062132

ROCK RIVER COAL GEOPHYSICS

SPRING 1982

on

COAL LICENCES 117, 118, 121 and 122

N.T.S. 95 D/11 & 95 D/14

ROCK RIVER AREA, YUKON TERRITORY

WATSON LAKE MINING DIVISION

Latitude: 60° 30' to 61° 00'

Longitude: 127° 00' to 127° 30'

For SULPETRO MINERALS LIMITED

by: J.L. Wright

TO COVER FIELD WORK COMPLETED

BETWEEN

MARCH 8, 1982 and MARCH 31, 1982

Submitted: May 6, 1982

This report has been examined; declared acceptable as Representation Work under Section 32 and Schedule B of the Canada Mining Regulations and valued in the amount of $ 192,089.67

for Chief, J. Blaine

Date: June 7, 1982.

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Compilation Map - Geology 1:50000

INTRODUCTION

During the spring of 1982 an extensive gravimetric program was completed on the ROCK RIVER COAL PROPERTY (Project 6205) in the southeastern Yukon. Objectives were to delineate coal units within the Rock River Tertiary basin. Previous drilling during the summer of 1981 had indicated by way of downhole electric logs that the coal unit's density was on the order of 1.3 - 1.7 g/cc and the surrounding sediments ranged about 2.1 g/cc. This density contrast coupled with the relatively large volumes of material expected lead to the formulation of the survey discussed herein. The aforementioned drilling is reviewed in a report titled, "Geological Report on Coal Licences 115 to 122, Rock River Area, Yukon Territory, September 21, 1981", by D.C. Miller and J.C. Harrison.

A statement of expenditures and author qualifications can be found in Appendix A.

SURVEY PROCEDURE

A total of twenty-one (21) lines were established by Pierre Ouellette Prospecting Enrg., Amos, Quebec, from February 15 - March 18, 1982. Numbering is L3N to L23N inclusive. Two (2) camp sites were established, one in the south end of the basin near L8N and the other to the north between L17N and L18N. Both the exact line locations and camp locations are depicted on the accompanying maps. A total of 110 line-km are involved.

Logistical details concerning the actual field program are tabulated below.

...../2

Instrumentation:	Lacoste-Romberg Gravitymeter #442 Tidelands Geophysical, Houston, Texas, U.S.A. Lacoste-Romberg Gravitymeter #219 John Fett, Hemet, California, U.S.A. Sokkisha B-2 Levels & Rods (3 units) Pocklington Ltd., Toronto, Ontario.
Base Station Locations:	North Camp - 60° 49.07'N 127° 8.7'W South Camp - 60° 39.34'N 127° 8.91'W
Line Interval:	2 km
Station Interval:	50m & 100m
Personnel:	J.L. Wright (Geophysicist) 2808 Keele Street, Toronto, Ontario M3M 2G5 N.W. Rayner (Geologist) 37 Martin Rd., Toronto, Ontario M4S 2V1 D. Robertson (Geologist) 3010 Saint Malo Rd., Mississauga, Ontario L5N 1T2 J.C. Harrison (Geologist) c/o Sulpetro Minerals Limited 1278 Dalhousie Dr., Kamloops, B.C. V2C 6G3 D. Windsor (Geological Technologist) 401-555 Dalgleish Dr., Kamloops, B.C. V2C 5W7 L. Stoliker (Geophysical Technician) c/o Sulpetro Minerals Limited 2161 Yonge Street, #301, Toronto, Ontario M4S 3A6 D. Ward (Geophysical Technician) 9 Willamere Dr., Scarborough, Ontario M1M 1W5 R. Shearing (Geologist) 6153 Sumas Dr., Duncan, B.C. V9C 4R4 P. Chung (Geologist) 2020 No.4 Rd., Richmond, B.C. V6X 2C3 T. Tobiason (Geological Technician) 10 Restwell Cres., Willowdale, Ontario M2K 2A2
Survey Dates:	March 8 - 31, 1982

Data was read as per the usual operating procedure for the Lacoste-Romberg model G gravitymeter. Readings were taken atop tripod equipped baseplates. The depth of snow and height of the baseplate above the ground were recorded. A main base station was read each morning and evening to eliminate any undetected offsets due to rough instrument handling as well as monitor tidal correction consistency. Two main base stations were established, one at each of the two camps.

Bench marks were established approximately every kilometer along the lines and marked with fluorescent orange paint. A given bench mark was assigned an arbitrary elevation, usually 100m, and all subsequent points referenced to this. No interline elevation control was established, thus all lines are "floating" gravimetrically as well as topographically relative to each other. In addition, it was impossible to complete closed levelling loops due to time limitation. Therefore the lines were levelled once with no return coverage to close the profiles. Level control was to the snow level.

DATA MANIPULATION

Data reduction was taken to the Bouguer Anomaly stage. That is, no terrain corrections are applied. Listed in the following are various standard corrections which were applied and pertinent details concerning each.

Tidal Correction: These are computed analytically from a formulation presented in a paper titled, "Nomograms for Computing Tidal Gravity", by T.A. Elkins in Geophysics, Vol.8, No.2, p.134. Average basin latitude and longitude used in the calculations are 60.75° N and 127.167° W.

Latitude Correction: These are computed as below.

Lat. Corr. = .00081 sin 2Ø per m (north-south)

Where "Ø" is the latitude of 60.65° N.

This correction is additive and increases from north to south along the line.

Free Air Correction: These are computed as below.

Free Air Corr. = .3086 h

Where "h" is the elevation of the baseplate. This elevation is obtained by subtracting the snow depth from the levelled snow elevation then adding on the baseplate height.

Bouguer Correction: These are computed as below.

Bouguer Corr. = $-.04191 \rho h_1$

Where "ρ" is the average density of the material underlying the gravity station and "h_1" is the ground elevation obtained by subtracting the snow depth from the levelled snow elevation. A "ρ" of 2.1 g/cc was assumed for the tertiary gravels and clays following inspection of the downhole electrical logs.

In addition to these corrections the raw dial readings were converted to milligal values in accordance with the standard procedures and calibration charts provided with each instrument. The final Bouguer Anomaly value is then calculated from the following formula.

Bouguer Anom. = Reading (mgals.) $\pm$ Tidal Corr. $\pm$ Lat. Corr.
+ Free Air Corr. - Bouguer Corr.

As noted, this is in units of milligals (i.e. mgals).

Individual gravity values can be read to an accuracy of 0.01 mgals with the Lacoste-Romberg model G gravitymeter. The other source of error excluding data reduction problems is in the level surveying. In standard field operations it is possible to maintain elevation control to better than $\pm$ 0.1 m. This yields gravity errors of approximately $\pm$ 0.02 mgals. However, in this particular application it was felt that the determination of snow depths could yield elevation uncertainties as large as $\pm$ 0.3m (i.e. $\pm$ 1 ft), thus pushing the error bounds to roughly $\pm$ 0.10 mgals. However, examination of the attached data plots will reveal that this magnitude of error is still quite acceptable for

the particular case in question. Consistent errors which build down line as levelling progresses will merely add a slope to the reduced gravity profile. Subsequent regional-residual separation completely removes such effects.

DATA PRESENTATION

The Bouguer Anomaly values are plotted in profile form at a scale of 1:10000 and profile scale of 1cm = 1.0 mgal. Twenty-one (21) plots exist, one for each of the lines. Shown at the bottom of the plots are several logistical parameters including instrumentation, main base station location, station interval, personnel, and survey dates. Lines which show anomalism had a regional-residual separation applied. The residual is drafted below the Bouguer Anomaly at a profile scale of 1cm = 0.5 mgals. In three instances (i.e. L3N, L4N and L5N) a portion of a regional trend is depicted but no separation to form the residual is done. This results from the lack of easterly coverage. Prints of the profiles can be found in the pocket at the rear of the report.

In addition to these data profiles are ten (10) computer model plots of the residual anomalies. One is a basin model across L17N. Scales are arbitrary depending on page size. More will be said later as regards these models under the Interpretation Section. These are appended to the report in Appendix B. Surface projections of the surmised coal beds are shown on a set of six (6) geologic-topographic maps covering the basin at a scale of 1:10000 and a single 1:50000 map. All of which can be found in a pocket at the rear of the report.

In summary, there are the following maps and plots accompanying this report.

Rock River Coal Gravity Profiles	1:10000
Geologic - Topographic Maps (6 sheets)	1:10000
Compilation Map - Geology	1:50000
Computer Model Plots (10 plots)	

INTERPRETATION

All profiles reveal a classic basin response. That is, a concave shape to the profile reflecting infilling tertiary sediments within a more dense surrounding structure. Limestones, shales, dolomites and andesites likely predominate and form the environment in which the tertiary basin sits. A generalized density of approximately 2.60 g/cc can be assigned such units. As mentioned previously the tertiary sediments have an average density of roughly 2.1 g/cc (excluding the coal) thus yielding a contrast on the order of -0.5 g/cc. It is difficult to determine exact basin geometrics, due to lack of coverage on to the flanking Paleozoic terrain. However, on L17N enough data was available to allow a computer inversion of the basin geometry. Shortly a more complete description of the computer plots will be given but suffice to say that beneath L17N a depth of tertiary sediments on the order of 1100m is indicated. The basin seems fairly symmetric with sloping sides of approximately 45°. The surmised basin shape is actually drawn to scale on the computer inversion plot labelled RRC L17N (Basin Model) in Appendix A. The depth is quite variable in a north-south sense. It undulates probably as a result of block faulting. The northern lines (i.e. 19N-23N) show the basin center sliding more westerly and shallowing noticeably. By L23N very little of the original basin appears to remain. Coverage on these lines is not adequate enough to determine the basin's western limit.

Since the coal units have a lower bulk density than the surrounding tertiary sediments they will be revealed by lows superimposed on the much broader basin low. An approximate density of 1.5 g/cc is assigned the coal following examination of the downhole electric logs. This yields a density contrast with the tertiary sediments of -0.6 g/cc.

A total of nine (9) responses possibly sourced by coal units are identified. Regional-residual separations were performed to remove the basin's response from that of the anomaly. This process is shown on the gravity profiles involved. Following is a tabulation of these lines.

L8N	L17N
L9N	L19N
L10N	L21N
L11N	L23N
L12N	

These residual data were modelled with a gravity inversion program to determine possible geometries for the causative bodies. Results of the inversion are computer plots composed of a profile depicting the observed data (i.e. crosses) and model fit (i.e. solid line). Below the profile are several parameters which characterize the fitted body. These are tabulated in the following with a short comment regarding each.

Depth - Depth to the top of the body in meters.

Depth Extent - Height of the body measured from the upper surface to lower surface in a vertical direction.

X of Corner 1 - This is the X-coordinate (i.e. line coordinate) of the upper left corner.

X of Corner 2 - This is the x-coordinate (i.e. line coordinate) of the upper right corner.

X of Corner 3 - This is the x-coordinate (i.e. line coordinate) of the lower right corner.

X of Corner 4 - This is the x-coordinate (i.e. line coordinate) of the lower left corner.

Strike Length - Total strike length of the body in and out of the profile (i.e. paper).

Density (gm/cc) - The density contrast between the model body and surrounding material.

Y Offset - Positioning of the profile along the model body. All profiles traversed the center, thus Y offset = 0.

Strike Angle - Angle at which the profile crosses the model body. All profiles crossed at right angles, thus strike angle = 90.0.

RMS abs. error (gu) - This is a measure of how good the model fit is to the observed data. Units are in gravity units (gu) where 1 g.u. = 0.1 mgals. An RMS error of 1.0 indicates that on the average the fitted curve is within $\pm$ 1.0 g.u. (i.e. $\pm$ 0.1 mgals) of the observed value of that station.

Profile units are in meters for all linear dimensions and gravity units (i.e. 1 g.u. = 0.1 mgals) for the gravity responses. Scales are fairly arbitrary depending upon page sizes and line lengths involved. Examination of the plots will adequately define any scales and dimensions involved. The final fitted body or model is drawn to scale below the horizontal axis which also represents the earth's surface. Invariable the body falls among the horizontal axis coordinate labels making recognition somewhat difficult.

It should be noted that while good fits are obtained in all cases these are not unique. That is, there are literally an infinite number of density distributions which can produce a given gravity response. However, the vast majority of such are not reasonable from a geologic or physical point of view. The above model shapes have had the appropriate geologic and physical constraints built in. Relatively flat tops and bottoms as well as bevelled sides seem reasonable for coal units which may facies out along strike. Certainly the actual geometrics will not likely differ substantially from such a model. It is impossible to model the individual layers within a given coal unit on such a scale. Thus each model is assigned a bulk density which must represent the average density contrast over the entire unit.

Five (5) anomalous zones or areas are outlined by these profiles. Interline connections have been made on the 1:10000 scale maps and the 1:50000 scale map. Short comments regarding each zone follow. These are keyed as to the lines involved.

L8N - L12N: This is a long response exceeding 8 km in length. Anomalies on lines 8N, 9N and 12N are fairly modest and likely not representing a substantial volume of low density material. However, the responses on L10N and L11N are well formed and reflecting relatively large volumes of material. Parameters derived from the model fit agree well with drilling in the vicinity of L10N. The zone seems to be right laterally faulted or offset between L10N and L11N. The strike component appears to be on the order of 600m.

L17N: A relatively large well formed anomaly is noted. It is slightly larger than the L10N anomaly indicating an increased volume of low density material. However, the strike length is fairly short. Neither line 16N or 18N show any convincing anomalism.

L19N: The anomaly is reduced in magnitude compared to either L10N or L17N. It also seems to be somewhat deeper sourced (i.e. ~80m). This may be deceiving in that more disseminated material near surface could also cause the observed response.

L21N: This is a fairly small anomaly which could be indicating low density overburden in-filling the Tertiary sediments.

L23N: The comments regarding L21N also pertain here. However, another possible source of the anomaly is a depression in the bedrock. That is, the anomaly is representing the basin geometry rather than a coal unit within the basin.

In addition to the above zones on which computer modelling was completed is another area of interest. It occurs on the extreme eastern ends of L4N and L5N. A quite pronounced negative anomaly is noted to begin on these lines but coverage was not adequate to outline the extent of the anomalism. However amplitudes could be quite large, perhaps in excess of 5 mgals. Possible regional trends were put on the 1:10000 scale gravity profiles in an attempt to quantify the data to

some extent. Of course, no computer modelling was attempted due to the lack of easterly coverage. This zone, while not well defined, is none the less quite exciting. It could well represent a substantial amount of carbonaceous material.

CONCLUSIONS and RECOMMENDATIONS

Six (6) anomalous areas are noted. Three of which (i.e. L4N-L5N, L8N-L12N, and L17N) could represent substantial volumes of carbonaceous material. Indeed, the poorly defined anomalies on L4N and L5N are quite exciting and, if verified, could add considerably to the potential coal reserves in the basin. While portions of the L8N-L12N anomaly have been drill tested it appears from examination of the 1:10000 scale plots that hole RR-4-81 may be somewhat westerly of the most promising area. To a lesser extent hole RR-3-81 is also slightly west of the anomaly center. However, this hole is a fair bit off-section making such a conjecture somewhat tenuous. Certainly the L17N anomaly is quite interesting and well separated from the known or drill inferred reserves. The remaining three (3) responses on L19N, L21N, and L23N are certainly not as interesting but could still represent areas of coal deposition.

Several recommendations as to further work are outlined in the following.

1) It is absolutely critical that lines 3N to 8N be extended easterly by approximately 2-3 km to verify and delineate the exciting anomaly detected on L4N and L5N.

2) Completion of lines 1N and 2N including adequate eastern coverage to comply with objectives outlined above.

3) In between lines located at 3.5N, 4.5N, 5.5N, 8.5N, 9.5N, 10.5N, 11.5N, 16.5N and 17.5N to further delineate the two central anomalies.

4) Extension of lines 18N through 22N westerly on the order of 2-3 km to complete coverage of the basin's northwest corner.

The above program, if completed, will likely outline a number of attractive drill targets. A spring (i.e. March) effort is suggested with logistics akin to the survey discussed herein.

James L. Wright

JLW*MS

James L. Wright
Geophysicist

APPENDIX A

APPENDIX A

STATEMENT OF COST

Wages & Salaries:

J.L. Wright (Geophysicist)
2808 Keele Street, Toronto, Ontario M3M 2G5

N.W. Rayner (Geologist)
37 Martin Rd., Toronto, Ontario M4S 2V1

D. Robertson (Geologist)
3010 Saint Malo Rd., Mississauga, Ontario. L5N 1T2

J.C. Harrison (Geologist)
c/o Sulpetro Minerals Limited,
1278 Dalhousie Dr., Kamloops, B.C. V2C 6G3

D. Windsor (Geological Technologist)
401-555 Dalgleish Dr., Kamloops, B.C. V2C 5W7

L. Stoliker (Geophysical Technician)
c/o Sulpetro Minerals Limited,
2161 Yonge Street, Suite 301, Toronto, Ontario. M4S 3A6

D. Ward (Geophysical Technician)
9 Willamere Dr., Scarborough, Ontario. M1M 1W5

R. Shearing (Geologist)
6153 Sumas Dr., Duncan, B.C. V9C 4R4

P. Chung (Geologist)
2020 No.4 Rd., Richmond, B.C. V6X 2C3

T. Tobiason (Geological Technician)
10 Restwell Cres., Willowdale, Ontario M2K 2A2

	TOTAL	$ 47,850.15
Linecutting:	Crew of 7 for 32 days - 104 km of grid, 6 km of trail Rate: Salaries + 20%	53,557.90
Watson Lake Based Aircraft:	B.C. Yukon - fixwing	13,634.24
	Frontier Helicopter - rotary	25,398.51
Food - Field Camps:		7,644.63
Equipment Rental (levels, gravity meters)		10,774.96
Fuel (gas, stove oil, JP-4, propane, other) that consumed and left in bush		8,425.47
Expediting:		1,974.00
Telephone:		490.81

Statement of Cost (cont'd)

Lumber:	$ 1,925.60
Airfares:	8,785.89
Car Rental:	615.50
Hotel & Food:	4,576.08
Freight & Crating Charges:	5,079.24
Hardware & Miscel.:	1,356.69
TOTAL	$192,089.67

STATEMENT OF QUALIFICATIONS

I, James L. Wright, of 2808 Keele Street, #8, Downsview, Ontario, do hereby certify that:

1. I am a graduate of the University of Arizona and obtained a B.Sc. degree in geophysics in 1973.

2. I am a graduate of Stanford University and obtained a M.Sc. degree in geophysics in 1975.

3. I have been actively involved in mineral exploration geophysics for seven (7) years.

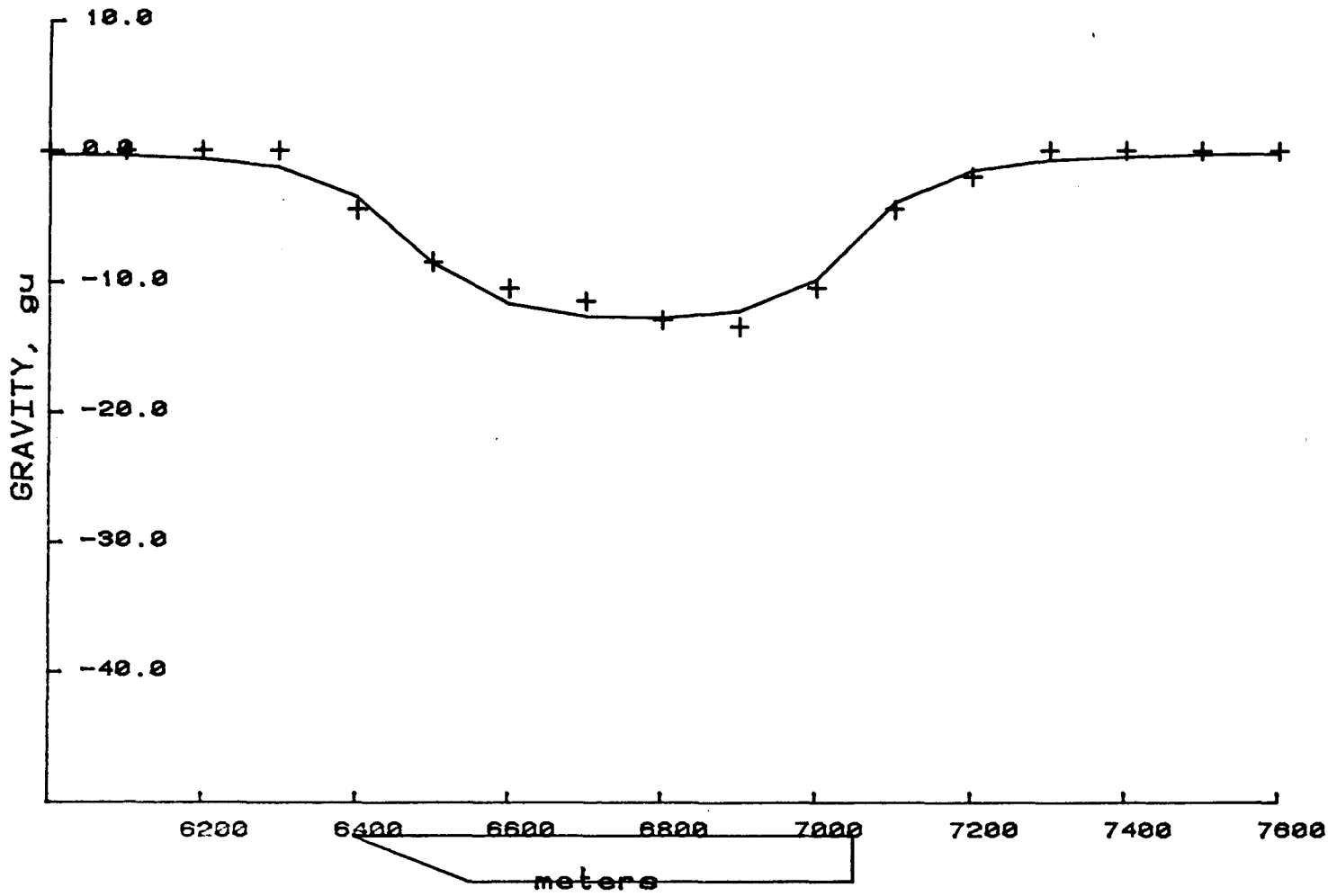
4. I supervised the work described in this report dated May 6, 1982.

