.D.	43.5	70	35.4
180	.987	.258	1.30	.162	N.D.	30.4	53	20.3
181	.916	.423	.867	.271	N.D.	30.0	34	25.5
182	1.38	.312	1.08	.271	N.D.	44.4	50	29.6
183	1.96	.519	1.34	.305	N.D.	31.5	39	32.7
184	1.50	.267	1.45	.268	N.D.	35.1	52	27.7
185	1.31	.226	1.21	.167	N.D.	30.1	72	27.4
186	1.68	.323	1.24	.250	N.D.	38.5	72	35.1
187	1.41	.292	1.99	.356	N.D.	44.9	75	39.3
189	1.34	.284	1.91	.299	N.D.	42.8	71	68.3
190	1.24	.448	1.29	.313	2.1	19.6	95	23.5
191	1.83	.466	1.92	.315	2.9	32.7	102	40.5
193	1.44	.408	1.29	.254	2.1	18.0	117	32.2
194	1.62	.495	3.28	.330	4.7	26.5	104	38.6
195	1.52	.480	2.90	.267	3.8	13.9	83	26.8
197	1.91	.442	1.77	.227	2.7	18.0	118	21.7
198	2.14	.517	1.67	.309	2.6	27.7	94	23.6
199	1.37	.495	2.18	.205	2.8	16.5	174	22.1
200	1.75	.445	1.79	.220	2.6	20.9	151	22.1
201	1.60	.465	1.65	.350	2.4	27.5	89	42.6
202	1.53	.430	1.43	.249	2.0	15.4	106	23.5
203	1.72	.490	1.37	.316	2.1	18.9	125	63.8
204	2.24	.408	2.02	.235	2.9	16.7	82	33.2
206	1.71	.554	1.57	.335	2.4	21.7	137	29.0
207	1.54	.571	1.54	.356	2.7	13.5	92	42.7
209	3.04	.487	3.93	2.41	6.3	102	92	86.0
211	1.98	.460	1.56	.260	2.2	16.3	104	25.3
213	1.62	.492	1.66	.299	2.3	18.5	147	25.8
214	1.05	.276	2.50	.150	3.0	10.8	82	27.9
215	2.02	.333	1.91	.213	2.4	14.3	90	28.1
216	1.97	.461	2.10	.311	2.7	20.5	102	42.9
218	1.39	.859	1.28	.372	2.2	18.8	116	33.0

219	1.02	.429	.890	.189	1.5	9.2	109	14.7
220	1.86	.456	1.92	.230	2.6	14.1	195	22.1
221	1.36	.344	3.06	.161	3.8	7.9	103	27.5
223	1.81	.487	3.08	.279	4.2	15.1	132	42.6
224	.787	.447	.612	.147	1.2	7.3	124	11.8
225	1.75	.413	2.26	.265	3.0	16.7	89	22.8
226	1.83	.388	2.40	.257	2.9	16.4	125	25.6
227	1.45	.445	1.49	.230	2.1	16.9	121	37.5
229	1.56	.438	1.45	.228	2.1	13.4	142	40.7
231	1.60	.472	1.79	.245	2.4	16.9	97	21.5
232	1.36	.492	1.55	.245	2.2	14.6	142	18.9
233	1.30	.480	1.20	.200	1.9	12.3	90	18.9
235	1.90	.494	1.91	.316	2.8	25.2	131	22.1
236	2.04	.409	2.28	.240	3.4	18.5	109	24.5
237	1.88	.411	1.69	.327	2.6	23.5	129	27.0
239	1.62	.492	1.92	.365	2.6	25.8	136	29.9
240	1.42	.870	1.31	.373	2.3	19.3	141	24.5
241	2.12	.504	2.06	.304	3.1	24.1	106	24.9
242	1.39	.624	1.47	.311	2.2	17.5	127	26.6
243	1.71	.489	2.30	.302	3.2	21.5	82	32.1
245	1.81	.476	1.43	.275	2.2	17.5	119	25.7
246	2.58	.441	2.10	.262	3.2	20.9	106	25.9
248	1.78	.499	1.66	.230	2.6	18.0	131	23.4
249	1.21	.364	1.37	.212	2.0	15.5	101	22.5
250	1.84	.796	2.26	.314	3.5	23.9	58	23.6
251	1.85	.478	1.83	.281	2.8	18.8	78	23.6
252	1.52	.403	2.54	.210	3.2	14.3	101	21.1
253	1.73	.415	2.76	.251	3.5	17.0	102	24.3
254	1.42	.473	1.61	.243	2.6	13.9	153	29.7
256	1.24	.658	1.28	.288	2.2	16.3	101	21.9
257	1.17	.533	1.45	.309	2.3	15.6	106	22.6
259	3.06	.476	2.90	.242	4.0	27.0	89	24.7
260	1.42	.307	1.42	.167	2.1	11.2	71	16.8
261	1.45	.298	2.08	.189	3.0	12.2	91	20.8
263	1.26	.365	2.04	.184	2.9	11.9	94	16.9
264	1.26	.363	2.62	.205	3.7	12.1	95	18.4
265	1.21	.597	1.08	.239	1.9	10.6	116	18.5
266	1.51	.492	2.10	.287	3.0	15.6	89	21.0
267	2.58	.384	2.14	.219	3.2	15.5	104	21.1
268	1.57	.481	1.61	.341	2.7	16.8	116	26.0
270	1.70	.382	1.50	.189	2.3	11.9	89	16.6
271	1.12	.321	1.69	.203	2.8	14.1	71	17.6
272	1.64	.523	1.21	.287	2.2	15.9	126	19.0
274	1.07	.329	1.52	.148	2.2	7.5	104	15.8
276	1.24	.390	2.24	.195	3.2	11.4	93	19.3
277	1.89	.416	3.29	.285	5.1	14.7	91	27.6
279	1.28	.426	1.43	.202	2.3	10.5	87	19.2
281	1.58	.432	1.83	.270	2.7	14.7	93	22.9
283	1.28	.493	1.84	.249	2.8	12.5	116	28.0
284	1.64	.448	1.97	.229	3.0	11.4	98	28.1
285	2.08	.402	1.96	.218	2.7	16.0	42	21.3
286	2.10	.443	1.94	.285	2.9	19.1	62	24.3
287	1.19	.412	1.38	.216	2.1	12.4	73	17.8

288	2.46	.383	2.24	.244	3.3	16.3	80	24.6
289	1.61	.550	1.86	.322	2.6	16.2	129	21.1
291	1.80	.404	1.89	.208	2.7	13.5	80	17.5
292	2.06	.481	1.82	.273	2.6	15.9	80	21.8
293	1.50	.468	2.32	.249	3.3	13.6	94	20.1
294	1.94	.419	1.79	.195	2.7	10.7	87	17.5
295	.766	.477	.817	.259	1.6	11.8	40	17.2
296	1.07	.486	.000	.274	1.7	12.5	62	17.6
297	.806	.456	.848	.229	1.4	10.6	60	14.2
298	1.25	.406	1.29	.277	2.0	12.8	129	18.2
299	1.39	.409	1.99	.237	2.6	12.1	120	19.0
300	2.34	.414	2.70	.277	3.9	17.6	89	23.0
301	1.63	.526	1.62	.331	2.6	17.7	93	23.7
302	1.49	.487	1.61	.274	2.5	14.4	94	23.6
305	2.24	.439	2.16	.264	3.2	18.1	89	26.3
307	2.14	.294	1.82	.205	2.6	14.2	68	17.6
308	1.61	.334	1.60	.199	2.4	11.9	47	20.1
309	1.13	.395	1.54	.217	2.2	10.9	71	17.6
310	1.53	.447	2.48	.234	3.4	13.5	80	18.9
311	2.28	.440	2.32	.241	3.2	13.5	84	23.7
312	1.94	.463	2.04	.270	2.9	14.5	82	35.9
315	1.68	.468	1.61	.218	2.2	9.2	89	31.2
317	1.15	.469	1.03	.186	1.7	8.0	112	20.1
318	1.94	.423	1.58	.215	2.2	11.9	80	18.9
319	1.65	.405	1.44	.249	2.2	14.9	60	20.6
320	2.26	.420	1.96	.225	2.7	14.1	80	22.2
321	1.76	.441	1.94	.236	2.8	14.1	89	19.3
322	1.09	.643	1.30	.295	1.9	12.1	84	17.6
323	2.64	.411	2.28	.261	3.0	17.4	87	25.0
324	1.36	.320	1.24	.103	1.8	6.0	75	12.4
325	1.02	.340	.816	.104	1.3	4.9	98	10.9
326	1.80	.509	2.02	.229	2.6	11.3	80	19.3
327	1.30	.568	1.37	.272	2.1	13.4	73	31.4
328	.861	.369	1.41	.122	1.9	7.6	80	14.3
329	.625	.213	1.30	.148	1.7	9.0	133	10.7
330	1.24	.299	1.76	.201	2.3	11.1	91	16.9
331	1.26	.302	2.10	.184	2.3	9.8	61	22.0
332	.869	.328	.941	.0773	1.5	3.8	73	27.2
334	1.40	.300	1.93	.208	2.5	15.4	87	18.9
335	1.51	.338	1.75	.285	2.3	18.1	72	20.9
337	1.38	.283	1.95	.205	2.4	14.4	60	28.3
338	1.73	.211	4.57	.152	5.0	12.7	67	45.1
340	1.56	.324	1.90	.264	2.5	31.9	51	19.3
342	1.74	.222	2.44	.170	2.9	15.5	91	31.6
343	1.17	.350	1.29	.191	1.9	15.0	105	13.8
344	.837	.319	1.28	.228	1.8	13.8	116	14.2
345	.831	.276	1.75	.221	2.3	12.7	129	13.8
346	2.18	.376	1.72	.277	2.6	19.1	83	21.1
348	1.61	.366	1.96	.212	2.6	14.2	72	21.6
349	1.85	.328	1.47	.201	2.2	14.9	93	24.3
350	2.62	.323	1.74	.258	2.5	25.4	50	28.1
351	.967	.167	1.40	.205	1.8	8.9	73	36.9
352	1.27	.299	1.79	.202	2.3	17.4	93	20.8

353	.535	.0199	31.3	.0436	41.0	17.3	62	63.5
355	1.75	.315	4.09	.211	4.8	21.6	71	35.3
356	1.23	.167	14.6	.101	16.8	18.0	61	87.6
357	2.08	.367	2.62	.209	3.4	17.4	89	32.4
359	1.30	.478	1.67	.272	2.2	16.0	64	32.4
360	1.32	.175	.941	.0504	1.2	3.8	118	8.6
361	3.06	.318	2.92	.283	3.7	26.0	90	35.9
362	1.76	.307	2.50	.232	3.1	16.9	71	18.2
363	2.14	.333	4.13	.391	5.4	24.5	73	41.3
364	2.72	.190	2.26	.153	2.7	12.8	95	32.9
366	.255	.0296	24.6	.0585	25.0	16.4	49	136
367	1.17	.486	1.10	.314	1.6	16.0	73	17.6
368	1.42	.297	2.10	.121	2.4	6.6	98	15.7
369	1.30	.453	2.56	.244	3.1	15.6	95	17.8
370	2.24	.405	2.34	.225	2.9	20.2	84	19.2
371	2.56	.351	2.28	.211	2.6	18.7	93	18.4
372	1.20	.238	.777	.0973	1.4	7.2	64	13.3
373	1.44	.437	1.23	.256	1.8	15.0	58	20.2
375	.911	.448	.740	.246	1.4	11.7	42	19.6
376	2.30	.390	1.79	.211	2.4	16.4	55	18.9
377	1.56	.321	1.41	.234	2.1	12.8	45	22.9
379	2.08	.352	1.52	.218	2.3	17.9	46	28.2
382	1.15	.301	2.62	.163	3.3	12.9	43	18.0
384	.698	.296	1.53	.0959	2.0	9.0	30	15.5
386	1.22	.311	2.80	.206	3.8	19.0	45	29.1
388	1.45	.391	1.59	.234	2.3	15.8	72	20.0
389	1.55	.403	2.34	.208	3.0	12.8	64	33.9
390	1.23	.319	1.06	.185	1.6	12.8	62	21.9
391	1.40	.336	1.97	.185	2.4	18.4	56	37.0
394	.996	.152	18.7	.0768	19.3	16.1	46	77.5
397	1.56	.245	2.12	.158	2.7	11.8	64	24.6
399	1.10	.483	1.23	.283	1.9	14.1	53	19.6
400	1.40	.408	3.54	.189	4.7	14.7	58	41.9
402	1.19	.319	1.68	.218	2.3	12.5	56	34.1
404	1.17	.248	.823	.124	1.4	9.4	72	14.7
405	.971	.523	.874	.238	1.6	15.0	55	17.1
408	1.53	.273	3.04	.202	3.9	15.0	87	90.1
410	.848	.424	.752	.228	1.3	14.0	47	17.1
412	1.48	.307	1.57	.178	2.1	11.8	61	20.6
413	.763	.325	.873	.144	1.3	7.4	56	15.3
414	1.38	.426	2.36	.234	2.9	16.9	45	29.1
415	1.41	.389	1.68	.247	2.3	15.6	74	18.9
417	1.84	.391	1.46	.279	2.1	27.4	55	20.6
418	1.25	.319	2.48	.197	3.0	13.5	42	25.1
420	1.46	.343	1.74	.163	2.4	10.2	64	38.3
423	1.25	.414	1.55	.244	2.3	14.2	59	23.1
424	1.36	.429	1.84	.261	2.4	17.4	61	25.0
425	1.19	.488	1.67	.350	2.4	22.5	55	21.0
427	1.03	.483	1.36	.240	2.0	15.1	49	26.9
428	1.35	.369	1.13	.265	1.8	17.4	64	22.0
429	.872	.391	1.13	.217	2.0	13.5	58	29.3
430	1.65	.436	1.56	.277	2.1	21.3	58	36.4
431	.919	.269	1.29	.136	1.9	12.8	32	34.1

432	1.02	.288	.743	.192	1.4	12.8	44	15.5
434	1.52	.199	6.54	.134	5.3	10.1	44	24.6
435	2.36	.511	3.51	.199	4.2	26.8	49	20.8
436	1.50	.310	1.62	.176	2.2	11.5	46	16.6
437	.863	.304	.995	.185	1.5	10.3	48	13.5
438	1.68	.252	2.00	.142	2.7	11.6	45	15.7
439	.998	.307	1.23	.152	1.7	10.0	75	14.4
440	1.05	.287	2.06	.197	2.6	12.8	32	16.4
441	1.35	.271	1.26	.170	2.3	16.6	92	19.8
442	2.14	.320	1.34	.222	2.8	22.7	63	25.3
443	2.02	.334	1.48	.248	2.7	18.9	62	21.3
444	3.10	.259	1.98	.194	3.3	15.0	73	22.2
445	1.76	.382	1.24	.260	2.3	20.9	73	18.9
446	1.83	.306	2.22	.226	3.8	15.8	84	24.1
447	1.58	.362	2.06	.303	3.2	18.6	60	53.2
448	1.29	.294	2.14	.272	3.6	14.7	73	21.9
449	1.98	.392	1.85	.315	3.2	27.0	97	21.7
450	1.48	.286	1.67	.204	2.7	14.5	71	21.2
451	1.18	.326	1.83	.236	2.9	14.4	108	18.1
452	1.10	.332	1.56	.215	2.6	11.0	73	24.0
453	.767	.265	.621	.0971	1.3	6.7	92	9.7

W. G. WAHL LTD. - SOILS RFWO NO: 137

MATRIX: HCLO4 ANALYSIS DATE: 101075 TAPE NO: 27 FILE NO:

CLIENT SAMPLE NO	CR PPM	PB PPM	P PPM	AG PPM	TI PPM	CO PPM	NA PPM	BE PPM
100	34.9	N.D.	176	0.71	940	7.7	100	0.16
101	28.1	N.D.	72	0.61	956	6.7	100	0.16
102	36.3	1	111	0.71	1170	7.0	110	0.16
103	37.9	1	154	1.00	952	7.3	110	0.20
104	49.9	N.D.	142	1.10	1020	10.2	130	0.20
105	39.9	8	180	1.10	943	12.9	150	0.20
106	10.4	3	41	0.52	783	3.4	90	N.D.
107	53.6	3	227	1.10	1180	9.0	130	0.29
108	51.6	2	208	1.19	1180	8.2	120	0.13
109	62.1	1	525	1.58	1820	18.8	230	0.25
110	38.7	N.D.	132	1.00	1020	9.5	150	0.22
111	50.0	N.D.	204	1.05	1130	11.3	160	0.18
112	40.2	1	354	0.61	918	8.9	160	0.22
113	49.1	1	276	1.00	1040	10,3	130	0.29
115	33.7	1	98	1.05	1090	7.4	150	0.16

117	46.9	1	256	1.19	962	13.6	200	0.25
118	50.4	5	290	1.00	938	12.3	160	0.29
120	38.4	N.D.	227	0.71	918	8.9	130	0.20
121	36.7	2	321	1.00	899	8.3	150	0.20
124	38.7	N.D.	189	0.56	1040	7.8	150	N.D.
125	30.5	N.D.	153	0.56	958	6.4	150	0.16
126	41.3	1	167	1.05	1150	7.4	160	0.20
128	29.4	1	197	0.61	955	6.0	160	0.16
129	39.9	1	233	1.05	922	8.4	160	0.22
130	36.6	N.D.	271	1.05	1000	9.0	150	0.29
132	43.0	N.D.	179	0.56	979	9.0	150	0.11
133	31.6	1	108	1.10	824	7.5	120	0.16
134	47.1	N.D.	165	1.34	945	9.2	160	0.22
135	46.0	1	232	1.53	951	11.3	190	0.29
136	36.3	N.D.	98	1.10	1030	8.4	190	0.16
137	32.3	N.D.	216	0.56	794	7.1	160	0.11
139	36.3	1	264	1.00	881	10.1	160	0.18
140	33.8	N.D.	140	0.71	1090	7.1	160	0.16
142	29.4	N.D.	235	0.61	931	7.6	190	0.16
143	37.9	N.D.	112	0.71	997	8.3	170	0.16
144	46.8	N.D.	102	1.00	911	9.9	130	0.20
145	48.5	N.D.	90	0.66	869	8.3	80	N.D.
146	17.9	1	62	0.71	656	4.4	70	0.11
147	58.5	1	228	1.34	976	10.2	150	0.25
148	33.9	1	197	1.00	1070	7.8	150	0.20
149	39.8	1	139	1.05	1180	7.8	150	0.22
150	49.1	1	287	1.10	1080	10.4	150	0.25
151	43.1	N.D.	232	0.71	846	10.2	110	0.22
152	35.5	N.D.	106	0.71	1010	7.6	160	0.18
153	41.4	N.D.	77	1.05	896	7.0	150	0.16
154	47.4	N.D.	262	1.10	840	7.8	80	0.20
155	59.6	2	336	1.10	1200	13.0	130	0.45
157	36.1	N.D.	250	0.61	884	6.4	120	0.20
159	44.8	N.D.	181	0.66	1050	9.5	150	0.16
160	26.2	1	98	0.42	928	6.0	180	N.D.
162	39.9	N.D.	119	1.58	617	6.7	130	0.18
164	32.2	N.D.	139	0.61	896	6.5	150	0.16
166	40.7	N.D.	111	0.71	927	9.7	150	0.16
167	33.2	2	174	0.61	985	6.5	150	N.D.
168	25.6	N.D.	82	0.56	780	4.9	90	0.11
169	39.8	N.D.	202	0.56	822	7.1	100	0.16
170	30.1	5	150	0.71	683	6.3	90	0.13
172	24.1	N.D.	90	0.61	890	4.9	110	0.11
174	51.3	N.D.	205	1.19	1050	7.6	150	0.43
176	38.7	N.D.	120	0.61	1050	7.8	180	0.20
177	48.4	2	183	1.05	1160	9.4	200	0.25
178	43.6	N.D.	167	1.10	1090	8.4	210	0.22
179	58.0	N.D.	183	1.10	1220	11.8	210	0.25
180	30.3	N.D.	201	0.56	922	6.4	80	0.16
181	31.6	N.D.	211	0.61	893	7.0	120	0.16
182	33.2	N.D.	132	0.52	875	6.9	50	0.20
183	43.0	2	175	1.05	1030	9.4	160	0.43

184	41.1	1	154	0.71	1020	8.1	160	0.25
185	33.9	2	156	0.52	1010	6.3	130	0.11
186	45.8	N.D.	216	0.61	1050	10.5	180	0.25
187	62.9	N.D.	167	1.00	1360	10.2	190	0.20
189	66.4	N.D.	210	0.71	1230	9.4	160	0.18
190	49.9	N.D.	126	1.11	1110	9.1	200	0.22
191	59.2	N.D.	275	1.16	1300	12.5	220	0.27
193	38.8	1	126	1.11	1300	10.1	210	0.22
194	72.6	3	396	1.56	1340	14.3	260	0.48
195	71.9	1	260	1.46	1730	10.7	220	0.32
197	46.3	2	119	1.26	1550	9.8	230	0.27
198	48.0	1	181	1.11	1300	11.5	260	0.46
199	49.2	N.D.	218	1.16	1360	9.7	250	0.22
200	48.9	2	126	1.11	1540	8.7	250	0.27
201	62.5	N.D.	164	1.06	1210	11.1	200	0.27
202	42.6	1	184	0.66	1120	8.4	200	0.24
203	44.0	N.D.	92	1.11	1220	9.5	230	0.32
204	47.5	2	165	1.16	1560	9.8	230	0.48
206	49.7	N.D.	112	1.11	1450	9.3	260	0.27
207	48.6	8	433	1.16	1910	9.9	210	0.22
209	203	1	344	1.96	2880	29.5	310	0.74
211	43.9	1	182	1.11	1390	9.5	250	0.32
213	46.0	1	106	1.11	1410	9.2	240	0.27
214	46.8	N.D.	99	1.16	1150	7.7	150	0.17
215	44.0	2	138	1.06	1300	8.0	180	0.27
216	49.6	1	195	1.11	1280	10.7	250	0.32
218	49.9	N.D.	241	0.66	1220	9.1	260	0.24
219	32.5	1	57	0.66	1310	5.6	200	0.22
220	48.9	N.D.	169	0.76	1330	8.6	210	0.32
221	54.2	1	257	1.11	1420	7.5	200	0.22
223	73.1	N.D.	403	1.16	1600	10.5	220	0.32
224	27.5	1	55	0.61	1340	4.7	200	0.15
225	55.8	1	150	1.11	1360	10.0	180	0.27
226	50.9	1	213	1.16	1270	10.1	200	0.32
227	44.7	N.D.	165	1.11	1330	8.1	210	0.24
229	39.9	N.D.	206	0.76	1340	7.7	220	0.24
231	44.0	2	120	0.56	1500	9.4	230	0.13
232	45.5	N.D.	103	1.11	1440	8.5	230	0.22
233	39.3	N.D.	108	0.76	1240	8.0	220	0.22
235	54.4	N.D.	196	0.66	1240	11.5	230	0.22
236	63.6	N.D.	159	1.26	1390	10.2	220	0.32
237	55.0	N.D.	180	1.16	1110	11.2	200	0.26
239	61.2	N.D.	184	1.16	1330	12.5	210	0.24
240	45.9	N.D.	278	1.16	1200	10.5	290	0.26
241	54.3	N.D.	187	1.16	1370	13.2	250	0.45
242	45.2	N.D.	160	1.16	1350	10.9	270	0.24
243	55.1	1	110	1.46	1660	11.5	280	0.26
245	40.6	N.D.	212	0.71	1330	10.8	280	0.17
246	49.8	1	328	1.16	1420	11.7	270	0.47
248	44.1	N.D.	161	1.26	1440	10.5	270	0.31
249	38.4	N.D.	110	1.16	1060	9.1	200	0.24
250	57.2	N.D.	218	1.46	1390	13.9	270	0.26

