(283) Item 15

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FOURTH REPORT FOR MINERAL MATERIALS CO. ON MAGNETOMETER SURVEYS ON THE BUENA VISTA IRON DEPOSIT, CHURCHILL COUNTY, NEVADA.
by E. L. Stephenson (March 1953)

FOURTH REPORT FOR MINERAL MATERIALS CO.

ON MAGNETOMETER SURVEYS ON THE BUENA VISTA IRON DEPOSIT

CHURCHILL COUNTY, NEVADA

By

E. L. Stephenson
Consulting Geophysicist

Reno, Nevada
March 1953

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Illustrations

* See Second Report for Mineral Materials Co. January, 1952.

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INTRODUCTION

This fourth report covers magnetometer surveys made in February 1953 for Mineral Materials Co. on the Buena Vista iron deposit, Churchill County, Nevada. The Buena Vista property comprises a group of patented and unpatented lode mining claims located mainly in Sections 3, 4, 5 and 9, T.24N., R.34E., in the northeastern part of the county. The ore bodies consist of irregular masses of magnetite in gabbro, occurring along well-defined mineralized zones that probably are structurally controlled.

During 1951 magnetometer measurements were made in the central part of the property, in an area designated as Grid No. 1 in the second report. This grid covered all of the Iron Mountain claim, most of the adjoining Fairview and Locomotive claims, and the east part of the Wild Horse claim and adjoining ground. A detailed magnetic map of Grid No. 1, contoured on an interval of 1,000 gammas, was submitted with the second report. In March 1952 two

smaller magnetometer grids were surveyed, Grid No. 2 on the east part of the Desert View claim, and Grid No. 3 on the Rover and Wyoming claims. A small extension also was added to the southeast part of Grid No. 1, and two reconnaisance traverses were run, one across the central part of the Albitross claim and one on the east end line of the Locomotive and Pennsylvania claims.

In February 1953 Grid No. 1 was extended an additional 700 feet eastward, and an extension was added to the southwest part of Grid No. 2. In addition, Grid No. 4 was run on the Mountaintop claim and Grid No. 5 on the Iron Horse ore body, and reconnaisance traverses No. 3, No. 4 and No. 5 were run in intermediate areas. The measurements were made with the same standard Askania magnetometer, and the 30-gamma sensitivity and the zero setting are the same as in the earlier surveys.

MAGNETOMETER SURVEYS

Plan of the surveys

The index map that was included with the third report has been revised to show the general plan of all of the magnetometer surveys to date, and new revised copies accompany this fourth report. On all of the grids most of the magnetometer traverses are spaced at intervals of 100 feet, and the lines run approximately normal to the strike of the mineralized zones. On Grids No. 1, No. 2, and No. 4 the traverse lines have a due north bearing, and on Grids No. 3 and No. 5 they have a northeast bearing. In the earlier surveys a 50-foot station interval was used, whereas in this fourth survey stations were occupied at 25-foot intervals to give greater magnetic detail.

The O-point of Grid No. 1 is the northwest corner of the Iron Mountain claim, and the base line is the north side line of the claim. In the earlier surveys the main part of the grid was run from 400W to 1500E, and the small southeasterly extension was run from 1500E to 1900E. In the present survey the grid was extended from 1500E to 2200E between the 600S and 600N coordinate lines, except that the 2100E and 2200E lines were run only to 500S. 400S. This extension adjoins on the north the southeasterly extension, which was described in the third report.

On Grid No. 2, the Desert View, the 400W, 500W and 600W lines were extended from 600S to 900S and new 700W and 800W lines

were run from 500S to 900S, covering a small southwesterly extension of the Desert View ore body. The 0-point of this grid is the northeast corner of the Desert View claim and the base line is the north side line.

Grid No. 4, on the Mountaintop claim, adjoins Grid No. 2 on the north, as shown on the index map. The 0-point is the same as the 0-point of Grid No. 2. North-south traverses were run from 400W to 900E as shown on the map.

Grid No. 5 is a 300x600 foot grid covering the ore body in the eastern part of the Iron Horse claim. Seven magnetometer traverses each 300 feet long were run at 100-foot intervals across the strike of this body, all referred to an arbitrary 0-point staked on the ground. The 100N traverse was extended an additional 100 feet to the northeast to outline another small anomaly.