5. I have no interest, directly or indirectly, in the property.

James L. Wright

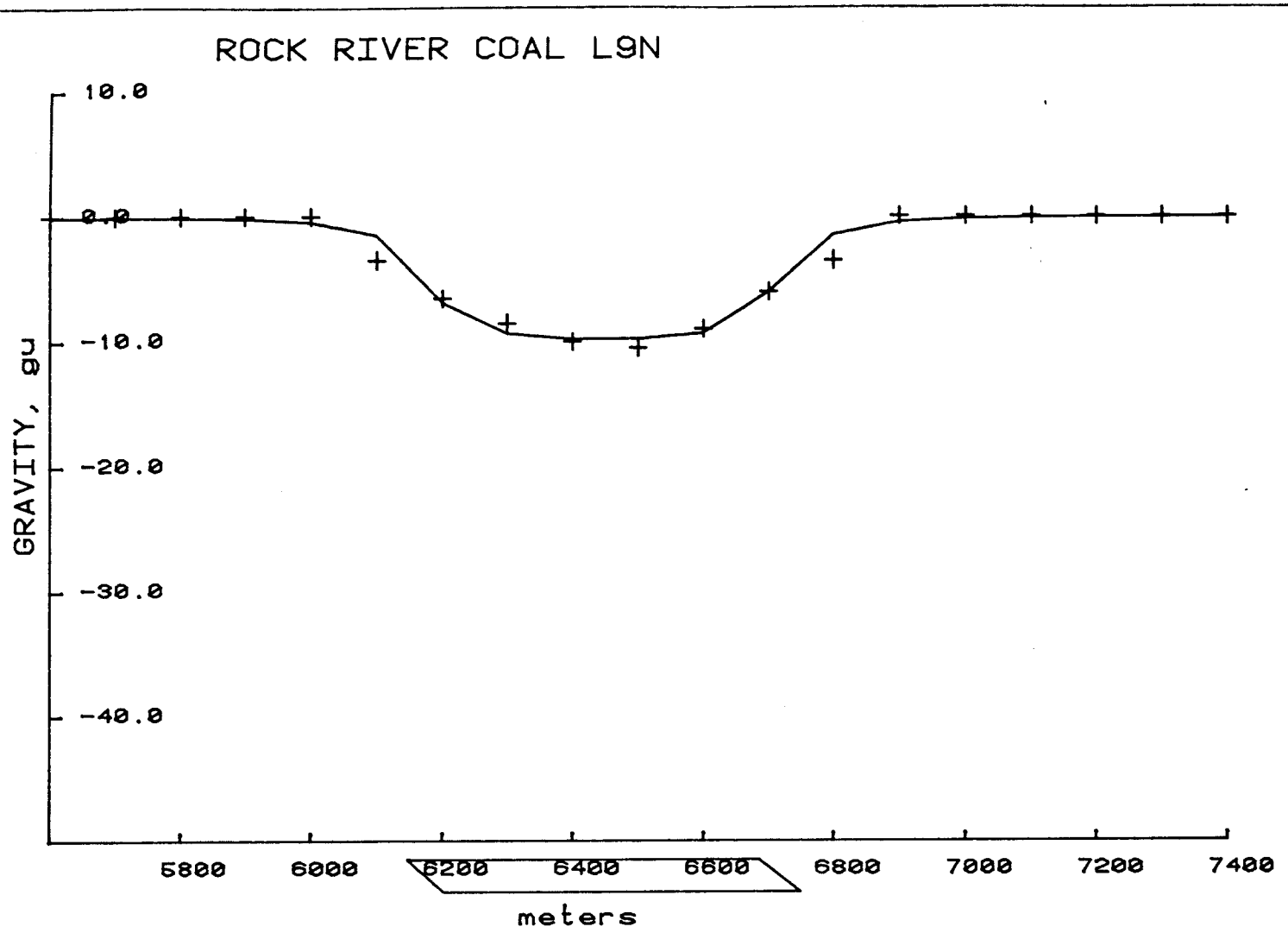
James L. Wright, M.Sc.
Geophysicist

APPENDIX B



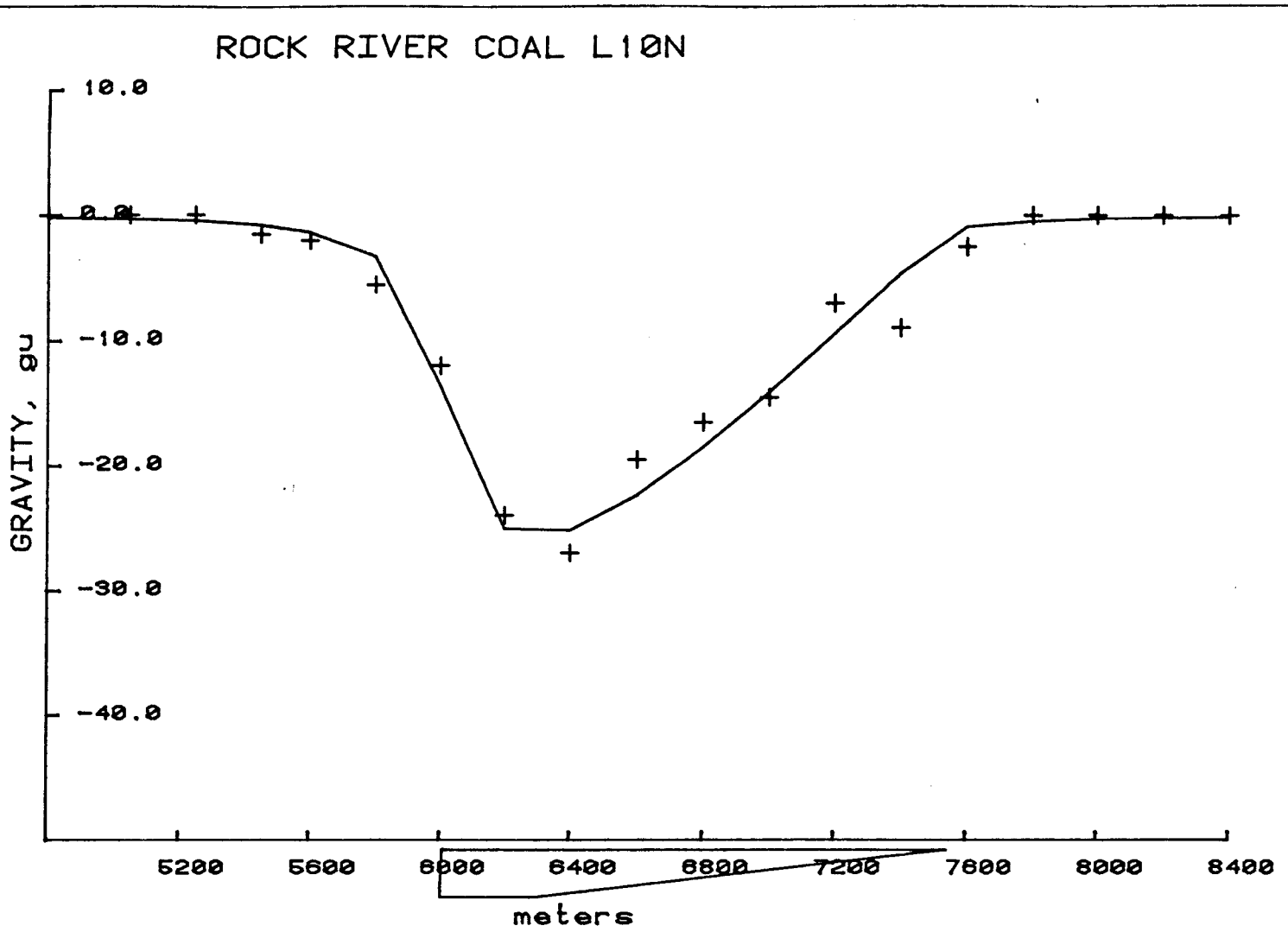
Depth	45.7
Depth Extent	60.1
X of corner 1	6400.4
X of corner 2	7050.0
X of corner 3	7050.0
X of corner 4	6551.0
Strike Length	978.5
Density (gm/cc)	-.6
Yoffset	.0
Strike Angle	90.0

RMS obs. error (gu): .75



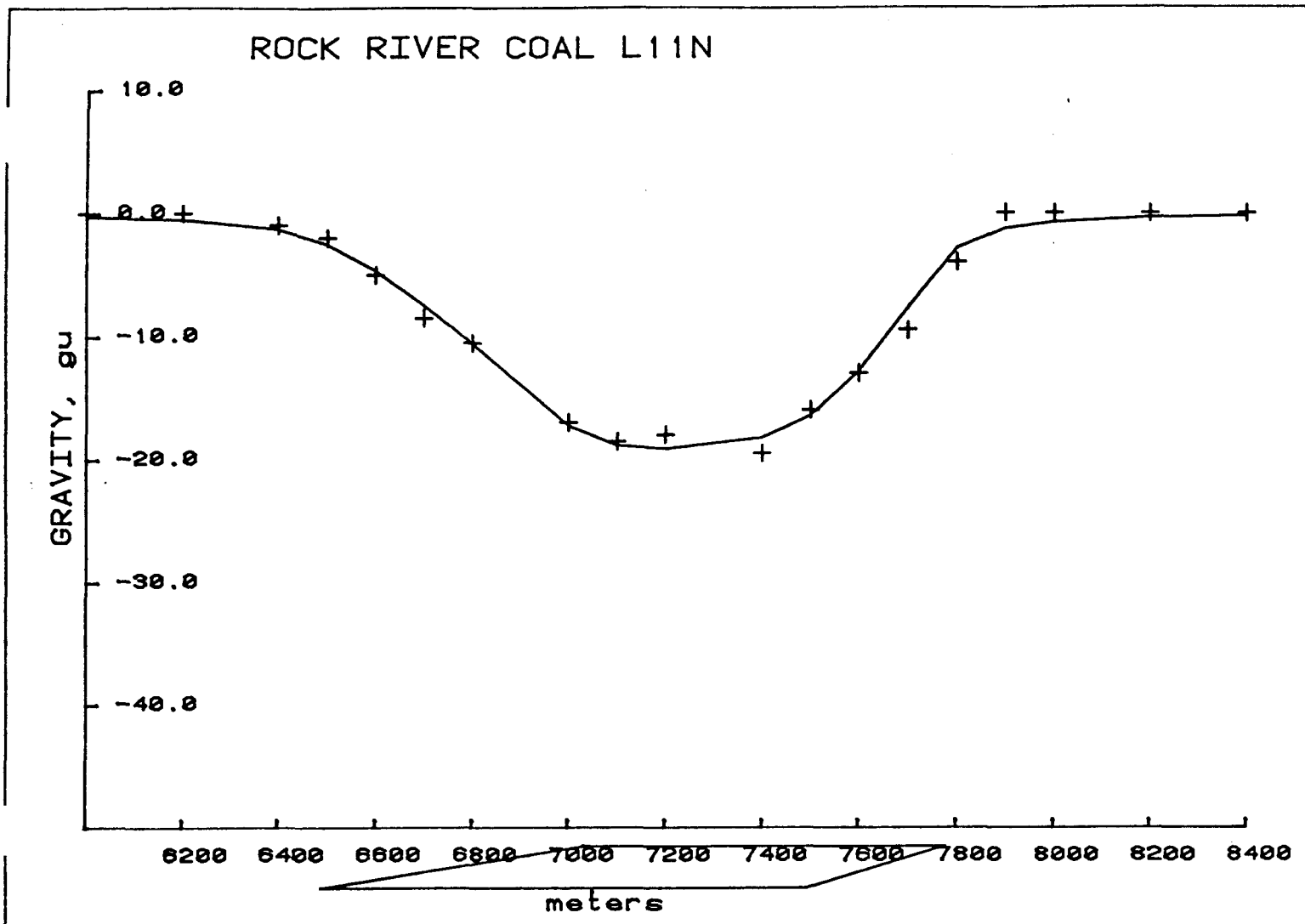
Depth	30.0
Depth Extent	50.0
X of corner 1	6147.5
X of corner 2	6686.2
X of corner 3	6750.0
X of corner 4	6203.2
Strike Length	367.9
Density (gm/cc)	-.6
Yoffset	.0
Strike Angle	90.0

RMS obs. error (gu): .73



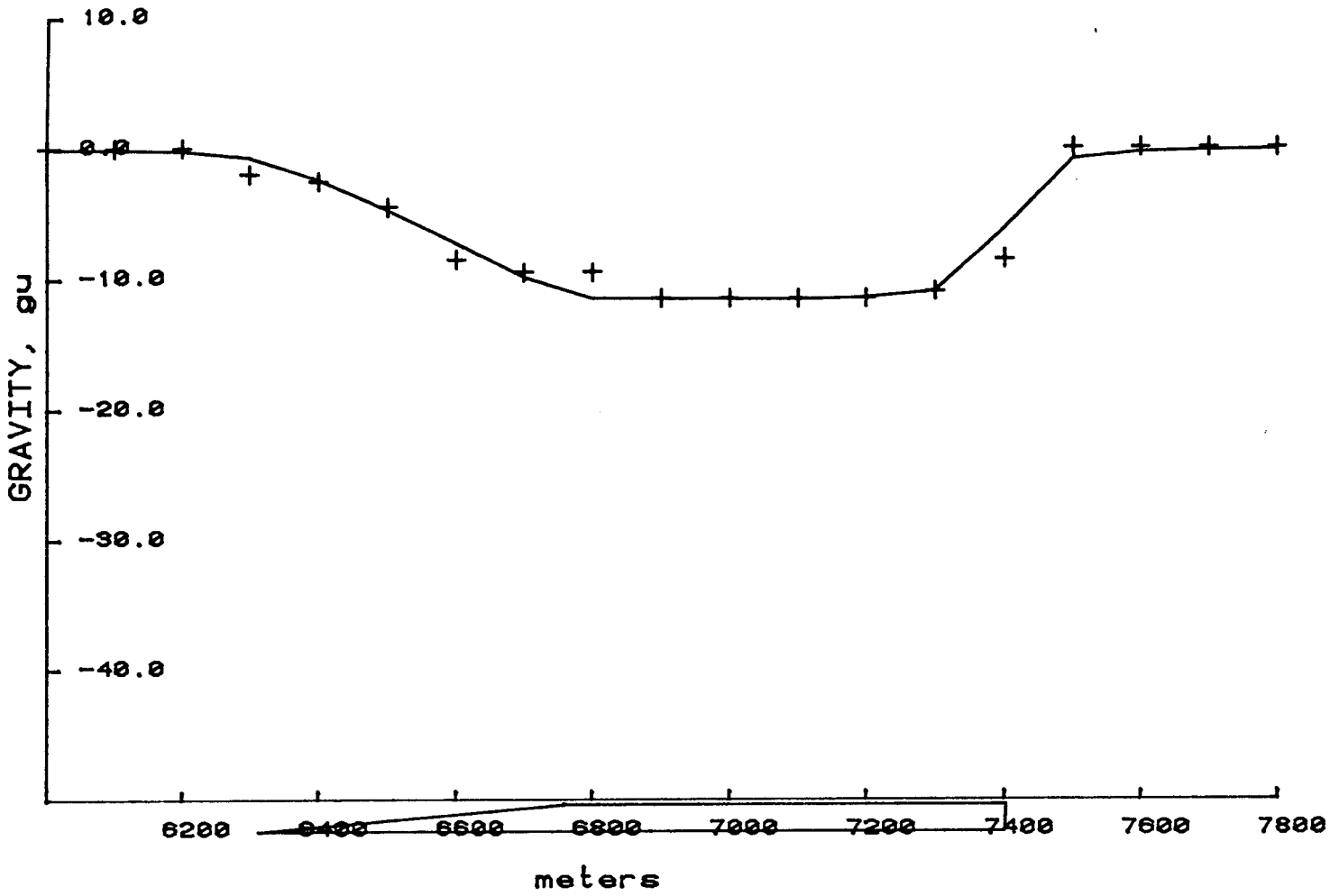
Depth	31.5
Depth Extent	146.0
X of corner 1	6010.1
X of corner 2	7542.4
X of corner 3	6300.3
X of corner 4	6002.5
Strike Length	2000.0
Density (gm/cc)	-.5
Yoffset	.0
Strike Angle	90.0

RMS abs. error (gu): 1.68



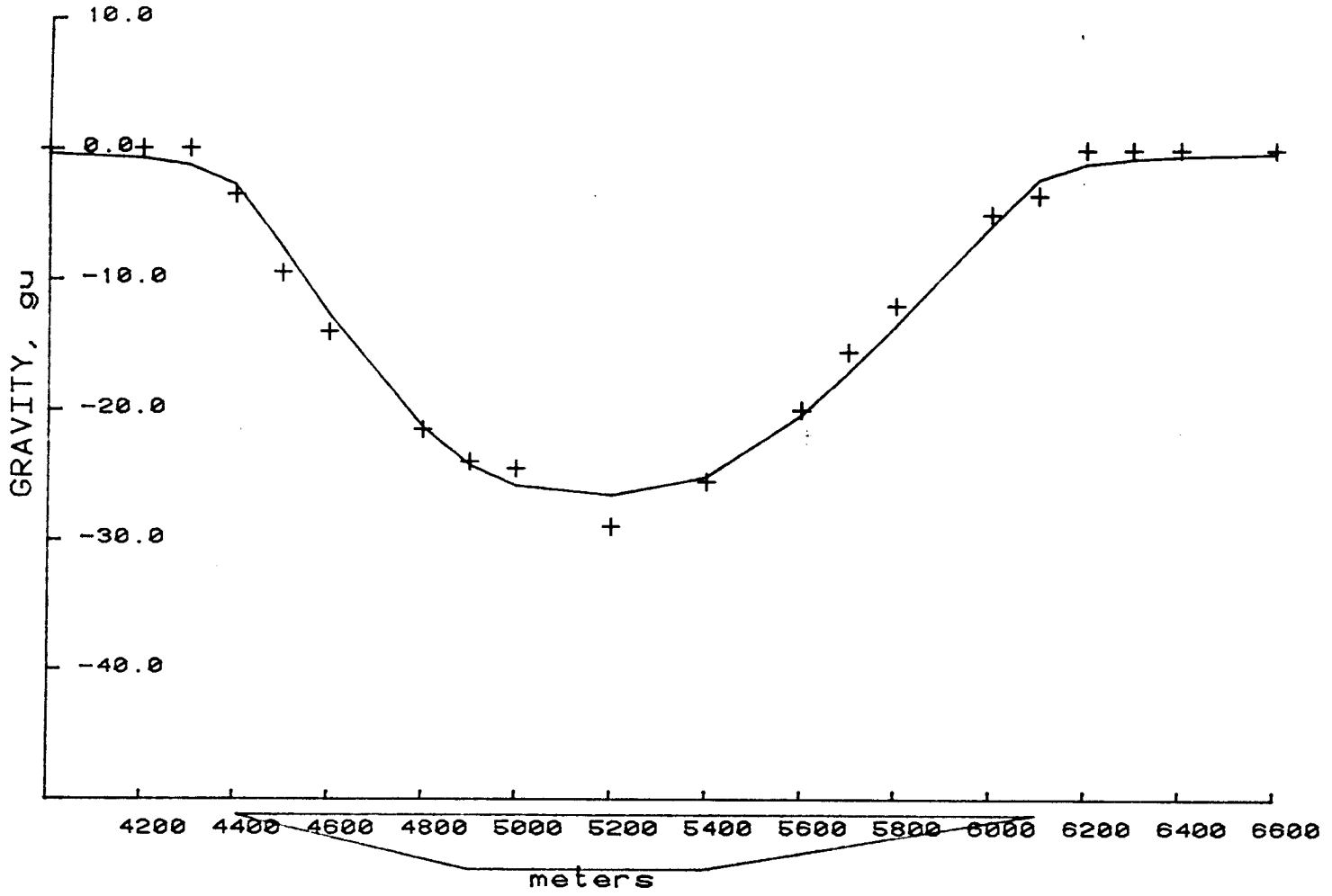
Depth	38.7
Depth Extent	88.0
X of corner 1	7032.0
X of corner 2	7780.5
X of corner 3	7495.7
X of corner 4	6487.6
Strike Length	1099.9
Density (gm/cc)	-.6
Yoffset	.0
Strike Angle	90.0

RMS abs. error (gu): .80



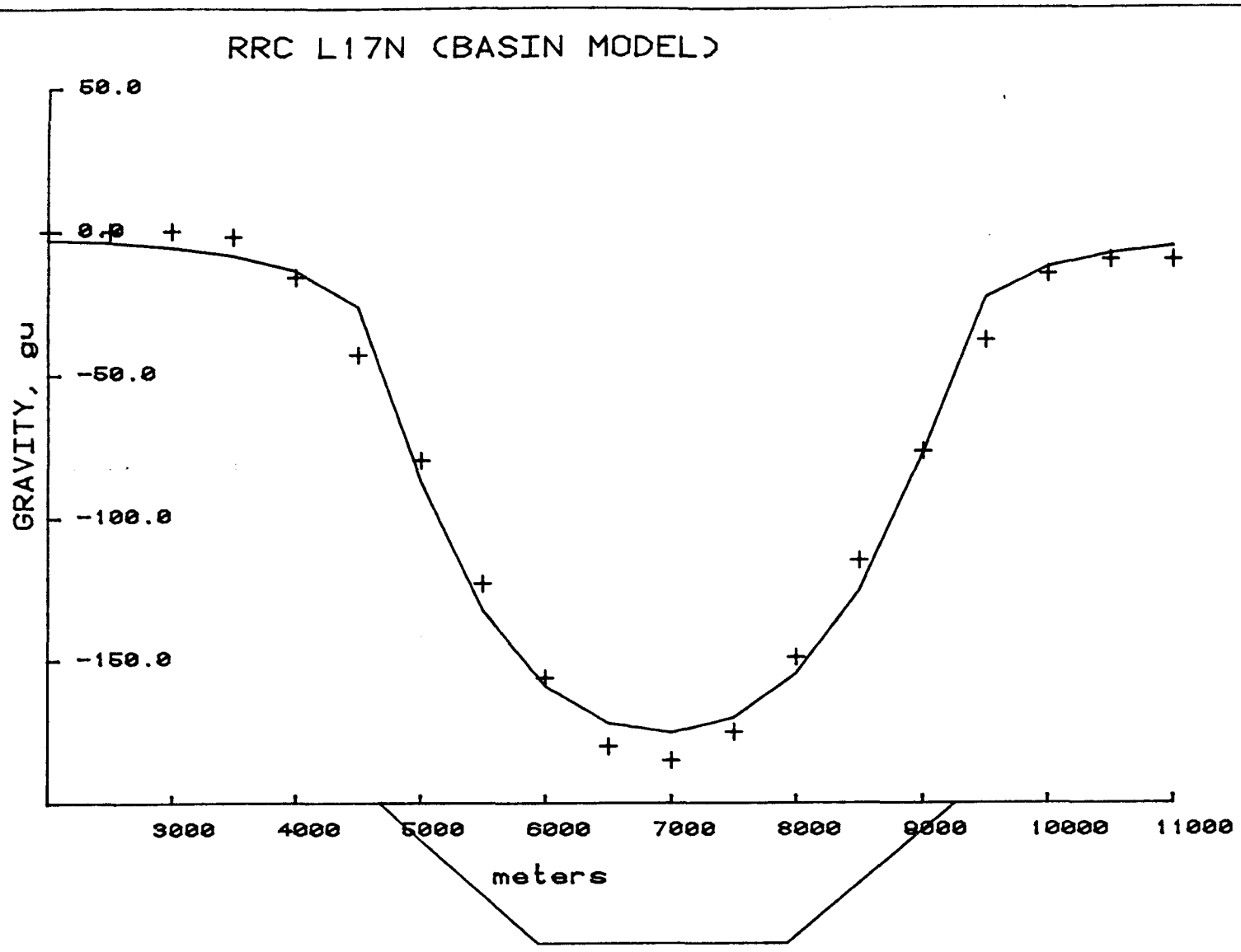
Depth	8.1
Depth Extent	39.0
X of corner 1	6758.1
X of corner 2	7402.3
X of corner 3	7400.5
X of corner 4	6313.0
Strike Length	1093.3
Density (gm/cc)	-.7
Yoffset	.0
Strike Angle	90.0

RMS abs. error (gu): .85



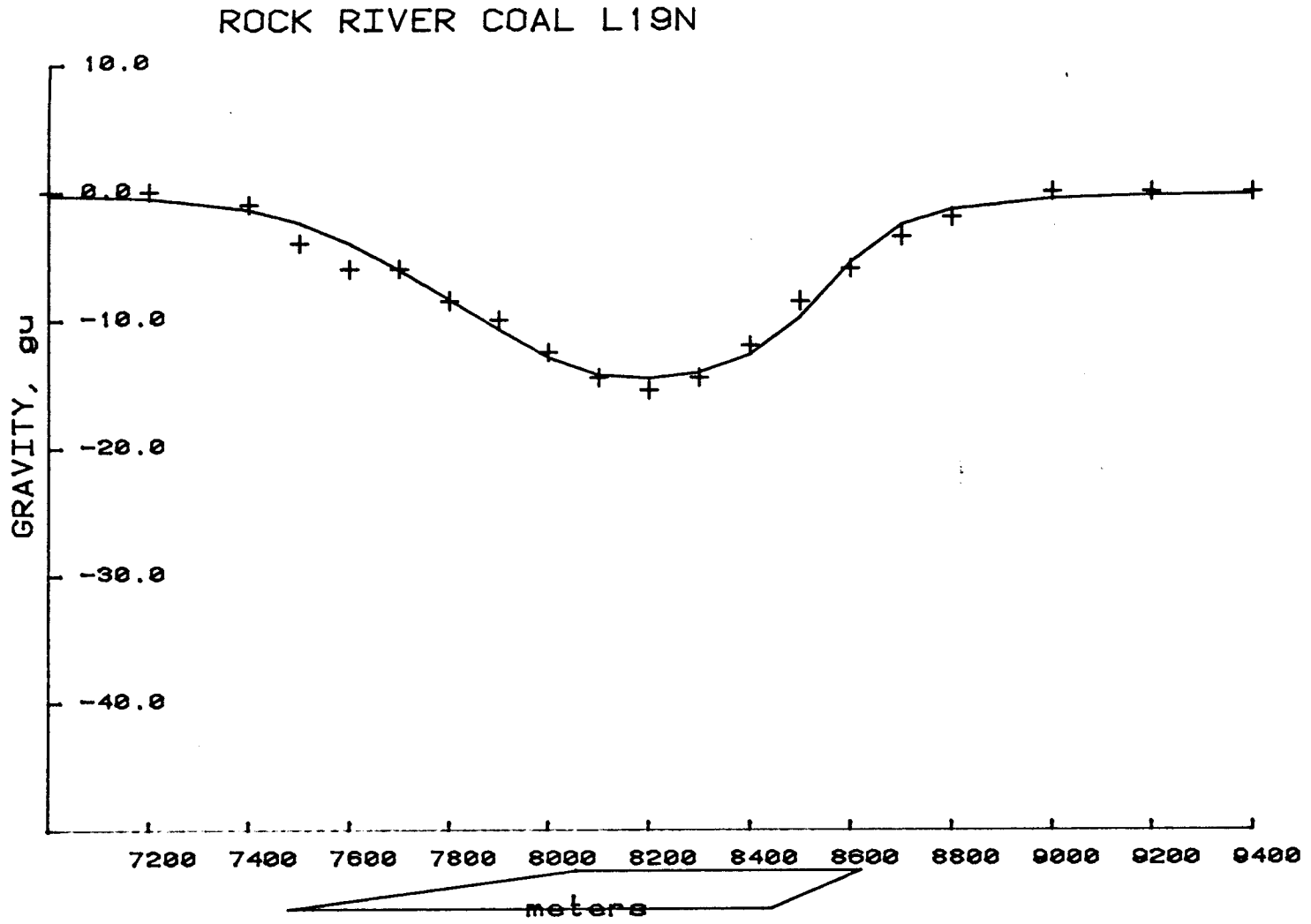
Depth	34.1
Depth Extent	116.4
X of corner 1	4411.1
X of corner 2	6101.0
X of corner 3	5401.0
X of corner 4	4906.1
Strike Length	1127.9
Density (gm/cc)	-.7
Yoffset	.0
Strike Angle	90.0

RMS abs. error (gu): 1.13



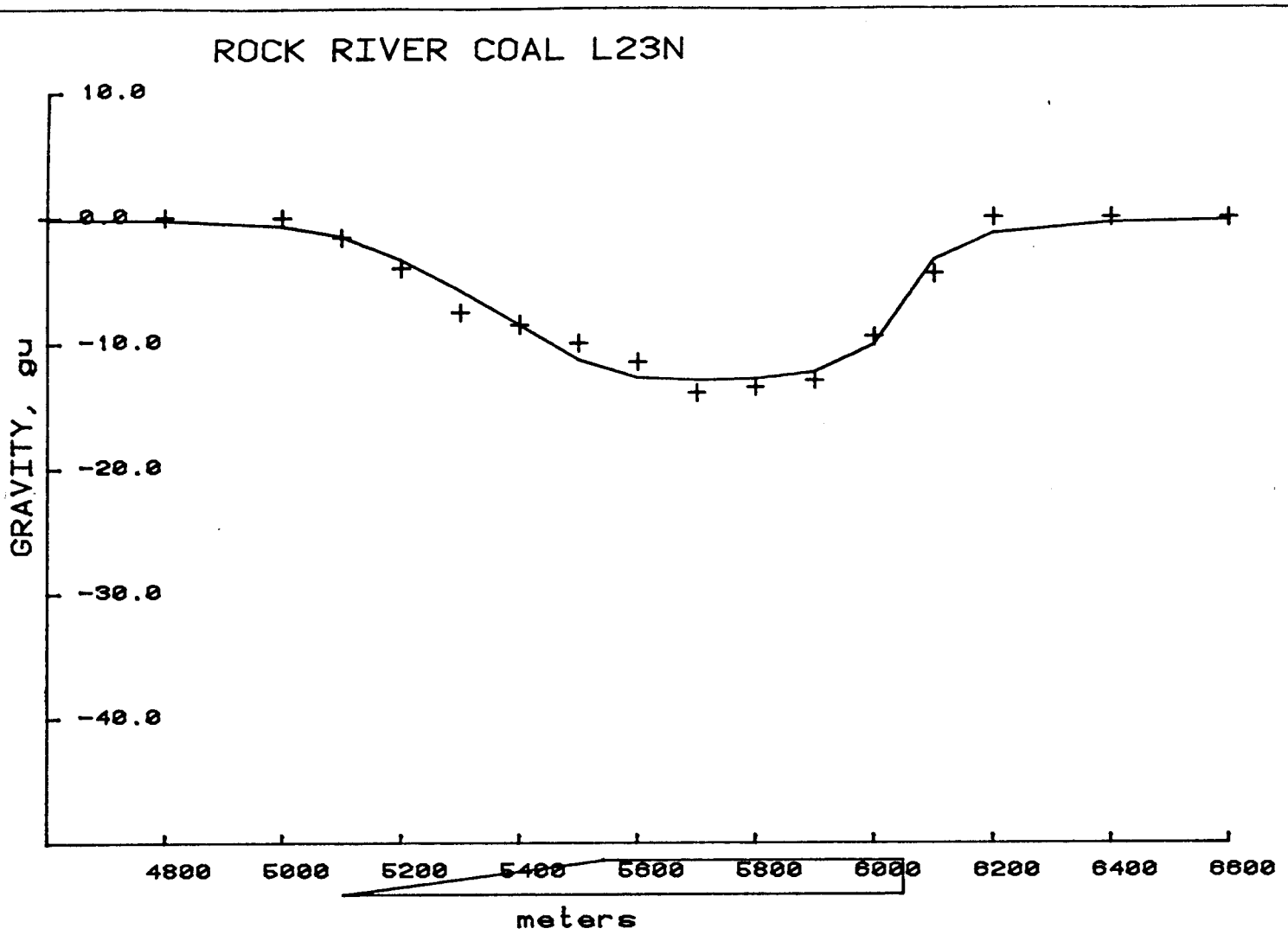
Depth	1.0
Depth Extent	1135.5
X of corner 1	4682.9
X of corner 2	9264.1
X of corner 3	7932.0
X of corner 4	5938.0
Strike Length	6000.1
Density (gm/cc)	-.5
Yoffset	.0
Strike Angle	90.0