251	44.8	N.D.	199	1.26	1230	11.5	280	0.31
252	52.0	1	113	1.46	1520	10.8	260	0.21
253	57.1	1	166	1.41	1500	11.3	260	0.24
254	42.9	1	188	1.26	1440	10.8	270	0.19
256	40.0	N.D.	191	1.26	1320	11.2	310	0.24
257	40.5	N.D.	114	1.26	1330	11.1	300	0.21
259	63.0	N.D.	183	1.56	1440	18.0	290	0.50
260	36.7	1	135	0.99	1100	7.7	140	0.24
261	45.5	2	113	0.94	1340	7.7	180	0.22
263	42.1	N.D.	123	0.99	1410	8.4	210	0.22
264	55.9	2	189	1.18	1730	8.4	200	0.20
265	35.8	1	159	0.99	1280	8.4	240	0.22
266	46.0	N.D.	189	1.18	1370	9.7	250	0.24
267	47.3	1	313	0.99	1370	10.1	220	0.46
268	40.5	1	250	0.99	1360	9.7	240	0.24
270	38.7	1	131	0.99	1330	8.1	210	0.22
271	40.7	N.D.	121	0.99	1280	7.5	160	0.20
272	40.7	N.D.	155	1.18	1190	9.5	220	0.24
274	34.1	1	93	1.18	1360	6.2	170	0.20
276	47.7	N.D.	122	1.18	1440	8.4	220	0.20
277	67.2	2	405	1.42	1960	12.1	210	0.24
279	36.7	2	112	0.99	1430	7.6	200	0.20
281	41.2	N.D.	175	1.08	1300	8.9	230	0.29
283	45.5	1	947	0.99	1290	8.9	210	0.24
284	48.4	N.D.	1150	0.99	1250	8.0	200	0.29
285	47.8	1	391	1.18	1260	10.1	160	0.46
286	46.9	2	349	1.23	1250	11.1	240	0.44
287	36.4	N.D.	182	0.99	1140	7.6	210	0.22
288	50.5	2	252	1.23	1450	9.9	230	0.42
289	44.7	N.D.	192	1.18	1450	11.2	250	0.24
291	42.3	N.D.	170	1.28	1410	8.5	220	0.29
292	44.3	1	373	0.99	1290	10.1	240	0.42
293	49.0	N.D.	193	1.23	1500	9.3	240	0.24
294	41.5	N.D.	163	1.08	1380	7.7	230	0.42
295	29.9	N.D.	283	0.89	824	6.9	180	0.18
296	35.0	N.D.	240	0.99	1030	7.7	210	0.22
297	26.3	N.D.	108	0.89	933	6.6	220	0.20
298	36.0	N.D.	198	0.89	1030	7.5	190	0.22
299	38.9	N.D.	188	0.99	1390	7.8	240	0.24
300	54.5	N.D.	259	1.23	1520	11.5	260	0.51
301	43.5	N.D.	171	1.18	1450	9.0	280	0.24
302	41.6	N.D.	240	1.08	1320	9.7	230	0.24
305	49.6	N.D.	320	1.23	1430	11.5	230	0.44
307	43.6	N.D.	192	0.99	1110	7.8	190	0.42
308	45.0	N.D.	283	1.08	1070	7.7	170	0.24
309	35.8	N.D.	113	1.08	1340	6.9	230	0.20
310	49.0	N.D.	203	1.18	1350	8.9	240	0.42
311	49.0	1	317	1.23	1500	9.6	250	0.46
312	45.5	N.D.	826	0.99	1280	9.1	260	0.24
315	37.5	N.D.	1130	0.99	1290	7.7	260	0.24
317	30.4	N.D.	183	0.89	1180	6.2	230	0.22

	318	36.6	N.D.	281	0.94	1180	7.3	250	0.42
	319	40.3	N.D.	349	0.99	1040	8.9	230	0.29
320		45.4	N.D.	309	1.18	1230	9.1	220	0.46
321		43.2	N.D.	242	1.18	1390	8.5	260	0.42
322		32.6	N.D.	277	0.99	1160	8.2	300	0.22
323		45.8	2	261	1.18	1410	10.4	260	0.55
324		31.6	N.D.	92	0.94	1240	4.7	220	0.20
325		23.9	N.D.	63	0.94	1130	4.2	230	0.20
326		43.6	N.D.	185	1.18	1390	8.4	250	0.29
327		35.9	N.D.	421	0.99	1130	8.1	260	0.22
328		31.3	N.D.	169	0.94	1120	4.5	140	0.15
329		26.0	N.D.	155	0.61	759	4.6	120	0.13
330		40.1	N.D.	257	0.89	882	5.7	170	0.20
331		42.1	N.D.	167	0.99	1300	6.7	180	0.20
332		24.2	N.D.	227	0.99	1580	4.9	150	0.15
334		49.5	N.D.	155	1.28	1180	7.7	150	0.22
335		46.9	N.D.	111	1.08	1130	8.1	190	0.24
337		45.5	N.D.	175	1.42	1010	6.7	170	0.20
338		67.1	N.D.	379	2.86	1040	11.4	160	0.42
340		55.2	N.D.	194	1.28	1090	10.6	160	0.24
342		54.0	N.D.	256	1.76	974	8.3	170	0.22
343		36.6	N.D.	252	0.89	853	6.9	170	0.20
344		37.1	N.D.	131	0.61	948	6.6	140	0.15
345		42.3	N.D.	66	0.94	1180	6.6	190	0.15
346		50.2	N.D.	273	0.99	1150	9.5	220	0.42
348		50.8	N.D.	265	0.99	1230	8.5	230	0.22
349		45.0	N.D.	254	0.94	1130	7.7	220	0.29
350		52.2	N.D.	210	1.56	1160	9.7	230	0.44
351		42.6	N.D.	198	0.89	1180	5.4	150	0.15
352		45.2	N.D.	162	0.99	1040	7.5	180	0.22
353		199	1	1100	4.74	718	34.2	350	0.66
355		68.2	N.D.	257	1.47	1340	13.4	240	0.57
356		123	N.D.	449	3.20	796	20.2	280	0.55
357		54.5	N.D.	209	1.23	1370	9.1	230	0.44
359		40.5	N.D.	146	1.18	1270	8.0	240	0.24
360		27.2	N.D.	64	0.89	989	3.8	160	0.20
361		65.8	N.D.	503	1.42	1480	13.6	240	0.60
362		60.3	N.D.	228	0.99	1230	8.4	190	0.24
363		94.4	1	527	1.57	1970	13.0	260	0.42
364		49.5	N.D.	310	1.90	1070	12.0	210	0.60
366		117	N.D.	477	4.31	179	29.8	300	0.42
367		34.0	1	66	0.99	1150	6.6	270	0.22
368		40.5	N.D.	124	1.28	1640	6.2	210	0.22
369		53.8	N.D.	153	1.28	1620	9.0	250	0.24
370		48.4	N.D.	229	1.18	1350	9.7	250	0.42
371		48.3	N.D.	221	1.08	1260	9.7	230	0.46
372		19.2	N.D.	114	0.57	851	5.0	80	0.23
373		33.3	N.D.	320	0.96	942	6.8	120	0.23
375		25.3	N.D.	73	0.53	923	5.4	120	0.16
376		38.7	N.D.	161	0.67	1170	8.2	140	0.29
377		34.8	N.D.	92	0.67	1090	6.9	120	0.18

379	37.6	N.D.	133	0.67	1250	8.8	120	0.25
382	41.3	N.D.	149	1.05	951	7.4	120	0.16
384	25.8	2	76	0.67	849	5.8	90	0.12
386	39.4	N.D.	166	1.34	868	10.9	120	0.20
388	36.4	N.D.	162	0.67	1030	7.4	110	0.20
389	46.3	N.D.	197	1.05	1220	8.1	150	0.25
390	27.5	N.D.	142	0.67	939	6.4	120	0.20
391	31.8	N.D.	117	1.00	985	8.3	140	0.20
394	108	1	809	3.36	628	26.3	190	0.46
397	36.0	2	123	1.05	1420	6.4	140	0.16
399	32.8	N.D.	94	1.05	1070	7.4	150	0.20
400	52.5	N.D.	303	1.48	1010	11.4	140	0.29
402	33.1	N.D.	218	0.57	910	7.0	120	0.20
404	20.5	N.D.	117	0.57	769	4.5	100	0.18
405	29.4	N.D.	186	1.05	967	7.5	150	0.20
408	56.1	N.D.	130	1.15	1030	16.6	150	0.23
410	23.7	N.D.	79	0.57	932	5.8	150	0.16
412	29.3	N.D.	126	0.67	1290	7.5	140	0.44
413	20.9	1	85	0.57	1090	5.4	110	0.16
414	48.5	N.D.	216	1.44	1080	8.8	140	0.44
415	44.8	N.D.	127	1.00	1120	8.3	150	0.20
417	42.9	N.D.	170	1.00	1070	9.8	140	0.25
418	39.6	N.D.	204	1.39	908	8.6	130	0.21
420	41.7	N.D.	342	0.96	1110	7.6	130	0.17
423	39.7	N.D.	360	1.39	1090	9.8	150	0.19
424	48.1	N.D.	552	1.39	1080	10.1	150	0.10
425	51.1	N.D.	255	1.39	1060	10.0	180	0.19
427	38.2	N.D.	222	1.05	1010	8.8	150	0.15
428	36.4	N.D.	90	0.96	949	7.6	150	0.19
429	34.6	N.D.	135	0.96	978	7.2	130	0.13
430	41.2	N.D.	194	1.05	1070	8.9	140	0.21
431	26.2	N.D.	82	0.86	928	8.9	90	0.15
432	25.1	N.D.	61	0.86	880	5.4	90	0.15
434	55.5	N.D.	194	1.72	1010	9.8	130	0.19
435	54.4	N.D.	356	1.39	773	11.1	150	0.49
436	31.9	N.D.	98	0.86	1320	6.7	120	0.21
437	24.5	1	75	0.57	846	5.4	120	0.11
438	35.2	N.D.	124	0.86	1220	6.3	120	0.19
439	28.5	2	273	0.76	896	6.0	100	0.17
440	43.4	N.D.	172	0.86	1930	6.8	110	0.17
441	35.9	N.D.	214	0.83	1000	7.4	90	0.28
442	42.7	N.D.	265	0.83	1070	9.4	120	0.33
443	43.1	N.D.	135	1.02	1090	9.2	120	0.35
444	44.9	N.D.	208	1.02	1230	7.8	120	0.35
445	37.7	N.D.	170	1.02	1040	9.1	120	0.30
446	44.9	1	191	1.02	1220	7.4	140	0.35
447	47.4	N.D.	535	1.02	1350	8.8	140	0.30
448	53.8	N.D.	270	1.12	1680	8.5	140	0.28
449	48.9	N.D.	116	1.02	1290	10.2	140	0.35
450	41.5	10	340	0.59	1030	6.8	110	0.19
451	45.7	N.D.	770	0.59	1220	8.2	110	0.19
452	39.7	N.D.	383	0.59	1250	7.1	110	0.17
453	18.0	N.D.	42	0.40	938	3.1	90	0.09

W. G. WAHL LTD. - SOILS RFWO NO: 137

MATRIX: HCL04 ANALYSIS DATE: 101075 TAPE NO: 27 FILE NO:

CLIENT SAMPLE NO	CU PPM	MN PPM	SR PPM	V PPM
100	16.2	77.8	14.2	33.5
101	7.7	62.6	15.5	29.5
102	6.8	60.7	15.2	42.7
103	8.0	78.1	13.9	33.0
104	14.6	108	15.6	36.2
105	15.7	748	21.2	38.2
106	2.8	28.7	12.3	21.7
107	10.3	53.3	11.1	46.1
108	13.9	159	9.8	57.1
109	16.0	257	15.7	73.4
110	7.0	72.8	15.7	32.9
111	16.4	347	18.6	48.5
112	10.6	78.1	15.9	33.2
113	35.2	79.5	16.5	36.8
115	10.8	91.8	18.5	40.5
117	20.9	356	16.3	36.7
118	22.6	175	17.6	36.5
120	14.3	114	15.6	33.5
121	15.7	172	17.1	38.2
124	3.9	232	18.3	33.2
125	10.6	327	18.2	28.9
126	18.4	95.6	19.8	38.5
128	8.0	86.8	19.7	31.2
129	7.3	84.3	16.4	33.5
130	4.0	179	16.2	36.7
132	5.3	110	17.6	33.0
133	71.8	80.4	14.6	26.9
134	8.0	241	16.3	31.9
135	14.3	379	17.7	32.2
136	3.9	128	19.8	33.0
137	7.9	76.8	18.1	23.9
139	7.3	135	16.2	31.5
140	11.5	79.5	21.0	40.2
142	4.2	109	21.1	30.0
143	3.5	96.2	21.9	32.2
144	7.0	104	15.7	31.9
145	7.3	114	15.0	29.4
146	5.6	38.0	12.9	19.9
147	13.9	236	16.2	38.3

148	6.0	89.9	15.9	33.9
149	6.3	85.9	18.1	39.2
150	7.7	124	17.0	39.8
151	7.0	74.4	13.5	32.9
152	7.0	80.9	22.3	33.4
153	9.8	186	17.1	30.2
154	22.9	>1450	10.4	32.9
155	13.9	151	13.4	48.1
157	12.7	105	12.4	29.5
159	7.0	80.6	17.1	36.0
160	2.5	162	24.0	30.0
162	13.9	144	12.3	31.2
164	7.7	175	15.3	30.2
166	10.1	93.7	17.0	30.0
167	6.6	55.5	19.5	23.9
168	6.6	48.3	17.3	20.3
169	7.0	60.9	13.8	32.9
170	13.8	189	9.2	40.2
172	7.0	91.5	12.7	45.0
174	19.8	77.2	13.8	46.5
176	7.7	90.3	21.6	35.2
177	9.8	106	25.2	39.2
178	7.3	95.6	23.1	35.0
179	10.5	92.4	21.9	47.8
180	5.8	53.3	13.0	38.2
181	9.8	115	21.9	28.4
182	11.0	96.7	18.7	30.0
183	10.3	225	21.1	35.2
184	9.8	103	18.5	33.4
185	7.3	160	17.4	33.2
186	13.9	146	20.5	33.4
187	27.6	134	17.6	44.5
189	16.4	157	19.8	46.8
190	8.0	126	32.1	37.2
191	12.9	254	32.4	48.1
193	8.5	544	33.7	40.7
194	25.8	1270	40.1	50.3
195	4.7	160	40.5	70.2
197	4.7	118	38.6	50.6
198	6.7	140	38.8	43.5
199	8.6	284	40.1	45.4
200	10.8	115	38.9	55.2
201	10.9	280	34.0	41.2
202	5.9	111	32.0	36.7
203	6.9	362	39.0	40.3
204	4.6	158	35.2	54.5
206	13.0	210	42.8	48.2
207	22.1	291	62.6	82.0
209	37.0	825	25.0	120
211	4.6	135	37.5	47.0
213	7.6	177	37.2	48.9
214	5.0	122	25.4	40.7
215	5.2	107	28.1	48.2
216	20.4	151	35.7	44.2

218	11.7	206	48.5	40.6
219	3.3	94.2	38.7	40.7
220	6.3	111	35.1	48.1
221	7.0	187	34.4	48.9
223	10.8	273	40.4	67.2
224	6.5	88.8	39.3	37.6
225	5.8	97.0	31.4	54.3
226	4.8	124	28.8	47.8
227	5.8	316	37.2	43.0
229	7.1	268	36.5	40.7
231	4.7	136	38.7	54.3
232	5.0	121	40.0	47.0
233	3.1	158	39.0	39.1
235	5.9	169	36.5	41.1
236	6.7	125	33.4	50.6
237	10.1	131	29.0	43.1
239	18.2	169	35.9	51.8
240	10.0	222	41.4	41.1
241	5.5	122	38.4	49.9
242	5.8	139	42.7	47.1
243	5.9	185	37.5	62.6
245	5.1	139	35.9	43.6
246	4.6	124	32.6	54.1
246	4.8	115	38.9	49.4
249	4.5	99.8	25.8	37.7
250	17.3	135	32.6	50.4
251	4.6	122	31.2	43.1
252	4.8	109	33.2	58.6
253	4.8	130	33.4	58.8
254	4.9	329	37.2	47.8
256	9.6	165	39.1	40.5
257	4.8	149	37.4	43.1
259	8.8	117	32.1	54.7
260	2.7	90.8	24.8	36.8
261	2.7	78.1	24.3	49.2
263	4.3	92.4	31.7	52.7
264	5.5	96.5	31.4	82.3
265	4.3	127	36.4	37.0
266	4.3	129	35.9	45.8
267	3.9	123	30.5	47.9
268	3.9	378	33.6	41.8
270	4.1	96.5	32.8	44.9
271	6.7	82.1	24.7	51.2
272	3.9	127	31.4	36.5
274	2.2	86.6	30.1	50.1
276	6.0	94.7	33.6	60.2
277	8.0	105	36.7	92.0
279	3.5	91.8	33.2	47.7
281	4.1	134	32.5	41.9
283	6.2	116	33.2	47.5
284	7.1	128	34.2	48.6
285	3.9	97.7	31.0	47.3
286	4.3	217	33.0	45.2
287	3.5	114	31.4	37.1
288	4.1	109	30.6	52.7

289	8.0	139	40.4	47.3
291	4.3	103	33.2	49.3
292	5.0	127	33.4	43.0
293	4.4	120	35.9	52.5
294	2.5	104	34.8	46.0
295	4.3	96.5	24.9	25.8
296	4.4	175	31.0	32.2
297	7.6	139	27.9	28.8
298	4.2	118	28.7	34.4
299	4.1	112	31.1	52.5
300	3.9	128	33.2	53.3
301	4.3	145	39.8	49.5
302	6.9	169	35.1	43.4
305	5.2	130	32.6	50.3
307	4.0	83.7	23.0	42.9
308	3.5	99.1	26.8	39.2
309	2.6	109	33.5	45.6
310	3.9	110	33.7	47.3
311	3.5	120	33.2	54.4
312	4.1	294	33.2	46.2
315	4.4	129	34.9	43.4
317	2.5	170	36.5	34.4
318	3.5	101	31.4	39.4
319	2.8	189	26.8	34.8
320	3.5	115	29.8	42.8
321	3.5	106	34.2	50.1
322	3.5	129	38.9	37.4
323	4.0	107	30.3	50.1
324	1.7	76.4	32.2	41.3
325	1.4	88.9	35.2	32.7
326	2.8	104	37.4	51.4
327	4.3	288	37.0	36.3
328	1.8	62.9	25.4	41.6
329	3.5	59.7	17.5	28.0
330	2.8	80.2	20.3	35.7
331	2.7	74.8	25.3	54.8
332	10.3	76.7	31.4	52.2
334	6.7	231	26.2	43.7
335	6.7	121	27.0	41.8
337	10,6	302	24.6	34.4
338	17.8	1010	21.8	44.0
340	40.3	156	23.0	41.1
342	7.6	923	20.9	33.2
343	4.4	130	25.4	33.3
344	4.6	104	24.6	35.1
345	4.3	84.5	23.7	46.2
346	9.2	143	27.9	40.9
348	11.1	155	30.8	48.3
349	5.9	144	28.6	41.5
350	15.7	159	26.0	40.9
351	4.1	257	19.5	41.8
352	10.7	287	24.6	34.8
353	34.0	825	5.9	46.4
355	16.9	902	31.7	49.9
356	23.0	3850	19.3	41.5

357	6.7	179	28.4	46.4
359	6.1	240	36.7	41.3
360	2.3	43.4	19.8	39.4
361	10.3	222	26.7	68.8
362	7.6	97.4	22.4	49.7
363	14.8	196	30.4	98.7
364	18.2	3770	25.2	46.2
366	45.3	6610	5.4	21.4
367	3.9	130	37.2	34.4
368	2.7	79.6	30.5	67.7
369	7.0	106	35.8	66.5
370	5.3	92.7	30.4	52.2
371	6.0	88.8	27.9	48.4
372	1.5	62.8	17.6	26.5
373	2.5	126	24.2	31.7
375	4.9	104	25.2	26.7
376	4.9	83.5	24.3	41.9
377	2.5	104	23.1	37.1
379	3.7	169	27.0	40.9
382	7.6	114	22.3	34.8
384	4.1	221	24.1	32.7
386	11.2	1230	21.4	29.3
388	4.1	170	24.5	33.0
389	5.1	139	26.4	47.4
390	2.4	122	20.8	30.7
391	6.7	334	21.9	31.6
394	36.1	1730	10.9	35.7
397	5.1	92.4	19.8	45.7
399	6.5	99.5	27.4	33.3
400	12.7	931	24.7	38.8
402	15.8	148	19.7	29.5
404	2.1	76.1	17.3	25.6
405	40.4	398	23.4	28.6
408	7.5	229	19.1	39.2
410	6.5	162	25.9	27.1
412	3.9	118	21.3	43.9
413	2.5	160	24.7	34.0
414	12.4	573	27.6	38.8
415	9.4	403	28.1	45.0
417	5.9	126	24.4	36.1
418	5.3	768	22.3	34.4
420	5.4	225	26.2	44.4
423	5.8	127	28.1	37.7
424	7.8	275	25.9	42.6
425	7.8	125	28.6	40.0
427	6.7	697	30.7	36.6
428	5.2	158	24.0	32.1
429	5.3	157	25.6	34.0
430	8.6	159	25.3	38.1
431	6.4	377	20.8	34.0
432	5.1	80.5	22.4	28.2
434	9.3	256	19.5	44.8
435	16.1	442	24.8	28.9
436	2.5	68.3	24.0	48.9

437	2.7	104	22.0	28.1
438	2.5	74.0	19.6	48.3
4[illegible]	2.5	71.8	20.0	40.4
440	5.6	79.3	20.7	65.1
441	5.9	66.5	19.8	42.7
442	5.7	105	22.3	40.0
443	3.8	70.3	22.8	40.0
444	3.7	47.7	19.4	46.7
445	4.2	68.0	25.5	35.2
446	4.4	70.6	21.9	47.2
447	9.1	85.3	26.1	55.4
448	6.0	151	23.7	69.0
449	8.7	70.9	27.8	50.4
450	4.0	55.0	19.8	42.9
451	5.1	125	22.4	58.8
452	5.8	92.6	27.1	51.1
453	3.0	32.1	24.2	35.4

(2)

Please note:
1.) As,An,Sn,Te,Se,U,W,B,Rb,En,Mo - not detected.
2.) Si values are partial.
3.) K values are a bit high.

W. G. WAHL LTD. - ROCKS   RFWO NO: 137

MATRIX: GEO-HNO3   ANALYSIS DATE: 41175   TAPE NO: 28   FILE NO: 3

CLIENT SAMPLE NO	NI PPM	CU PPM	ZN PPM	CR PPM	CO PPM	V PPM	CD PPM
114	54	128	144	162	66	225	1.9
116	71	449	165	126	136	173	2.0
119	63	266	146	192	69	192	1.5
122	66	122	136	183	70	232	1.7
123	14	42.0	70	76.6	18	14.3	2.2
127	21	29.2	55	45.7	15	49.9	0.6
131	20	34.8	139	67.3	24	43.9	2.2
138	63	170	168	168	80	224	1.9
141	70	52.0	137	94.3	82	257	2.0
156	82	112	126	150	79	178	1.7
158	18	74.0	176	119	27	54.3	4.3
161	19	69.3	144	177	32	19.4	6.8
163	19	107	90	63.3	13	34.3	1.9
165	11	85.5	106	41.1	16	11.3	1.3
171	18	92.8	149	56.2	26	75.1	2.0
173	20	93.9	85	24.1	21	54.9	0.6
175	48	168	167	111	78	325	1.9
188	18	77.6	113	157	29	24.0	5.8
196	25	60.7	141	64.3	26	60.1	2.6
192	23	52.5	139	163	27	19.2	6.5
205	23	89.0	180	134	25	14.9	5.4
208	68	80.1	196	169	73	269	2.4
210	57	148	206	124	86	272	2.6
212	19	68.4	177	31.8	16	45.9	0.8
217	63	154	219	99.4	91	331	2.8
222	20	70.7	174	87.8	18	22.4	3.1
228	17	74.8	90	73.6	16	14.7	2.5
230	26	126	170	110	29	22.8	4.3
234	25	94.6	206	177	30	21.3	7.3
238	48	190	224	76.3	92	353	2.6
244	21	94.9	138	134	24	15.2	5.2
247	35	229	260	76.3	97	386	3.2
258	43	258	289	78.7	89	383	3.4
262	40	229	279	81.0	101	498	4.0
269	45	190	208	78.7	100	446	3.3
273	19	150	172	27.2	13	45.9	0.8
275	46	161	303	82.9	91	362	2.9
278	98	165.	228	139	105	292	2.9
280	22	177	154	70.5	61	334	2.0
282	77	224	235	170	87	276	2.6
290	55	160	202	137	89	338	2.9
303	54	244	237	96.7	101	294	2.6
304	32	103	155	132	33	30.0	4.5
306	61	201	219	102	90	349	2.7
313	14	44.3	729	37.6	11	49.7	1.1
314	49	104	226	115	89	407	3.3
316	31	34.6	162	41.5	24	73.4	1.2
333	73	65.1	295	171	90	349	2.9
336	28	43.8	118	101	28	114	2.9
339	25	68.8	123	114	19	12.4	4.2
341	29	46.2	129	121	21	10.0	4.7
347	39	98.3	256	119	40	74.1	4.3
354	45	45.6	162	164	48	42.6	6.1
358	32	39.5	146	157	27	18.1	6.1
365	32	27.3	216	218	34	27.4	8.1
374	22	46.5	166	55.1	14	51.8	1.6
378	36	53.5	179	170	31	20.5	6.3
380	20	55.4	115	78.5	16	10.8	2.6

381	35	70.2	101	81.6	20	77.0	1.2
383	36	92.8	240	218	39	23.3	7.5
385	35	26.7	153	221	35	15.4	8.1
387	33	29.5	188	200	31	14.4	7.6
392	17	60.9	117	81.0	15	16.0	2.6
393	22	38.3	154	137	23	12.4	5.0
395	28	55.4	179	173	30	16.2	6.1
396	30	53.5	188	186	35	19.7	7.2
398	32	175	234	216	35	16.2	8.2
401	18	105	163	93.2	18	11.8	3.0
403	18	34.6	113	92.8	15	7.6	3.0
406	18	89.4	139	98.8	14	11.4	2.9
407	36	67.6	224	231	38	18.5	8.2
409	27	28.5	162	183	29	13.4	6.7
411	93	172	211	206	105	194	2.3
416	19	109	124	103	18	12.0	3.6
419	31	36.4	137	214	33	20.3	8.6
421	19	31.3	139	73.4	19	37.1	2.2
422	24	86.0	221	77.3	25	54.7	2.6
426	14	49.6	71	77.5	13	11.2	2.5
433	40	64.5	139	204	76	40.0	6.5

