

MAR 19680004: NORTHEAST ALBERTA

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19680004

AIRBORNE SCINTILLOMETER SURVEY
OF THE NEW SENATOR OPTION, NORTHEAST ALBERTA

McINTYRE PORCUPINE MINES LIMITED

TRIGG, WOOLLETT & ASSOCIATES LTD.

July, 1968.

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Indexing Document Nos. 700006

AIRBORNE SCINTILLOMETER SURVEY
OF THE NEW SENATOR OPTION, NORTHEAST ALBERTA

McINTYRE PORCUPINE MINES LIMITED

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AIRBORNE SCINTILLOMETER SURVEY
OF THE NEW SENATOR OPTION, NORTHEAST ALBERTA

McINTYRE PORCUPINE MINES LIMITED

SUMMARY

An airborne scintillometer survey of the New Senator Option, Northeast Alberta, was carried out June 10th to 14th, 1968, and recorded a total of forty-four radioactive occurrences. Ground investigation of these anomalies is recommended.

LOCATION

The New Senator Option is located 55 miles west of Uranium City, Saskatchewan (Dwg. 8MNSO-1) in the Andrew Lake area of Northeast Alberta. The coordinates of the approximate centre of the option area are 59°50' north latitude, 110°13' west longitude.

GEOLOGY

The geology of the New Senator Option area is contained in Research Council of Alberta Preliminary Reports as follows:

58-3	Geology of the Andrew Lake, North District.	J. D. Godfrey.
61-2	Geology of the Andrew Lake, South District.	J. D. Godfrey.
62-1	Geology of the St. Agnes Lake District.	Godfrey & Peikert.
65-6	Geology of the Bayonet, Ashton, Potts and Charles Lakes District.	J. D. Godfrey.

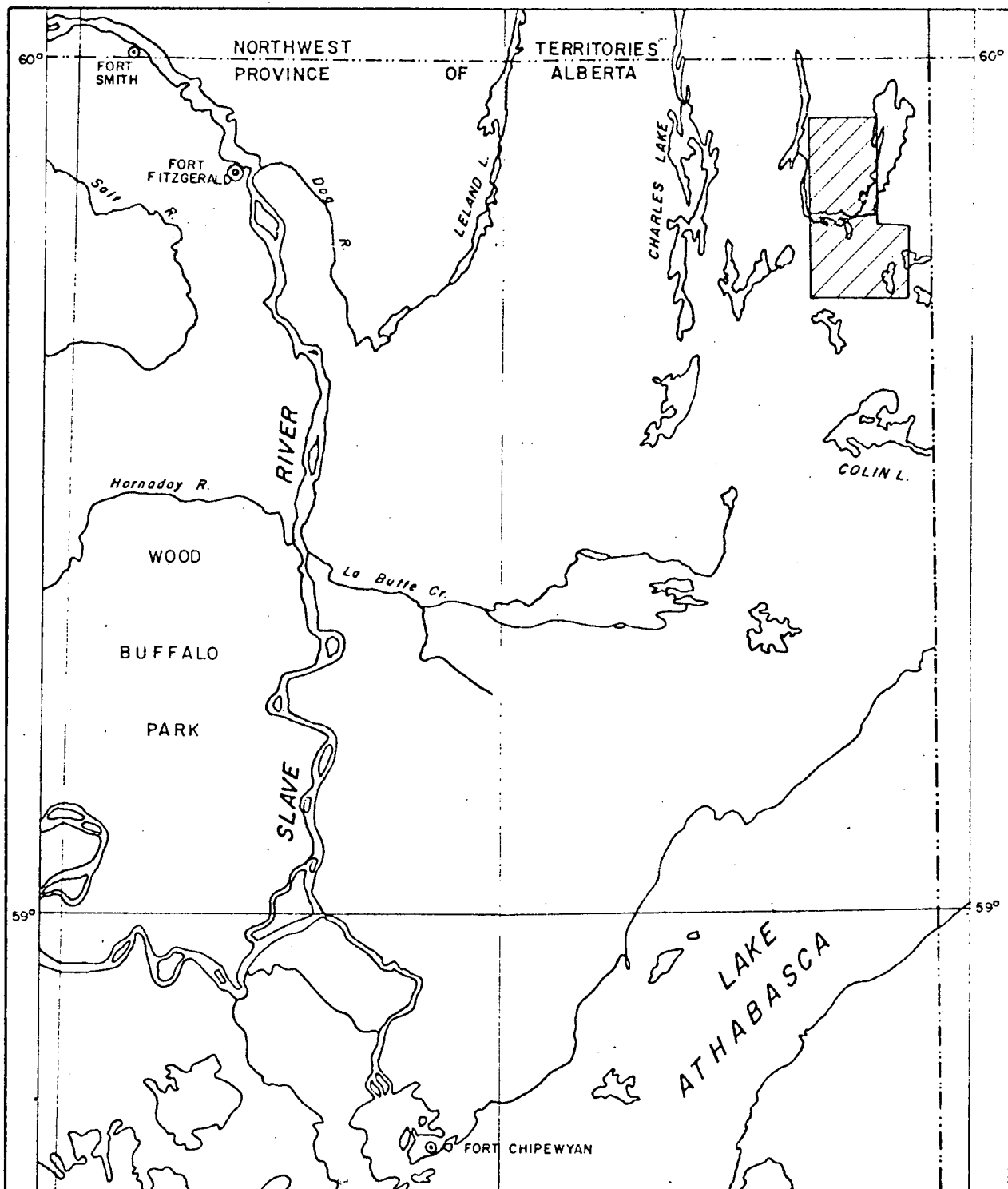
Radioactive occurrences noted by Godfrey are located in three main groups:

- (a) Cherry Lake (north and northwest areas)
- (b) Holmes Lake - Bonny Fault area,
- (c) Spider Lake area,

and are associated with metasedimentary rocks, massive biotite granites and faults.

SURVEY

An airborne scintillometer survey of the New Senator Option was carried out June 10th - 14th, 1968, by Trigg, Woollett & Associates Ltd. of Edmonton, Alberta, and totalled 503.4 line miles including 19.5 line miles of anomaly rechecks. Survey flight lines were oriented west-east and spaced at intervals of 1,320 feet except in the Spider Lake, Holmes Lake and North Cherry Lake areas where flight lines were spaced at 660 feet. The actual flight path was recorded during flight on air photo



MCINTYRE PORCUPINE MINES LTD.

NEW SENATOR OPTION

NORTHEASTERN ALBERTA

scale 4 0 4 8 12 miles

TRIGG, WOOLLETT & ASSOCIATES LTD
EDMONTON, ALBERTA

JULY, 1968

Survey (cont'd)

mosaics (scale 1 inch = 3,000 feet) by a technician seated in the helicopter. Fiducial points were located, marked and numbered on the flight mosaic and on the recorder chart. Ground clearance was maintained at 100 feet but not recorded.

Flight lines were later reconstructed by transferring the fiducial points to a geologic base map (scale 1 inch = 2,640 feet) constructed from the Research Council of Alberta geology maps contained in Preliminary Reports 58-3, 61-2, 62-1 and 65-6.

Flight recorder charts were examined and interpreted. All significant radioactive responses were located and plotted on the survey base map as anomalies (Dwg. 8MNSO-2). This survey was flown under the supervision of E. Lipsett, P.Geoph. with D. Danyluk as technician.

EQUIPMENT

The following equipment was used to perform this survey:

- (a) Bell 47-Super G2 helicopter.
- (b) Mount Sopris Airborne Scintillometer, Model 160-12A.
- (c) Moseley Electrowriting Recorder, Model 680.
- (d) Bonzer Vertical Measuring Radar Instrument.

Details of the instrument setting used for this survey are as follows:

Time Constant	0.45 seconds
Per Cent Probable Error	1%
Range Scale	0-5000 counts per second
Energy Discrimination	nil
Ground Clearance	100 feet
Air Speed	45 miles per hour
Recorder Chart Speed	4 inches per minute

CONCLUSIONS

The airborne scintillometer survey of the New Senator Option recorded a total of forty-four radioactive occurrences. These occurrences may be classified as follows:

Cherry Lake - Twin Lakes

Confirmation and extension of known radioactivity is evident through a concentration of eighteen anomalies.