RMS obs. error (gu): 7.62



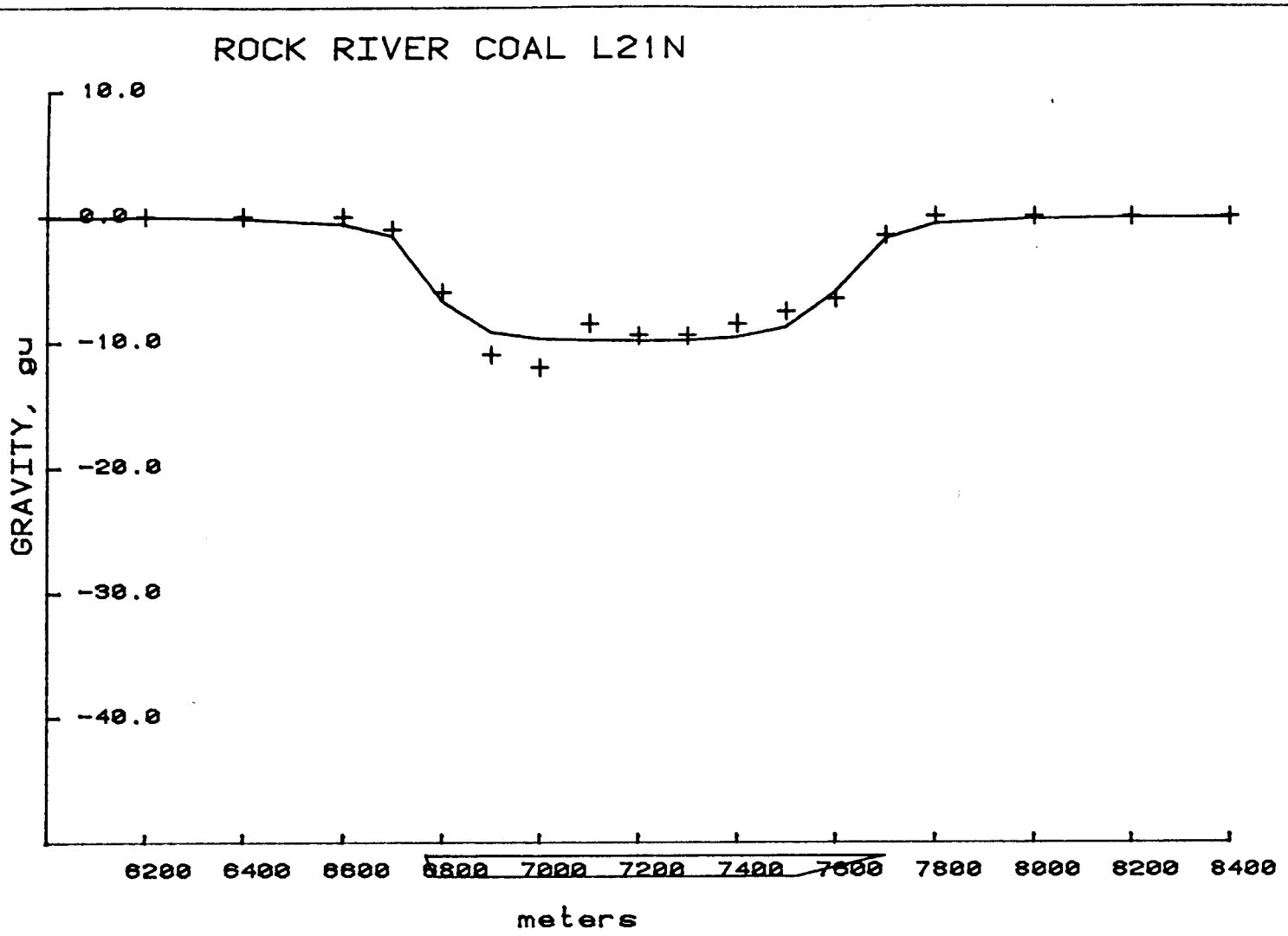
Depth	81.5
Depth Extent	78.2
X of corner 1	8054.2
X of corner 2	8622.5
X of corner 3	8442.6
X of corner 4	7476.5
Strike Length	1000.0
Density (gm/cc)	-.6
Yoffset	.0
Strike Angle	90.0

RMS abs. error (gu): .80



Depth	30.7
Depth Extent	57.7
X of corner 1	5541.2
X of corner 2	6050.0
X of corner 3	6050.0
X of corner 4	5101.0
Strike Length	1131.2
Density (gm/cc)	-.6
Yoffset	.0
Strike Angle	90.0

RMS abs. error (gu): .86



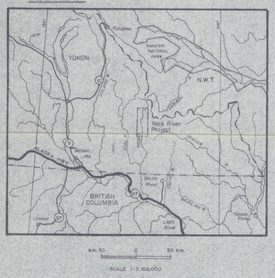
Depth	26.9
Depth Extent	43.0
X of corner 1	6768.4
X of corner 2	7701.0
X of corner 3	7524.7
X of corner 4	6786.0
Strike Length	973.9
Density (gm/cc)	-.6
Yoffset	.0
Strike Angle	90.0

RMS abs. error (gu): .90

61°00'
127°15'
127°00'
60°45'
60°30'

L 23+00 N
L 22+00 N
L 21+00 N
L 20+00 N
L 19+00 N
L 18+00 N
NORTH CAMP
WL 17+00 N
L 16+00 N
L 15+00 N
L 14+00 N
L 13+00 N
L 12+00 N
L 11+00 N
L 10+00 N
L 9+00 N
L 8+00 N
SOUTH CAMP
L 7+00 N
L 6+00 N
L 5+00 N
L 4+00 N
L 3+00 N

INDEX MAP



Anomalous Gravity Response

N

SULPETRO MINERALS LIMITED
TORONTO, CANADA

ROCK RIVER - YUKON TERRITORY

Location of Anomalous Gravity Responses

SCALE 1:50,000

APPROX LAT & LONG OF LOWER RT COR OF DWG
LATITUDE
LONGITUDE

PROJECT NO. 6205
REPORT NO.

SHEET NO.
OF
NTS 95 D/11 K

Bouguer Anomaly (mgals)

25·00 24·00 23·00 22·00 21·00 20·00 19·00 18·00 17·00 16·00 15·00 14·00 13·00 12·00 11·00 10·00 9·00 8·00 7·00 6·00 5·00 4·00 3·00 2·00 1·00 0

17·76 11·84 11·25 10·55 9·84 9·09 8·55 7·98 7·23 6·49 5·77 4·97 4·18 3·54 3·06 2·77 2·52 2·15 1·98 1·94 1·64 1·45 1·23 0·44 0·62 0·64 0·60 0·51 0·42 0·50 0·55 0·72 0·84 0·93 1·13 1·30 1·54 1·82 1·96 1·75 1·67 1·57 1·42 1·56 1·37 1·37 1·15 0·98 0·95 0·75

Regional

W. 50 55 60 65 70 75 80 85 90 95 100 E.

Residual Bouguer Anomaly (mgals)

5·00 4·00 3·00 2·00 1·00 0·00 -1·00 -2·00 -3·00 -4·00 -5·00

W. 50 55 60 65 70 75 80 85 90 95 E.

Instrumentation: Lacoste – Romberg Gravitymeter No. 442
Sokkisha B-2 Level

Main Base Station Location: South Camp Rock River

Station Interval: 100 m.

Personnel: J. L. Wright, D. Ward (meter)
L. Stoliker, T. Tobiason (level)

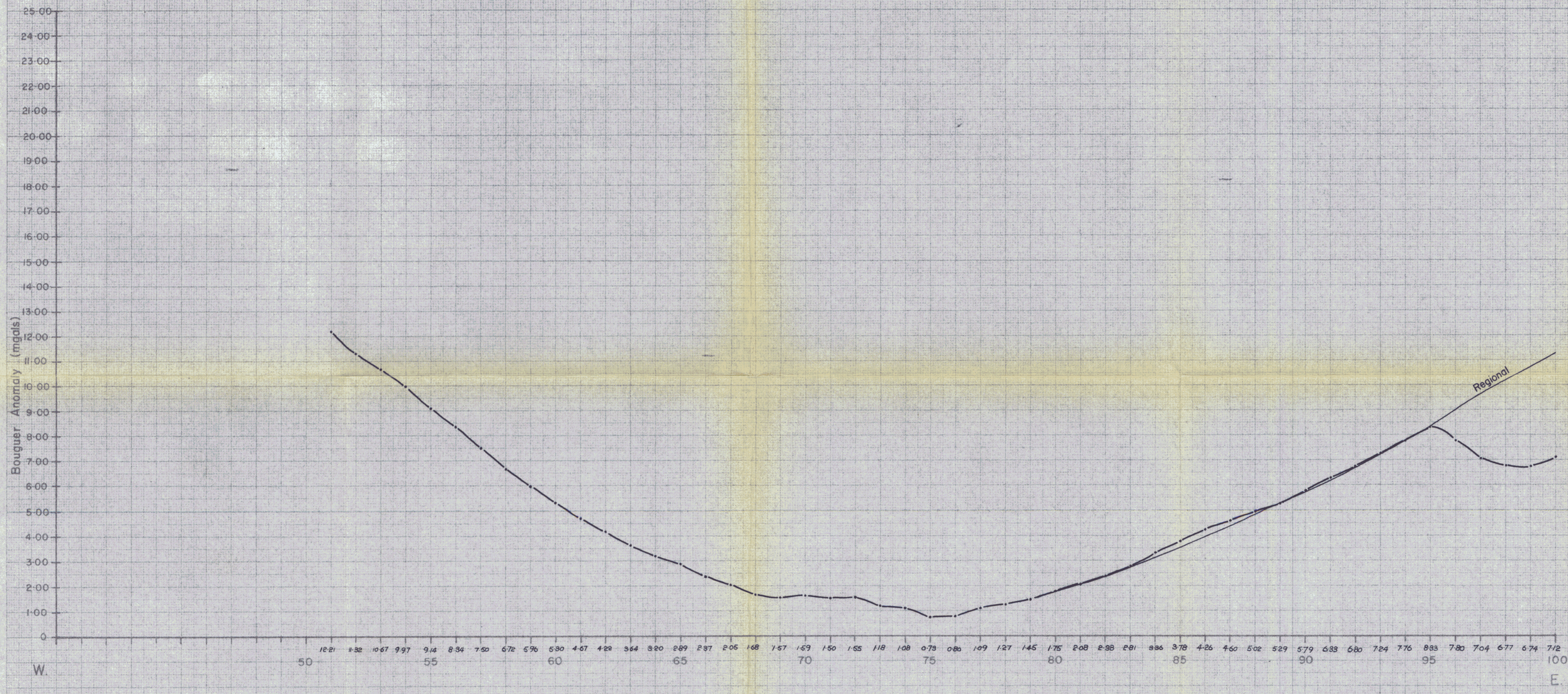
Survey Dates: March 17, 1982

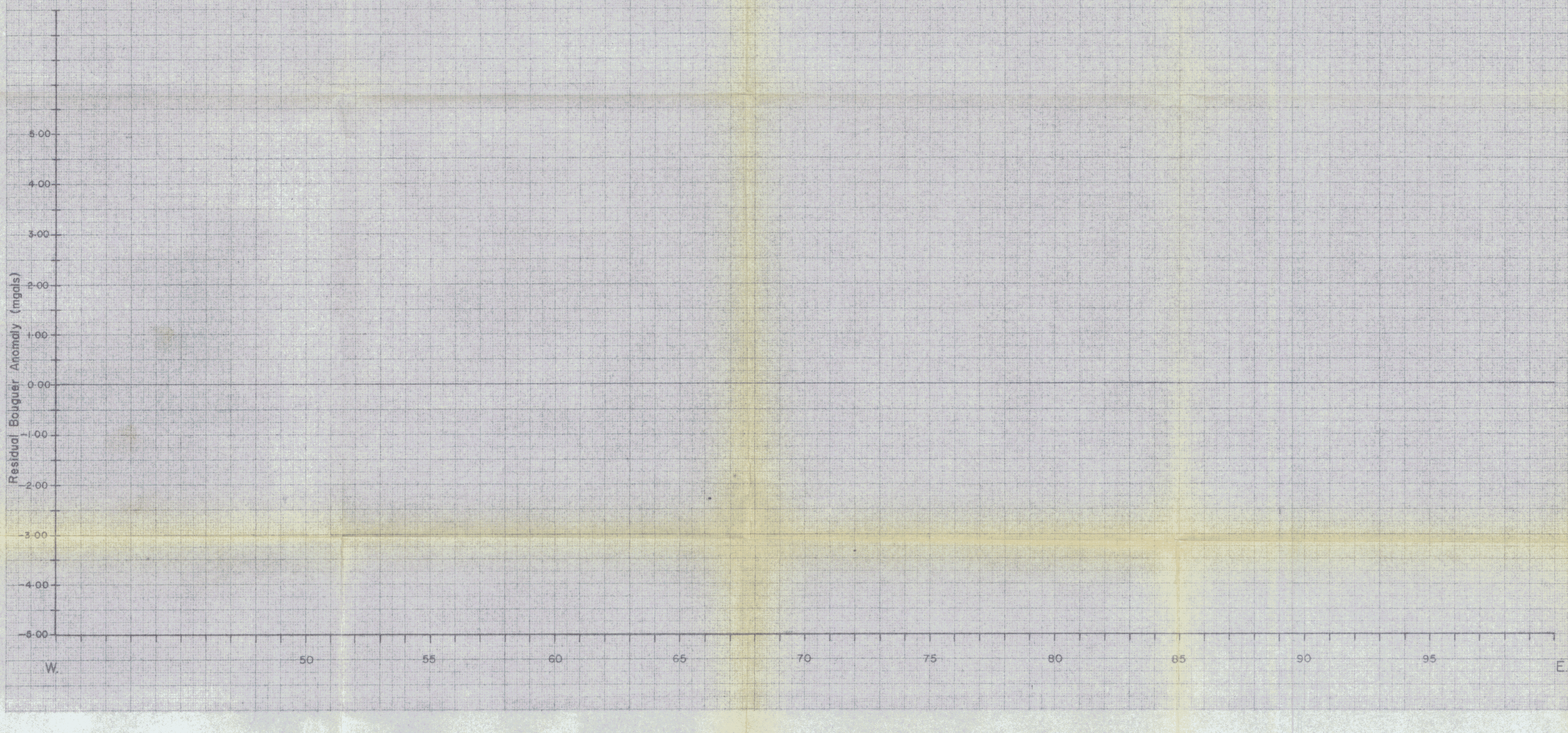
SULPETRO MINERALS LIMITED
TORONTO, CANADA
James J. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 3 N.

SCALE 1:10,000

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG. ° ' " LATITUDE ° ' " LONGITUDE	PROJECT NO. 6205	SHEET NO. OF
	REPORT NO.	NTS





Instrumentation: Lacoste – Romberg Gravitymeter No. 219
Sokkisha B-2 Level

Main Base Station Location: South Camp, Rock River

Station Interval: 100 m.

Personnel: D. Windsor, R. Shearing (meter)
C. Harrison, P. Chung (level)

Survey Dates: March 16-17, 1982.

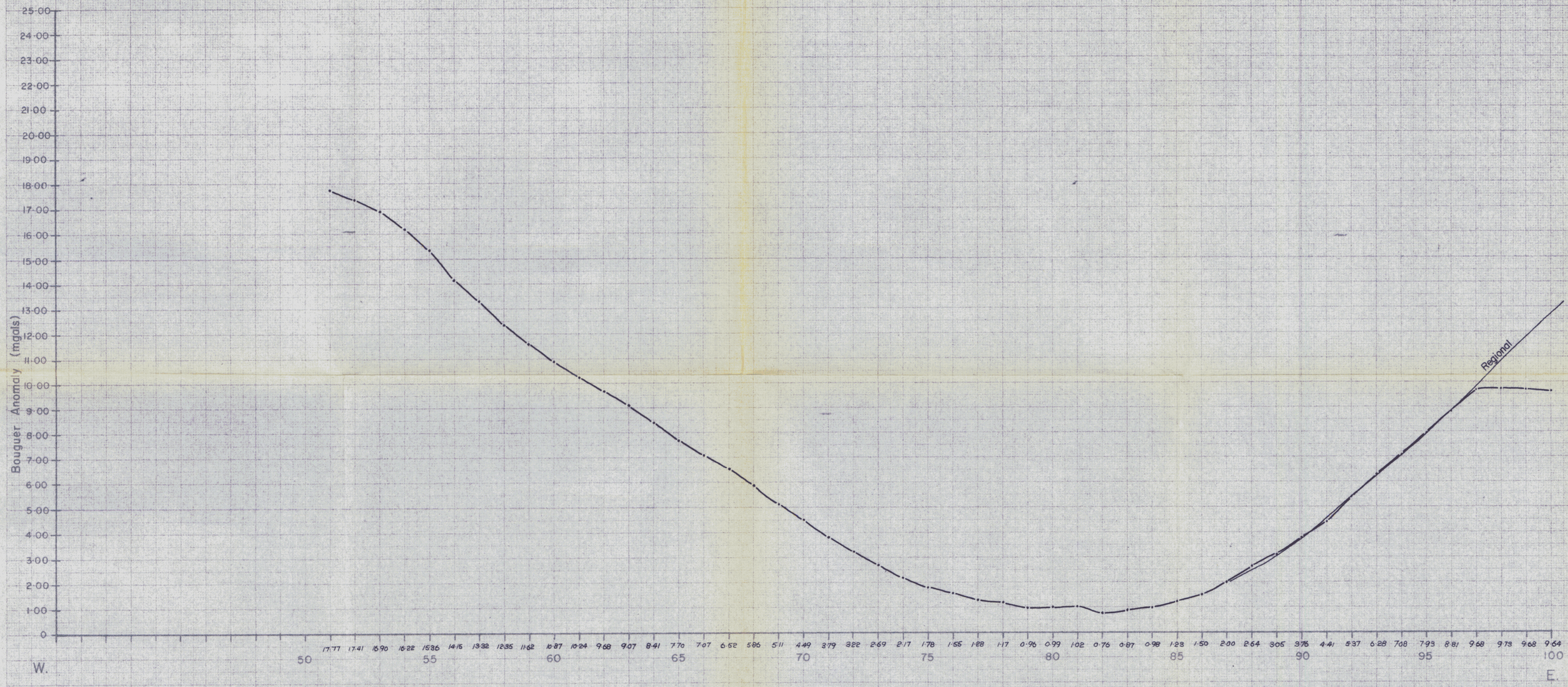
SULPETRO MINERALS LIMITED
TORONTO, CANADA

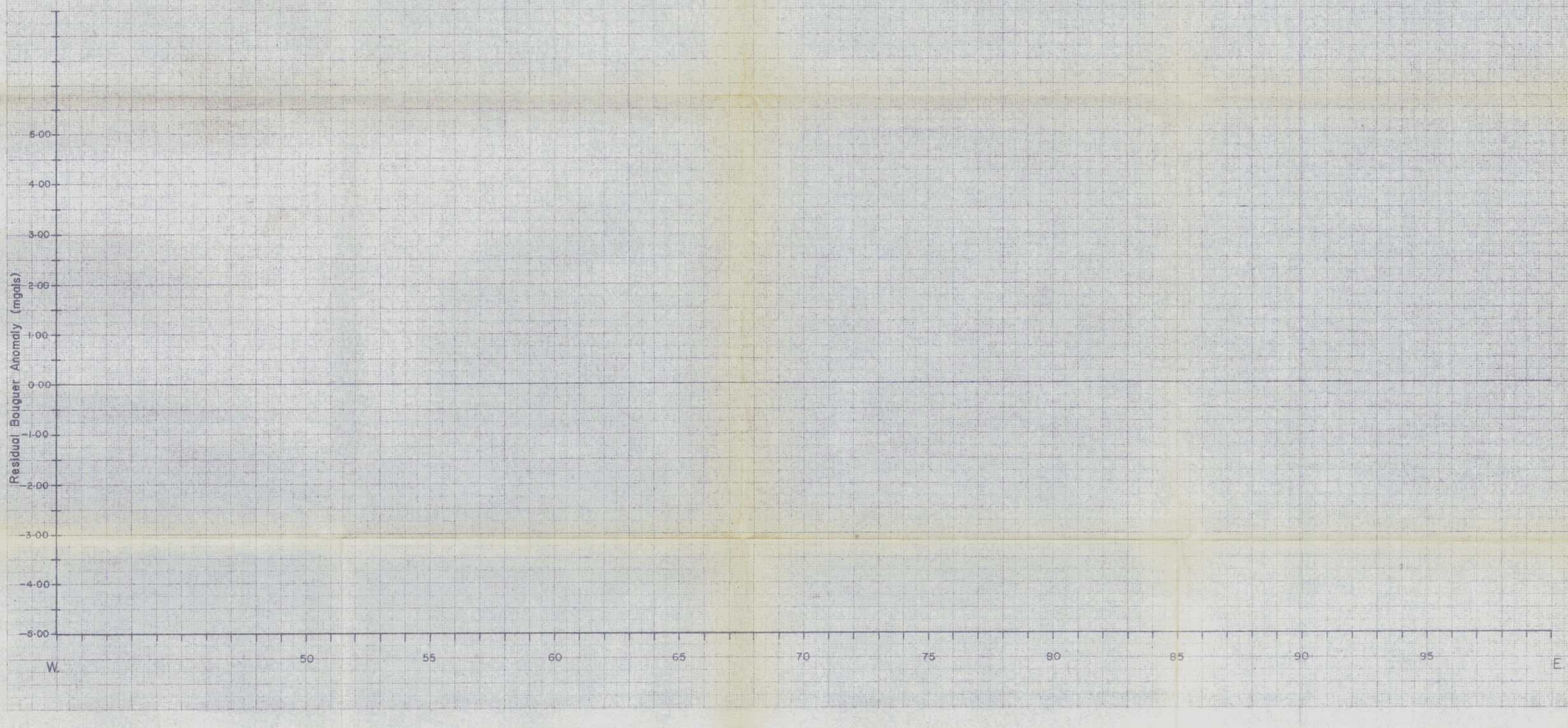
James D. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 4+00 N.

SCALE: 1:10,000

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.	PROJECT NO. 6205	SHEET NO. OF
° ' " LATITUDE		
° ' " LONGITUDE	REPORT NO.	N.T.S.





Instrumentation: Lacoste – Romberg Gravitymeter No. 442
Sokkisha B-2 Level

Main Base Station Location: South Camp Rock River

Station Interval: 100 m.

Personnel: J.L. Wright, D. Ward (meter)
L. Stoliker, T. Tobiason (level)

Survey Dates: March 16, 1982.

SULPETRO MINERALS LIMITED
TORONTO, CANADA

James D. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 5+00 N.