W. G. WAHL LTD. - ROCKS RFWO NO: 137

MATRIX: GEO-HNO3 ANALYSIS DATE: 41175 TAPE NO: 28 FILE NO: 3

CLIENT SAMPLE NO	AG PPM	BE PPM	SR PPM	MN PPM	TI %	P %
114	4.2	0.7	106	1190	.517	.066
116	3.7	0.6	80.1	1120	.339	.062
119	2.9	1.1	28.4	1120	.364	.053
122	3.3	1.0	49.5	795	.490	.061
123	2.2	0.9	13.8	593	N.D.	.040
127	2.1	1.1	276	312	.228	.051
131	4.5	1.4	34.9	6240	.181	.073
138	3.4	0.8	113	1160	.410	.062
141	3.8	1.0	175	1110	.778	.085
156	2.7	0.6	105	944	.340	.049
158	4.2	1.1	54.9	1930	.0210	.030
161	4.5	1.8	4.7	4390	.0031	.033
163	1.7	0.8	12.8	1120	.0120	.034
165	1.9	0.2	12.0	1590	.0054	.017
171	3.0	1.1	65.1	1900	.200	.065
173	2.5	1.0	79.2	640	.199	.062
175	3.7	1.6	97.5	1300	.902	.109
188	4.4	0.5	9.8	6230	.0106	.056
196	4.2	1.1	118	3540	.198	.082
192	4.6	0.8	6.2	3860	.0271	.046
205	3.6	0.9	25.1	2150	.0072	.131
208	3.8	1.0	214	1020	.631	.080
210	4.2	0.9	145	1280	.474	.083
212	2.1	1.6	523	438	.196	.089
217	4.0	1.1	81.9	1070	.762	.084
222	2.7	0.7	9.2	1940	.0087	.048
228	2.3	0.7	8.8	1020	.0119	.043
230	4.9	0.9	25.0	12200	.0250	.047
234	5.1	0.9	8.0	5980	.0090	.067
238	4.2	1.3	131	1400	.931	.091
244	3.3	0.9	4.4	545	.0108	.061
247	5.3	1.5	80.9	1240	1.06	.111
258	5.0	1.4	82.0	1620	1.01	.097
262	5.7	1.8	75.3	1320	1.34	.114
269	6.0	1.7	72.5	1350	1.16	.134

273	3.1	1.7	387	341	.227	.095
275	5.3	1.7	84.6	1020	1.04	.103
278	4.5	1.3	115	1030	.774	.097
280	3.6	1.7	47.8	663	.784	.085
282	5.1	1.4	86.7	1020	.475	.100
290	4.2	1.3	74.0	1210	.686	.088
303	4.3	1.2	85.6	1920	.746	.099
304	5.1	0.8	27.8	3660	.0381	.100
306	5.0	1.3	39.4	1620	.867	.114
313	2.5	1.3	126	772	.214	.086
314	4.4	1.7	90.0	869	1.11	.108
316	2.6	1.1	166	889	.232	.079
333	4.0	1.3	194	1670	.942	.106
336	3.5	2.7	205	812	.776	0.22
339	3.4	0.4	14.2	497	.0085	.030
341	3.3	0.2	3.6	4760	.0026	.023
347	4.6	1.2	110	3750	.208	.101
354	7.5	1.1	41.1	33600	.0147	.041
358	4.9	0.7	18.0	15700	.0030	.037
365	8.9	3.4	23.1	25100	N.D.	.035
374	4.5	1.1	108	2160	.221	.095
378	6.2	1.0	22.3	15600	.0118	.055
380	2.7	0.8	8.6	2940	.0061	.041
381	3.7	1.4	265	981	.298	.068
383	6.9	1.0	9.7	11300	.0188	.073
385	5.7	1.6	10.9	7750	.0078	.056
387	5.2	1.0	9.7	8490	.0025	.125
392	3.4	N.D.	7.4	2490	.0159	.021
393	4.0	0.3	11.9	3800	.0051	.071
395	4.9	1.0	12.9	7080	.0082	.079
396	5.7	0.8	8.1	10300	.0042	.045
398	5.7	0.7	10.9	8940	.0042	.118
401	2.5	0.5	16.4	1800	.0263	.108
403	2.4	0.6	4.4	1600	N.D.	.040
406	2.8	0.7	5.2	3050	.0111	.037
407	5.8	0.9	14.3	10200	.0042	.086
409	5.0	0.8	12.9	3670	N.D.	.084
411	3.4	1.4	46.8	2000	.323	.072
416	2.7	0.8	3.2	3120	N.D.	.036
419	6.1	0.7	24.5	10900	.0012	.060
421	2.6	0.7	36.4	1730	.128	.079
422	3.3	1.2	133	3100	.181	.084
426	2.6	0.7	6.8	2390	.0031	.037
433	4.7	1.0	8.3	2670	.0208	.058

H. G. WAHL LTD. - ROCKS RFWO NO: 137

MATRIX: GEO-HN03 ANALYSIS DATE: 41175 TAPE NO: 28 FILE NO: 3

CLIENT SAMPLE NO	AL %	FE %	SI PPM	CA %	MG %	NA %	K %
114	5.56	8.37	8900	7.16	3.90	.603	7.28
116	5.08	8.64	11200	9.87	3.29	.639	7.93
119	5.40	6.11	6070	2.13	2.44	.143	5.56
122	5.68	7.12	12700	4.35	3.33	.198	6.88
123	.144	14.4	260	.0553	.711	.0614	1.09
127	5.96	2.21	5480	1.31	.506	2.09	6.24
131	5.56	11.1	10800	.351	1.21	.882	6.16
130	5.88	7.99	10100	7.26	3.21	1.44	7.48
141	5.96	8.73	14100	5.92	3.30	1.46	7.44
156	5.92	7.16	11500	6.38	3.89	1.28	7.00
158	.344	23.9	590	.917	2.01	.0978	2.82

161	.185	30.0	1160	.0633	3.11	.0751	2.68
163	.411	11.4	80	.220	.327	.0933	1.29
165	.312	3.10	140	.219	.165	.0465	1.01
171	5.52	10.1	8900	1.20	1.85	3.07	4.88
173	7.30	2.31	7920	2.19	.531	3.98	5.72
175	5.92	8.83	9830	2.41	3.13	2.01	5.88
188	.212	30.0	130	.167	1.05	.0871	2.56
196	6.04	9.91	9490	1.34	.996	2.15	4.92
192	.273	30.8	120	.0569	1.33	.0541	2.02
205	.322	26.8	100	.188	.834	.104	1.78
208	6.16	8.28	13300	4.66	4.13	2.56	6.20
210	5.48	5.10	7440	7.43	3.64	1.61	6.20
212	8.34	2.00	11400	1.48	.535	4.16	6.48
217	5.88	10.1	10100	4.62	3.93	1.48	5.08
222	.215	14.8	310	.153	1.43	.0839	1.15
228	.229	13.3	90	.218	.397	.0745	0.99
230	.937	21.4	110	.298	1.26	.0620	1.93
234	.115	34.5	290	.101	3.00	.0652	2.35
238	6.04	9.36	14500	3.12	3.39	1.72	5.04
244	.157	28.2	110	.143	.562	.0792	1.70
247	5.80	10.7	7940	5.29	3.09	2.05	5.56
258	5.64	12.3	9130	5.25	3.06	2.35	5.60
262	5.68	14.5	10900	5.92	2.99	1.59	6.20
269	6.04	13.1	12200	1.52	1.51	2.21	5.00
273	8.64	1.80	17600	.925	.569	4.80	5.84
275	5.88	11.8	13300	6.59	3.99	1.24	6.00
278	6.12	11.2	15800	7.21	5.34	1.20	6.28
280	8.53	7.26	14000	4.08	1.20	2.53	6.64
282	6.24	9.61	22000	7.35	4.75	1.73	6.60
290	6.00	11.8	13500	1.32	4.04	1.75	4.56
303	5.64	10.4	8730	7.14	3.38	1.16	5.84
304	.713	26.1	200	.640	.694	.236	2.21
306	6.12	10.0	10500	4.20	3.63	2.42	5.40
313	7.96	9.58	11400	.779	.763	3.21	5.44
314	6.44	12.2	14900	3.02	3.73	1.54	5.00
316	8.87	2.55	14600	5.66	.768	3.19	7.40
333	8.60	9.80	16500	4.20	2.84	2.67	5.68
336	4.24	13.8	1740	.398	.861	1.20	4.20
339	.375	21.9	270	.0463	1.28	.187	1.40
341	.0968	23.8	260	.0668	.361	.0411	1.40
347	6.20	19.4	16200	3.90	1.35	1.37	6.04
354	.346	30.9	140	.0318	1.25	.0557	2.18
358	.168	30.9	90	.111	.453	.0606	1.88
365	.0704	38.5	130	.0377	.360	.0912	2.83
374	6.56	4.61	11700	2.18	.402	2.08	6.84
378	.401	33.2	220	.457	1.60	.134	2.69
380	.179	13.6	90	.758	.544	.0562	1.37
381	5.60	3.73	3850	1.28	.626	1.88	5.20
383	.316	38.4	730	1.07	3.29	.101	3.57
385	.231	38.9	7560	.459	2.74	.134	3.24
387	.192	37.0	1400	.150	3.12	.0902	2.52
392	.256	13.6	80	.349	.820	.0705	1.09
393	.213	26.5	130	.468	1.14	.0858	2.09
395	.223	33.2	280	.567	2.67	.0705	2.69
396	.259	35.7	1960	.693	3.56	.0788	3.21
398	.249	38.4	830	.796	1.60	.0932	3.65
401	.275	16.8	130	.167	.688	.0764	1.26
403	.0506	18.4	150	.153	1.59	.0352	1.26
406	.138	17.3	120	.272	1.06	.0469	1.30
407	.245	43.8	6730	1.47	3.89	.142	4.64
409	.104	35.6	400	.780	1.50	.0577	3.22
411	6.04	7.89	7370	9.97	3.81	1.16	7.20
416	.179	22.3	140	.0495	.0620	.0450	1.28
419	.114	38.8	1160	1.29	.575	.0813	4.12
421	4.76	13.3	2560	.675	.885	2.23	3.35
422	5.72	13.4	5710	1.38	1.07	2.70	4.80
426	.127	16.4	80	.0662	.0800	.0460	0.97
430	.516	38.0	1410	.0863	1.10	.124	2.84

W. G. WAHL LTD. RF-137

SAMPLE NUMBER	Pb ppm	SAMPLE NUMBER	Pb ppm
114	4	247	6
116	2	258	32
119	6	262	6
122	< 2	269	< 2
123	< 2	273	24
127	8	275	6
131	< 2	278	4
138	4	280	< 2
141	8	282	8
156	< 2	290	4
158	2	303	< 2
161	< 2	304	2
163	2	306	< 2
165	20	313	6
171	8	314	< 2
173	8	316	2
175	6	333	< 2
188	< 2	336	< 2
196	< 2	339	< 2
192	< 2	341	8
205	6	347	< 2
208	6	354	< 2
210	2	358	< 2
212	16	365	< 2
217	< 2	374	6
222	2	378	< 2
228	10	380	< 2
230	12	381	10
234	2	383	4
238	16	385	< 2
244	2	387	< 2

SAMPLE NUMBER	Pb ppm	SAMPLE NUMBER	Pb ppm
392	10		
393	8		
395	< 2		
396	< 2		
398	< 2		
401	14		
403	< 2		
406	4		
407	< 2		
409	< 2		
411	< 2		
416	< 2		
419	< 2		
421	< 2		
422	6		
426	2		
433	4		

File 2.2085

Ontario

Ministry of Natural Resources

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL
TECHNICAL DATA STATEMENT

TO BE ATTAC
FACTS SHOW
TECHNICAL REPORT

41016SW9149 2.2085 MARION

900

Type of Survey(s) GEOPHYSICAL, GEOLOGICAL, GEOCHEMICAL

Township or Area Map Area 'B' Benton Township

Claim Holder(s) W.G. Wahl Limited,
1101-302 Bay Street, Toronto,

Survey Company W.G. Wahl Limited.

Author of Report David G. Wahl, Consulting Engineer

Address of Author 1101-302 Bay Street, Toronto.

Covering Dates of Survey July 11 - July 13, 1975
(linecutting to office)

Total Miles of Line Cut 1.04

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
--Electromagnetic	20
--Magnetometer	20
--Radiometric	
--Other	
Geological	40
Geochemical	Rock Soil 20

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer ____ Electromagnetic ____ Radiometric ____
(enter days per claim)

DATE: April 9/76 SIGNATURE: ____
Author of Report or Agent

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
P	428951
P	428954

If space insufficient, attach list

TOTAL CLAIMS 2

OFFICE USE ONLY

Res. Geol. ____ Qualifications 63.2859.

Previous Surveys

File No.	Type	Date	Claim Holder

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS – If more than one survey, specify data for each type of survey

Number of Stations 76 Number of Readings 152

Station interval 50' 15m Line spacing 400' 120m

Profile scale 1" to 200' and 1" to 20°

Contour interval 100-500 - 1000 as required

MAGNETIC

Instrument Geometric Total Field Proton Magnetometer

Accuracy – Scale constant ± 1 gamma

Diurnal correction method Base Station - time interpolation

Base Station check-in interval (hours) 1 hr

Base Station location and value All baseline stations std as Base Stations.

ELECTROMAGNETIC

Instrument Crone Radem VLF Unit

Coil configuration -

Coil separation -

Accuracy 1° of dip and 1% total relative field strength

Method: ☒ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency Cutler Maine 17.8 KHz (specify V.L.F. station)

Parameters measured dip angle or inphase response; Field Strength and Fraser Filtration valves.

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time Frequency

– Off time Range

– Delay time

– Integration time

Power

Electrode array

Electrode spacing

Type of electrode

SELF POTENTIAL

Instrument ____________________ Range ____________________

Survey Method ____________________

____

Corrections made ____________________

____

RADIOMETRIC

Instrument ____________________

Values measured ____________________

Energy windows (levels) ____________________

Height of instrument ____________________ Background Count ____________________

Size of detector ____________________

Overburden ____________________

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey ____________________

Instrument ____________________

Accuracy ____________________

Parameters measured ____________________

____

Additional information (for understanding results) ____________________

____

____

AIRBORNE SURVEYS

Type of survey(s) ____________________

Instrument(s) ____________________

(specify for each type of survey)

Accuracy ____________________

(specify for each type of survey)

Aircraft used ____________________

Sensor altitude ____________________

Navigation and flight path recovery method ____________________

____

Aircraft altitude ____________________ Line Spacing ____________________

Miles flown over total area ____________________ Over claims only ____________________

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken P 428951, P 428954

Total Number of Samples Soils 39 Rock 11 Total 50

Type of Sample Rock and Soils
(Nature of Material)

Average Sample Weight Soils 8oz Rock 16oz

Method of Collection Manual
Random rock chips

Soil Horizon Sampled B- horizon

Horizon Development fair

Sample Depth 10 inches

Terrain Regional drainage to the
South-east.

Drainage Development moderately well drained
severe swamp

Estimated Range of Overburden Thickness
20'

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis
- 80 mesh

General
See Appendix iv for detailed procedure

ANALYTICAL METHODS

Values expressed in: per cent ☐ p. p. m. ☒ p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others Total 31 elements as per appendix iv.

Field Analysis (tests)

Extraction Method

Analytical Method N/A

Reagents Used

Field Laboratory Analysis

No. (tests)

Extraction Method

Analytical Method N/A

Reagents Used

Commercial Laboratory (tests)

Name of Laboratory Barringer Research

Extraction Method 5mls HNO_3-2.0mls $HCLO_4$

Analytical Method MRFAPE

Reagents Used As above

General
See Appendix iv for detailed procedure

Ontario

File 2.2085

Ministry of Natural Resources

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

RECEIVED
APR 15 1976
PROJECTS UNIT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) GEOPHYSICAL, GEOLOGICAL, GEOCHEMICAL
Township or Area Mallard Township Map Area 'A'
Claim Holder(s) W.G. Wahl Limited
1101-302 Bay Street, Toronto
Survey Company W.G. Wahl Limited.
Author of Report David G. Wahl, Consulting Engineer
Address of Author 1101-302 Bay Street, Toronto.
Covering Dates of Survey July 9 - July 12, 1975
(linecutting to office)
Total Miles of Line Cut 2.3 miles

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	20
–Magnetometer	20
–Radiometric	
–Other	
Geological	40
Geochemical Rock Soil	20

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer ______ Electromagnetic ______ Radiometric ______
(enter days per claim)

DATE: April 9, 1976 SIGNATURE: ______
Author of Report or Agent

Res. Geol. ______ Qualifications 63.2859

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
P	428940
P	428942
P	428943
P	428944
P	428946

If space insufficient, attach list

TOTAL CLAIMS 5

USE ONLY

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS – If more than one survey, specify data for each type of survey

Number of Stations 244 Number of Readings 488

Station interval 50' and 25' Line spacing 400'

Profile scale 1" to 200 and 1" to 20°

Contour interval 100 - 500 - 1000 as required

MAGNETIC

Instrument Geometric Total Field Proton Magnetometer

Accuracy – Scale constant ± 1 gamma

Diurnal correction method Base Station - time interpolation

Base Station check-in interval (hours) All baseline stations std Base Stations (1hr)

Base Station location and value All baseline stations std as check Base Stations

ELECTROMAGNETIC

Instrument Crone Radem VLF Unit

Coil configuration -

Coil separation -

Accuracy 1° of dip and 1% total relative field strength

Method: ☒ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency Cutler Maine 17.8 KHz
(specify V.L.F. station)

Parameters measured dip angle or inphase response; Field Strength and Fraser Filtration valves.

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time Frequency

– Off time Range

– Delay time

– Integration time

Power

Electrode array

Electrode spacing

Type of electrode

SELF POTENTIAL

Instrument ________________________________ Range ______________

Survey Method ____

____

Corrections made ____

____

RADIOMETRIC

Instrument ____

Values measured ____

Energy windows (levels) ____

Height of instrument ________________________ Background Count ______________

Size of detector ____

Overburden ____

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey ____

Instrument ____

Accuracy ____

Parameters measured ____

____

Additional information (for understanding results) ______________________

____

____

AIRBORNE SURVEYS

Type of survey(s) ____

Instrument(s) ____

(specify for each type of survey)

Accuracy ____

(specify for each type of survey)

Aircraft used ____

Sensor altitude ____

Navigation and flight path recovery method ______________________

____

Aircraft altitude ________________________ Line Spacing ______________

Miles flown over total area ________________________ Over claims only ______________

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken P 428943, P 428942, P 428944, P 428946

Total Number of Samples Soils 27
Rock 7 total 34

Type of Sample Rock & Soil
(Nature of Material)

Average Sample Weight Soils 8oz; Rock 16 oz

Method of Collection Manual - random rock chips

Soil Horizon Sampled B-horizon

Horizon Development fair

Sample Depth 8 inches

Terrain gentle slope to the north

Drainage Development well established

Estimated Range of Overburden Thickness 20' - 50'

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis - 80 Mesh

General
See Appendix iv for detailed procedure

ANALYTICAL METHODS

Values expressed in:
per cent ☐
p. p. m. ☒
p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others Total 31 elements as per Appendix iv.

Field Analysis (tests)
Extraction Method
Analytical Method N/A
Reagents Used

Field Laboratory Analysis
No. (tests)
Extraction Method
Analytical Method N/A
Reagents Used

Commercial Laboratory (tests)
Name of Laboratory Barringer Research
Extraction Method .5mls HNO_3-2.0mls $HCLO_4$
Analytical Method MRFAPE
Reagents Used As above

General
See Appendix iv for detailed procedure

Ontario

File 2·2085

Ministry of Natural Resources

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

RECEIVED
APR 15 1976
PROJECTS UNIT

**TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.**

Type of Survey(s) GEOPHYSICAL GEOLOGICAL GEOCHEMICAL
Township or Area Map Area 'E' MARION TOWNSHIP
Claim Holder(s) W.G. Wahl Limited
1101-302 Bay Street, Toronto
Survey Company W.G. Wahl Limited
Author of Report David G. Wahl, Consulting Engineer
Address of Author 1101-302 Bay Street
Covering Dates of Survey July 9-10 1975
(linecutting to office)
Total Miles of Line Cut used recon lines 1.66

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	–
–Magnetometer	20
–Radiometric	
–Other	
Geological	20
Geochemical Rock Soils	20

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer ______ Electromagnetic ______ Radiometric ______
(enter days per claim)

DATE: April 9,1976 SIGNATURE: ______
Author of Report or Agent

OFFICE USE ONLY

Res. Geol. ______ Qualifications 63·2859

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
P	428803
P	428804
P	428805
P	428808

If space insufficient, attach list

TOTAL CLAIMS 4

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS – If more than one survey, specify data for each type of survey

Number of Stations 108 Number of Readings 216

Station interval 50' (15m) Line spacing 400' (120m)

Profile scale 1" to 200' 1" to 20°

Contour interval as required

MAGNETIC

Instrument Geometric Total Field Proton Magnetometer

Accuracy – Scale constant ± 1 gamma

Diurnal correction method Base Station - time interpolation

Base Station check-in interval (hours) 1 hr

Base Station location and value All baseline stations std as check base stations.

ELECTROMAGNETIC

Instrument

Coil configuration

Coil separation

Accuracy

Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency

(specify V.L.F. station)

Parameters measured

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time Frequency

– Off time Range

– Delay time

– Integration time

Power

Electrode array

Electrode spacing

Type of electrode

SELF POTENTIAL

Instrument ____ Range ____

Survey Method ____

____

Corrections made ____

____

RADIOMETRIC

Instrument ____

Values measured ____

Energy windows (levels) ____

Height of instrument ____ Background Count ____

Size of detector ____

Overburden ____
(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey ____

Instrument ____

Accuracy ____

Parameters measured ____

____

Additional information (for understanding results) ____

____

____

AIRBORNE SURVEYS

Type of survey(s) ____

Instrument(s) ____
(specify for each type of survey)

Accuracy ____
(specify for each type of survey)

Aircraft used ____

Sensor altitude ____

Navigation and flight path recovery method ____

____

Aircraft altitude ____ Line Spacing ____

Miles flown over total area ____ Over claims only ____

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken P 428803; P 428804; P 428805; P 428808

Total Number of Samples Soils 46 Rock 13 Total 59

Type of Sample Rock & Soils
(Nature of Material)

Average Sample Weight Soils 8 oz, 16 oz Rock

Method of Collection Manual (shovel)
Random rock chips

Soil Horizon Sampled B-horizon

Horizon Development fair

Sample Depth 8"

Terrain Gentle slope to the north

Drainage Development generally good

Estimated Range of Overburden Thickness
20' - 50'

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis
- 80 mesh

General See Appendix iv for detailed procedure

ANALYTICAL METHODS

Values expressed in:
per cent ☐
p. p. m. ☒
p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As, (circle)

Others Total 31 elements as

Field Analysis (per appendix iv tests)

Extraction Method

Analytical Method N/A

Reagents Used

Field Laboratory Analysis

No. (tests)

Extraction Method

Analytical Method N/A

Reagents Used

Commercial Laboratory (tests)

Name of Laboratory Barringer Research

Extraction Method .5mls HNO_3 -2.0mls $HCL0_4$

Analytical Method MRFAPE

Reagents Used As above

General
See Appendix iv for detailed procedure

Ontario

File 2.2085

Ministry of Natural Resources

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

RECEIVED
APR 15 1976
PROJECTS UNIT.

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) GEOPHYSICAL GEOLOGICAL GEOCHEMICAL.

Township or Area Map Area 'D' HEENAN & MARION TWPS

Claim Holder(s) W. G. Wahl Limited
1101-302 Bay Street Toronto.

Survey Company W. G. Wahl Limited

Author of Report David G. Wahl, Consulting Engineer

Address of Author 1101 - 302 Bay St. Toronto.

Covering Dates of Survey July 5&6/75 - July 15, 1975 July 16, 1975 (linecutting to office)

Total Miles of Line Cut 1.50

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	20
–Magnetometer	-
–Radiometric	-
–Other	-
Geological	40
Geochemical Rock Soils	20

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: April 9,1976 SIGNATURE:
Author of Report or Agent

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
P	428792
P	428799

If space insufficient, attach list

TOTAL CLAIMS 2

OFFICE USE ONLY

Res. Geol. _____ Qualifications 63.2859

Previous Surveys

File No.	Type	Date	Claim Holder

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS – If more than one survey, specify data for each type of survey

Number of Stations 126 Number of Readings 252

Station interval 50' data plotted Line spacing 400'; 120m

Profile scale 1" to 200' 1" to 20°

Contour interval as required

MAGNETIC

Instrument

Accuracy – Scale constant

Diurnal correction method

Base Station check-in interval (hours)

Base Station location and value

ELECTROMAGNETIC

Instrument Crone Radem VLF Unit

Coil configuration -

Coil separation -

Accuracy 1° of dip and 1% total relative field strength

Method: ☒ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency Cutler Maine 17.8 KHz
(specify V.L.F. station)

Parameters measured dip angle or inphase response with reduced Fraser Filtration where needed.