Reconnaisance traverse No. 3 is a 400-foot traverse run between the 0-point of Grid No. 5 and the 2200E-600N point of Grid No. 1. Reconnaisance traverse No. 4 was run to test the area between Grid No. 1 and Grid No. 2. It extends from the 800W-600S point of Grid No. 2 to a little northwest of the 1900E-675S point of Grid No. 1. Reconnaisance traverse No. 5 has its 0-point at the 800W station of traverse No. 4 and it runs approximately at right angles to that traverse as shown on the map. It was run to obtain additional detail on a new magnetometer anomaly discovered on traverse No. 4.

Results of the surveys

In order to coordinate the chief magnetic results in the eastern part of the property a new magnetic map has been prepared which includes both the 1952 and 1953 extensions of Grid No. 1, all of Grid No. 2, new Grid No. 4, and the plan of reconnaisance traverses No. 4 and No. 5. This map also will serve as a base for any additional magnetic data that may be added later in the main mineralized area. It is drawn on a scale of 100 feet to the inch and contoured on an interval of 5,000 gammas.

Grid No. 1 Extension. The east part of Grid No. 1 is characterized by numerous sharp magnetic variations, and the magnetic profiles are best described as erratic. The map also shows, however, certain broad well-defined anomalous zones. The main central mineralized zone shown on the map of the second survey extends eastward to 2100E and includes one strong but narrow positive anomaly on the 1700E and 1800E lines at about 300S. An additional rather strongly positive but variable zone branches to the northeast, centering on and near the 0 line between 1900E and 2000E. It extends in the form of small peaks to the east edge of the grid, but the 2200E line shows that negative values are becoming dominant.

The general positive area is bordered on the west, north and east by broad negative areas which the map suggests may be part of a general negative area that also appears on the north part of reconnaisance traverse No. 5 and the northwest corner of Grid No. 4.

It therefore appears that the east edge of the main central mineralized area has been reached.

A small positive anomaly also occurs in the northeast corner of the grid, the strongest peak being on the 2100E line at 400N. This zone extends beyond the present boundary of the grid, but it is diminishing in strength on the 2200E line.

The positive anomaly in the southeast part of the grid was noted and described in the third report in part as follows:

"The persistence and magnetic strength of the zone, and particularly the magnetic trends, suggest that this may be the same mineralized zone in which the chief ore body occurs on the Desert View claim."

The new magnetic results are not extensive enough to establish whether this anomaly actually is directly related to the main Desert View anomaly, but it probably is directly related to the new anomaly found on the reconnaissance traverses to the east, and both of the anomalies may be part of a general positive zone that is also indicated in the southwest corner of the Grid No. 2 extension. Additional measurements will be necessary between the two grids to establish the actual relationships.

Grid No. 2 Extension. The new measurements in Grid No. 2 show an extension of the main positive anomaly to the west, including a sharp positive peak on the 700W line that exceeds 25,000 gammas. The measurements also indicate, however, that the mineralized zone in general is narrowing and weakening to the west. South of the

positive anomaly the central and eastern parts of the extension show only neutral or negative values as far west as 700W. The 800W line, however, shows rather strong positive values on the south end, and, as noted above, this may be part of the east edge of a general positive zone lying between Grid No. 2 and Grid No. 1. Additional measurements already planned will furnish more information on this area.

Grid No. 4. The chief feature of Grid No. 4 is a broad, strongly positive zone of northeasterly trend that extends essentially across the entire grid. The west end of this zone was first noted in the north central part of Grid No. 2 in the third report. Based on the plus 10,000-gamma contour the zone roughly varies in width from 100 to about 300 feet, and the chief positive anomalies lie between the 0 line and the 800E line.

Within the general positive zone there are two main centers of mineralization, both of which show broad areas that exceed 20,000 gammas and that show a number of peaks exceeding 25,000 gammas. The narrower of these zones lies in the south central part of the grid, roughly between the 0 line and the 300E line. The 20,000-gamma closure varies from 75 to about 150 feet in width. The other main zone lies in the east part of the grid between the 550E and 850E coordinates. As shown on the map, it is best developed on the 700E and 800E lines, while to the west it shows two branches on the 600E line, one centering at about 500N and one at

about 350N. Both of these anomalies are associated with outcrops of high-grade iron, and both of them are believed to indicate large mineable bodies of ore.