SCALE 1:10,000

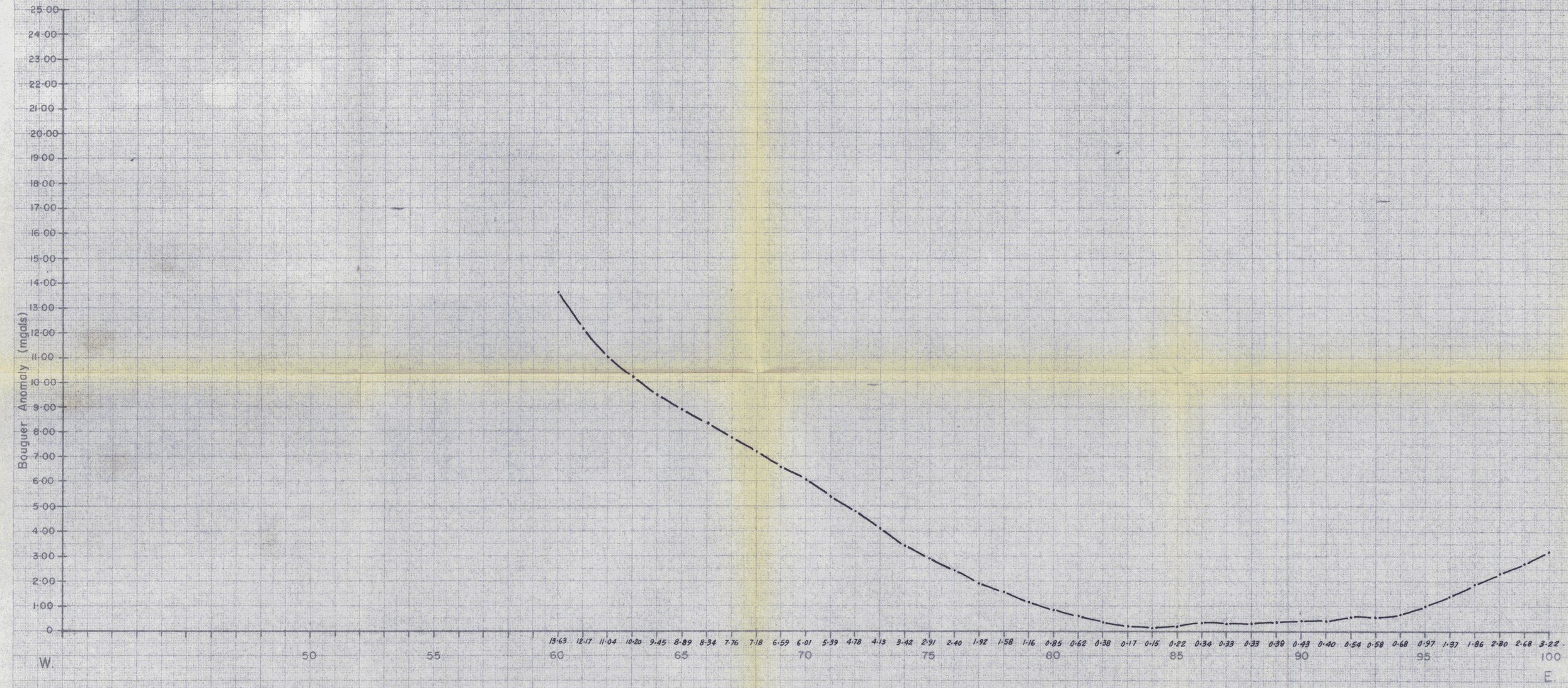
APPROX. LAT. & LONG. OF LOWER LT. COR. OF DWG.
° ' LATITUDE
° ' LONGITUDE

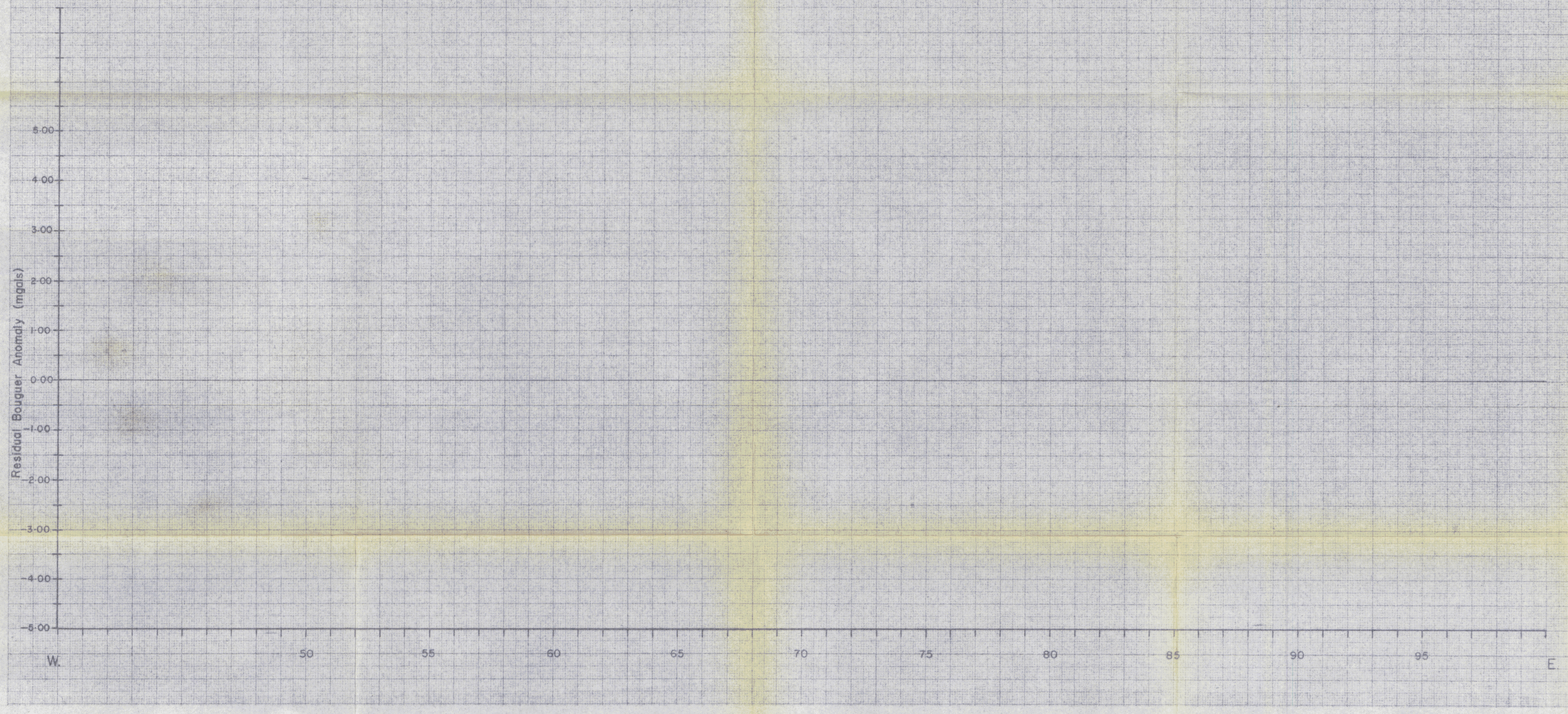
PROJECT NO. 6205

REPORT NO.

SHEET NO. OF

N.T.S.





Instrumentation: Lacoste – Romberg Gravitymeter No. 442
Sokkisha B-2 Level

Main Base Station Location: South Camp Rock River

Station Interval: 100 m.

Personnel: J.L. Wright, D. Ward (meter)
L. Stoliker, T. Tobiason (level)

Survey Dates: March 15, 1982

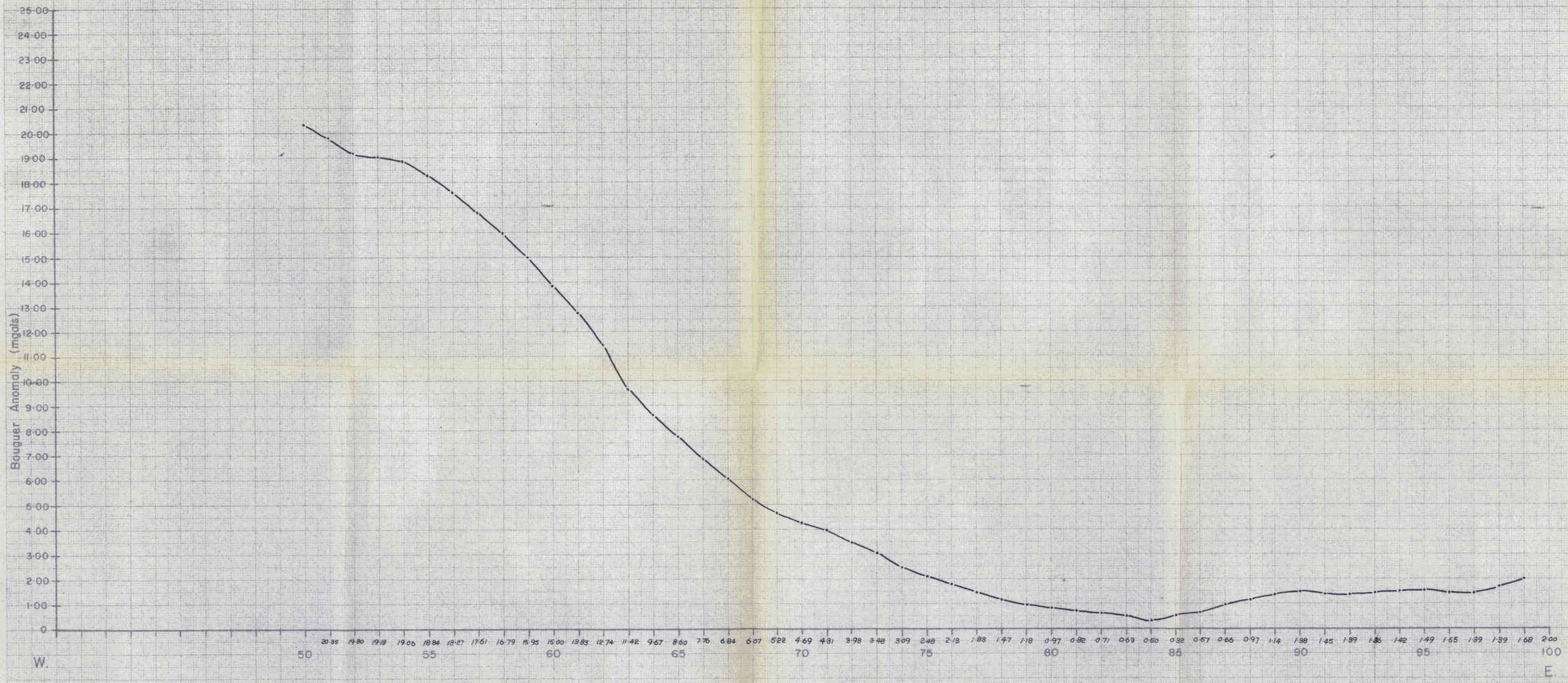
SULPETRO MINERALS LIMITED
TORONTO, CANADA

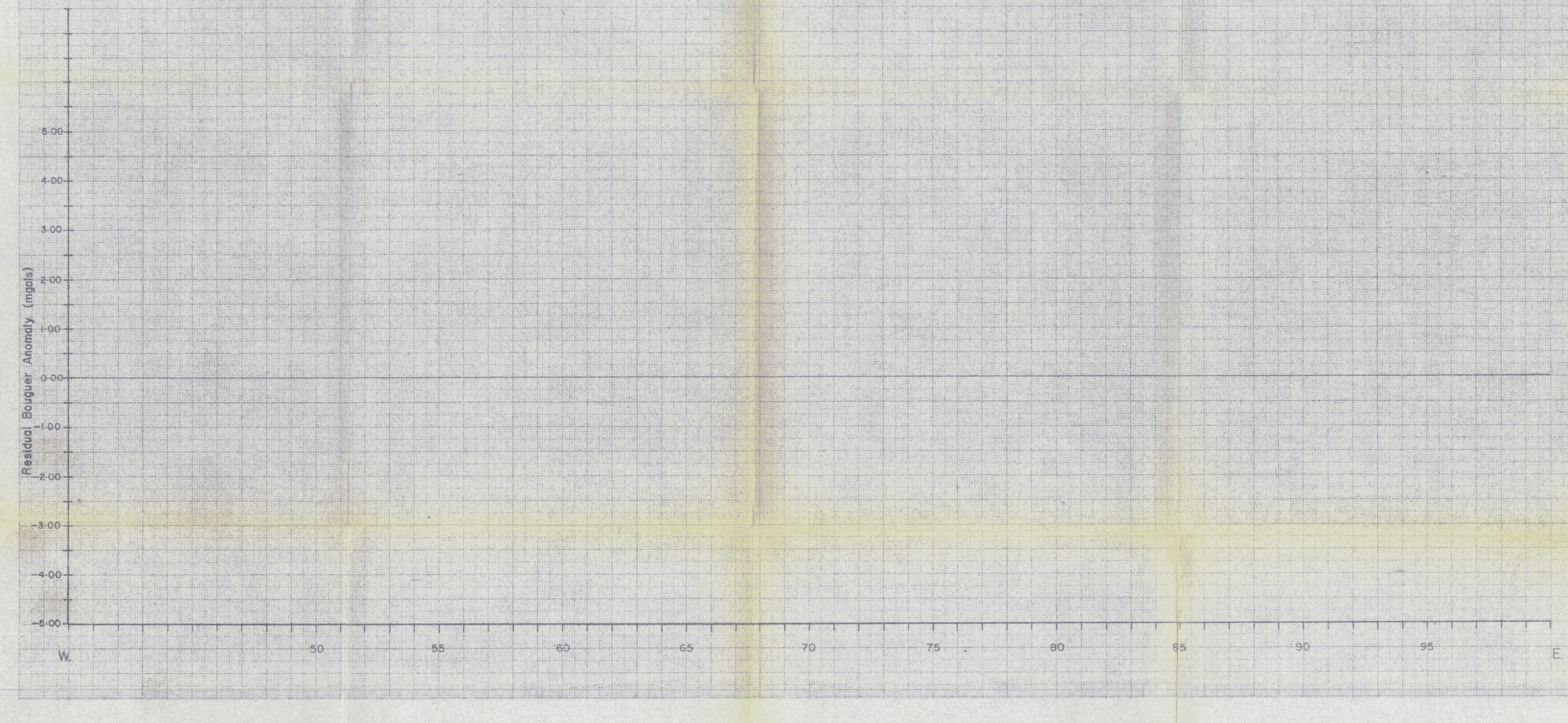
James L. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 6 N.

SCALE 1:10,000

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.	PROJECT NO. 6205	SHEET NO. ___ OF ___
___° ___' ___" LATITUDE ___° ___' ___" LONGITUDE	REPORT NO.	N.T.S.





Instrumentation: Lacoste - Romberg Gravitymeter No. 219
Sokkisha B-2 Level

Main Base Station Location: South Camp, Rock River

Station Interval: 100 m.

Personnel: D. Windsor, R. Shearing (meter)
C. Harrison, P. Chung (level)

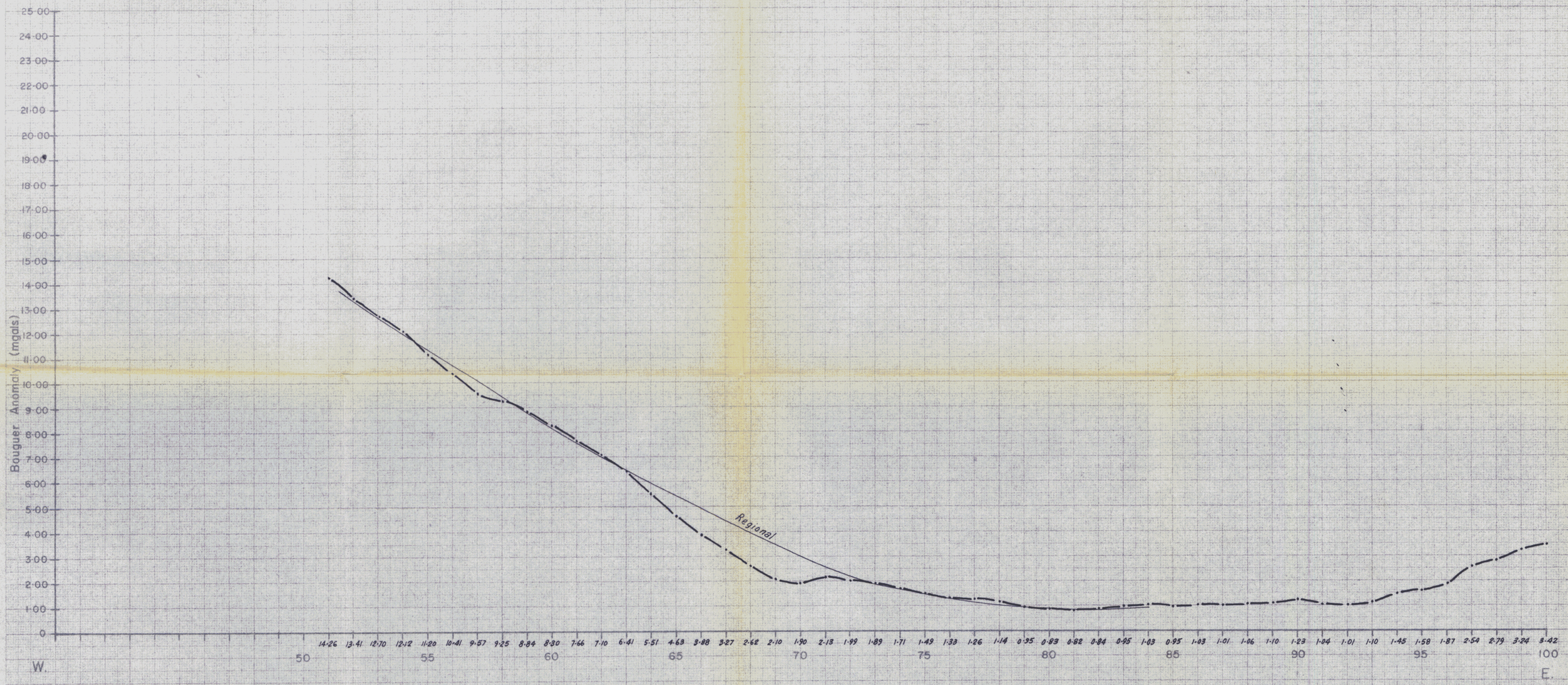
Survey Dates: March 15 - 16, 1982.

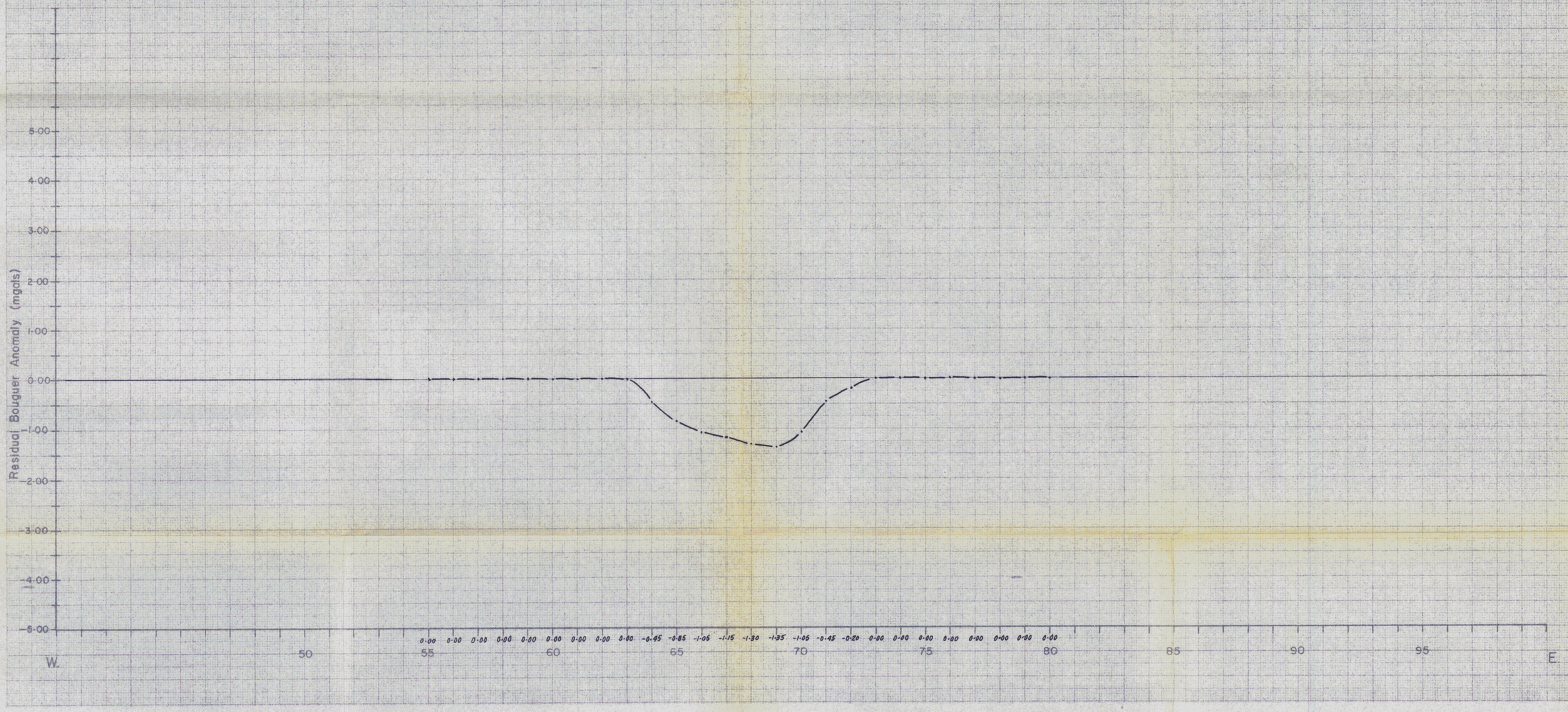
SULPETRO MINERALS LIMITED
TORONTO, CANADA

James J. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 7+00 N.
SCALE 1:10,000

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG. ° ' " LATITUDE ° ' " LONGITUDE	PROJECT NO. 6205	SHEET NO. OF
	REPORT NO.	N.T.S.





Instrumentation: Lacoste – Romberg Gravitymeter No. 442

Sokkisha B-2 Level

Main Base Station Location: South Camp Rock River

Station Interval: 100 m.

Personnel: J. L. Wright, D. Windsor (meter)
W. Rayner, C. Harrison, P. Chung (level)

Survey Dates: March 14-15, 1982

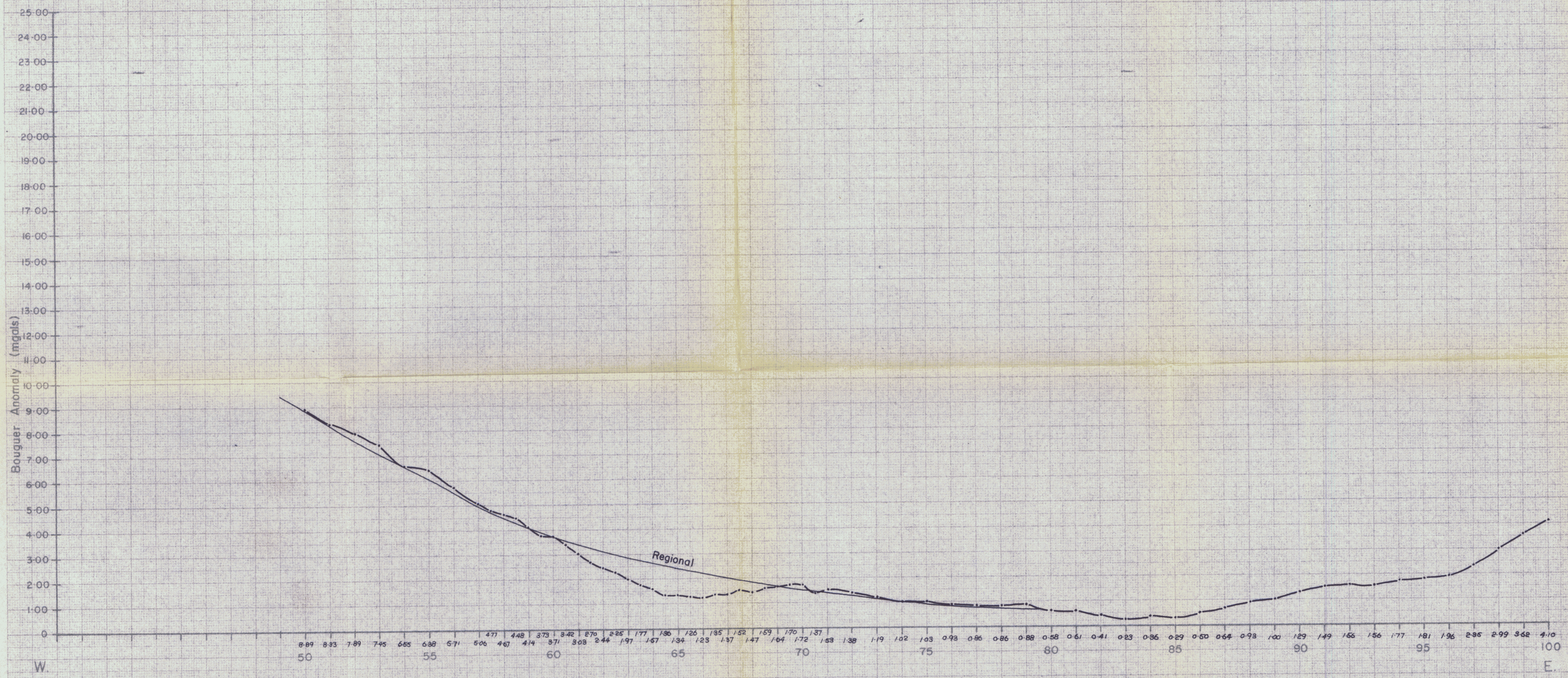
SULPETRO MINERALS LIMITED
TORONTO, CANADA

James J. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 8+00 N.

SCALE 1:10,000

APPROX LAT & LONG OF LOWER RT COR OF DWG ° ' " ___ ° ___ ' ___ " LATITUDE ___ ° ___ ' ___ " LONGITUDE	PROJECT NO 6205 REPORT NO.	SHEET NO. ___ OF ___ N.T.S. ___





Instrumentation: Lacoste – Romberg Gravitymeter No. 219
Sokkisha B-2 Level

Main Base Station Location: South Camp, Rock River

Station Interval: 100 m., 50 m.

Personnel: D. Windsor, R. Shearing (meter)
C. Harrison, P. Chung (level)

Survey Dates: March 17-18, 1982.