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time Frequency

– Off time Range

– Delay time

– Integration time

Power

Electrode array

Electrode spacing

Type of electrode

SELF POTENTIAL

Instrument ________________ Range ________________

Survey Method ________________

____

Corrections made ________________

____

RADIOMETRIC

Instrument ________________

Values measured ________________

Energy windows (levels) ________________

Height of instrument ________________ Background Count ________________

Size of detector ________________

Overburden ________________

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey ________________

Instrument ________________

Accuracy ________________

Parameters measured ________________

____

Additional information (for understanding results) ________________

____

____

AIRBORNE SURVEYS

Type of survey(s) ________________

Instrument(s) ________________

(specify for each type of survey)

Accuracy ________________

(specify for each type of survey)

Aircraft used ________________

Sensor altitude ________________

Navigation and flight path recovery method ________________

____

Aircraft altitude ________________ Line Spacing ________________

Miles flown over total area ________________ Over claims only ________________

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken P 428792; P 428799

Total Number of Samples Soils 52 Rock 8 Total 60

Type of Sample Rock and Soils
(Nature of Material)

Average Sample Weight Soils 8oz,Rock 16 oz.

Method of Collection Manual
random rock chips

Soil Horizon Sampled B - horizon

Horizon Development fair

Sample Depth 8 inches

Terrain Steep ridges regional drainage is to the North

Drainage Development Well drained

Estimated Range of Overburden Thickness
10' to 50'

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis
-80 mesh

General
See Appendix iv
for detailed procedure.

ANALYTICAL METHODS

Values expressed in:
per cent ☐
p. p. m. ☒
p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others Total 31 elements as per appendix iv.

Field Analysis (tests)

Extraction Method

Analytical Method N/A

Reagents Used

Field Laboratory Analysis

No. (tests)

Extraction Method

Analytical Method N/A

Reagents Used

Commercial Laboratory (tests)

Name of Laboratory Barringer Research

Extraction Method .5mls HNO_3-2.0mls $HCLO_4$

Analytical Method MRFAPE

Reagents Used As above

General
See Appendix iv for detailed procedure.

Ontario

File 2.2085

Ministry of Natural Resources

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

RECEIVED
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PROJECTS UNIT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) GEOLOGICAL, GEOCHEMICAL
Township or Area Map Area D Heenan Township
Claim Holder(s) W. G. Wahl Limited
1101-302 Bay Street, Toronto
Survey Company W.G. Wahl Ltd.
Author of Report David G.Wahl,Consulting Engineer
Address of Author 1101-302 Bay Street
Covering Dates of Survey July 8, 1975
(linecutting to office)
Total Miles of Line Cut 1.61

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
—Electromagnetic	
—Magnetometer	
—Radiometric	
—Other	
Geological	20
Geochemical	20

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer ______ Electromagnetic ______ Radiometric ______
(enter days per claim)

DATE: April 9/76 SIGNATURE: ______
Author of Report or Agent

OFFICE USE ONLY

Res. Geol. ______ Qualifications 63.2859

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
P	428784
P	428787
P	429837

If space insufficient, attach list

TOTAL CLAIMS 3

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS – If more than one survey, specify data for each type of survey

Number of Stations ______________ Number of Readings ______________
Station interval ______________ Line spacing ______________
Profile scale ______________
Contour interval ______________

MAGNETIC

Instrument ______________
Accuracy – Scale constant ______________
Diurnal correction method ______________
Base Station check-in interval (hours) ______________
Base Station location and value ______________

ELECTROMAGNETIC

Instrument ______________
Coil configuration ______________
Coil separation ______________
Accuracy ______________
Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line
Frequency ______________ (specify V.L.F. station)
Parameters measured ______________

GRAVITY

Instrument ______________
Scale constant ______________
Corrections made ______________
Base station value and location ______________
Elevation accuracy ______________

INDUCED POLARIZATION RESISTIVITY

Instrument ______________
Method ☐ Time Domain ☐ Frequency Domain
Parameters – On time ______________ Frequency ______________
– Off time ______________ Range ______________
– Delay time ______________
– Integration time ______________
Power ______________
Electrode array ______________
Electrode spacing ______________
Type of electrode ______________

SELF POTENTIAL

Instrument __________ Range __________

Survey Method __________

Corrections made __________

RADIOMETRIC

Instrument __________

Values measured __________

Energy windows (levels) __________

Height of instrument __________ Background Count __________

Size of detector __________

Overburden __________
(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey __________

Instrument __________

Accuracy __________

Parameters measured __________

Additional information (for understanding results) __________

AIRBORNE SURVEYS

Type of survey(s) __________

Instrument(s) __________
(specify for each type of survey)

Accuracy __________
(specify for each type of survey)

Aircraft used __________

Sensor altitude __________

Navigation and flight path recovery method __________

Aircraft altitude __________ Line Spacing __________

Miles flown over total area __________ Over claims only __________

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken P - 428784, P - 428787, P - 429837

Total Number of Samples Soils 53 Rock 14 Total 67

Type of Sample Rock and Soil
(Nature of Material)

Average Sample Weight Soils 8 oz, Rock 16oz

Method of Collection Manual
Random rock chips

Soil Horizon Sampled B- horizon

Horizon Development fair to poor

Sample Depth variable

Terrain low swampy conditions

Drainage Development poor

Estimated Range of Overburden Thickness 30' - 50'

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis
- 80 Mesh

General
See Appendix iv
for detailed procedure

ANALYTICAL METHODS

Values expressed in:
per cent ☐
p. p. m. ☒
p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others Total 31 elements as per appendix iv.

Field Analysis (tests)
Extraction Method
Analytical Method N/A
Reagents Used

Field Laboratory Analysis
No. (tests)
Extraction Method
Analytical Method N/A
Reagents Used

Commercial Laboratory (tests)
Name of Laboratory Barringer Research
Extraction Method 5mls HNO_3-2.0mls $HCLO_4$
Analytical Method MRFAPE
Reagents Used As above

General
See Appendix iv for detailed procedure.

Ontario

Ministry of Natural Resources

File 2.2085

by hand

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APR 15 1976

PROJECTS UNIT

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) ELECTROMAGNETIC

Township or Area Marion-Heenan-Benton-Mallard

Claim Holder(s) W. G. Wahl Limited,
1101 - 302 Bay St. Toronto.

Survey Company W.G. Wahl Limited.

Author of Report David G. Wahl, Consulting Engineer

Address of Author 1101 - 302 Bay St. Toronto.

Covering Dates of Survey As per attached list.
(linecutting to office)

Total Miles of Line Cut 52.46 miles

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	40
–Magnetometer	
–Radiometric	
–Other	
Geological	
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer ______ Electromagnetic ______ Radiometric ______
(enter days per claim)

DATE: April 9/76 SIGNATURE:
Author of Report or Agent

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
As per attached list.	

If space insufficient, attach list

TOTAL CLAIMS 67

OFFICE USE ONLY

Res. Geol. ______ Qualifications 63.2859

Previous Surveys

File No.	Type	Date	Claim Holder

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS – If more than one survey, specify data for each type of survey

Number of Stations 5540 Number of Readings 5540

Station interval 50feet (15 meters) Line spacing 400 feet (120 meters)

Profile scale 1" to 400' 1" to 120m

Contour interval

MAGNETIC

Instrument

Accuracy – Scale constant

Diurnal correction method

Base Station check-in interval (hours)

Base Station location and value

ELECTROMAGNETIC

Instrument Crone Radem VLF Unit

Coil configuration

Coil separation

Accuracy 1° of dip and 1% total relative field strength

Method: ☒ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency Cutler Maine 17.8 KHz

(specify V.L.F. station)

Parameters measured dip angle or inphase response with reduced Fraser Filtration where needed.

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time Frequency

– Off time Range

– Delay time

– Integration time

Power

Electrode array

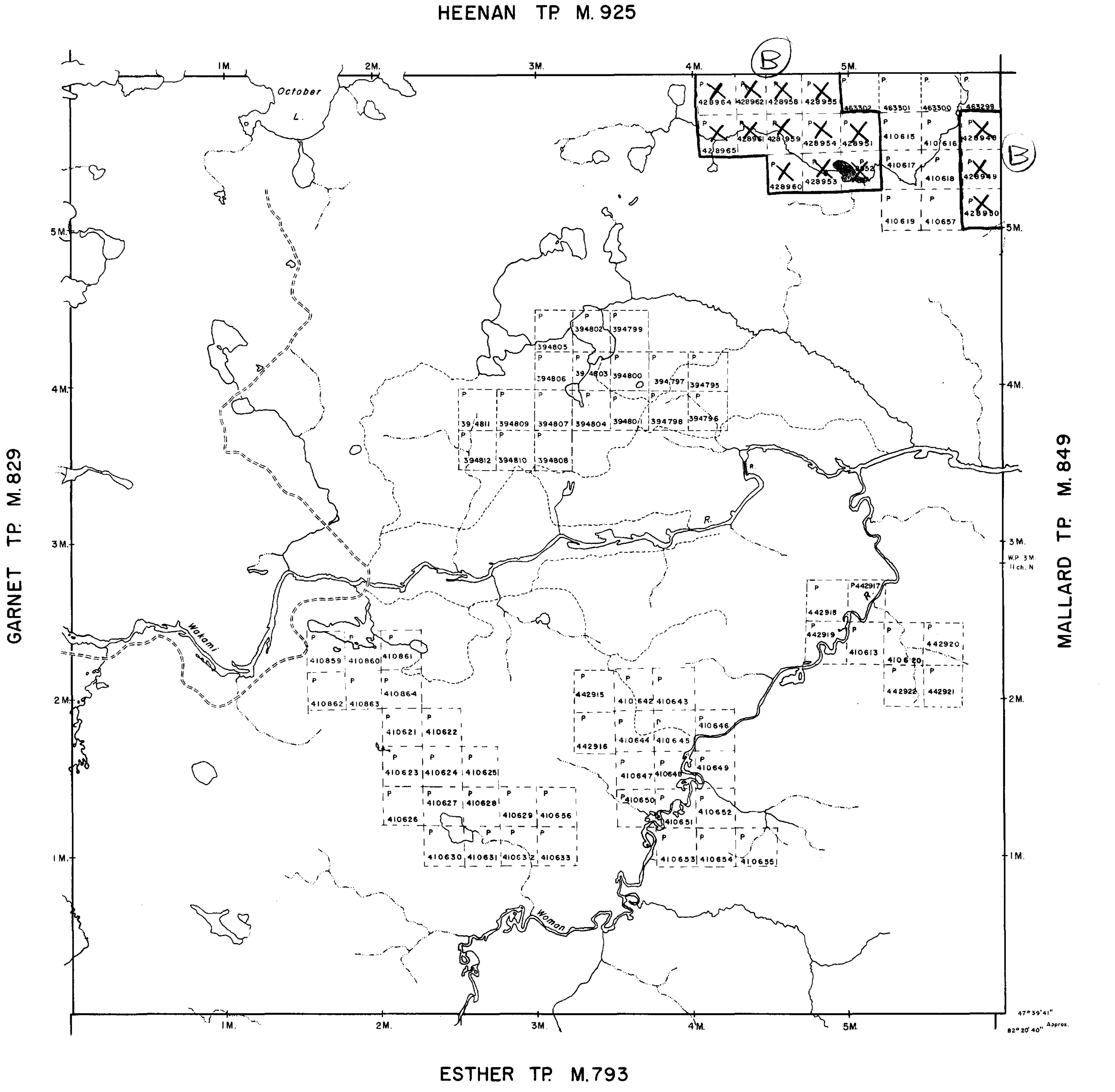
Electrode spacing

Type of electrode

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

DATE OF ISSUE
APR 21 1976
SURVEYS AND MAPPING BRANCH



LEGEND

HIGHWAY AND ROUTE No.
OTHER ROADS
TRAILS
SURVEYED LINES:
- TOWNSHIPS, BASE LINES, ETC.
- LOTS, MINING CLAIMS, PARCELS, ETC.

UNSURVEYED LINES:
- LOT LINES
- PARCEL BOUNDARY
- MINING CLAIMS ETC.

RAILWAY AND RIGHT OF WAY
UTILITY LINES
NON-PERENNIAL STREAM
FLOODING OR FLOODING RIGHTS
SUBDIVISION
ORIGINAL SHORELINE
MARSH OR MUSKEG
MINES ⚒

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" SURFACE RIGHTS ONLY	◓
" MINING RIGHTS ONLY	◒
LEASE, SURFACE & MINING RIGHTS	■
" SURFACE RIGHTS ONLY	⬒
" MINING RIGHTS ONLY	⬓
LICENCE OF OCCUPATION	▼
CROWN LAND SALE	C.S.
ORDER-IN-COUNCIL	OC
RESERVATION	Ⓡ
CANCELLED	ⓧ
SAND & GRAVEL	Ⓢ

SCALE : 1 INCH = 40 CHAINS

FEET 0 500 1000 2000 4000 6000 8000
METRES 0 200 400 600 800 1 KM 2 KM

ACRES	HECTARES
40	16

TOWNSHIP 2.2085

BENTON

DISTRICT
SUDBURY

MINING DIVISION
PORCUPINE

Ministry of Natural Resources
Ontario
Surveys and Mapping Branch

Date April 27th, 1973
Whitney Block
Queen's Park, Toronto

Plan No.
M. 659

41016SW9149 2.2085 MARION

200

ONTARIO
MINISTRY OF NATURAL RESOURCES

2.2085

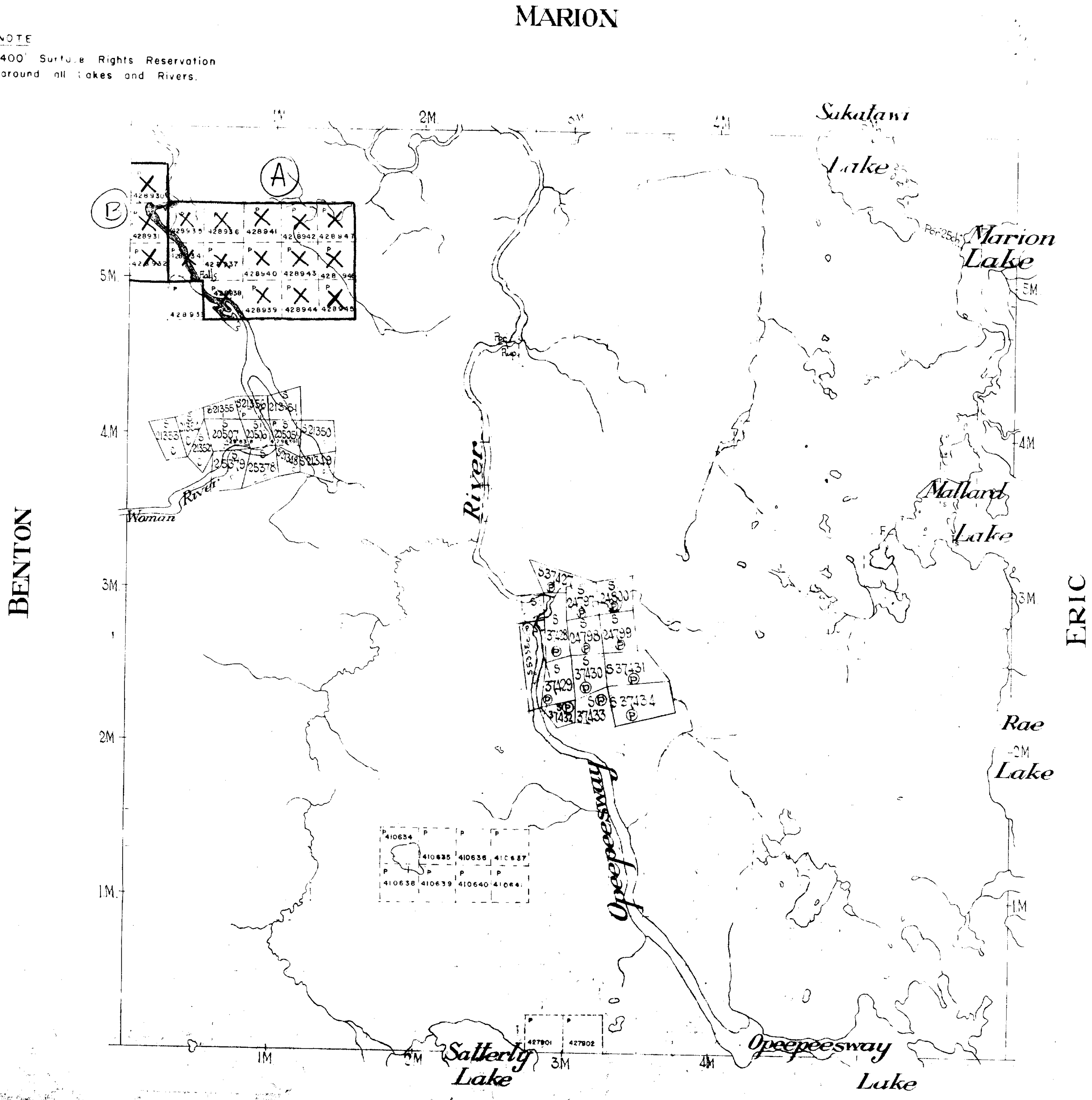
MALLARD

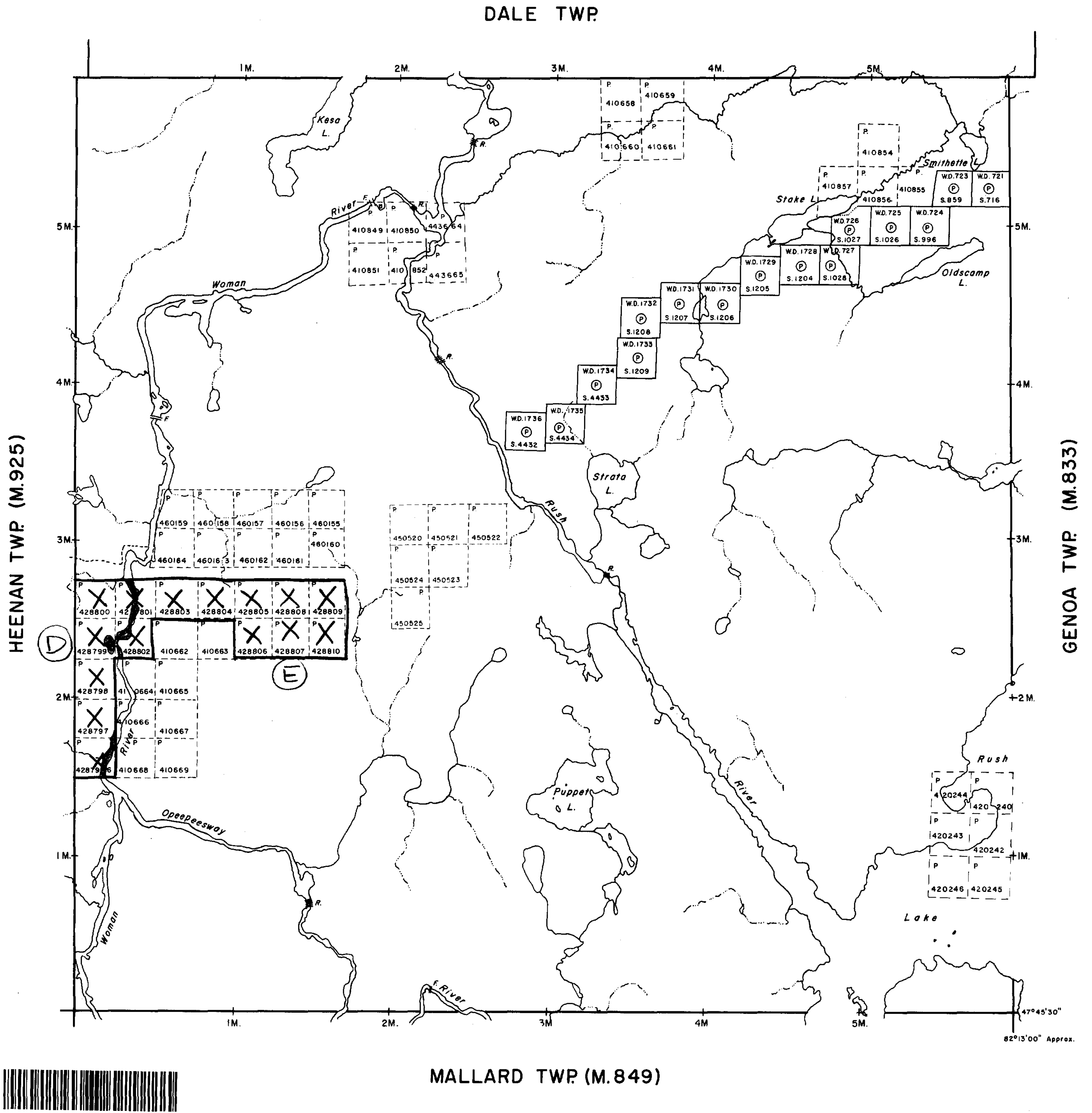
PORCUPINE MINING DIVISION
DISTRICT OF SUDBURY

DATE OF ISSUE
APR 21 1976
SURVEYS AND MAPPING BRANCH

Scale 10 Chains - 1 Inch

NOTE
400' Surface Rights Reservation around all Lakes and Rivers.





THE TOWNSHIP OF 2.2085

MARION

DISTRICT OF
SUDBURY

PORCUPINE
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	═
IMPROVED ROADS	═
KING'S HIGHWAYS	═
RAILWAYS	┼
POWER LINES	●
MARSH OR MUSKEG	▨
MINES	⚒
CANCELLED	C.
PATENTED S.R.O.	◓

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

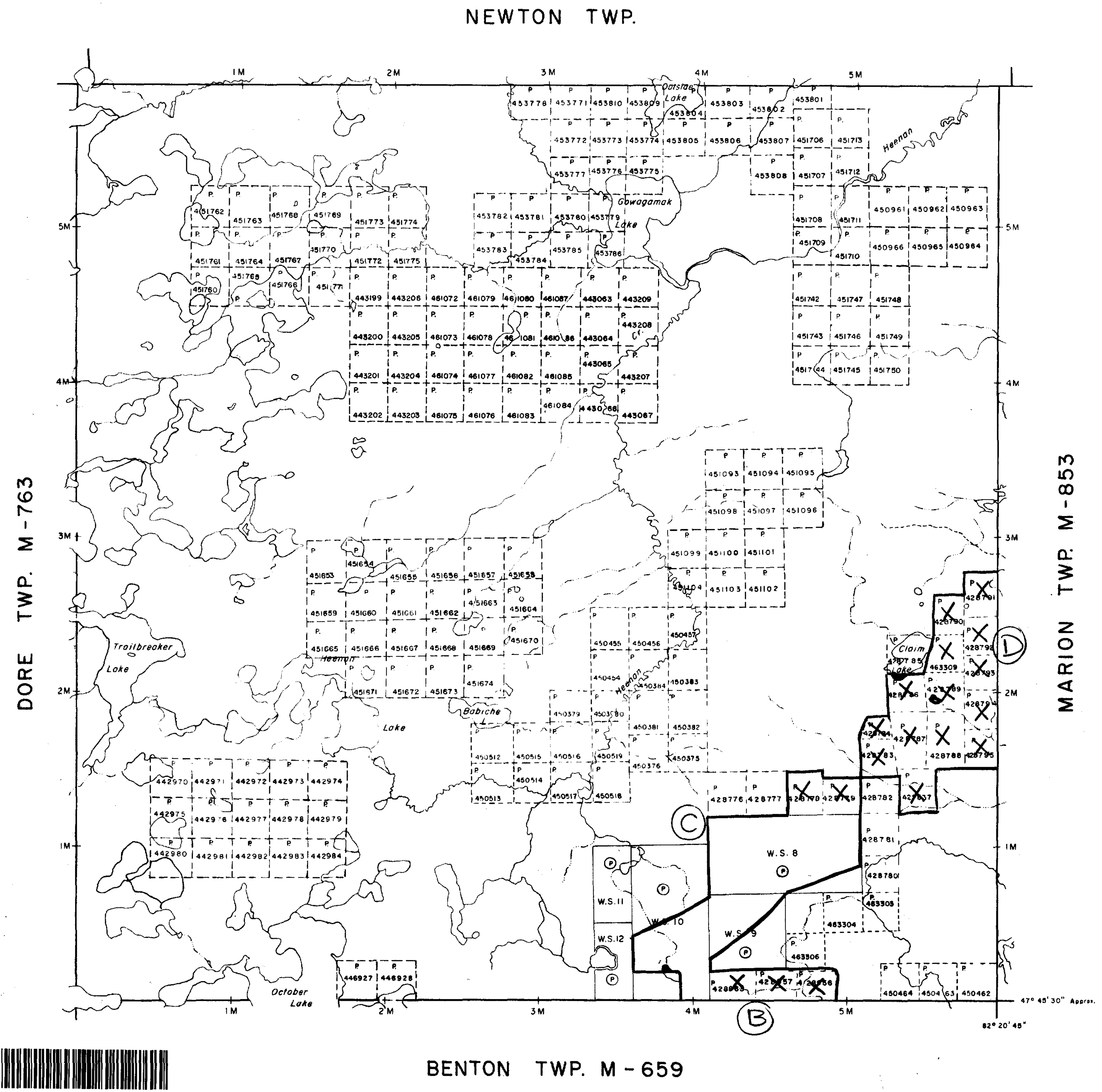
DATE OF ISSUE
APR 21 1976
SURVEYS AND MAPPING BRANCH

PLAN NO. M.853

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

41016SW9149 2.2085 MARION

220



THE TOWNSHIP OF

2·2085

HEENAN

DISTRICT OF
SUDBURY

PORCUPINE
MINING DIVISION

SCALE: 1-INCH 40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	═
IMPROVED ROADS	≡
KING'S HIGHWAYS	═
RAILWAYS	┼
POWER LINES	─•─
MARSH OR MUSKEG	▨
MINES	⚒
CANCELLED	C.