Grid No. 4 also shows one other strong but rather narrow anomaly that exceeds 20,000 gammas. It lies at about 500N on the 0 and 100E lines and is associated with a prominent outcrop on the north wall of the canyon. This anomaly is small in comparison with the two main centers just noted, but it probably represents a mineable block of ore.

At the west end of the general zone the positive anomaly extends northward on the 200W and 300W lines up the rib of a spur ridge to about 350N, as shown by the plus 5,000-gamma contour. There is one sharp, narrow positive peak on the south end of the 300W line, but this west part of the general mineralized zone probably does not contain much, if any mineable ore.

The general positive zone cuts off sharply on the west, and a negative zone occupies the northwest corner of the grid. Tentatively, it is correlated with the broad negative zones on the north part of reconnaisance traverse No. 5 and the east end of Grid No. 1.

Grid No. 5. The magnetic results on Grid No. 5, on the Iron Horse claim, are presented in a separate small magnetic map which also shows the magnetic profile of reconnaisance traverse No. 3.

Most of Grid No. 5, including all of the 200N and 300N lines, shows negative magnetic values. The zone of the iron outcrops is marked by a series of narrow strong positive anomalies that are best developed on the 0 line and particularly the 200S line. The magnetic curves indicate that the body is narrow, and the extremely strong and sharp negative anomalies on the borders probably mean that the body has no great depth extent, although some of the negative effect may be due to faulting.

The main mineralized zone indicated by the outcrops terminates between the 0 line and the 100N line. To the north, on the east part of the 100N line, there is a rather broad positive extension that reaches values in excess of 10,000 gammas at about 300E. Small outcrops of high-grade iron occur in this area which lies on the next ridge east, but it is questionable whether the anomaly represents any sizeable economic body. The negative borders are well-defined but not especially strong, and this part of the mineralized zone may extend to depth. In general, the results indicate that the Iron Horse ore body is not of major importance. Reconnaissance traverse No. 3, as shown by the profile, shows mainly negative values between Grid No. 5 and Grid No. 1.

Traverses No. 4 and No. 5. The magnetic results of reconnaissance traverses No. 4 and No. 5 are shown on the accompanying profile sheet. Traverse No. 4 shows a broad, strongly positive zone centering at about 800W, in the unexplored area between Grid No. 1 and

Grid No. 2. The higher positive readings extend from 700W to 1200W, where there is a sharp drop to negative values at 1300W. Traverse No. 5 shows a narrower peak, suggesting that the positive zone probably trends in a general easterly direction. On the north the magnetic values drop steadily and are negative beyond about 250N. On the south the values drop very sharply but remain above 4,000 gammas, and a second broad peak centers at 400S. The traverses therefore indicate the presence of a probably large mineralized zone between Grid No. 1 and Grid No. 2, and as already noted, the edges of this zone probably appear on the two grids. Additional detailed measurements will be necessary in this area.

SUMMARY

The present magnetometer measurements indicate that in Grid No. 1 the main central mining zone is erratically mineralized east of 1500E but that the main positive anomalies probably terminate in the vicinity of the 2100E or 2200E lines. The numerous positive peaks for the most part may indicate only sub-marginal mineralization, although one or two small mineable bodies may be present. The positive anomaly in the southeast corner of the grid probably correlates with a new positive anomaly found on reconnaissance traverses 4 and 5.

On Grid No. 2 the new measurements indicate a westward extension of the main positive anomaly, including one sharp positive peak, but they also indicate that the mineralized zone is narrowing and weakening to the west. The 800W line shows the edge of a positive area in the southwest corner of the grid which may correlate with the anomalies just noted above. Additional measurements are desirable in the area between Grid No. 1 and Grid No. 2, and plans have been made to obtain these measurements.

Grid No. 4, all of which is new, shows a broad, strongly positive zone of northeasterly trend within which there are two major centers of mineralization. Both of these areas should contain rather large mineable ore bodies and plans should be made for drilling or other development work.