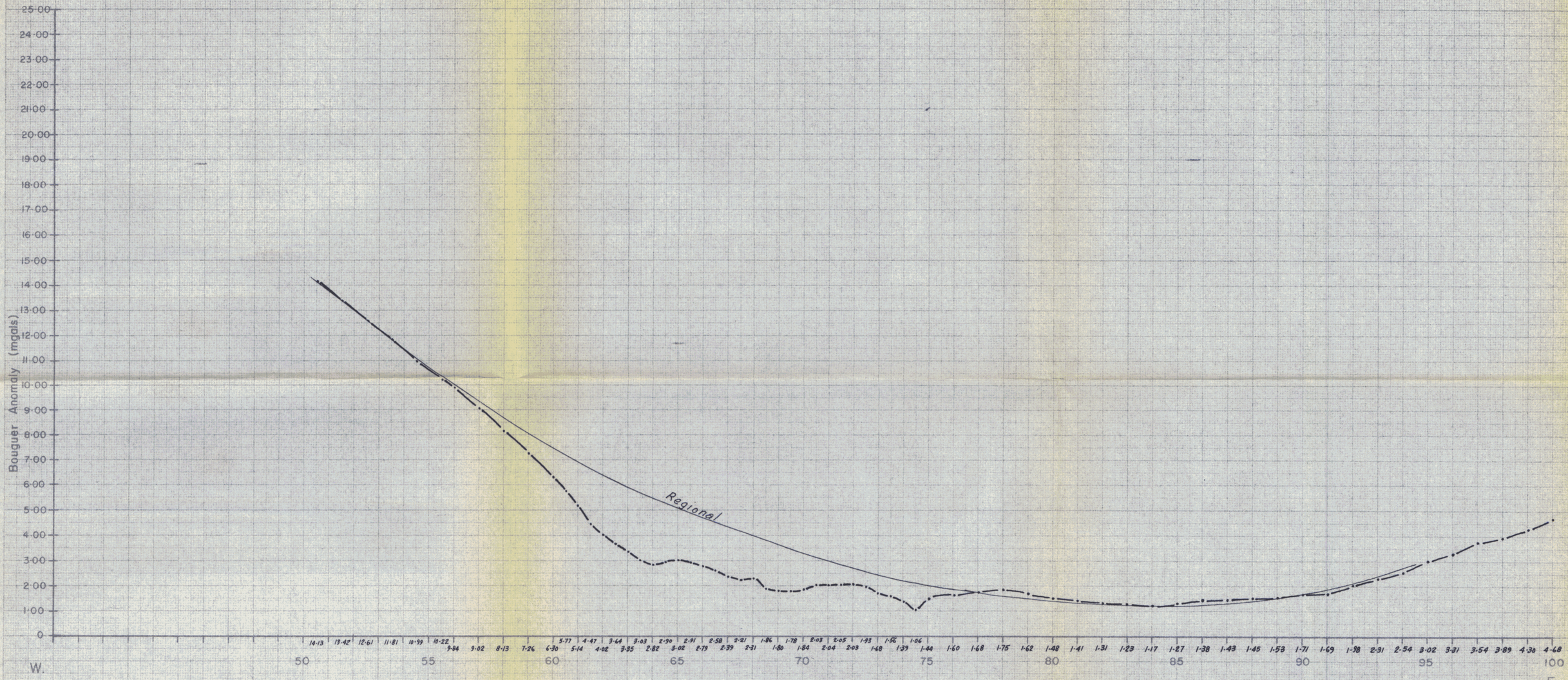
SULPETRO MINERALS LIMITED
TORONTO, CANADA

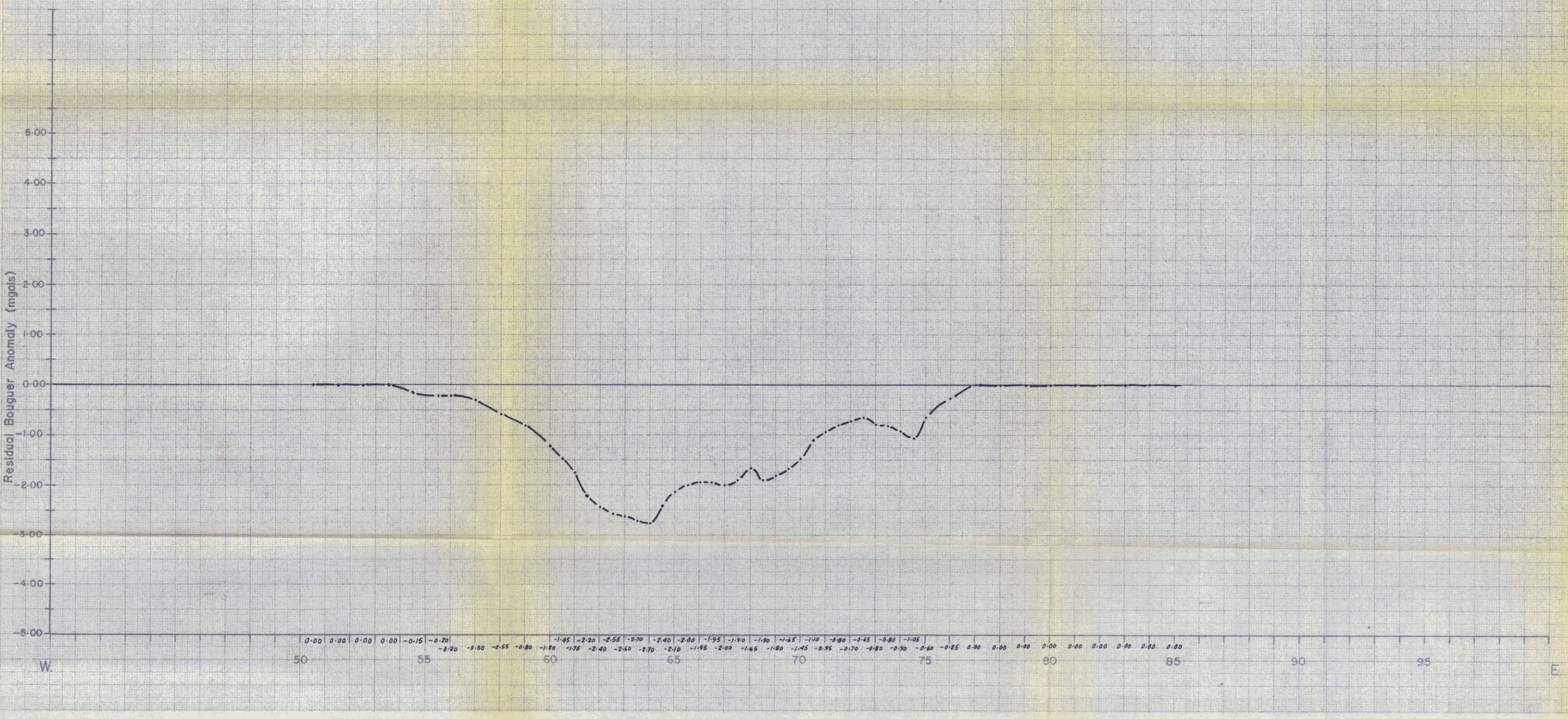
James D. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 9+00 N.

SCALE 1:10,000

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.	PROJECT NO. 6205	SHEET NO. ___ OF ___
___° ___' ___" LATITUDE ___° ___' ___" LONGITUDE	REPORT NO.	N.T.S.





Instrumentation: Lacoste - Romberg Gravitymeter No. 442
Sokkisha B-2 Level

Main Base Station Location: South Camp Rock River

Station Interval: 50m. & 100m.

Personnel: J. L. Wright, D. Ward (meter)
L. Stoliker, T. Tobiason (level)

Survey Dates: March 18 & 20, 1982

SULPETRO MINERALS LIMITED
TORONTO, CANADA

James J. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 10+00N.

SCALE 1:10,000

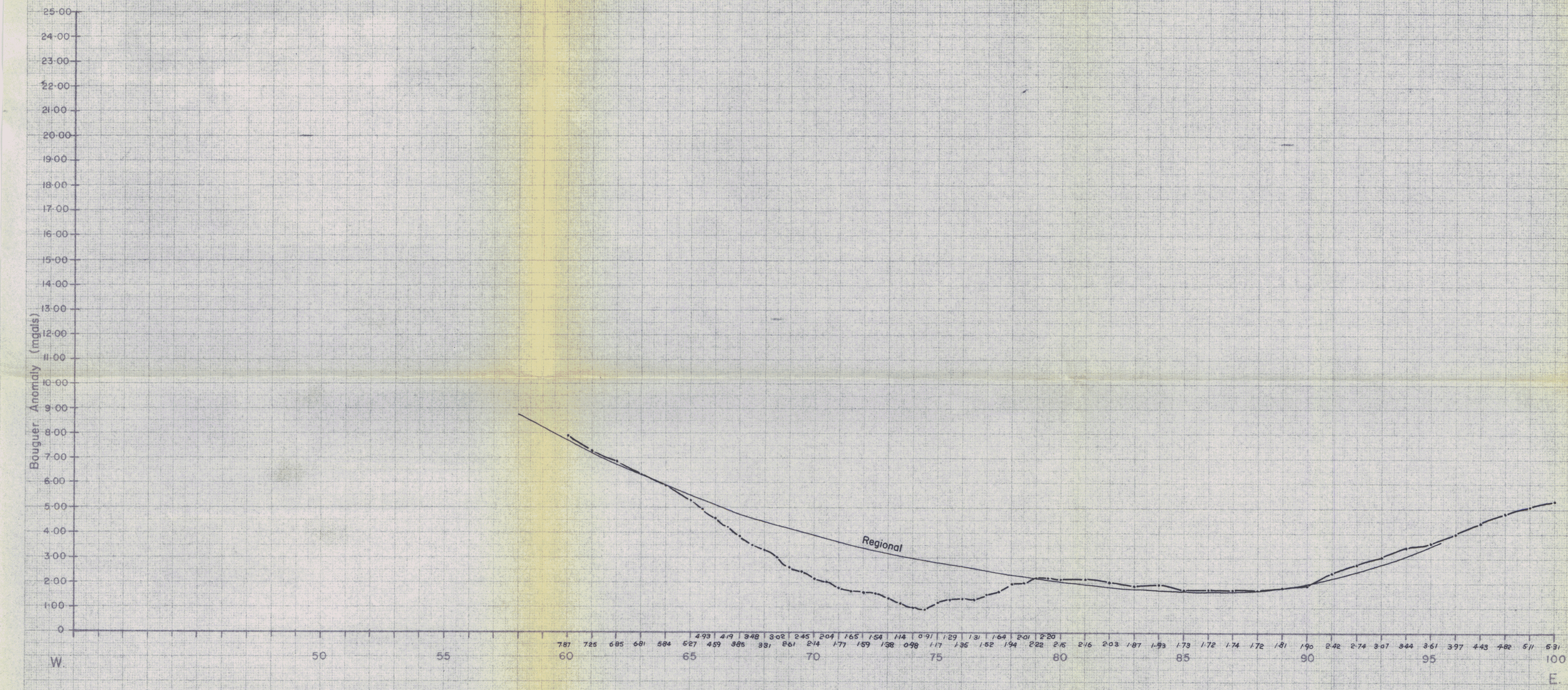
APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.
° ' " LATITUDE
° ' " LONGITUDE

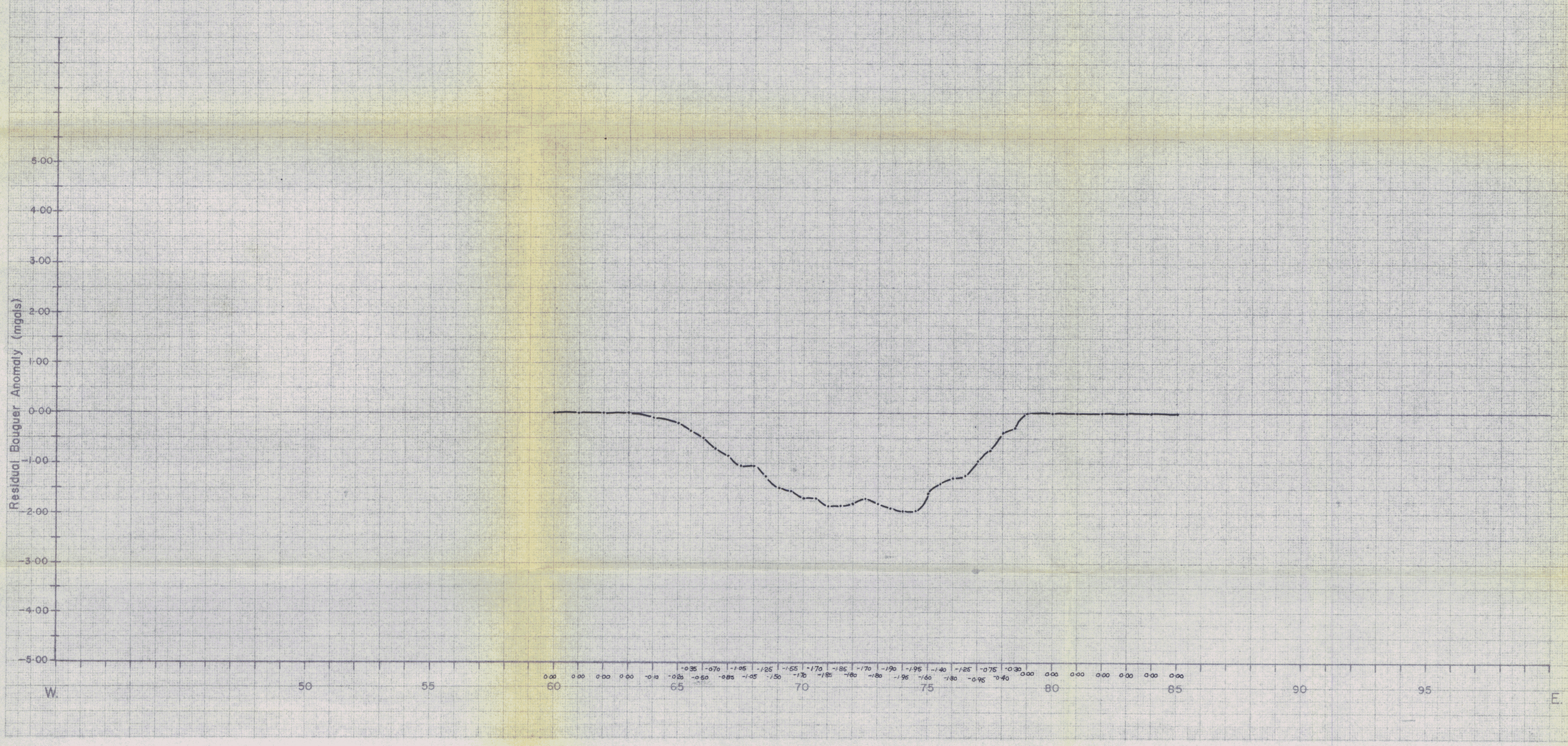
PROJECT NO. 6205

SHEET NO. OF

REPORT NO.

N.T.S.





Instrumentation: Lacoste – Romberg Gravitymeter No. 219
Sokkisha B-2 Level

Main Base Station Location: South Camp, Rock River

Station Interval: 100 m., 50 m.

Personnel: D. Windsor, R. Shearing (meter)
C. Harrison, P. Chung (level)

Survey Dates: March 18-19, 1982.

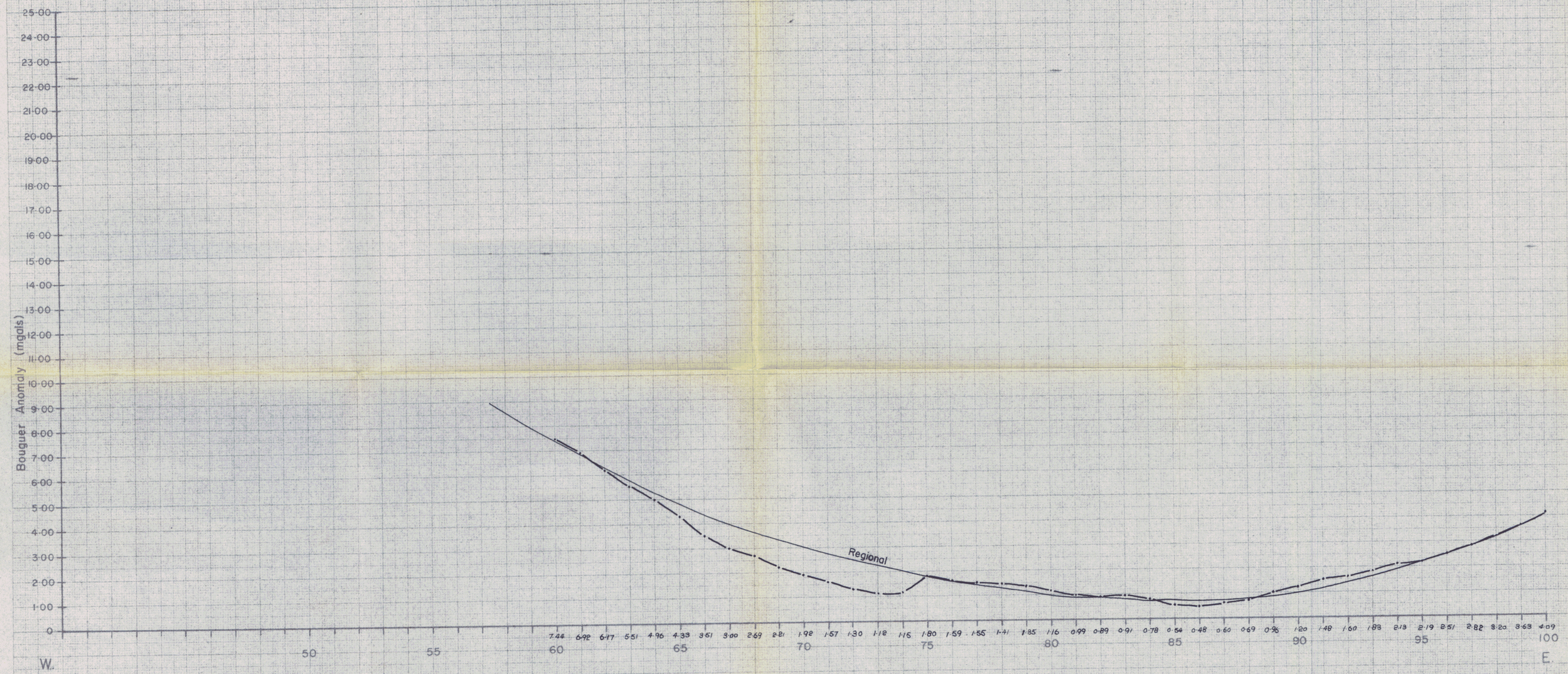
SULPETRO MINERALS LIMITED
TORONTO, CANADA

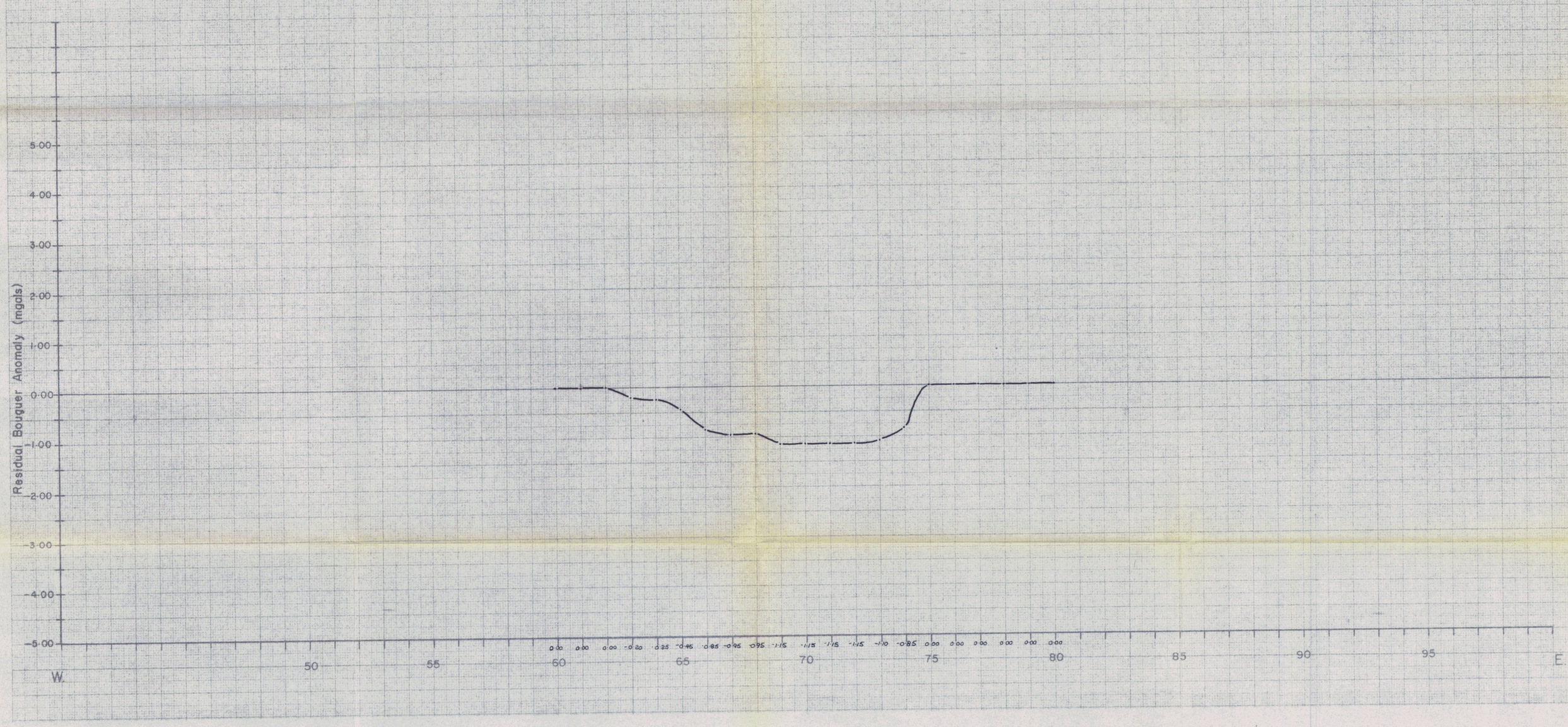
James J. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 11+00 N.

SCALE 1:10,000

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG. ° ' " LATITUDE ° ' " LONGITUDE	PROJECT NO. 6205	SHEET NO. OF
	REPORT NO.	NTS





Instrumentation: Lacoste – Romberg Gravitymeter No. 219
Sokkisha B-2 Level

Main Base Station Location: South Camp, Rock River

Station Interval: 100 m.

Personnel: D. Windsor, R. Shearing (meter)
C. Harrison, P. Chung (level)

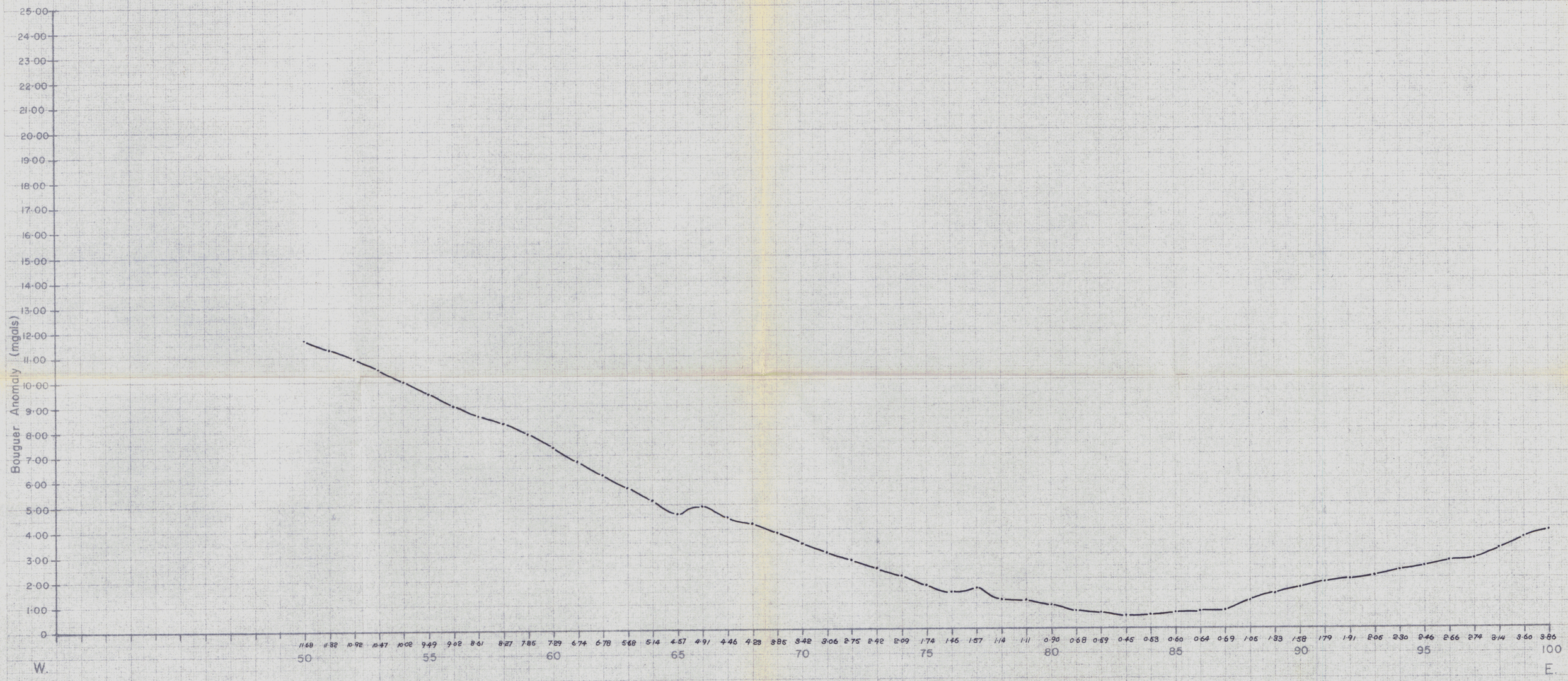
Survey Dates: March 19-20, 1982.