NOTES

400' Surface rights reservation around the shores of all lakes and rivers.

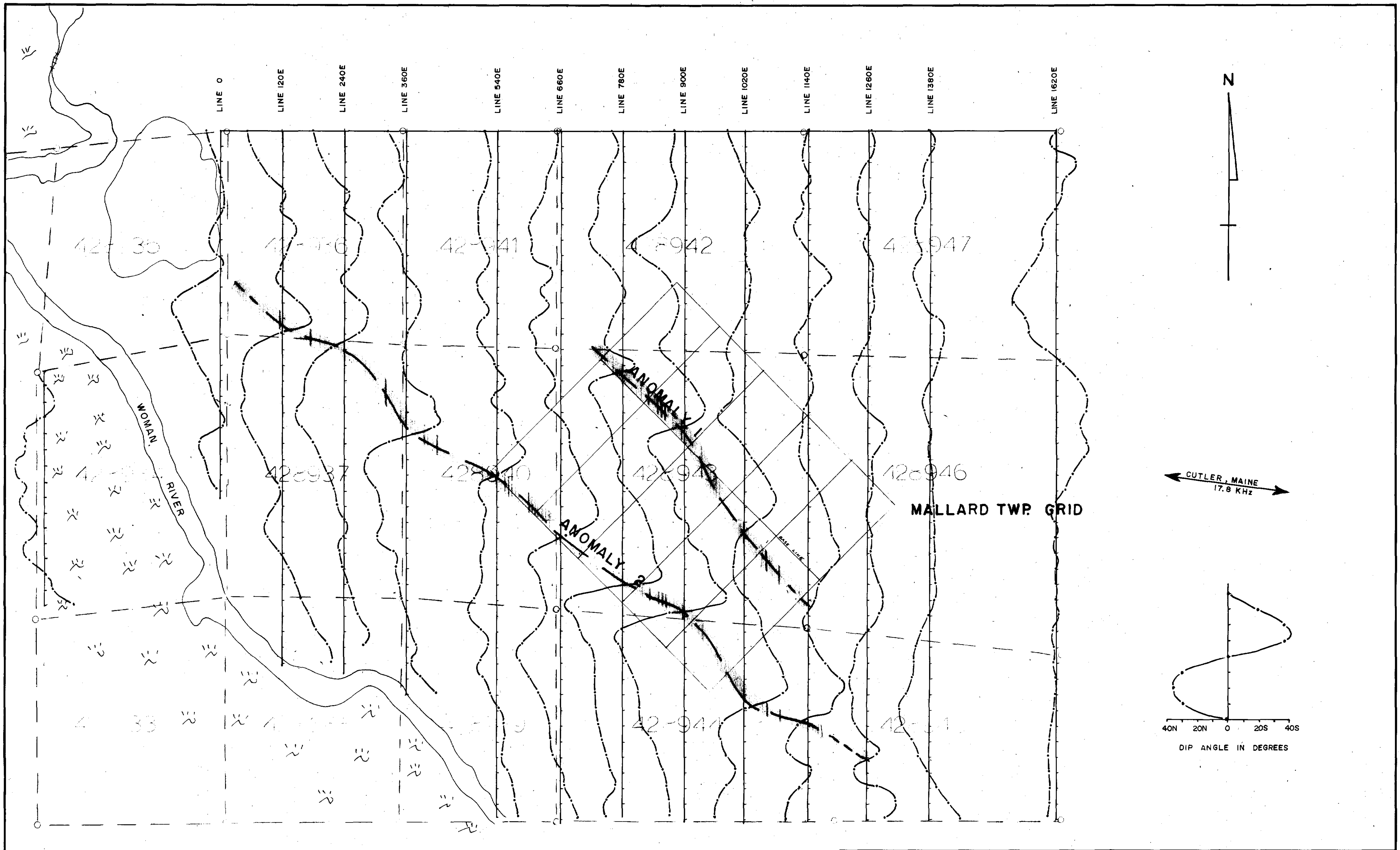
DATE OF ISSUE
NOV 18 1976
SURVEYS AND MAPPING BRANCH

PLAN NO. **M-925**

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

41016SW9149 2.2085 MARION

230



U.S. STEEL INTERNATIONAL LIMITED

WOMAN RIVER PROJECT

MAP AREA "A"
EM-VLF DIP ANGLE
RECONNAISSANCE SURVEY

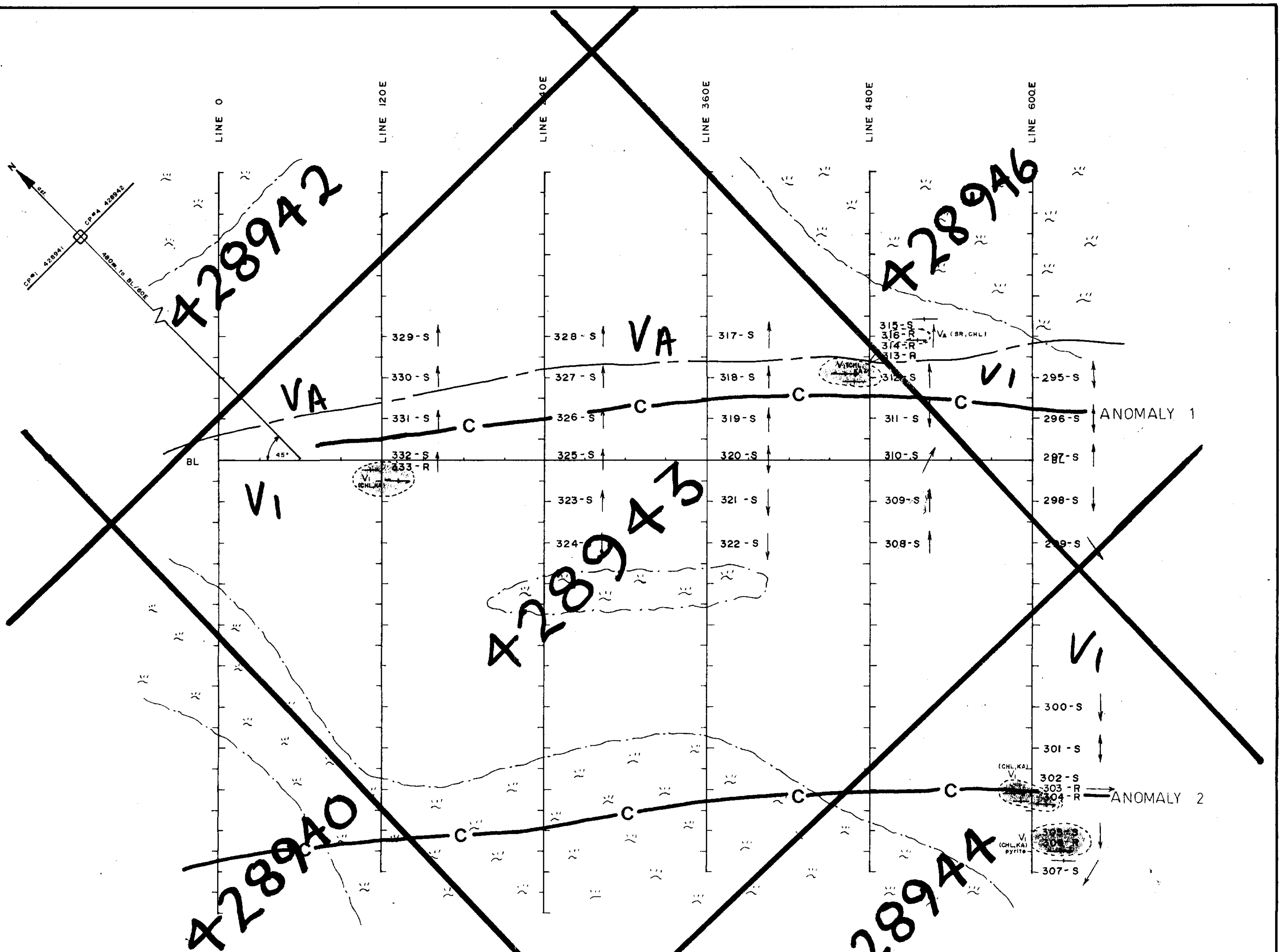
DRAWN BY R.B.	REV
TRACED BY R.B.	REV
APPROVED D.W.	REV
N.T.S. 41 0/9	REV.
DWG. NO.	100

AUGUST 1975

1 INCH TO 120 METERS
400 FEET

41016SW9149 2.2085 MARION

240



LEGEND

VA	ACID VOLCANIC ROCK	⟷	VERTICAL SCHISTOSITY
V1	INTERMEDIATE VOLCANIC ROCK	—+—	VERTICAL BEDDING
B.I.F.	BANDED IRON FORMATION	⟷	FLAT GROUND
—C—	CONDUCTOR AXIS	→	DIRECTION OF SLOPE
— — —	INFERRED GEOLOGICAL CONTACT	333-R 332-S	ROCK SAMPLE SOIL SAMPLE
⬭	ROCK OUTCROP		SWAMP, APPROXIMATE EXTENT

200 0 200 400 600 800 FEET

100 150 200 METERS

ALTERATION TERMS

CHL	CHLORITIZATION
KA	KAOLINIZATION
SR	SERICITIZATION

U.S. STEEL INTERNATIONAL LIMITED

WOMAN RIVER PROJECT

MALLARD TWP. GRID

DETAILED GEOLOGICAL GEOCHEMICAL SURVEY

PROVINCE OF ONTARIO

DRAWN BY R.B.
TRACED BY R.B.
APPROVED
N.T.S. 41 0/9
REV

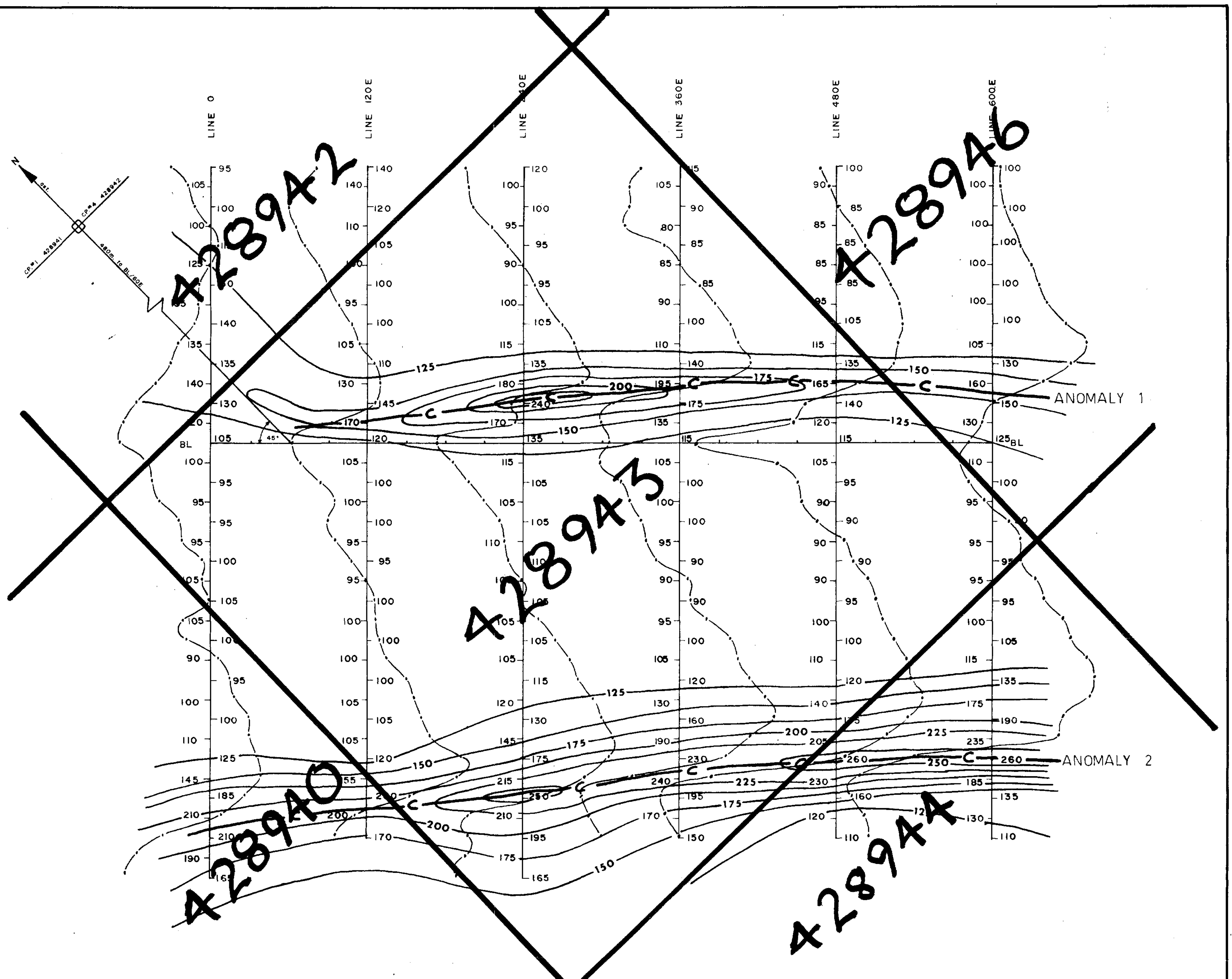
AUGUST 1975

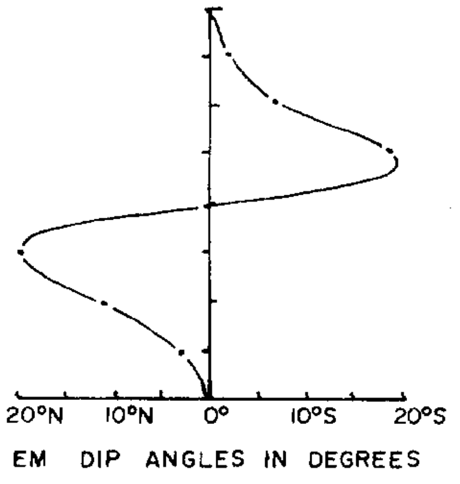
WGH

1 INCH TO 60 METERS 200 FEET

DWG. NO. 101

250





EM DIP ANGLES IN DEGREES

CUTLER, MAINE
17.8 KHz

CONTOUR INTERVAL: 25%
OF RELATIVE FIELD STRENGTH

200 0 200 400 600 800 FEET

0 50 150 200 METERS

U.S. STEEL INTERNATIONAL LIMITED

WOMAN RIVER PROJECT

MALLARD TWP. GRID

DETAILED EM-VLF SURVEY

DRAWN BY R.B.	REV
TRACED BY R.B.	REV
APPROVED	REV
N.T.S. 41 O/9	REV
DWG. NO.	102

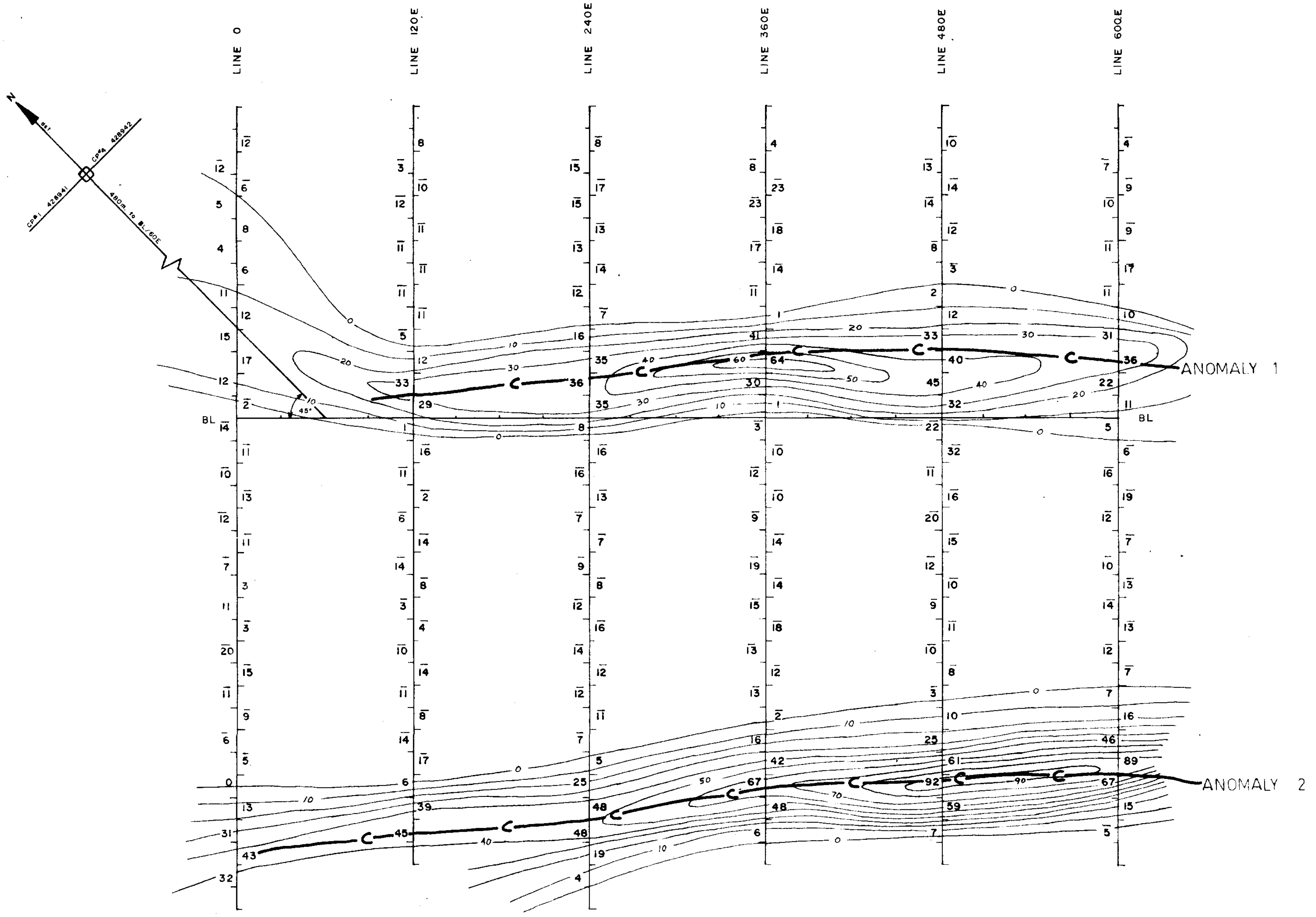
AUGUST 1975

WCH

1 INCH TO 60 METERS
200 FEET

41016SW9149 2.2085 MARION

260



CONTOUR INTERVAL : 10 DEGREES

200 0 200 400 600 800 FEET

100 150 200 METERS

U.S. STEEL INTERNATIONAL LIMITED

WOMAN RIVER PROJECT

MALLARD TWP. GRID
CONTOURED FRASER FILTERED
DIP ANGLES

DRAWN BY R.B.	REV
TRACED BY R.B.	REV
APPROVED	REV
N.T.S. 41 O/9	REV

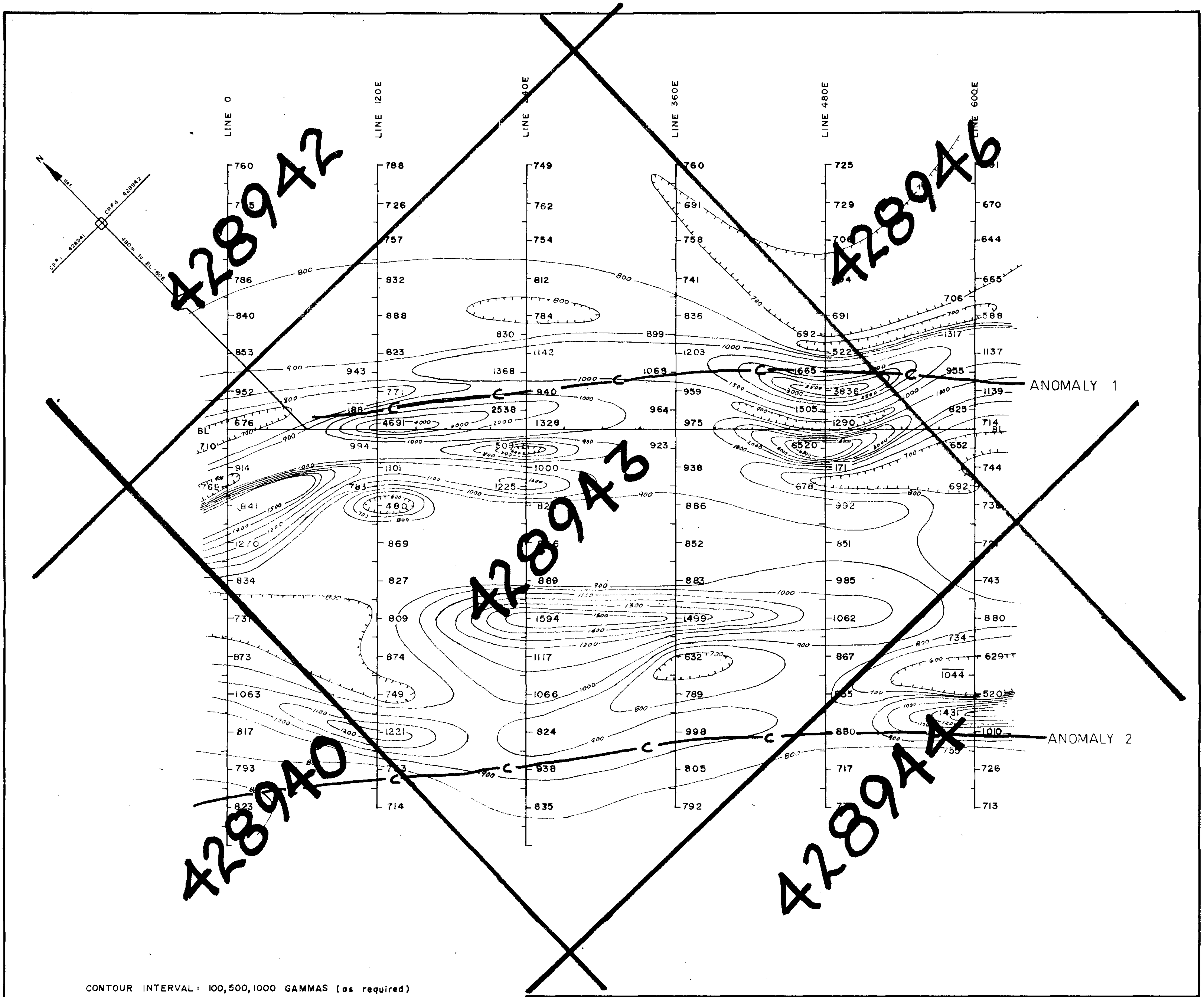
AUGUST 1975

1 INCH TO 60 METERS
200 FEET

DWG. NO. 103

41016SW9149 2.2085 MARION

270



CONTOUR INTERVAL: 100, 500, 1000 GAMMAS (as required)