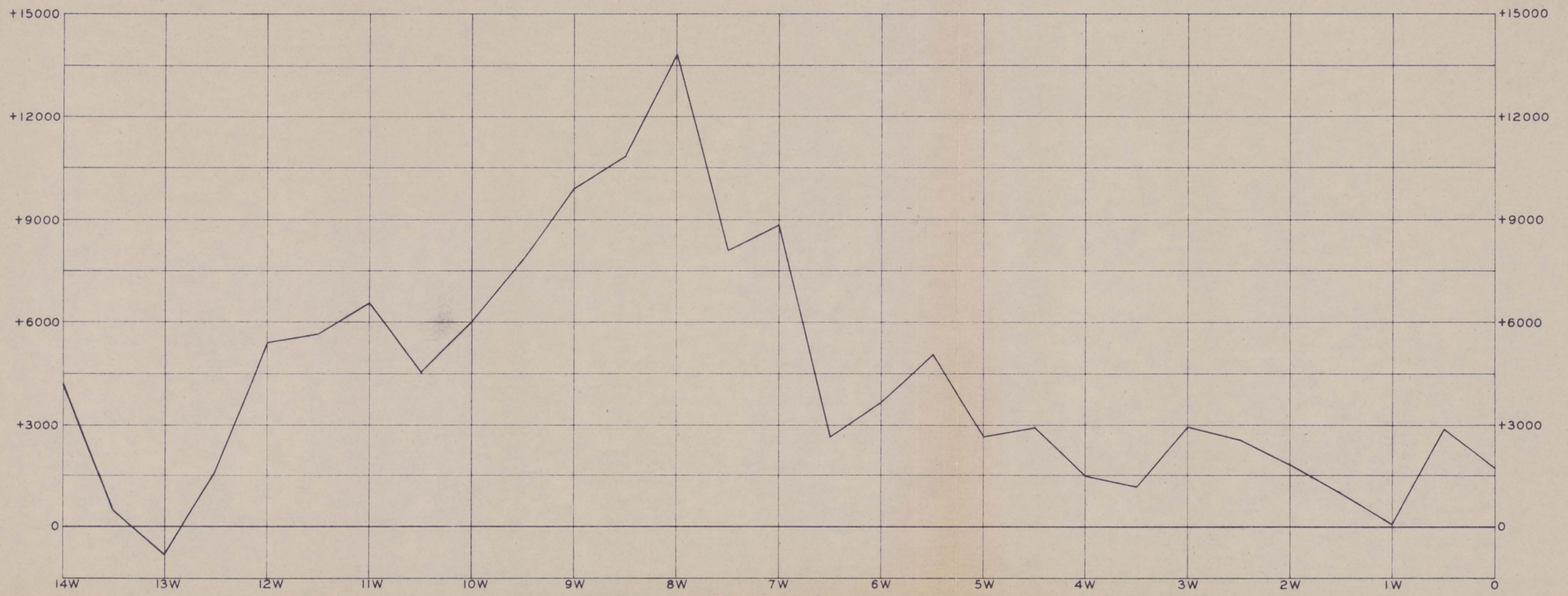
On Grid No. 5 the magnetic results indicate that the outcropping ore body is quite narrow and that it may not extend to any great depth. Work now in progress in this area will determine the amount of mineable ore.

This fourth report merely presents and summarizes the latest magnetic data obtained on the Buena Vista property, and no specific development recommendations are made herein. The results will be reviewed in detail, however, with the Mineral Materials engineering staff in the field, and plans and recommendations will be formulated for such further testing and development as may seem desirable.

Reno, Nevada
March 1953

E. L. Stephenson
Consulting Geophysicist

MINERAL MATERIALS CO.



RECONNAISSANCE TRAVERSE NO. 4

RECONNAISSANCE TRAVERSE NO. 5

SURVEY BY E.L. STEPHENSON 1953

ELS 2-53

BUENA VISTA IRON DEPOSIT

1" = 100'

0 100 200 ft.