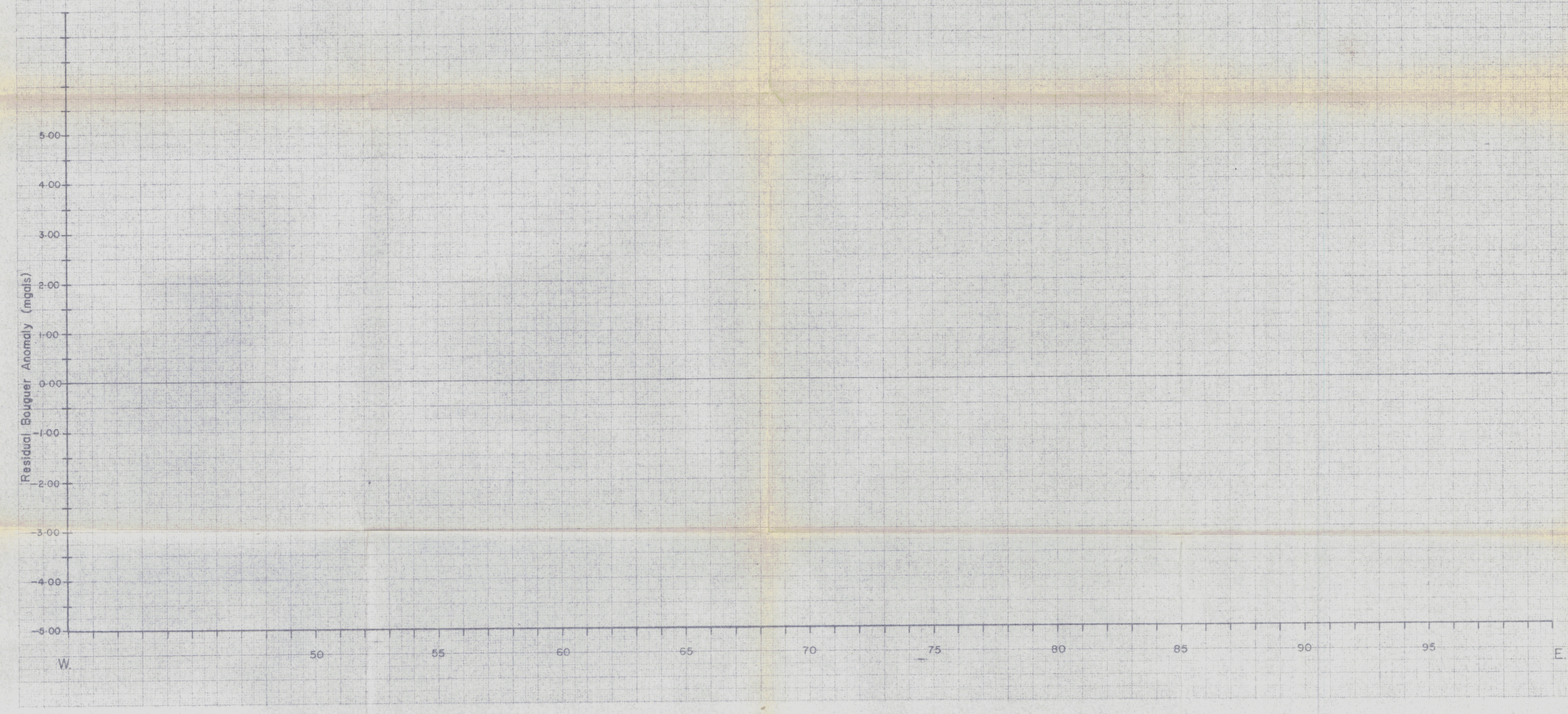
SULPETRO MINERALS LIMITED
TORONTO, CANADA

James J. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 12+00 N.
SCALE: 1:10,000

APPROX LAT & LONG OF LOWER RT COR OF DWG ° ' N LATITUDE ° ' W LONGITUDE	PROJECT NO. 6205 REPORT NO.	SHEET NO. OF NTS





Instrumentation: Lacoste - Romberg Gravitymeter No. 442
Sokkisha B-2 Level

Main Base Station Location: South Camp, Rock River

Station Interval: 100 m.

Personnel: J. L. Wright, D. Ward (meter)
L. Stoliker, T. Tobiason (level)

Survey Dates: March 19, 1982.

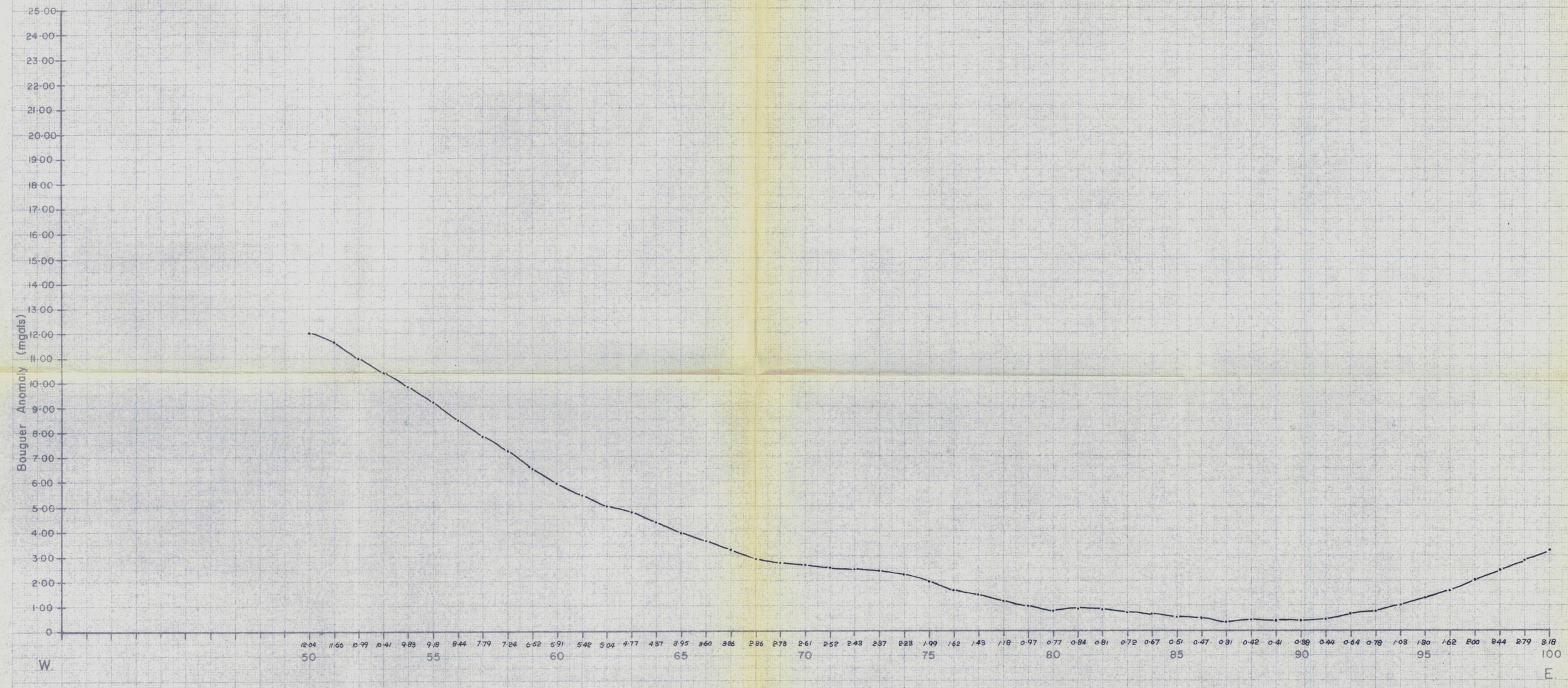
SULPETRO MINERALS LIMITED
TORONTO, CANADA

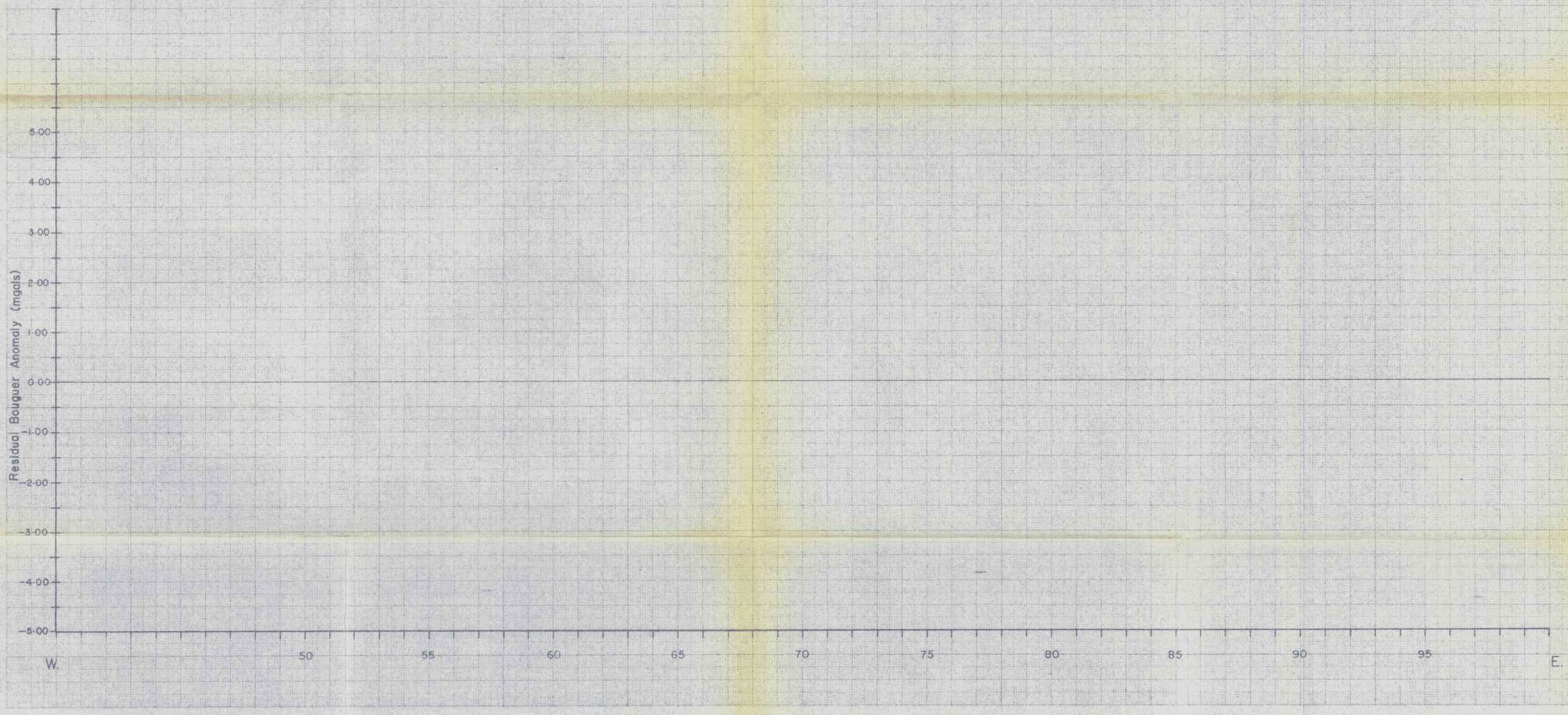
James J. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 13+00 N.

SCALE 1:10,000

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.	PROJECT NO. 6205	SHEET NO.
LATITUDE	REPORT NO.	N.T.S.
LONGITUDE		





Instrumentation: Lacoste – Romberg Gravitymeter No. 442
Sokkisha B-2 Level

Main Base Station Location: South Camp, Rock River

Station Interval: 100 m.

Personnel: J.L. Wright, D. Ward (meter)
L. Stoliker, T. Tobiason (level)

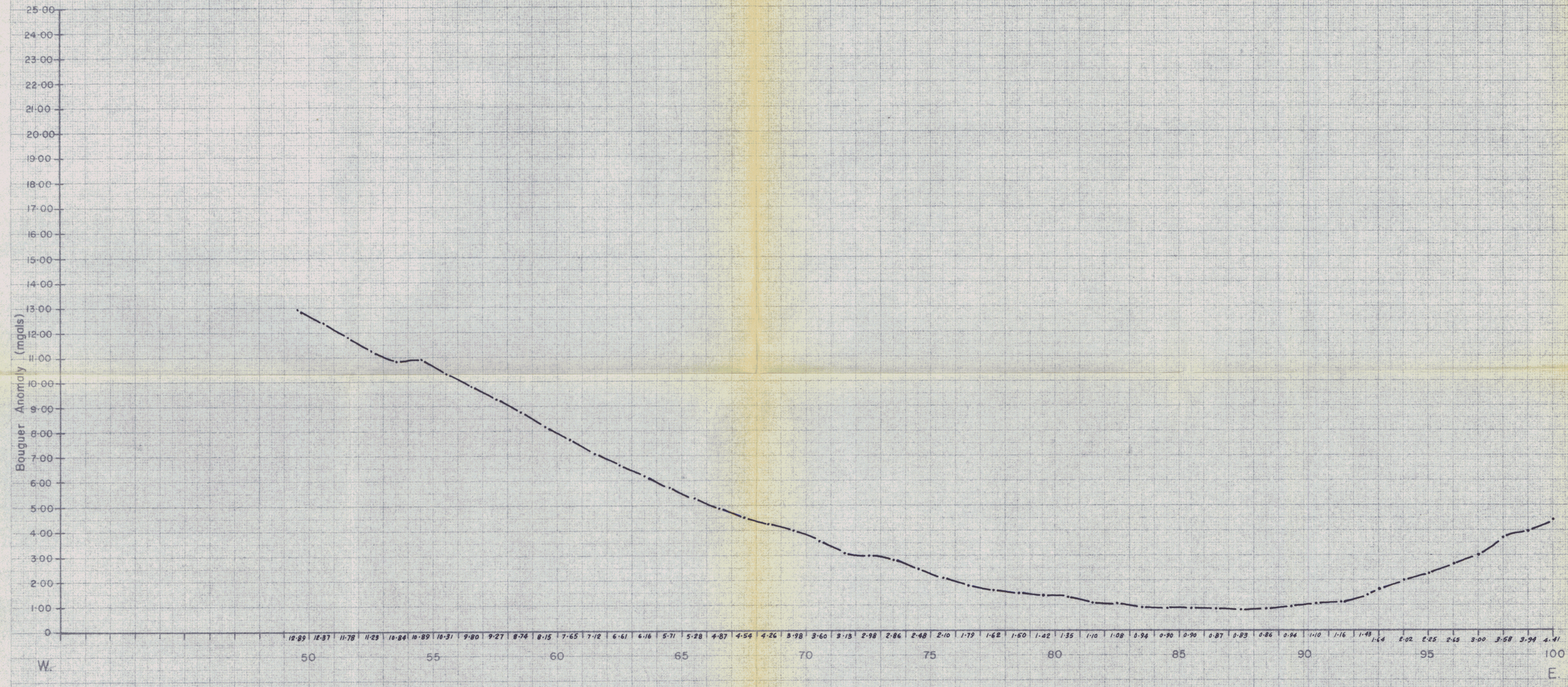
Survey Dates: March 21, 1982.

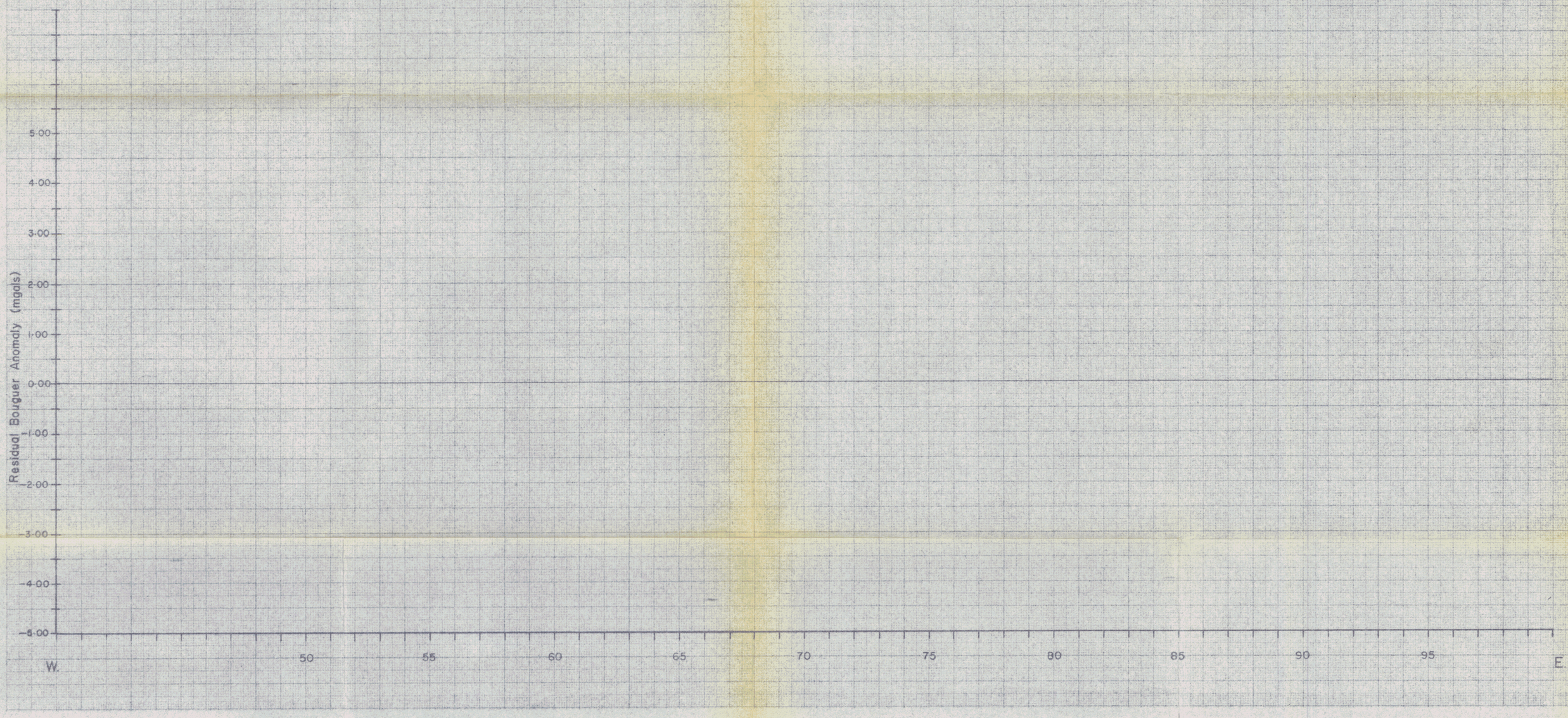
SULPETRO MINERALS LIMITED
TORONTO, CANADA

James L. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 14+00 N.
SCALE 1:10,000

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.	PROJECT NO. 6205	SHEET NO. OF
°' " LATITUDE °' " LONGITUDE	REPORT NO.	N.T.S.





Instrumentation: Lacoste – Romberg Gravitymeter No. 442

Sokkisha B-2 Level

Main Base Station Location: South Camp Rock River

Station Interval: 100m.

Personnel: J.L. Wright, L. Stoliker (meter)
T. Tobiason, D. Ward (level)

Survey Dates: March 22, 1982

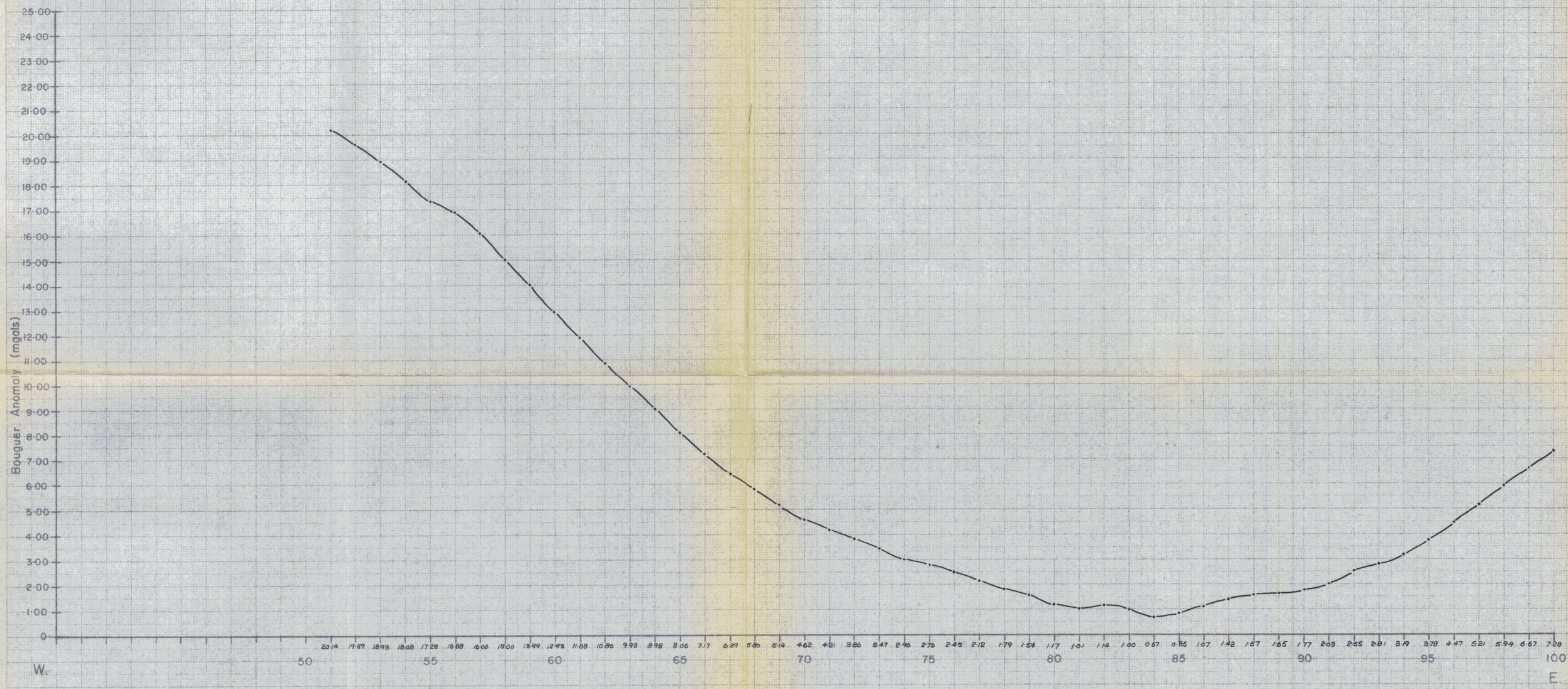
SULPETRO MINERALS LIMITED
TORONTO CANADA

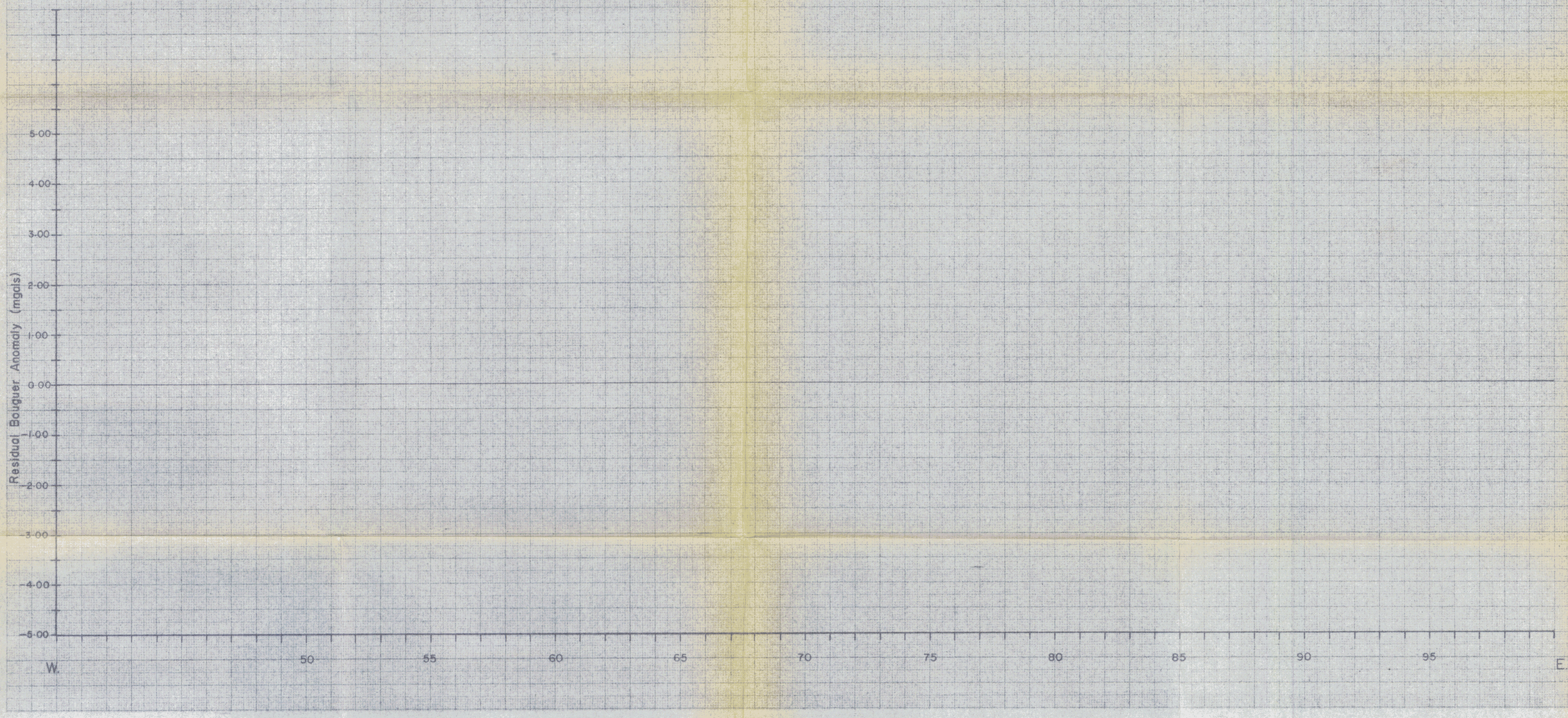
James L. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 15+00 N.

SCALE 1:10,000

APPROX LAT & LONG OF LOWER RT COR OF DWG. ° ' " LATITUDE ° ' " LONGITUDE	PROJECT NO. 6205	SHEET NO. OF
	REPORT NO.	NTS





Instrumentation: Lacoste – Romberg Gravitymeter No. 219

Sokkisha B-2 Level

Main Base Station Location: South Camp, Rock River

Station Interval: 100 m.

Personnel: D. Windsor, C. Harrison (meter)
R. Shearing, P. Chung (level)

Survey Dates: March 22, 1982.

SULPETRO MINERALS LIMITED
TORONTO, CANADA

James J. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 16+00 N.