BACKROUND: 59,000 GAMMAS

INSTRUMENT: GEOMETRICS G-816 TOTAL FIELD PROTON MAGNETOMETER

280

200 0 200 400 600 800 FEET

50 0 50 100 150 200 METERS

U.S. STEEL INTERNATIONAL LIMITED

WOMAN RIVER PROJECT

MALLARD TWP. GRID

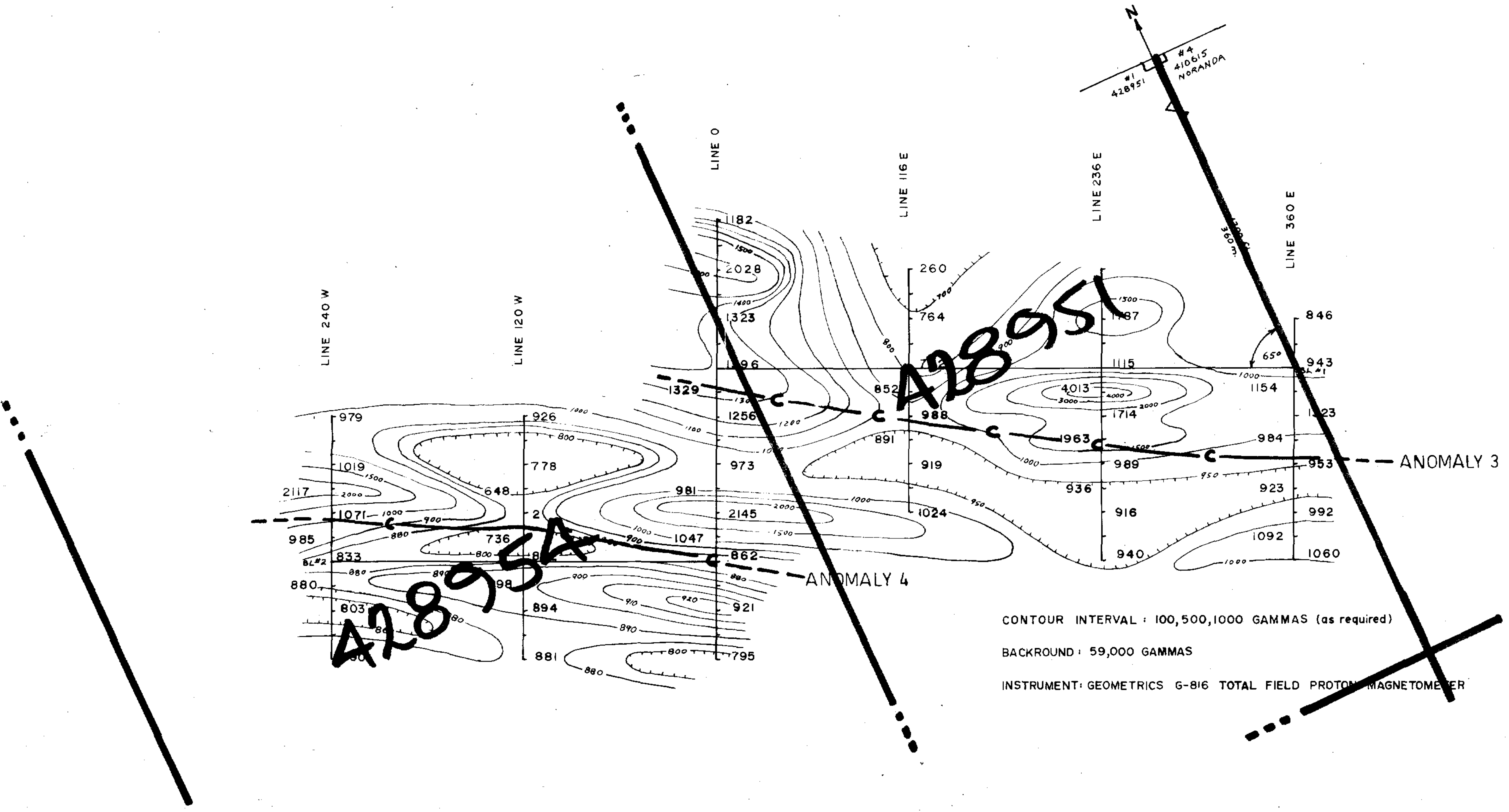
DETAILED MAGNETIC SURVEY

DRAWN BY R.B.	REV
TRACED BY R.B.	REV
APPROVED	REV
N.T.S. 41 O/9	REV
DWG. NO. 104	

AUGUST 1975

WGM

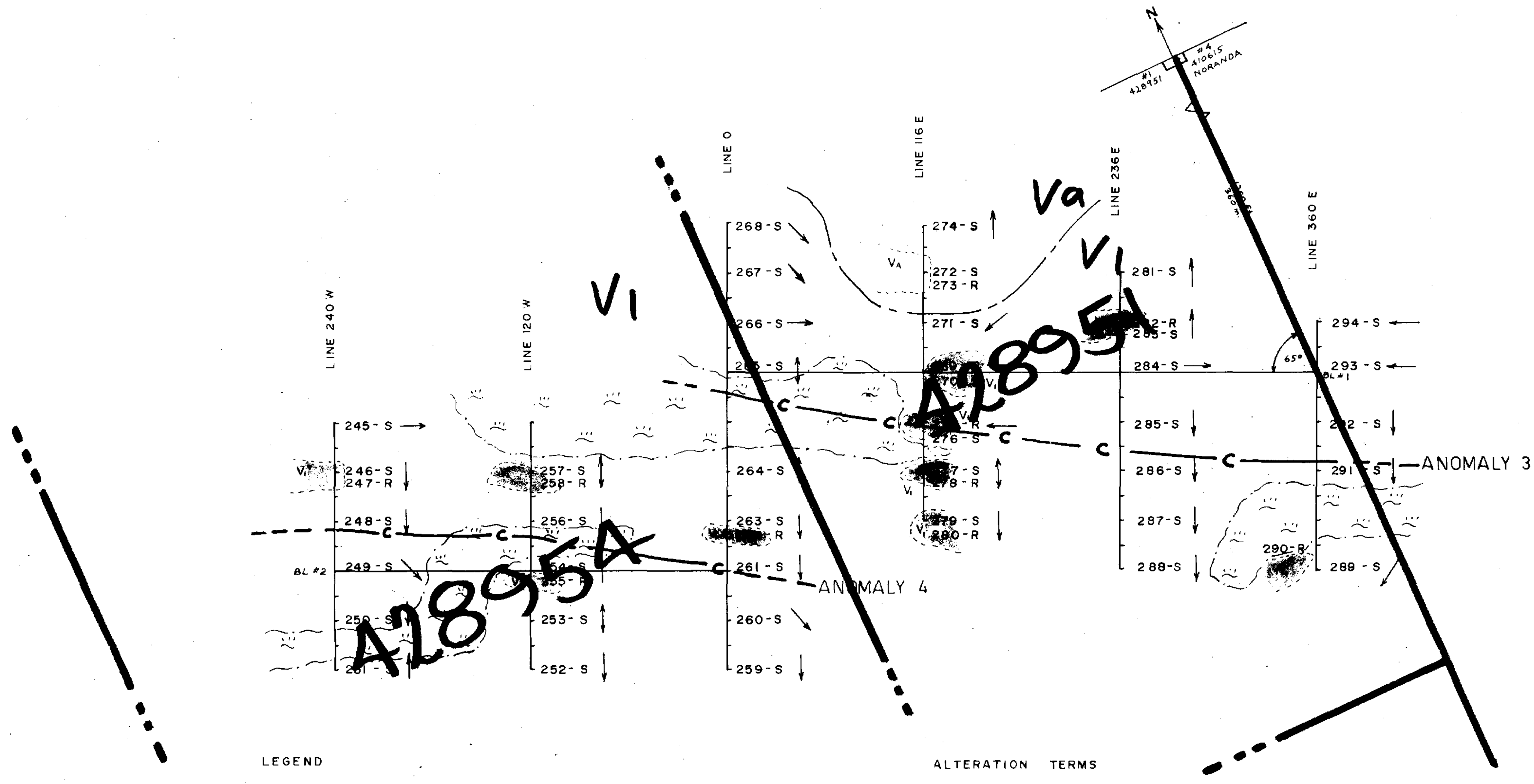
1 INCH TO 60 METERS
200 FEET



CONTOUR INTERVAL : 100,500,1000 GAMMAS (as required)

BACKROUND : 59,000 GAMMAS

INSTRUMENT: GEOMETRICS G-816 TOTAL FIELD PROTON MAGNETOMETER



LEGEND

VA	ACID VOLCANIC ROCK	←+→	VERTICAL SCHISTOSITY
VI	INTERMEDIATE VOLCANIC ROCK	—+—	VERTICAL BEDDING
B.I.F.	BANDED IRON FORMATION	←→	FLAT GROUND
—C—	CONDUCTOR AXIS	→	DIRECTION OF SLOPE
— - —	INFERRED GEOLOGICAL CONTACT	269-R 270-S	ROCK SAMPLE SOIL SAMPLE
◌	ROCK OUTCROP	▨	SWAMP, APPROXIMATE EXTENT

ALTERATION TERMS

CHL	CHLORITIZATION
KA	KAOLINIZATION
SR	SERICITIZATION

200 0 200 400 600 800 FEET

50 100 150 200 METERS

290

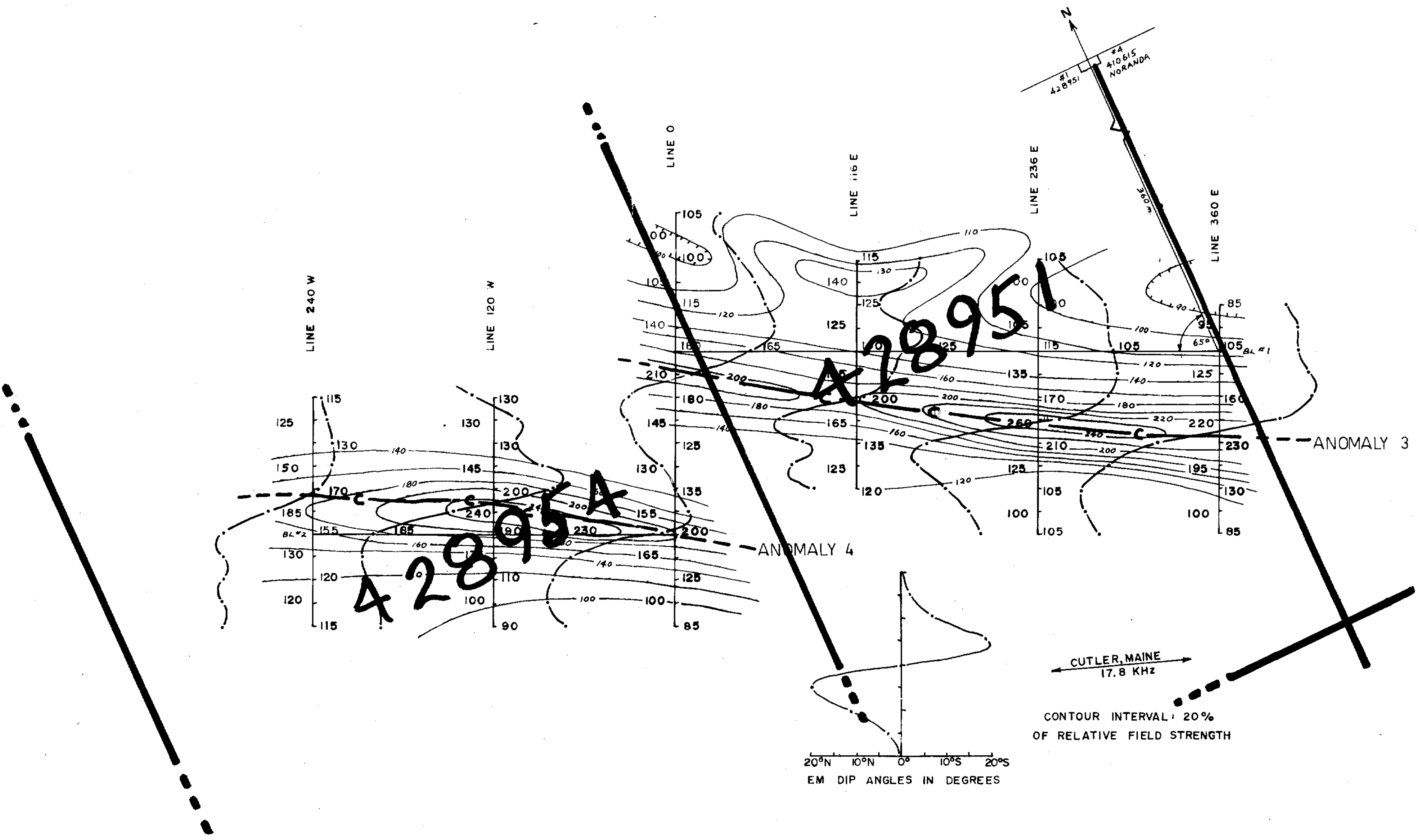
U.S. STEEL INTERNATIONAL LIMITED

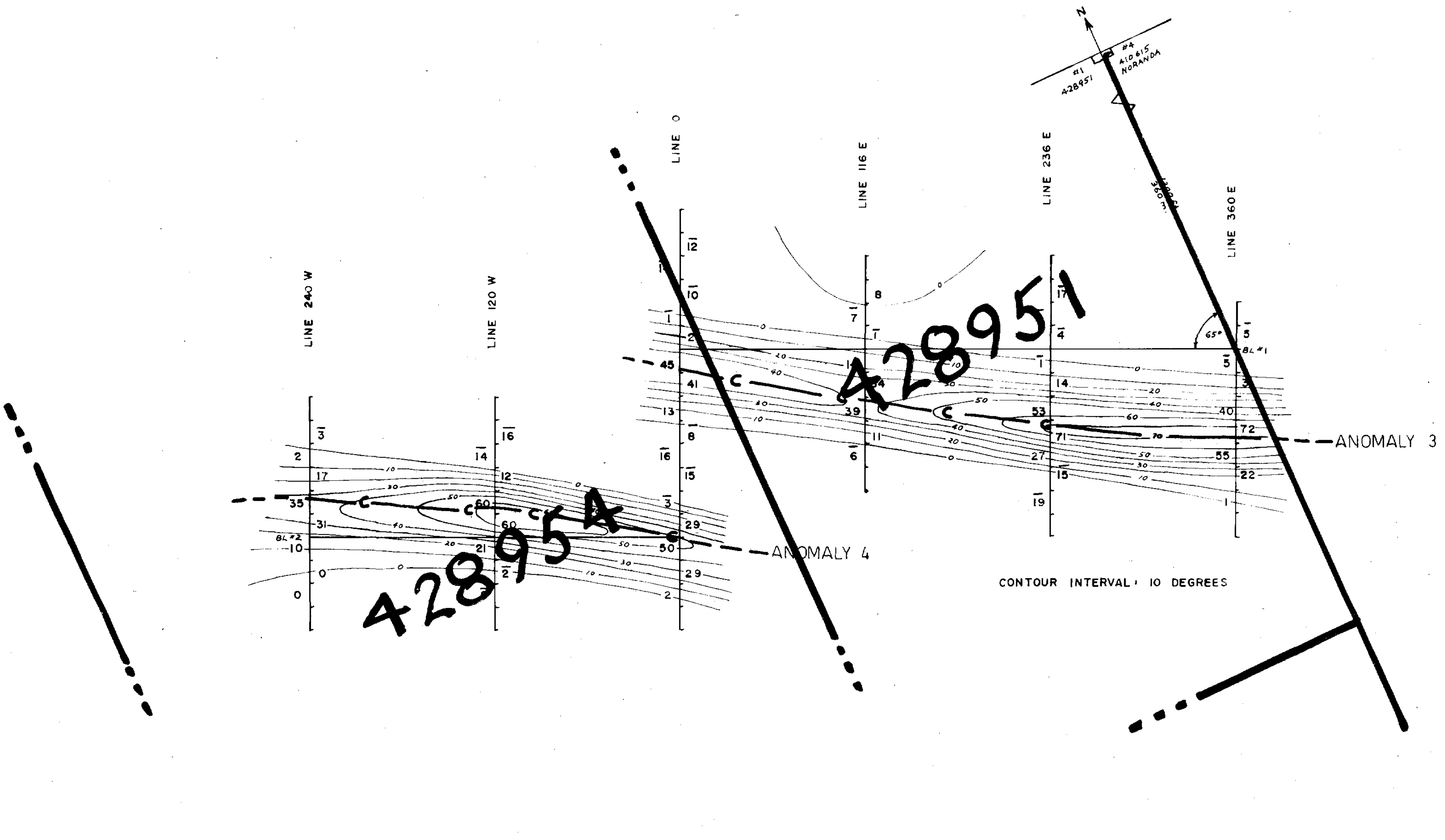
WOMAN RIVER PROJECT

BENTON TWP. GRID
DETAILED MAGNETIC SURVEY
AND
GEOLOGICAL-GEOCHEMICAL SURVEY

L S Wehl

DRAWN BY	R.B.
REV	
TRACED BY	R.B.
REV	
APPROVED	D.W.
REV	
N.T.S.	41 0/9
REV.	
AUGUST 1975	
WGH	
1 INCH TO	60 METERS 200 FEET
DWG. NO.	106





200 0 200 400 600 800 FEET

50 0 50 100 150 200METERS

300

U.S. STEEL INTERNATIONAL LIMITED

WOMAN RIVER PROJECT

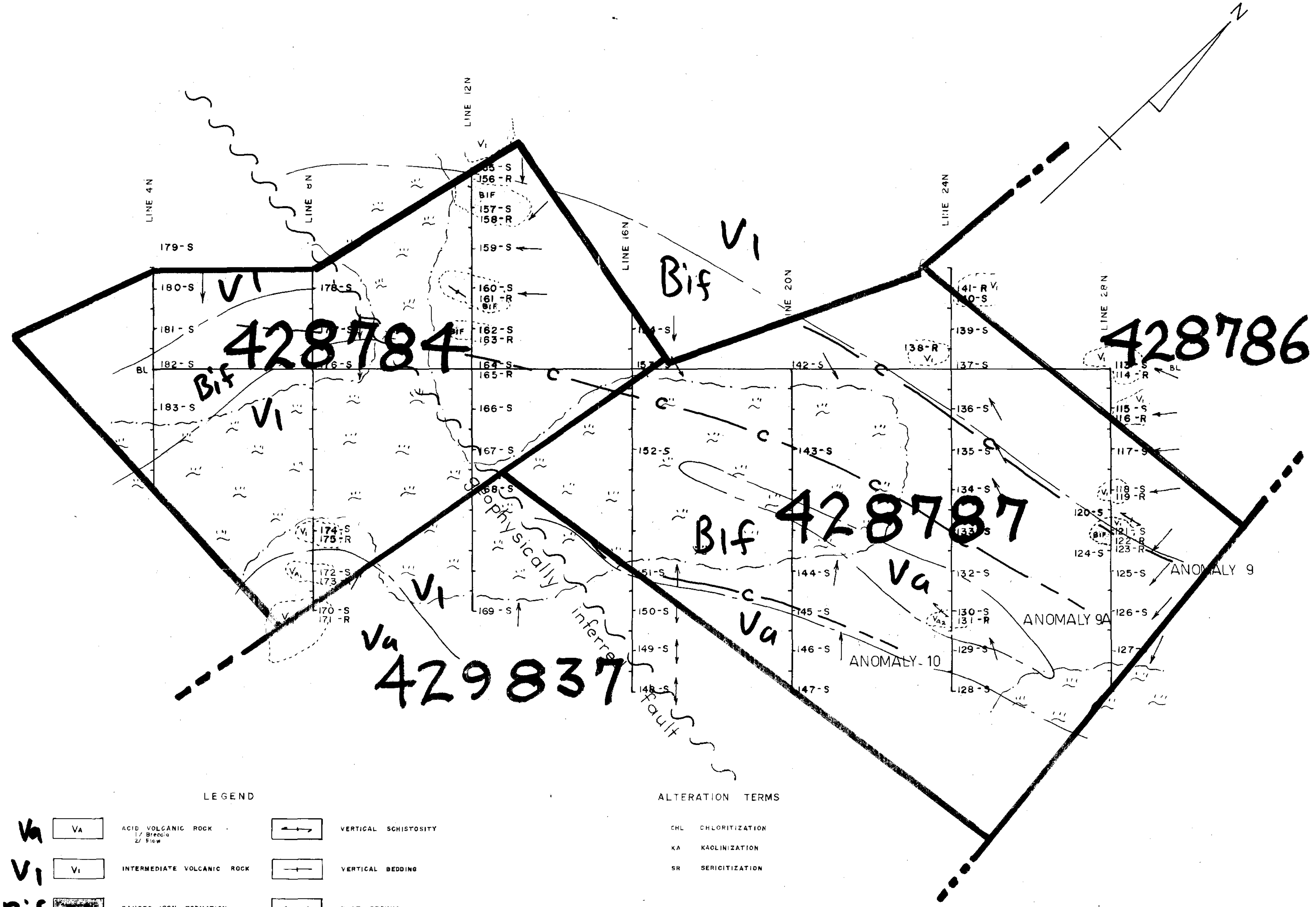
BENTON TWP. GRID
DETAILED EM-VLF SURVEY
AND
CONTOURED FRASER FILTERED
DIP ANGLES

DRAWN BY R.B.	REV.
TRACED BY R.B.	REV.
APPROVED D.W.	REV.
N.T.S. 41 0/9	REV.

AUGUST 1975

1 INCH TO 60 METERS 200 FEET

DWG. NO. 107



LEGEND

Va VA	ACID VOLCANIC ROCK - 1/ Breccia 2/ Flow	↔	VERTICAL SCHISTOSITY
V1 VI	INTERMEDIATE VOLCANIC ROCK	—+—	VERTICAL BEDDING
Bif ▨	BANDED IRON FORMATION	↔	FLAT GROUND
—C—	CONDUCTOR AXIS	→	DIRECTION OF SLOPE
— - —	INFERRED GEOLOGICAL CONTACT	156-R 155-S	ROCK SAMPLE SOIL SAMPLE
◌	ROCK OUTCROP	≈	SWAMP, APPROXIMATE EXTENT

ALTERATION TERMS

CHL	CHLORITIZATION
KA	KAOLINIZATION
SR	SERICITIZATION

200 0 200 400 600 800 FEET

0 50 100 150 200 METERS

U.S. STEEL INTERNATIONAL LIMITED

WOMAN RIVER PROJECT

CLAIM LAKE GRID

DETAILED GEOLOGICAL-GEOCHEMICAL SURVEY

DRAWN BY R.B. REV

TRACED BY R.B. REV

APPROVED D.W. REV

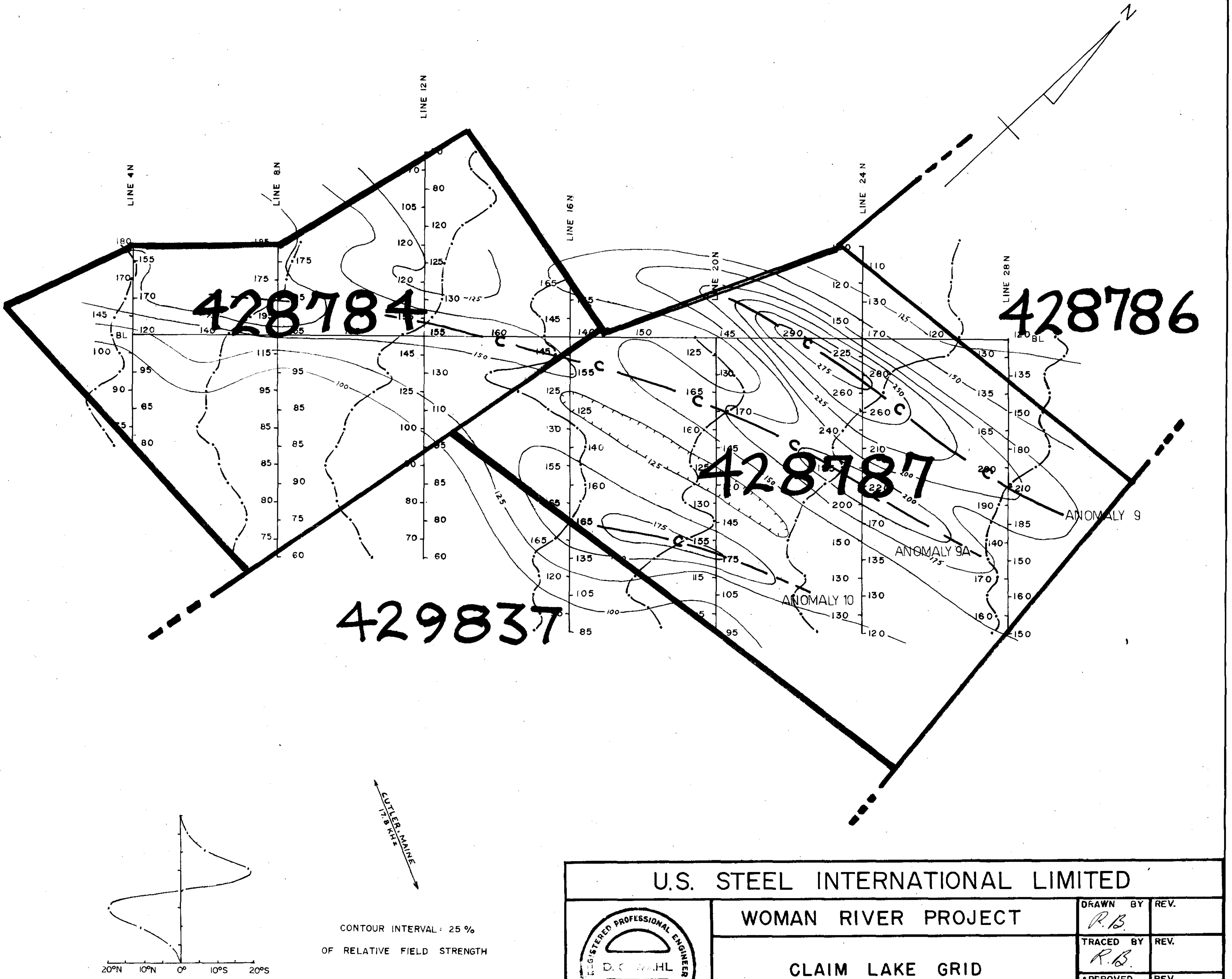
N.T.S. 41 O/16 REV.