MAGNETIC PROFILES

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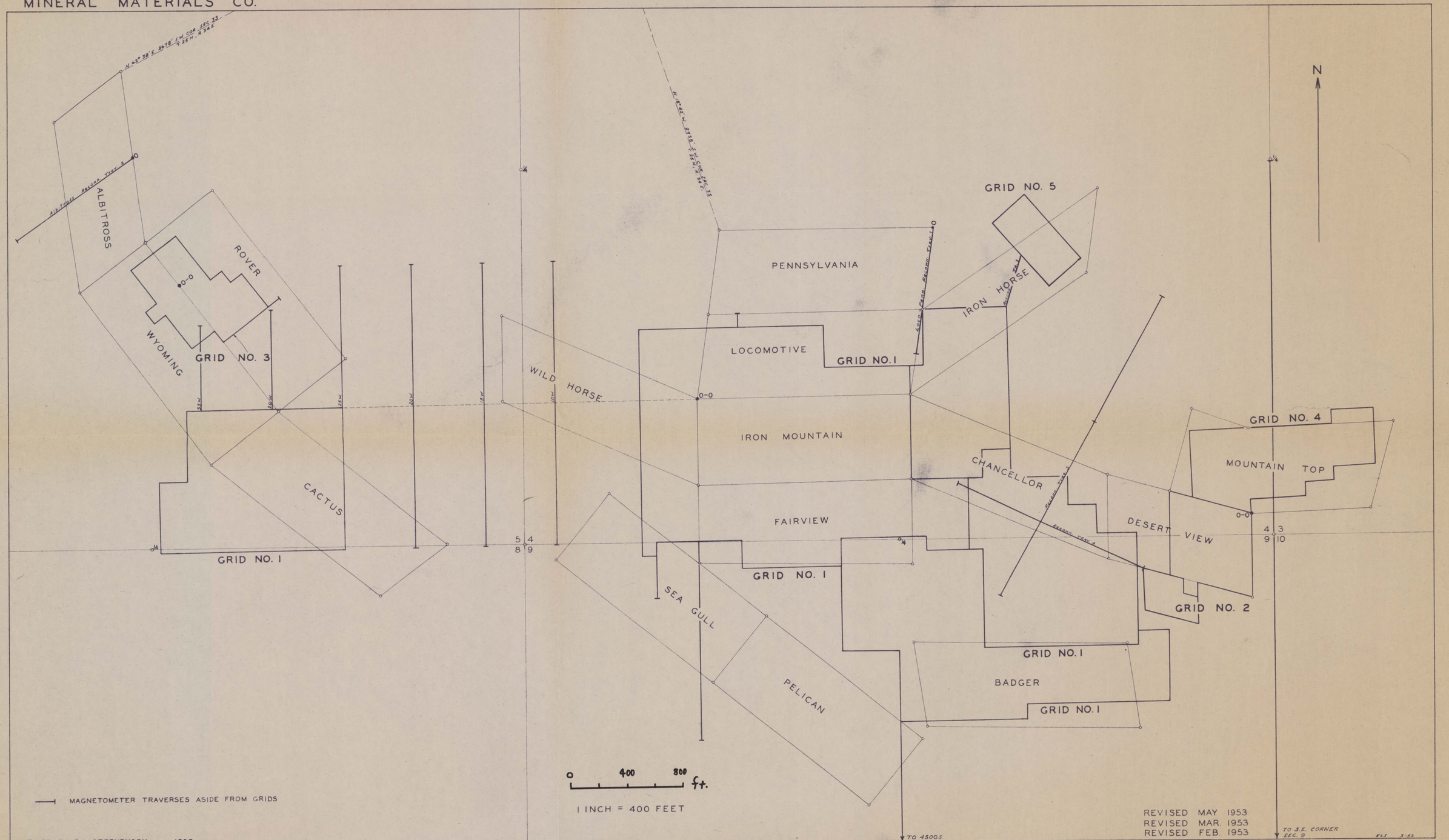