SCALE 1:10,000

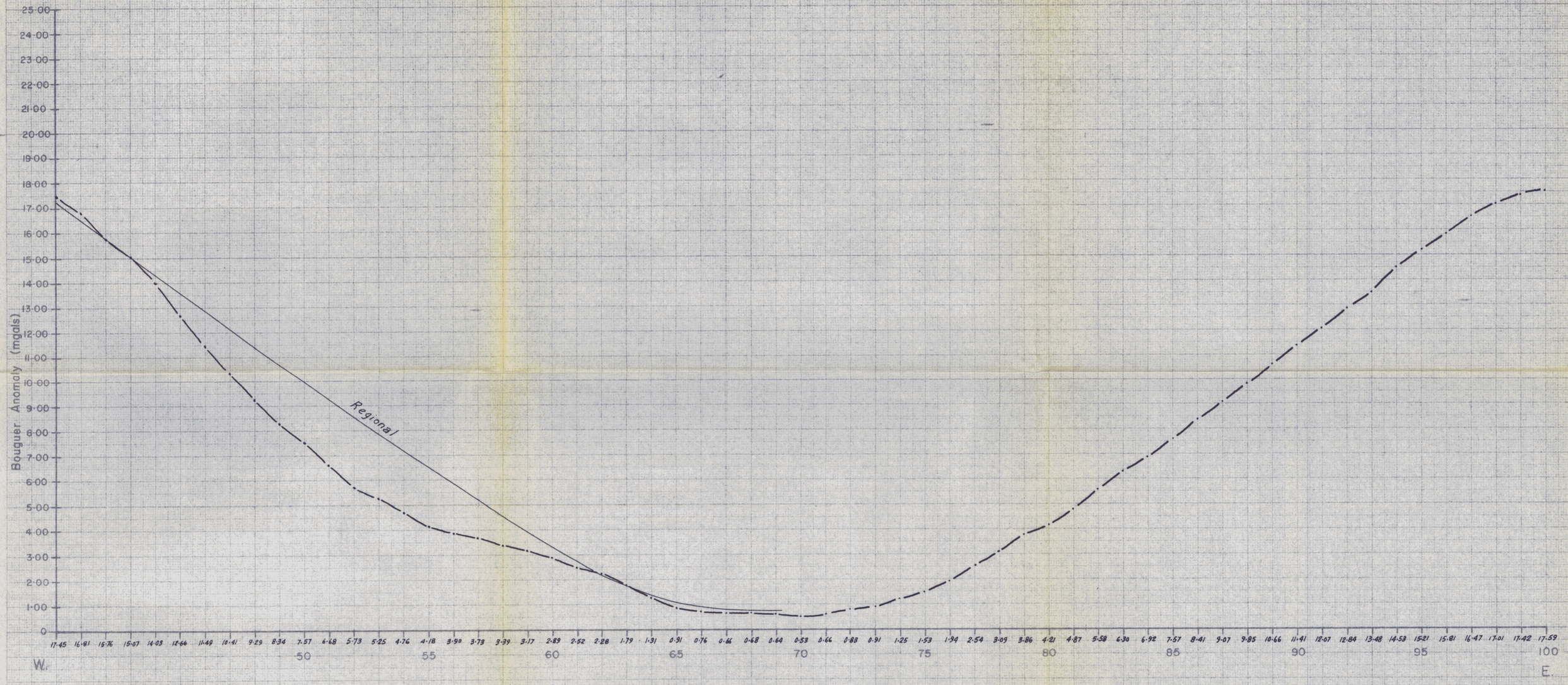
APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.
° ' " LATITUDE
° ' " LONGITUDE

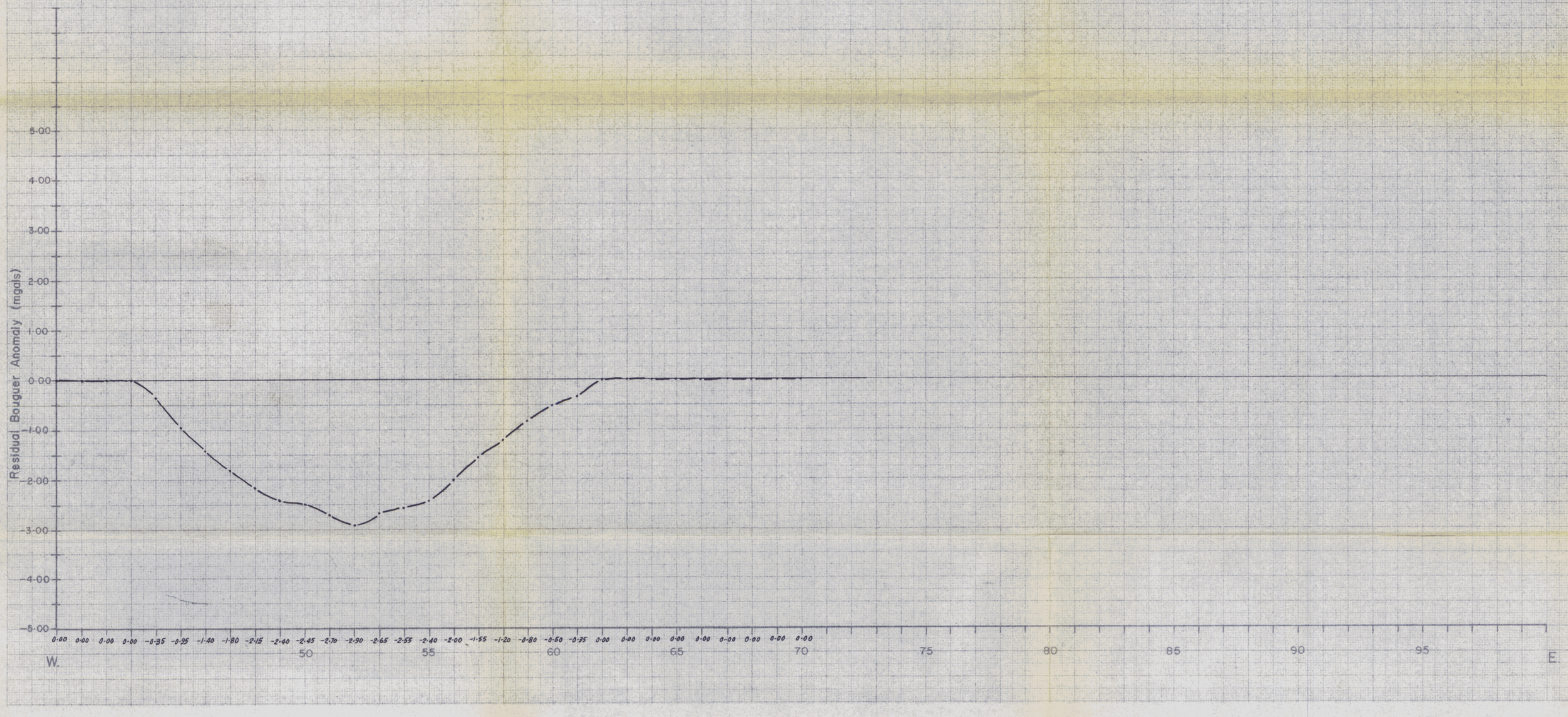
PROJECT NO. 6205

REPORT NO.

SHEET NO. OF

NTS





Instrumentation: Lacoste – Romberg Gravitymeter No. 219
Sokkisha B-2 Level

Main Base Station Location: South Camp Rock River

Station Interval: 100 m.

Personnel: D. Windsor, C. Harrison (meter)
P. Chung, R. Shearing (level)

Survey Dates: March 23, 1982

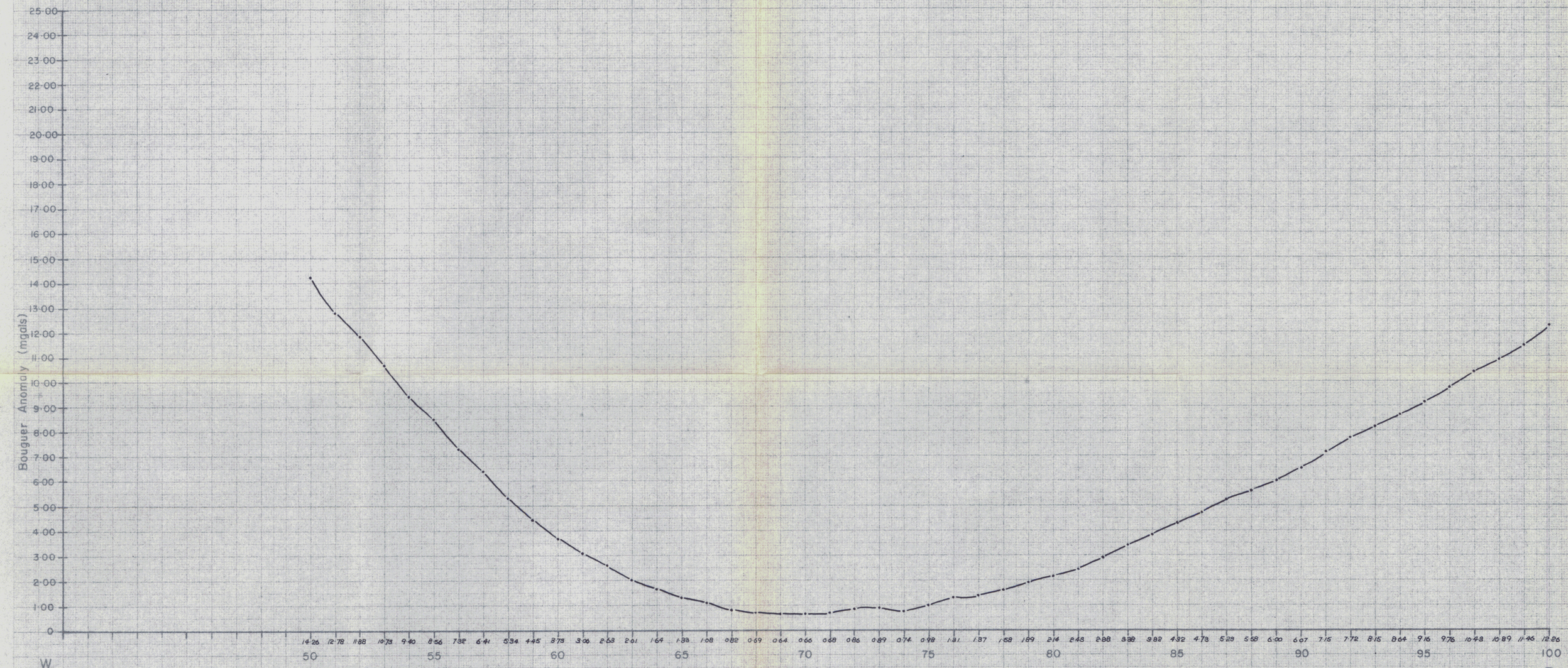
SULPETRO MINERALS LIMITED
TORONTO CANADA

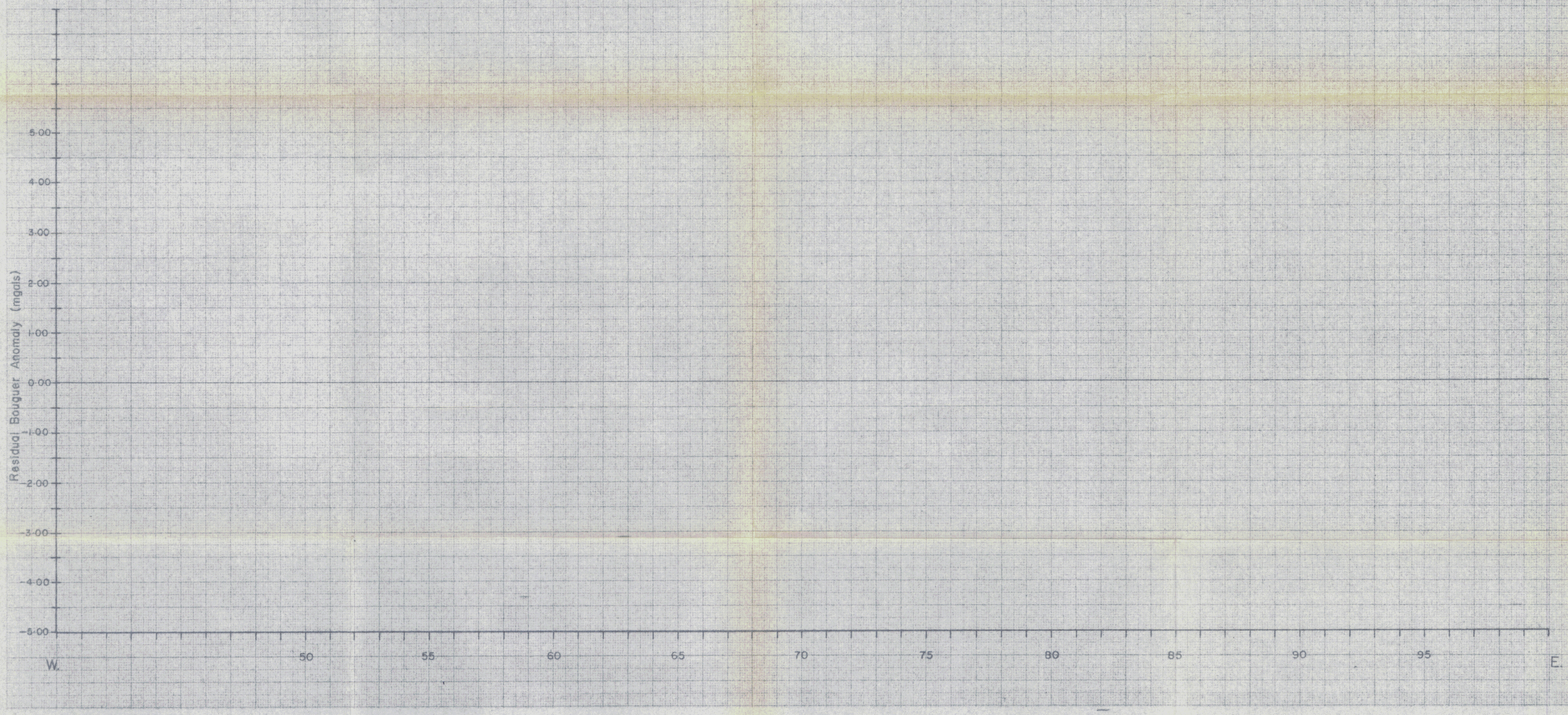
James J. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 17 + 00 N.

SCALE 1:10,000

APPROX LAT & LONG OF LOWER RT COR OF DWG ° ' " ° ' " LATITUDE ° ' " LONGITUDE	PROJECT NO 6205 REPORT NO.	SHEET NO. OF NTS





Instrumentation: Lacoste – Romberg Gravitymeter No. 442
Sokkisha B-2 Level

Main Base Station Location: North Camp, Rock River

Station Interval: 100 m.

Personnel: L. Stoliker, T. Tobiason (meter)
D. Windsor, R. Shearing (level)

Survey Dates: March 27-28, 1982.

SULPETRO MINERALS LIMITED
TORONTO, CANADA

James J. White

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 18+00 N.

SCALE 1:10,000

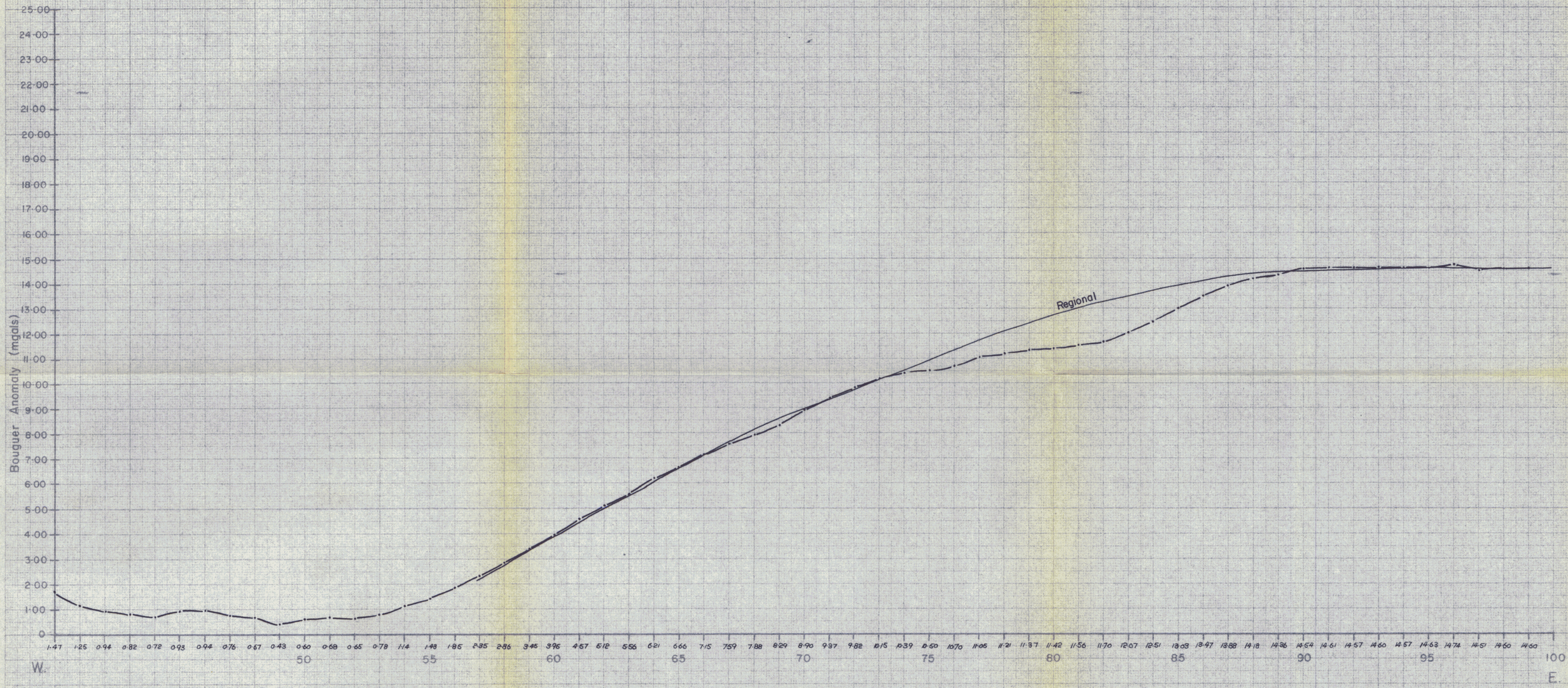
APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.
° ' " LATITUDE
° ' " LONGITUDE

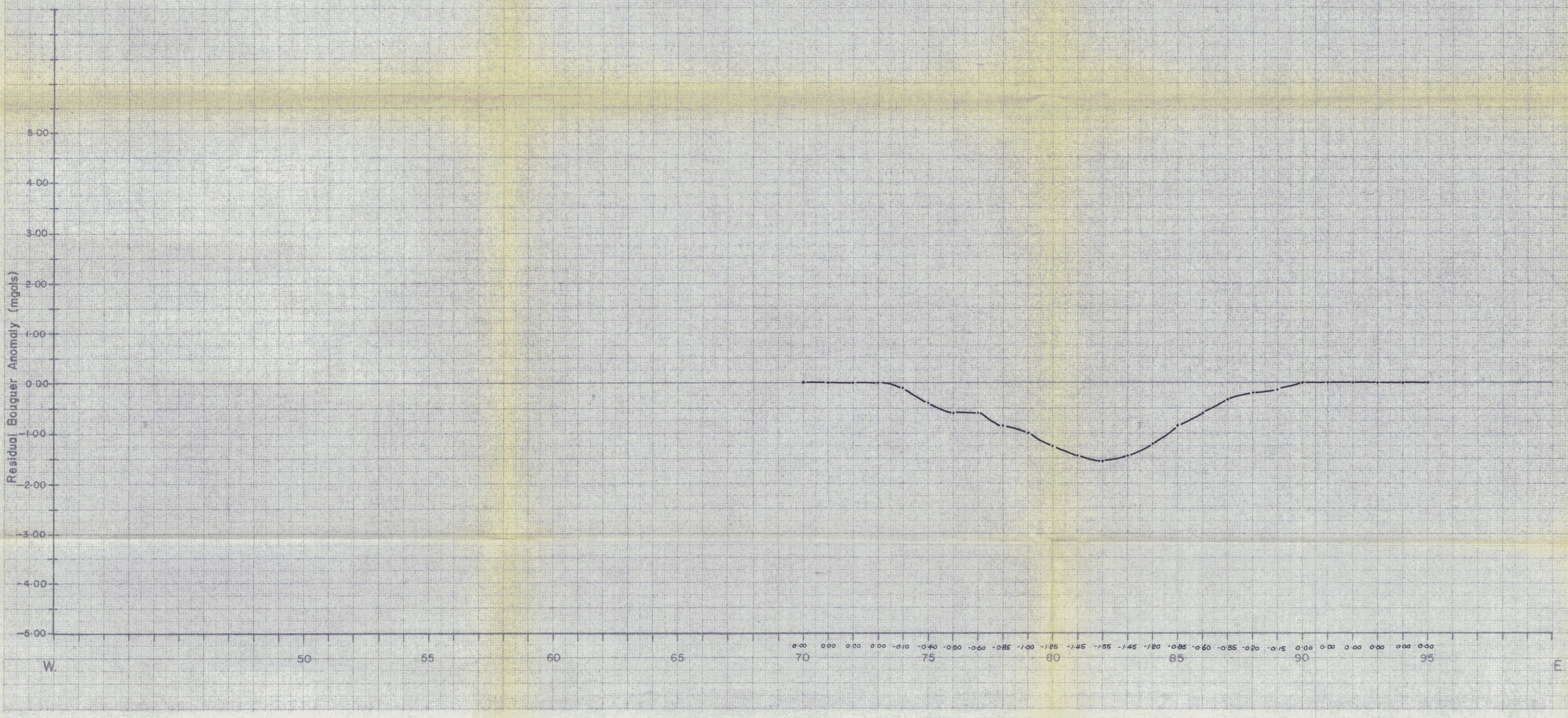
PROJECT NO. 6205

SHEET NO. OF

REPORT NO.

N.T.S.





Instrumentation: Lacoste – Romberg Gravitymeter No. 219
Sokkisha B-2 Level

Main Base Station Location: North Camp, Rock River

Station Interval: 100 m.

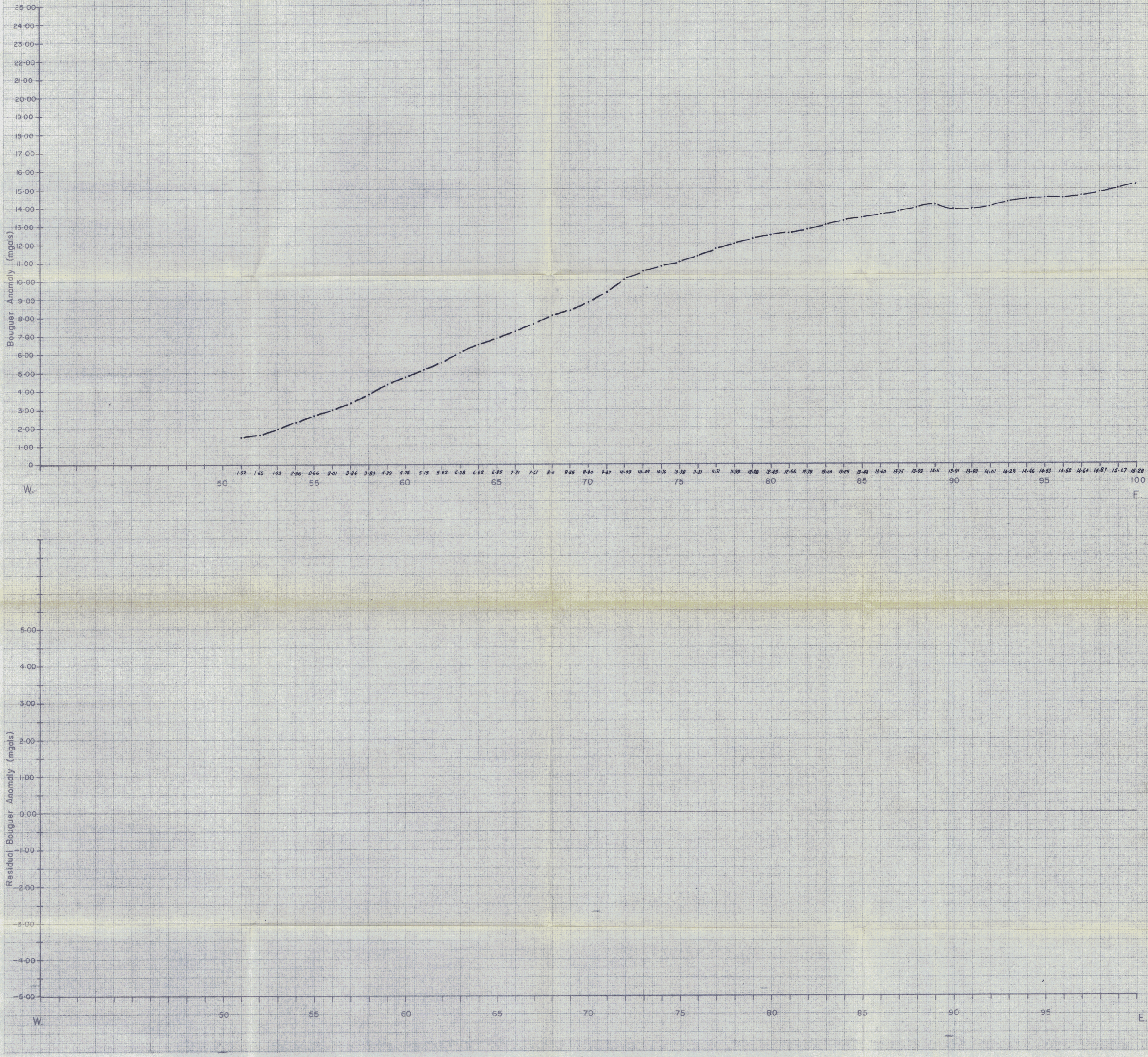
Personnel: C. Harrison, P. Chung (meter)
J.L. Wright, D. Ward (level)

Survey Dates: March 27-28, 1982.

SULPETRO MINERALS LIMITED
TORONTO CANADA
James L. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 19+00 N.
SCALE 1:10,000

APPROX LAT. & LONG. OF LOWER RT COR. OF DWG ° ' " ° ' " LATITUDE ° ' " LONGITUDE	PROJECT NO. 6205 REPORT NO.	SHEET NO. OF N.T.S.



Instrumentation: Lacoste – Romberg Gravitymeter No. 442
Sokkisha B-2 Level

Main Base Station Location: North Camp Rock River

Station Interval: 100 m.