AUGUST 1975

WGH

1 INCH TO 60 METERS 200 FEET

DWG. NO. 115



CONTOUR INTERVAL: 25 %
OF RELATIVE FIELD STRENGTH

200 0 200 400 600 800 FEET

50 100 150 200 METERS

U.S. STEEL INTERNATIONAL LIMITED

WOMAN RIVER PROJECT

CLAIM LAKE GRID

DETAILED EM-VLF SURVEY

D. C. WAHL

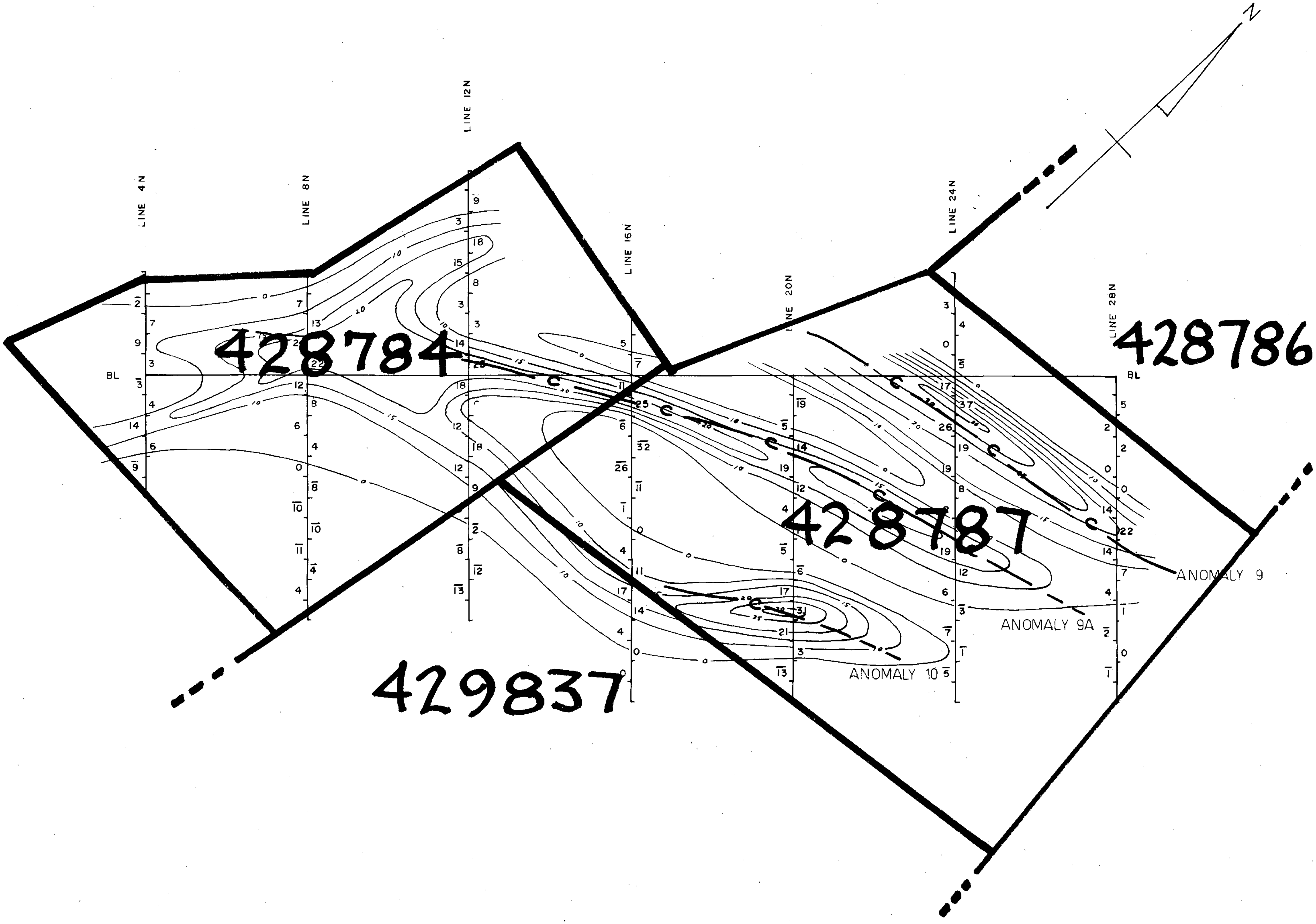
DRAWN BY R.B.
TRACED BY R.B.
APPROVED D.W.
N.T.S. 41 O/16
DWG. NO. 116

AUGUST 1975

1 INCH TO 60 METERS
200 FEET

41016SW9149 2.2085 MARION

320



CONTOUR INTERVAL : 5, 10 DEGREES (as required)

200 0 200 400 600 800 FEET

0 50 100 150 200 METERS

U.S. STEEL INTERNATIONAL LIMITED

WOMAN RIVER PROJECT

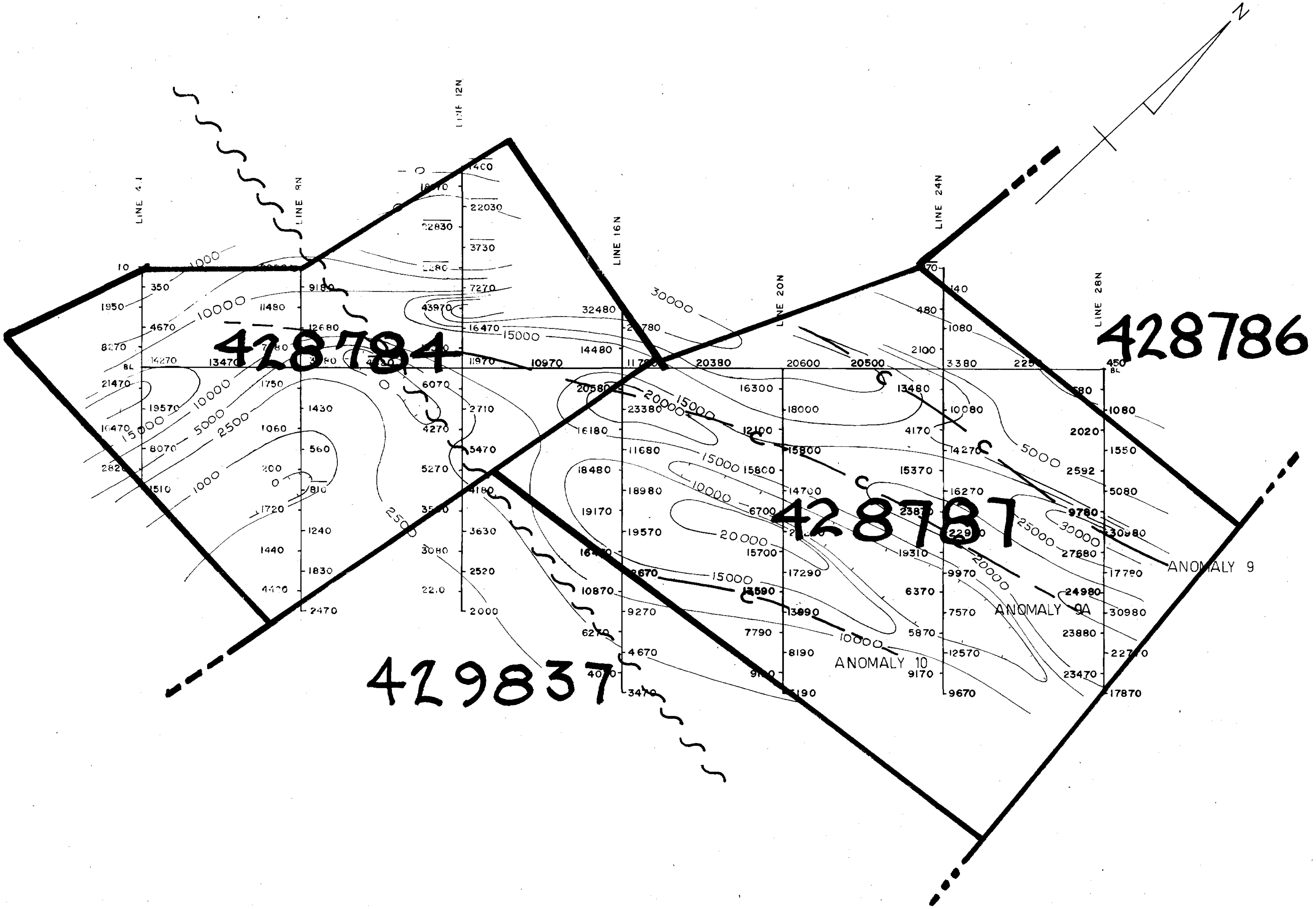
CLAIM LAKE GRID
CONTOURED FRASER FILTERED
DIP ANGLES

DRAWN BY R.B.	REV
TRACED BY R.B.	REV
APPROVED D.W.	REV
N.T.S. 41 O/16	REV.

AUGUST 1975

1 INCH TO 60 METERS
200 FEET

DWG. NO. 117



CONTOUR INTERVAL : as required to delineate structure

VERTICAL MAGNETIC FIELD DATA AFTER FALCONBRIDGE

340

200 0 200 400 600 800 FEET

50 0 50 100 150 200 METERS

U.S. STEEL INTERNATIONAL LIMITED

WOMAN RIVER PROJECT

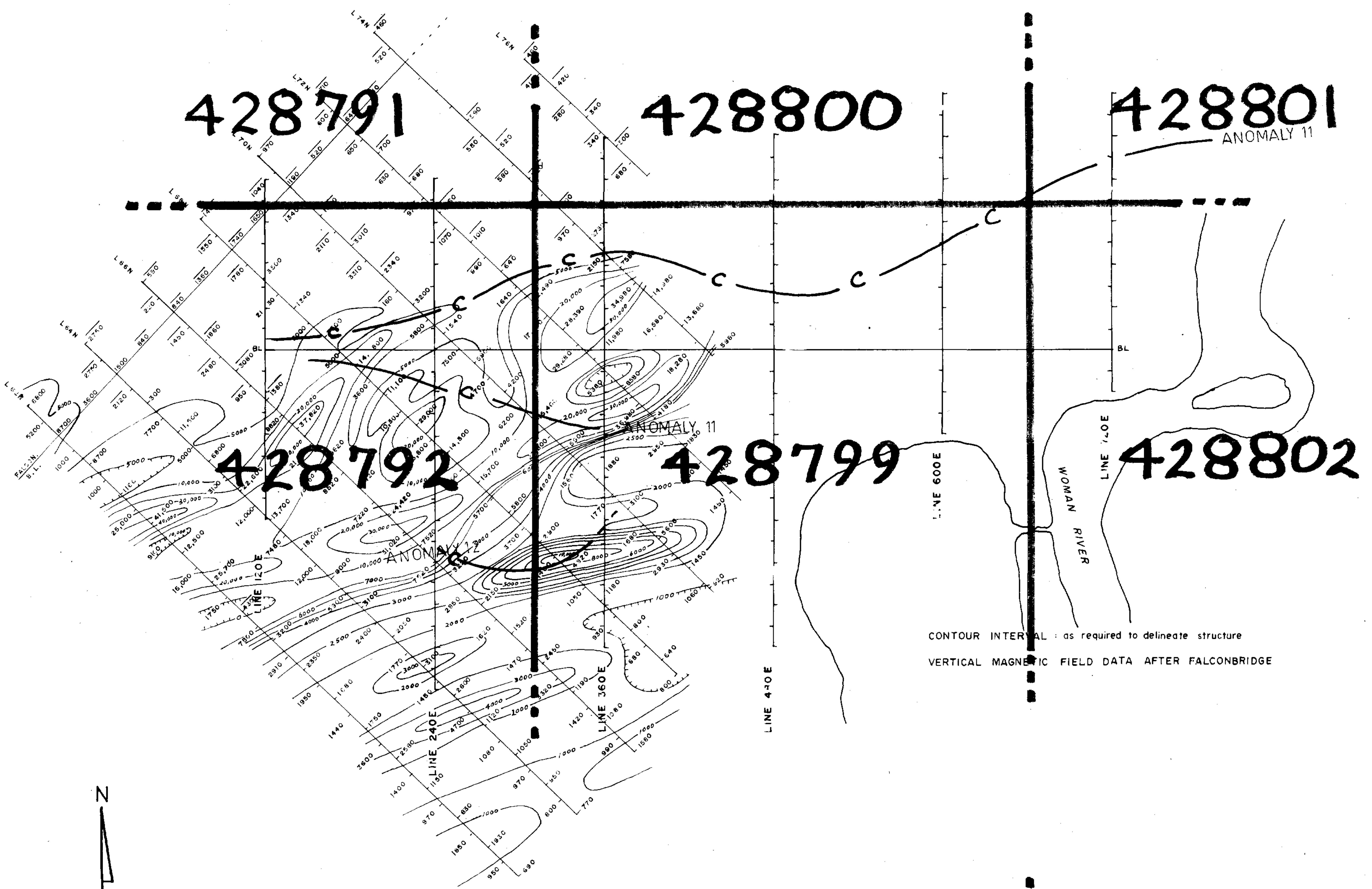
CLAIM LAKE GRID

DETAILED MAGNETIC SURVEY

DRAWN BY	R.B.
TRACED BY	R.B.
APPROVED	D.W.
N.T.S.	41 O/16
DWG. NO.	118

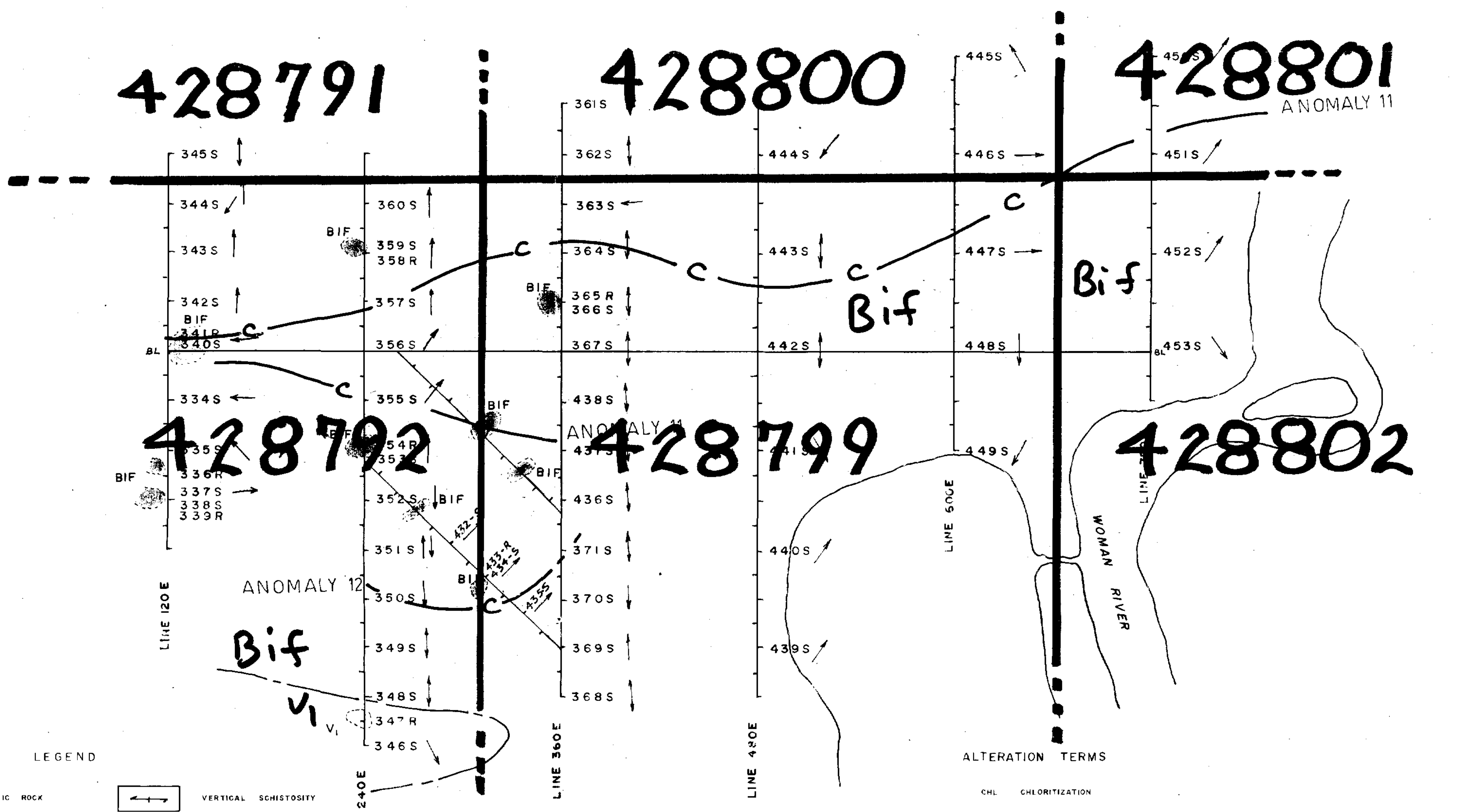
AUGUST 1975

1 INCH TO 60 METERS
200 FEET



CONTOUR INTERVAL : as required to delineate structure

VERTICAL MAGNETIC FIELD DATA AFTER FALCONBRIDGE



ALTERATION TERMS

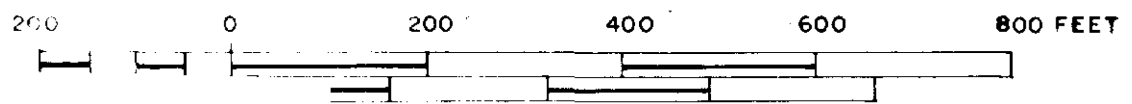
CHL CHLORITIZATION

KA KAOLINIZATION

SR SERICITIZATION

LEGEND

VA Va	ACID VOLCANIC ROCK	↕	VERTICAL SCHISTOSITY
VI V1	INTERMEDIATE VOLCANIC ROCK	+	VERTICAL BEDDING
▨ Bif	BANDED IRON FORMATION	↔	FLAT GROUND
—C—	CONDUCTOR AXIS	→	DIRECTION OF SLOPE
— — —	INFERRED GEOLOGICAL CONTACT	339-R 338-S	ROCK SAMPLE SOIL SAMPLE
	ROCK OUTCROP		SWAMP, APPROXIMATE EXTENT



U.S. STEEL INTERNATIONAL LIMITED

WOMAN RIVER PROJECT

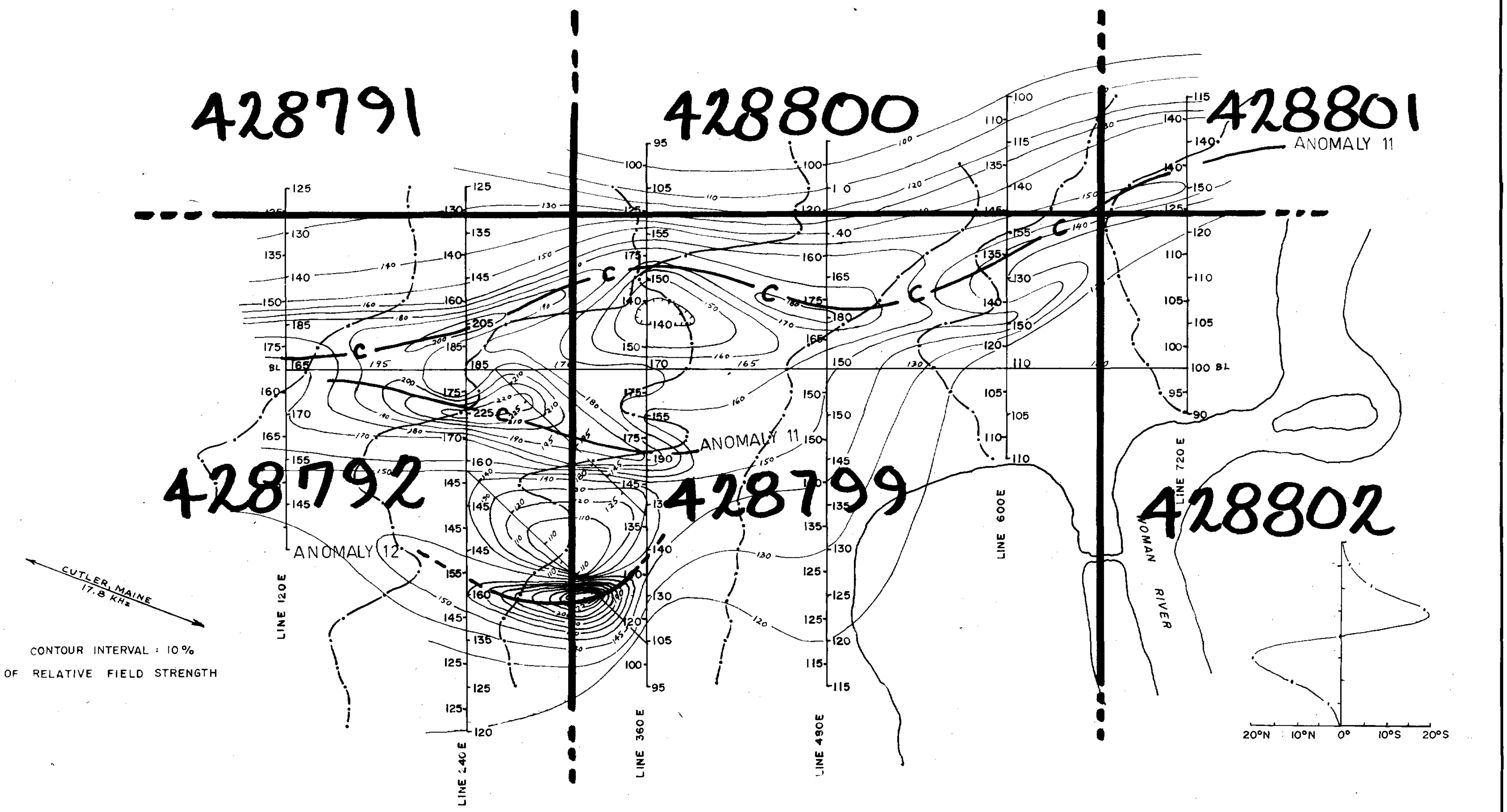
BOUNDARY GRID
DETAILED MAGNETIC SURVEY
AND
GEOLOGICAL-GEOCHEMICAL SURVEY

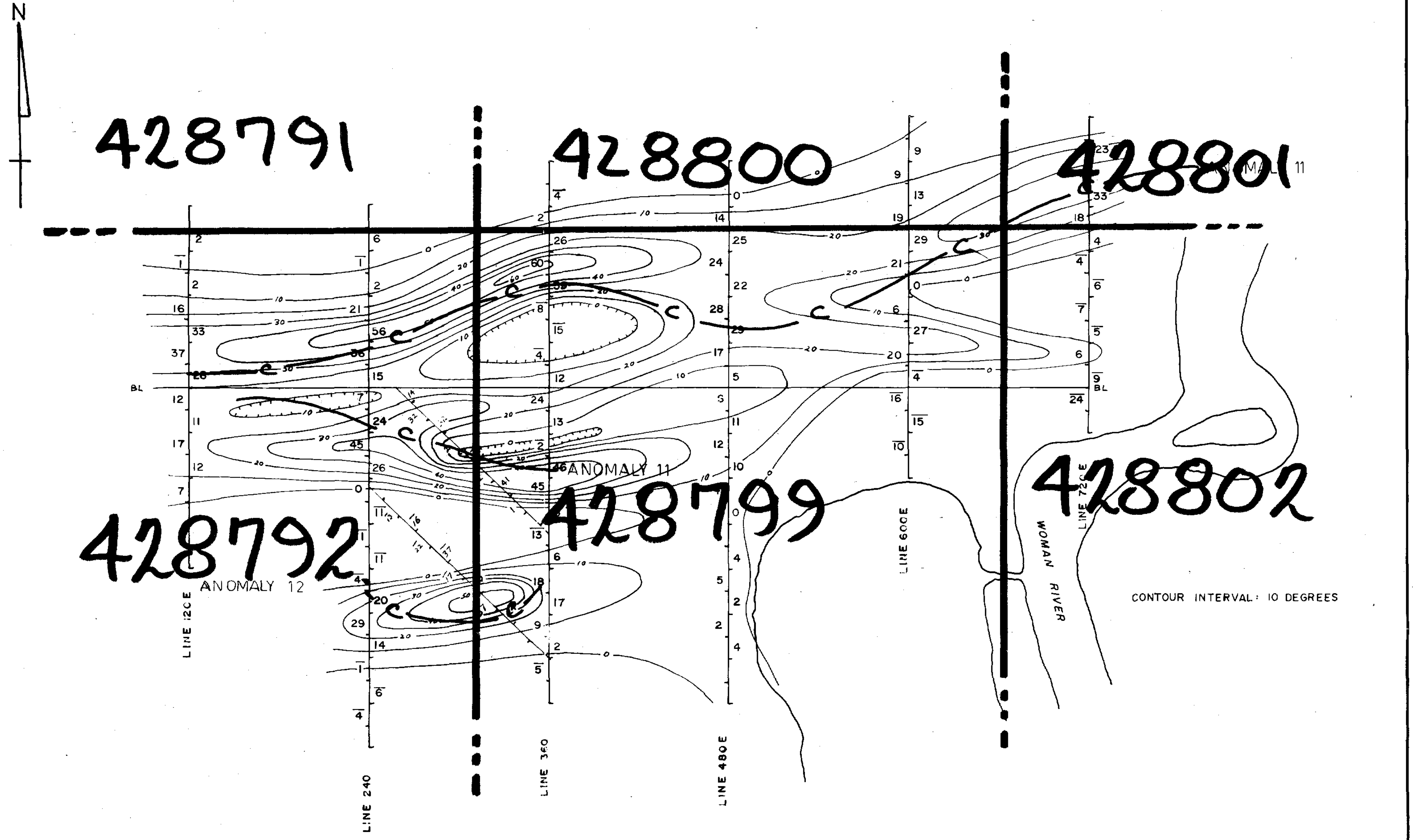
DRAWN BY	R.B.	REV
TRACED BY	R.B.	REV
APPROVED	D.W.	REV
N.T.S.	41 0/16	REV

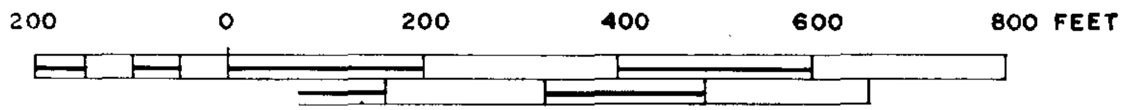
AUGUST 1975 | 1 INCH TO 60 METERS 200 FEET | DWG. NO. 119