REVISED MAY 1953
REVISED MAR. 1953
REVISED FEB. 1953

COMPILED BY E. L. STEPHENSON 1952

INDEX MAP OF MAGNETIC SURVEYS, BUENA VISTA IRON DEPOSIT, CHURCHILL COUNTY, NEVADA

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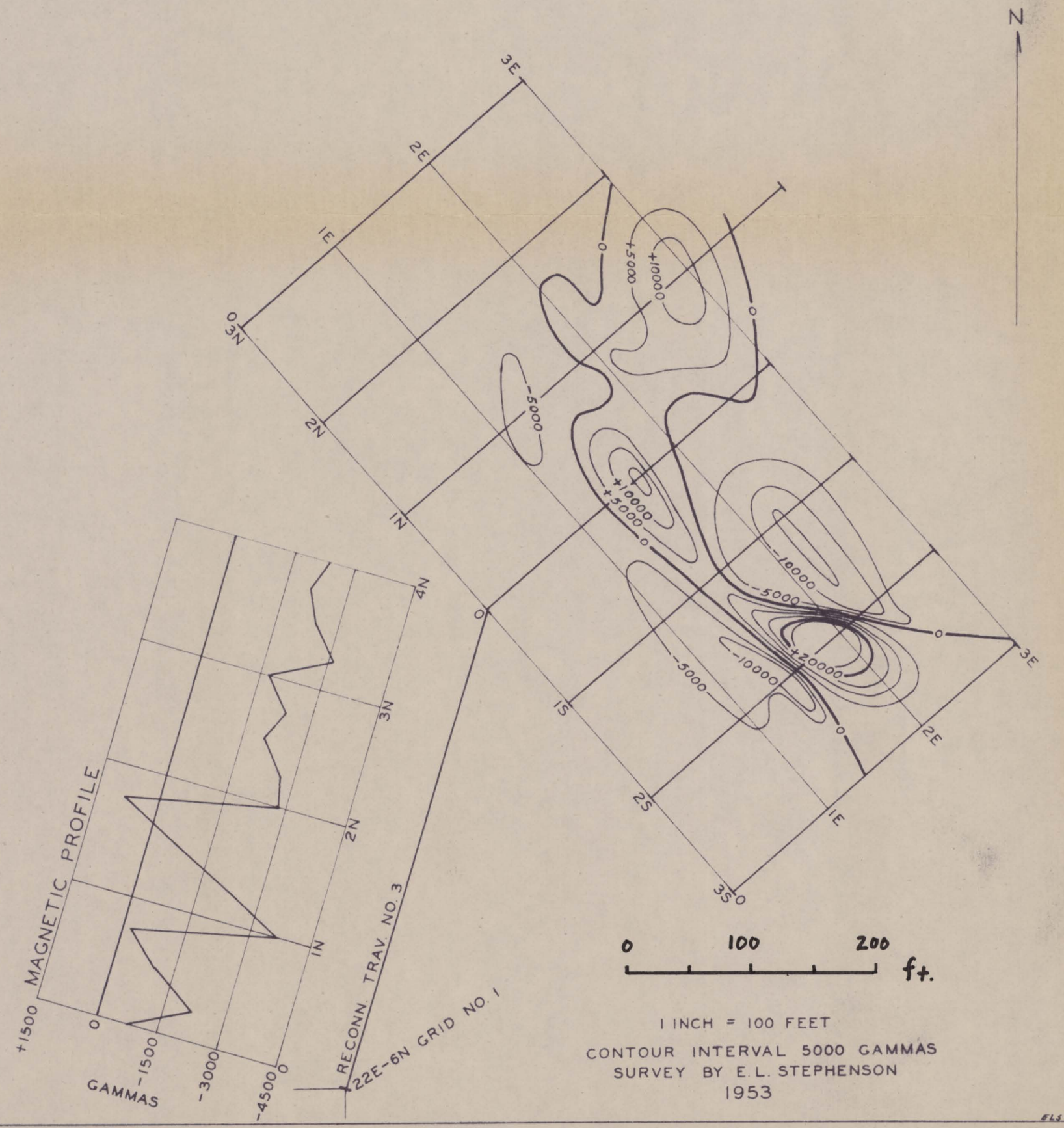

1 INCH = 100 FEET

CONTOUR INTERVAL 5000 GAMMAS

SURVEY BY E. L. STEPHENSON

1953

ELS 2-53

MAGNETIC MAP OF GRID NO. 5. BUENA VISTA IRON DEPOSIT

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