Personnel: L. Stoliker, T. Tobiason (meter)
D. Robertson, D. Ward (level)

Survey Dates: March 26, 27, 1982

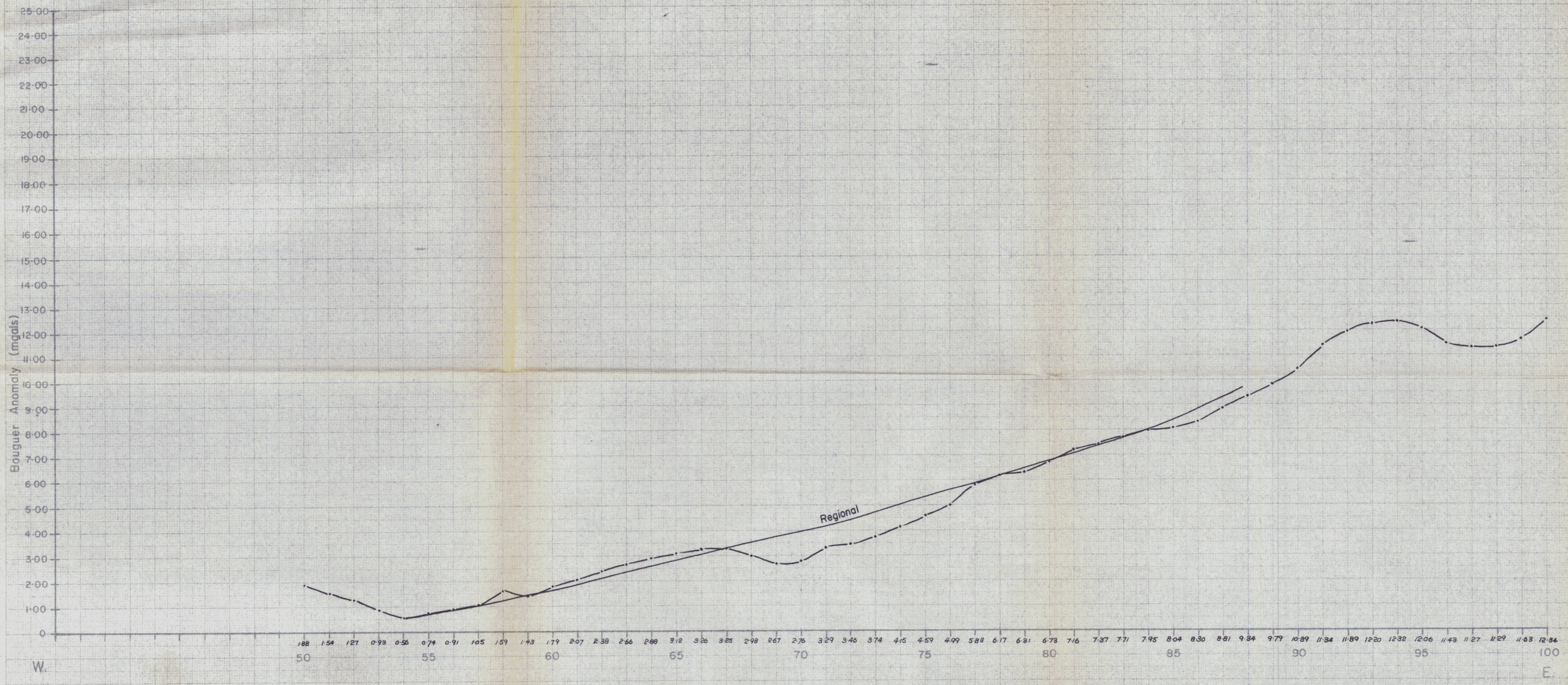
SULPETRO MINERALS LIMITED
TORONTO, CANADA

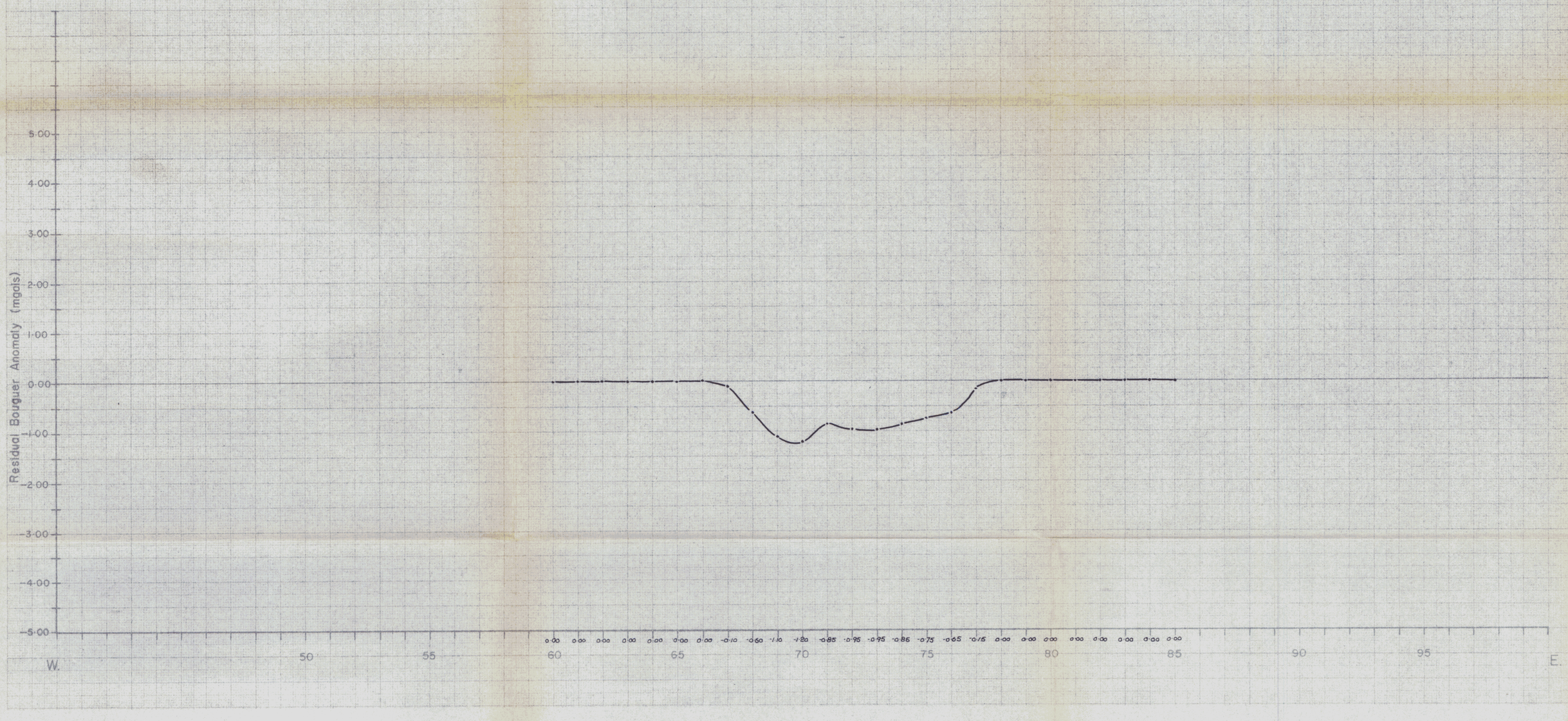
James D. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 20 +00 N.

SCALE 1:10,000

APPROX LAT & LONG OF LOWER RT COR OF DWG. ° ' " LATITUDE ° ' " LONGITUDE	PROJECT NO. 6205	SHEET NO. OF
	REPORT NO.	N.T.S.





Instrumentation: Lacoste – Romberg Gravitymeter No. 219
Sokkisha B-2 Level

Main Base Station Location: North Camp, Rock River

Station Interval: 100 m.

Personnel: C. Harrison, P. Chung (meter)
D. Windsor, R. Shearing (level)

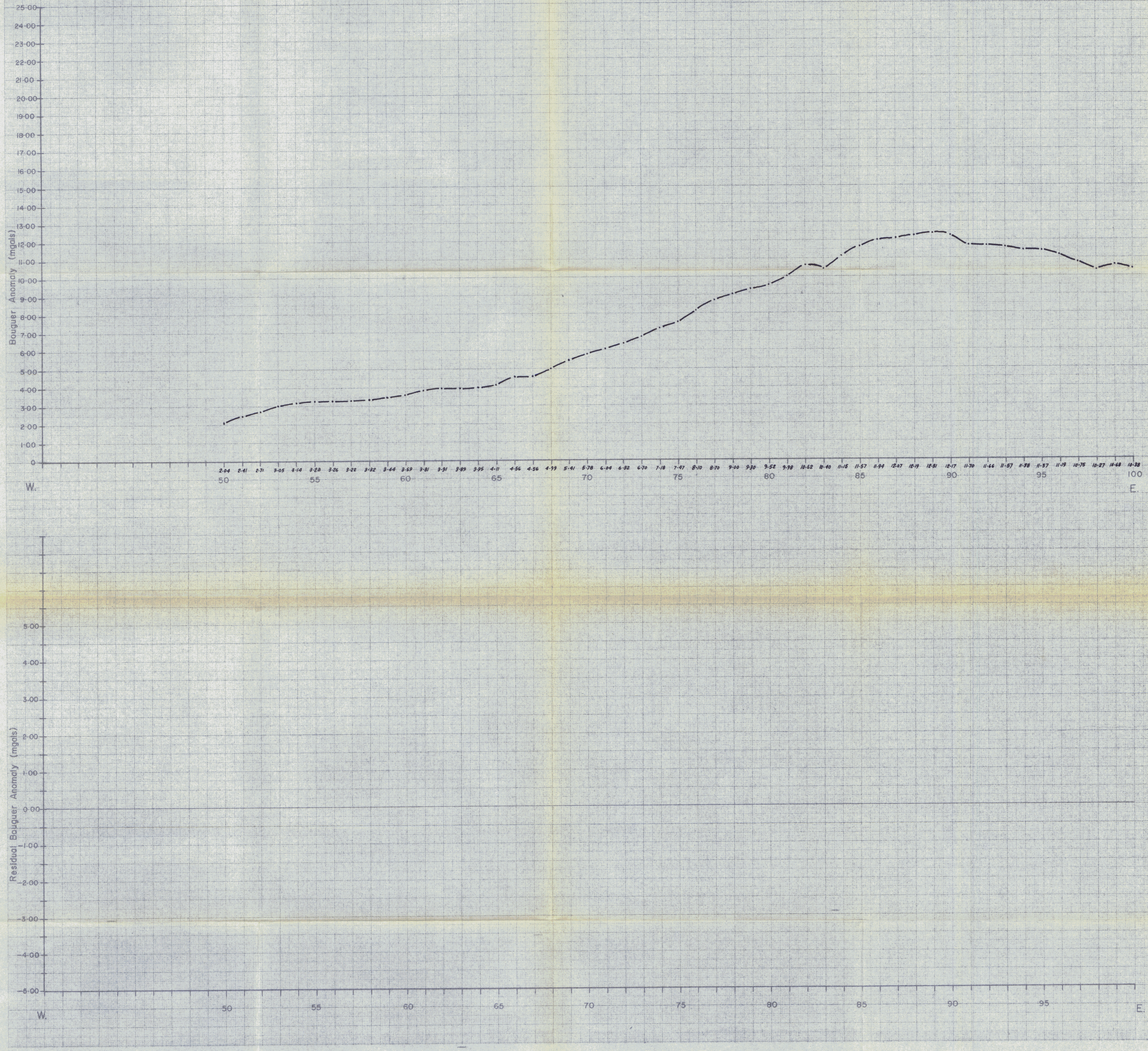
Survey Dates: March 26-27, 1982.

SULPETRO MINERALS LIMITED
TORONTO, CANADA
James D. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 21+00 N.
SCALE 1:10,000

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.
° ' LATITUDE
° ' LONGITUDE

PROJECT NO. 6205
REPORT NO.
SHEET NO. OF
N.T.S.



Instrumentation: Lacoste – Romberg Gravitymeter No. 219
Sokkisha B-2 Level

Main Base Station Location: North Camp Rock River

Station Interval: 100 m.

Personnel: C. Harrison, P. Chung (meter)
D. Windsor, R. Shearing (level)

Survey Dates: March 25, 1982

SULPETRO MINERALS LIMITED
TORONTO CANADA

James J. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 22+00N.

SCALE 1:10,000

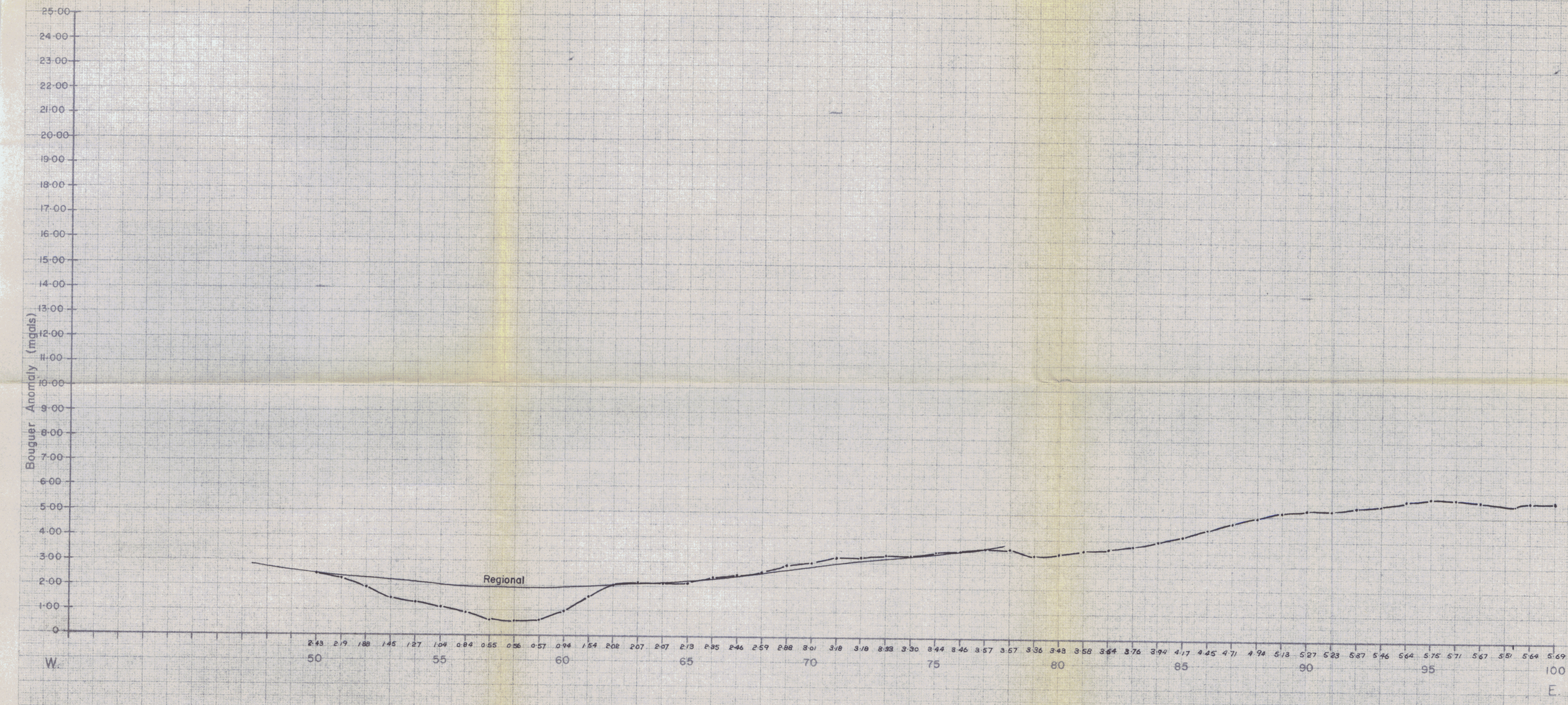
APPROX LAT & LONG OF LOWER RT COR OF DWG
° ' "
° " LATITUDE
° " LONGITUDE

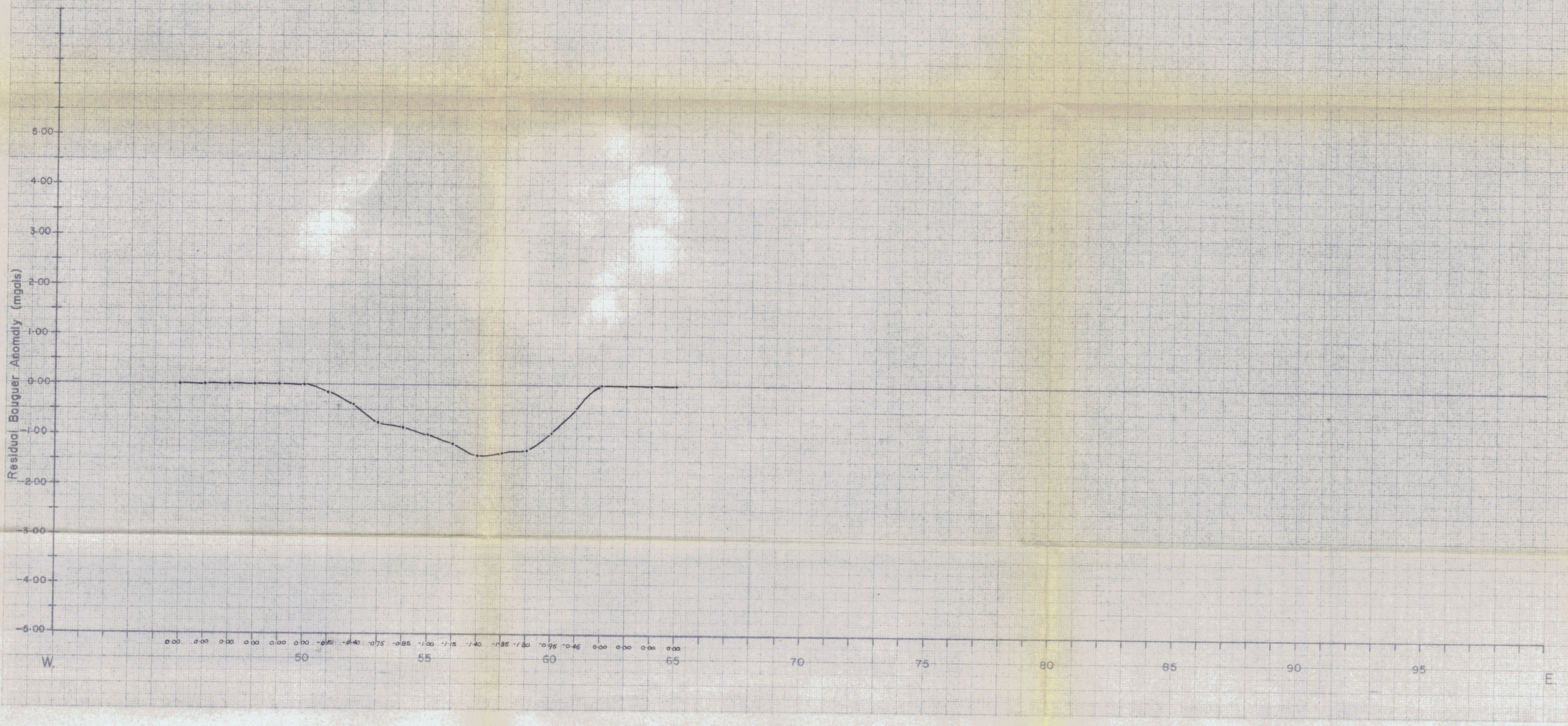
PROJECT NO. 6205

REPORT NO.

SHEET NO. OF

N.T.S.





Instrumentation: Lacoste – Romberg Gravitymeter No. 442
Sokkisha B-2 Level

Main Base Station Location: North Camp, Rock River

Station Interval: 100 m.

Personnel: L. Stoliker, T. Tobiason (meter)
J.L. Wright, D. Ward, D. Windsor, R. Shearing (level)

Survey Dates: March 25 - 26, 1982.

SULPETRO MINERALS LIMITED
TORONTO, CANADA

James D. Wright

ROCK RIVER COAL, Yukon
GRAVITY PROFILE
Line: 23+00 N.

SCALE 1:10,000

APPROX. LAT. & LONG. OF LOWER RT. COR. OF DWG.
° ' " LATITUDE
° ' " LONGITUDE

PROJECT NO. 6205

SHEET NO. OF

REPORT NO.

N.T.S.

L3N

50E 55E 60E 65E 70E 75E 80E 85E 90E 95E 100E

8,714,000 N

8,712,000 N

8,710,000 N

ROCK RIVER

DALZIEL CREEK

SULPETRO MINERALS LIMITED

Rock River - Yukon Territory

Scale approx. 1:10000 Formline 5 Metres

Date Of Photo. 1960 File No. 81103

AERO GEOMETRICS LTD.

Sheet # 1 of 6

PROJECT No. 6205 NTS 95 D/11

200 100 0 200 400 600 800 1000 meters

James J. Wright

N

ANOMALOUS GRAVITY RESPONSE





INDEX MAP

SULPETRO MINERALS LIMITED

Rock River – Yukon Territory

Scale approx. 1:10000 Formline 5 Metres

Date Of Photo. 1960 File No. 81103

AERO GEOMETRICS LTD.

Sheet #2 of 6

200 100 0 200 400 600 800 1000meters

PROJECT No. 6205 NTS 95 D/11

James J. Wright

South Camp

L8+00 N.

L7+00 N.

L6+00 N.

L5+00 N.

L4+00 N.

50E. 55E. 60E. 65E. 70E. 75E. 80E. 85E. 90E. 95E. 100E.

ROCK RIVER

DALZIEL CREEK

INDEX MAP

WATSON LAKE

SMITH RIVER

SULPETRO MINERALS LIMITED

Rock River - Yukon Territory

Scale approx. 1:10000 Formline 5 Metres

Date Of Photo. 1960 File No. 81103

AERO GEOMETRICS LTD.

Sheet #3 of 6

200 100 0 200 400 600 800 1000 meters

PROJECT No. 6205 NTS 95D/11

James A. Wright

L13N.

L12N.

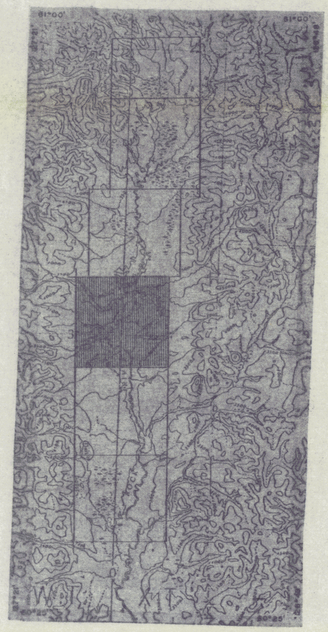
L11N.

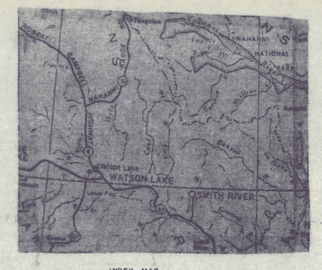
L10N.

L9N.

50E 55E 60E 65E 70E 75E 80E 85E 90E 95E 100E

ROCK RIVER





INDEX MAP

SULPETRO MINERALS LIMITED

Rock River - Yukon Territory

Scale approx. 1:10000 Formline 5 Metres

Date Of Photo. 1960 File No. 81103

AERO GEOMETRICS LTD.

Sheet #4 of 6

200 100 0 200 400 600 800 1000meters

PROJECT No.: 6205 NTS. 95D/14

James J. White

North Camp

L 18 N.

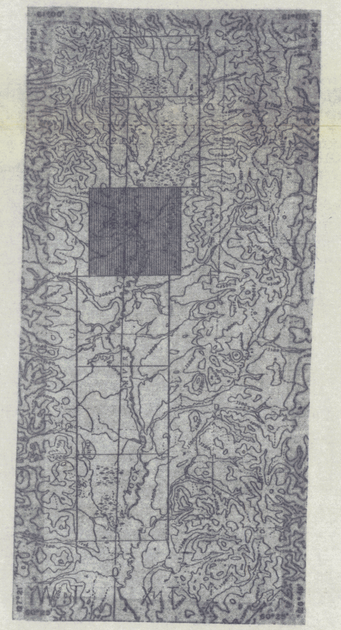
L 17 N.

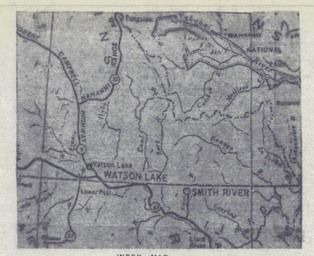
L 16 N.

L 15 N.

L 14 N.

ROCK RIVER





INDEX MAP

SULPETRO MINERALS LIMITED

Rock River – Yukon Territory

Scale approx. 1:10000 Formline 5 Metres

Date Of Photo. 1960 File No. 81103

AERO GEOMETRICS LTD.

Sheet #5 of 6

200 100 0 200 400 600 800 1000 meters

PROJECT No. 6205 NTS. 95 D/14

James 2. Wright

L 23 N.

L 22 N.

L 21 N.

L 20 N.

RIVER

ROCK





INDEX MAP

SULPETRO MINERALS LIMITED

Rock River - Yukon Territory

Scale approx. 1:10000 Formline 5 Metres

Date OF Photo. 1960 File No. 81103

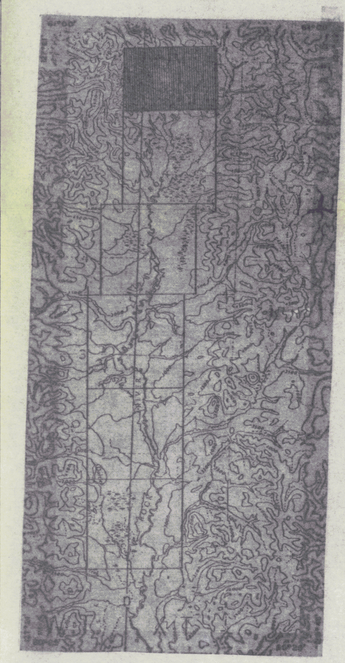
AERO GEOMETRICS LTD.

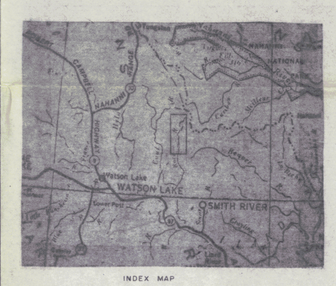
Sheet #6 of 6

200 100 0 200 400 600 800 1000 Meters

PROJECT No. 6205 NTS. 95 D/14

James A. Wright





INDEX MAP

ROCK RIVER