41016SW9149 2.2085 MARION

350







U.S. STEEL INTERNATIONAL LIMITED

WOMAN RIVER PROJECT

BOUNDARY GRID
DETAILED EM-VLF SURVEY &
CONTOURED FRASER
FILTERED DIP ANGLES

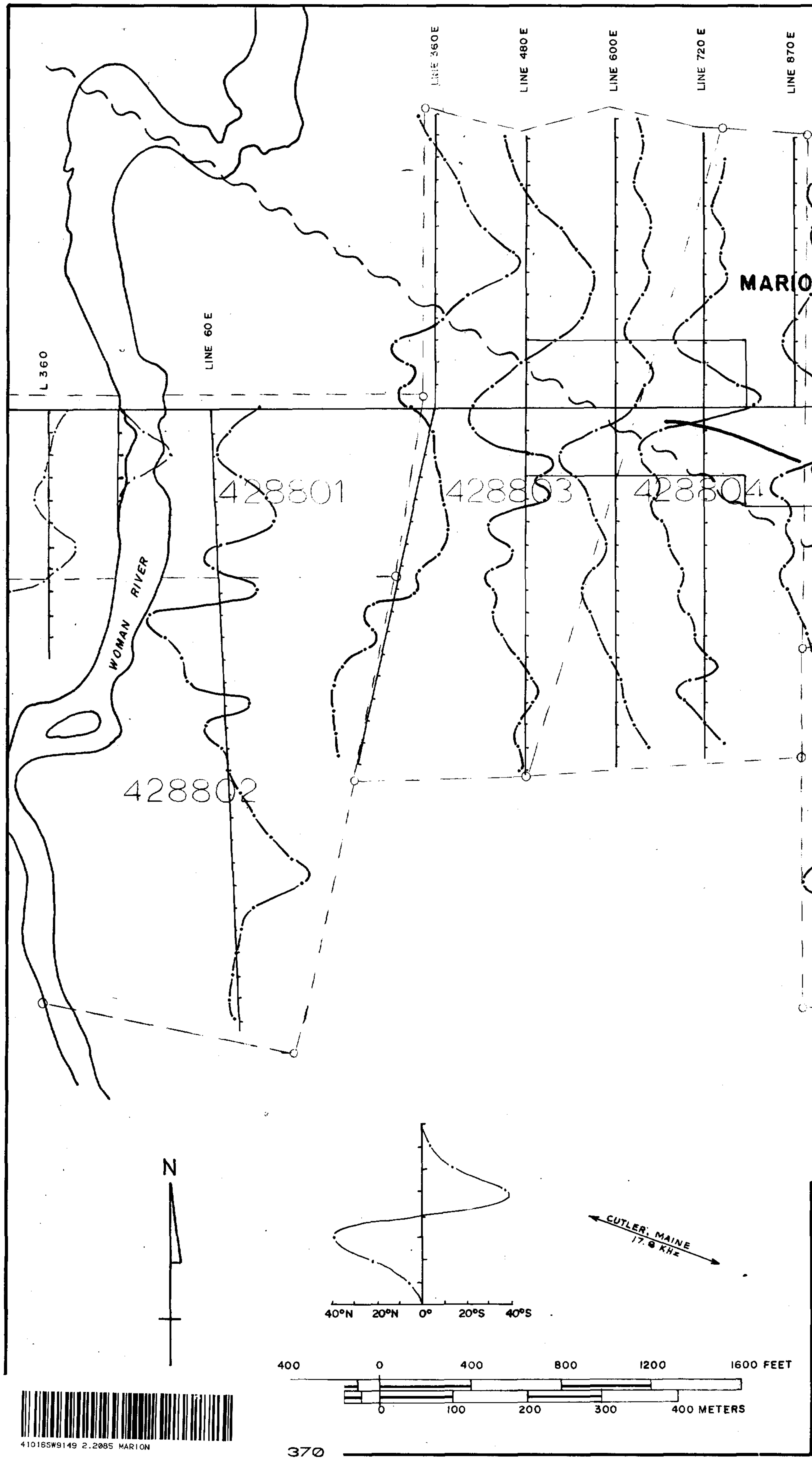
DRAWN BY R.B.	REV
TRACED BY R.B.	REV
APPROVED D.W.	REV
N.T.S. 41 O/16	REV

AUGUST 1975

1 INCH TO 60 METERS 200 FEET

DWG. NO. 120

360



370

U.S. STEEL INTERNATIONAL LIMITED

WOMAN RIVER PROJECT

MAP AREA "E"

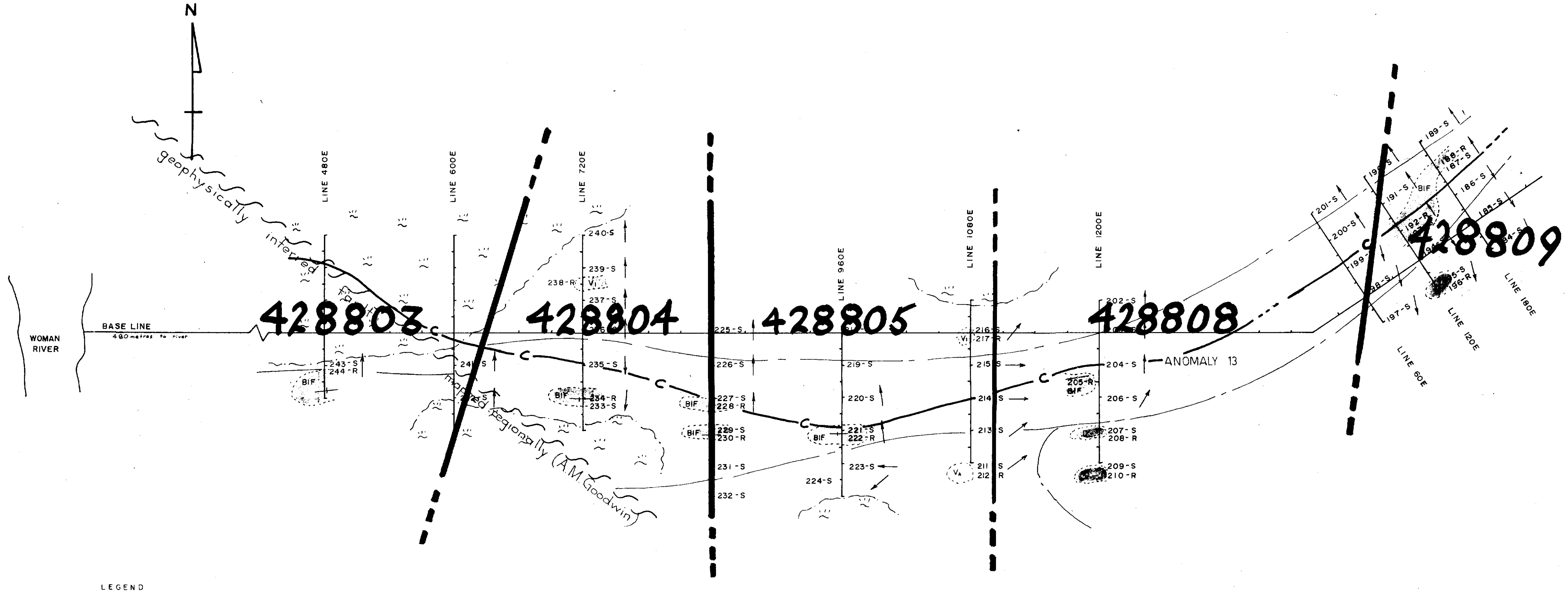
EM-VLF DIP ANGLE
RECONNAISSANCE SURVEY

DRAWN BY	R.B.	REV	
TRACED BY	R.B.	REV	
APPROVED	D.W.	REV	
N.T.S.	41 O/16	REV.	

AUGUST 1975

1 INCH TO 120 METERS 400 FEET

DWG. NO. 121



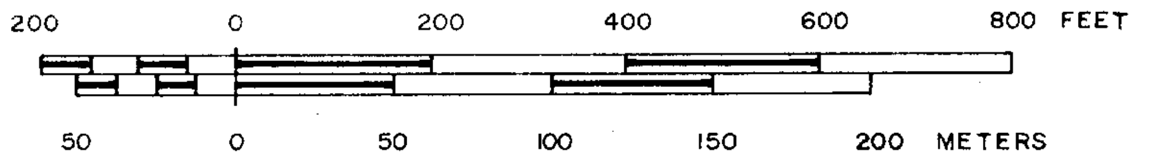
LEGEND

VA	ACID VOLCANIC ROCK	←+→	VERTICAL SCHISTOSITY
VI	INTERMEDIATE VOLCANIC ROCK	—+—	VERTICAL BEDDING
▨	BANDED IRON FORMATION	←→	FLAT GROUND
■	DIORITE	→	DIRECTION OF SLOPE
— — —	INFERRED GEOLOGICAL CONTACT	234-R 233-S	ROCK SAMPLE SOIL SAMPLE
◌	ROCK OUTCROP		SWAMP, APPROXIMATE EXTENT

NDUCTOR AXIS

ALTERATION TERMS

CHL	CHLORITIZATION
KA	KAOLINIZATION
SR	SERICITIZATION



U.S. STEEL INTERNATIONAL LIMITED

D. G. WAHL

WOMAN RIVER PROJECT

MARION TWP. GRID

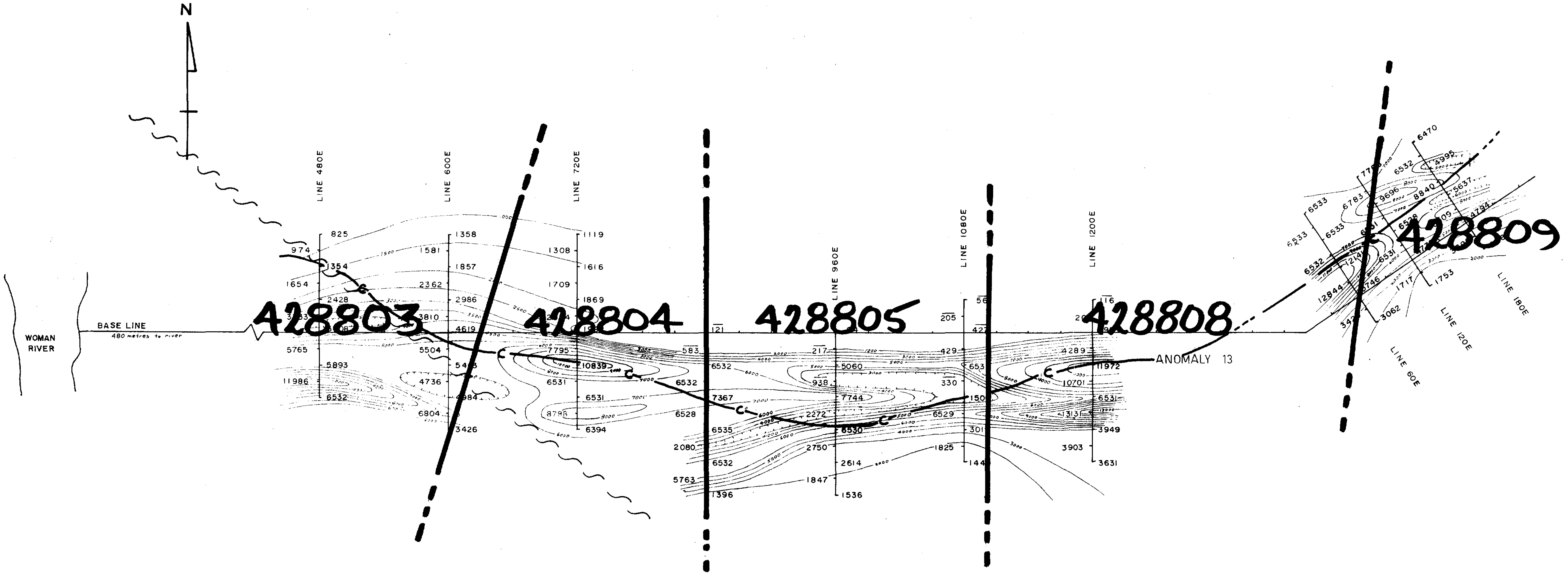
DETAILED GEOLOGICAL GEOCHEMICAL SURVEY

DRAWN BY R.B.	REV
TRACED BY R.B.	REV
APPROVED D.W.	REV
N.T.S. 41 0/16	REV
DWG. NO. 122	

AUGUST 1975

WGH

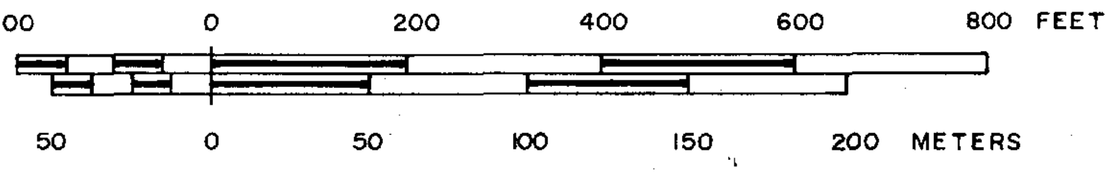
1 INCH TO 60 METERS 200 FEET



CONTOUR INTERVAL : 500, 1000 GAMMAS (as required)

BACKROUND : 59,000 GAMMAS

INSTRUMENT: GEOMETRICS G-816 TOTAL FIELD PROTON MAGNETOMETER



390

U.S. STEEL INTERNATIONAL LIMITED

D. G. W

WOMAN RIVER PROJECT

MARION TWP. GRID

DETAILED MAGNETIC SURVEY

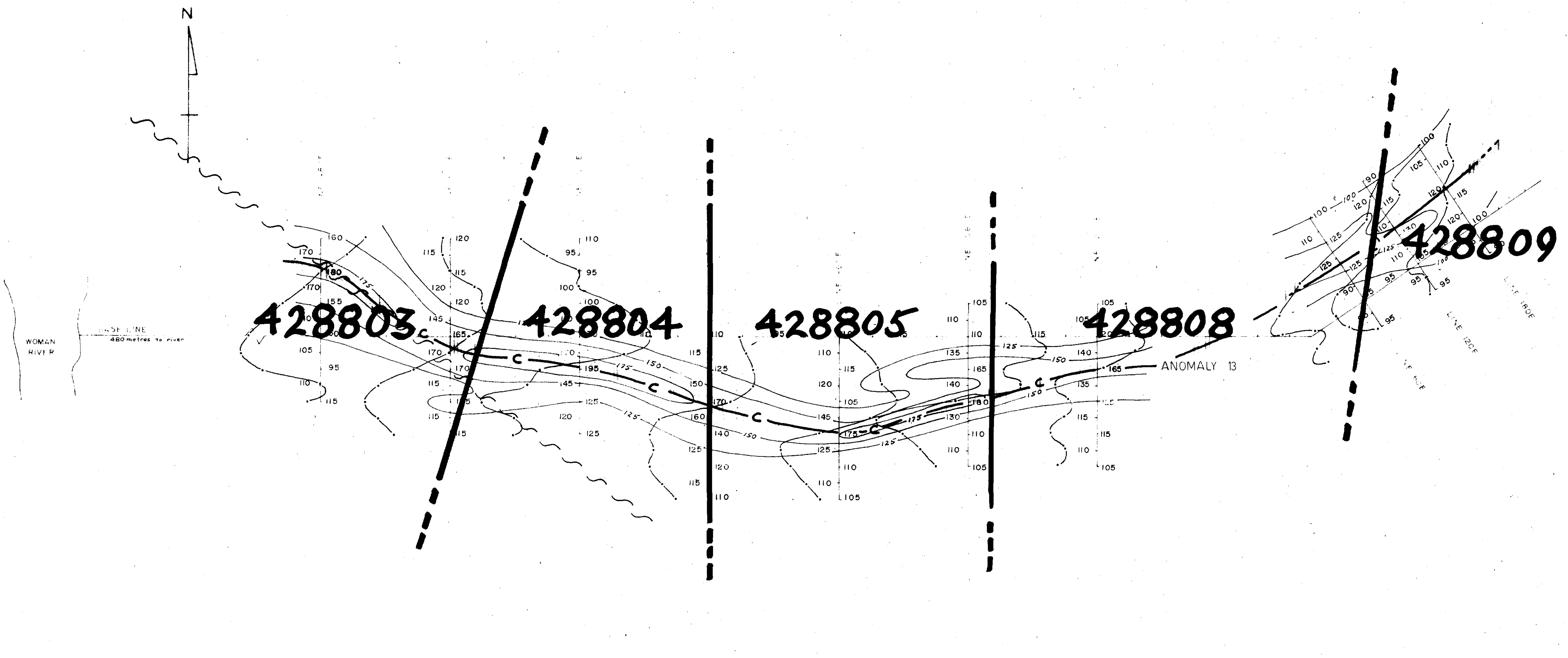
DRAWN BY R.B.
TRACED BY R.B.
APPROVED D. W.
REV
N.T.S. 41 0/16

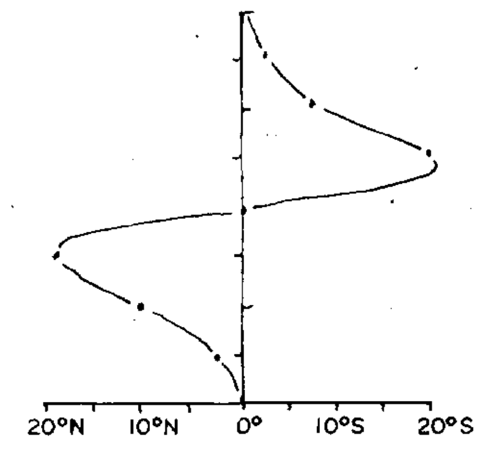
AUGUST 1975

WGH

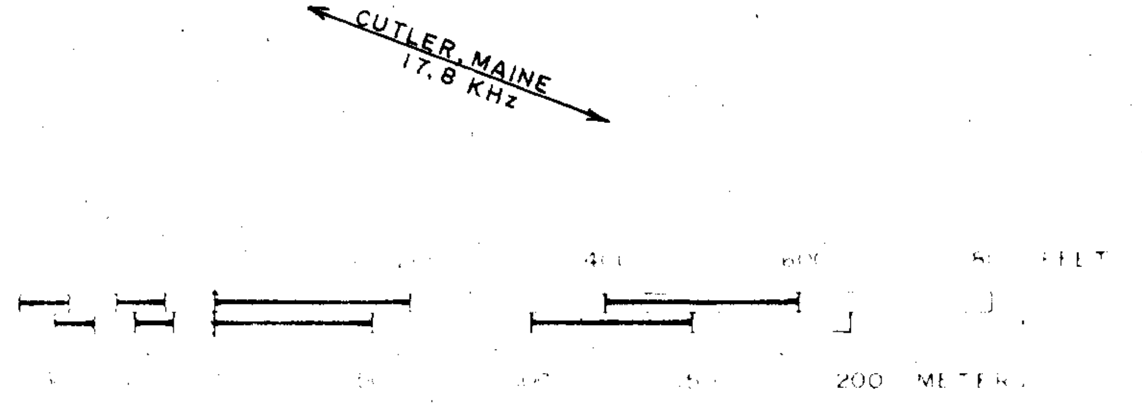
1 INCH TO 60 METERS 200 FEET

DWG. NO. 125





CONTOUR INTERVAL: 25%
OF RELATIVE FIELD STRENGTH



U.S. STEEL INTERNATIONAL LIMITED

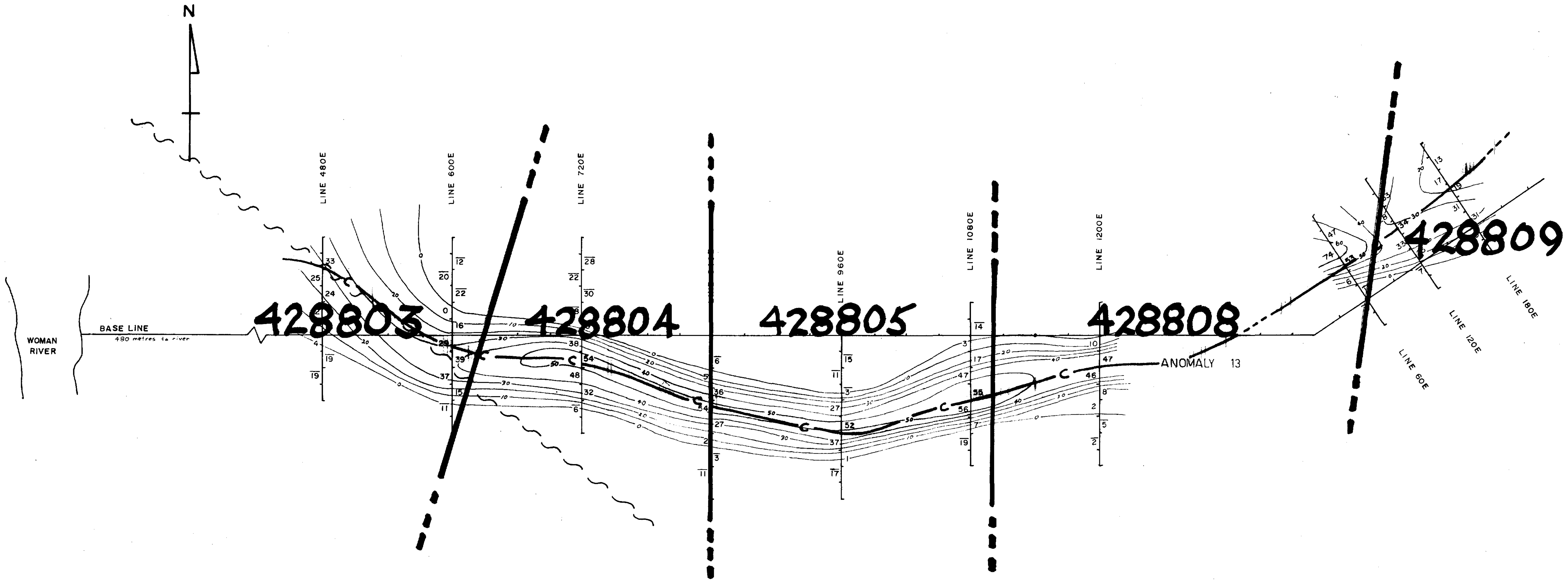
WOMAN RIVER PROJECT

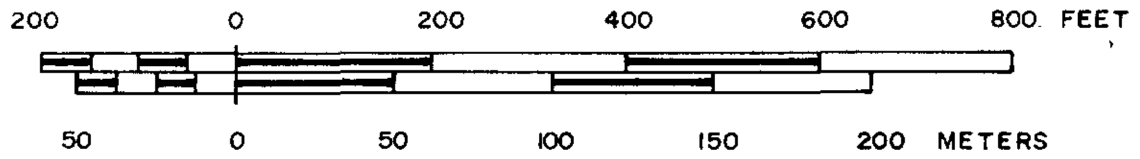
MARION TWP. GRID
DETAILED EM-VLF SURVEY

DRAWN BY	R.B.
TRACED BY	R.B.
APPROVED	D.W.
N.T.S.	41 0/16
DWG. NO.	123

AUGUST 1975

METERS
FEET





CONTOUR INTERVAL : 10 DEGREES

410

U.S. STEEL INTERNATIONAL LIMITED

WOMAN RIVER PROJECT

MARION TWP. GRID
CONTOURED FRASER
FILTERED DIP ANGLES

D. G. WAHL

D. G. Wahl

DRAWN BY R.B.
TRACED BY R.B.
APPROVED D.W.
N.T.S. 41 O/16
REV

AUGUST 1975

WGM

1 INCH TO 60 METERS 200 FEET

DWG. NO. 124