Conclusions (cont'd)3/4 mile northwest of Twin Lakes

Six radioactive occurrences to be investigated.

NSO - 57A	NSO - 38A
NSO - 37B	NSO - 38B
NSO - 60A	NSO - 61B

Spider Lake

Confirmation of known radioactivity through four anomalies.

Holmes Lake

Five radioactive occurrences to be investigated.

NSO - 96A	NSO - 8A
NSO - 6A	NSO - 11A
NSO - 7A	

Hutton Lake - Andrew Lake Arm

Six radioactive occurrences to be investigated.

NSO - 20A	NSO - 27B
NSO - 23A	NSO - 29A
NSO - 27A	NSO - 29B

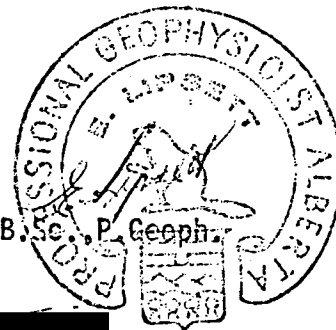
Anomaly NSO - 20A is weakly confirmed on lines 19, 21 and on the lineament flight line 106. Investigation of the lineament between Hutton Lake and Salmon Lake Arm is warranted. Other anomalies scattered throughout the survey area also warrant investigation.

A list of anomalies is contained in Appendix I and recorder chart profiles including rechecks in Appendix II.

RECOMMENDATIONS

A detailed ground investigation of all anomalies is warranted to determine the nature of the radioactive occurrences. Ground investigation priorities may be assigned to the anomaly location and evaluation through the areal designation established in the conclusions of this report.

E. Lipsett, B.Sc., P. Geoph.



C. M. Trigg, Ph.D., P.Eng.

July 10, 1968

APPENDIX INEW SENATOR OPTION - NORTHEAST ALBERTALIST OF ANOMALIES

<u>Anomaly No.</u>	<u>Location</u>	<u>Nature</u> (x b g d)	<u>Comments</u>
NSO-6A	West Side of Holmes Lake	Broad, distinct, 1550 cps 1.60	Near area of known radioactivity. Background 950 cps
-7A	Southwest of Holmes Lake	Broad, 1380 cps 1.38	Weak, related to NSO-95A. Background 1000 cps
-8A	1/4 mile East of Option boundary	Broad, 1600 cps 1.31	Poor. Background 1220 cps
-11A	West of Split Lakes	Sharp, distinct, 1200 cps 1.11	Good profile. Background 700 cps
-20A	South of Hutton Lake	Broad, pronounced, 1400 cps 1.56	Located on fault; weakly confirmed on NSO-19, 21, 106; background 900 cps
-23A	Southeast of Rutledge Lake	Broad, 1520 cps 1.52	Background 1000 cps
-27A	South of Andrew Lake	Broad, pronounced, 1610 cps 2.15	Edge of sand covered area. Background 750 cps
-27B	North of Andrew Lake Arm	Sharp, distinct, 1880 cps 1.71	Good profile. Background 1100 cps
-29A	East of Andrew Lake Arm	Broad, 1450 cps 1.45	Located on fault, weak. Background 1000 cps
-29B	North of Andrew Lake Arm	Sharp, 1390 cps 1.77	Background 820 cps
-37A	North of Spider Lake	Sharp, distinct, 1560 cps 1.64	Area of known radioactivity. Background 950 cps
-37B	Northwest of Cherry Lake	Broad, 1300 cps 1.30	Sand area, weak. Background 1000 cps
-38A	Northwest of Cherry Lake	Broad, pronounced, 1610 cps 1.46	Related to NSO-61A. Background 1100 cps
-38B	Northwest of Cherry Lake	Broad, 1630 cps 1.34	Small. Background 1220 cps
-38C	North Edge of Spider Lake	Sharp, pronounced, 1650 cps 1.83	Area of known radioactivity. Background 900 cps

APPENDIX I (cont'd)

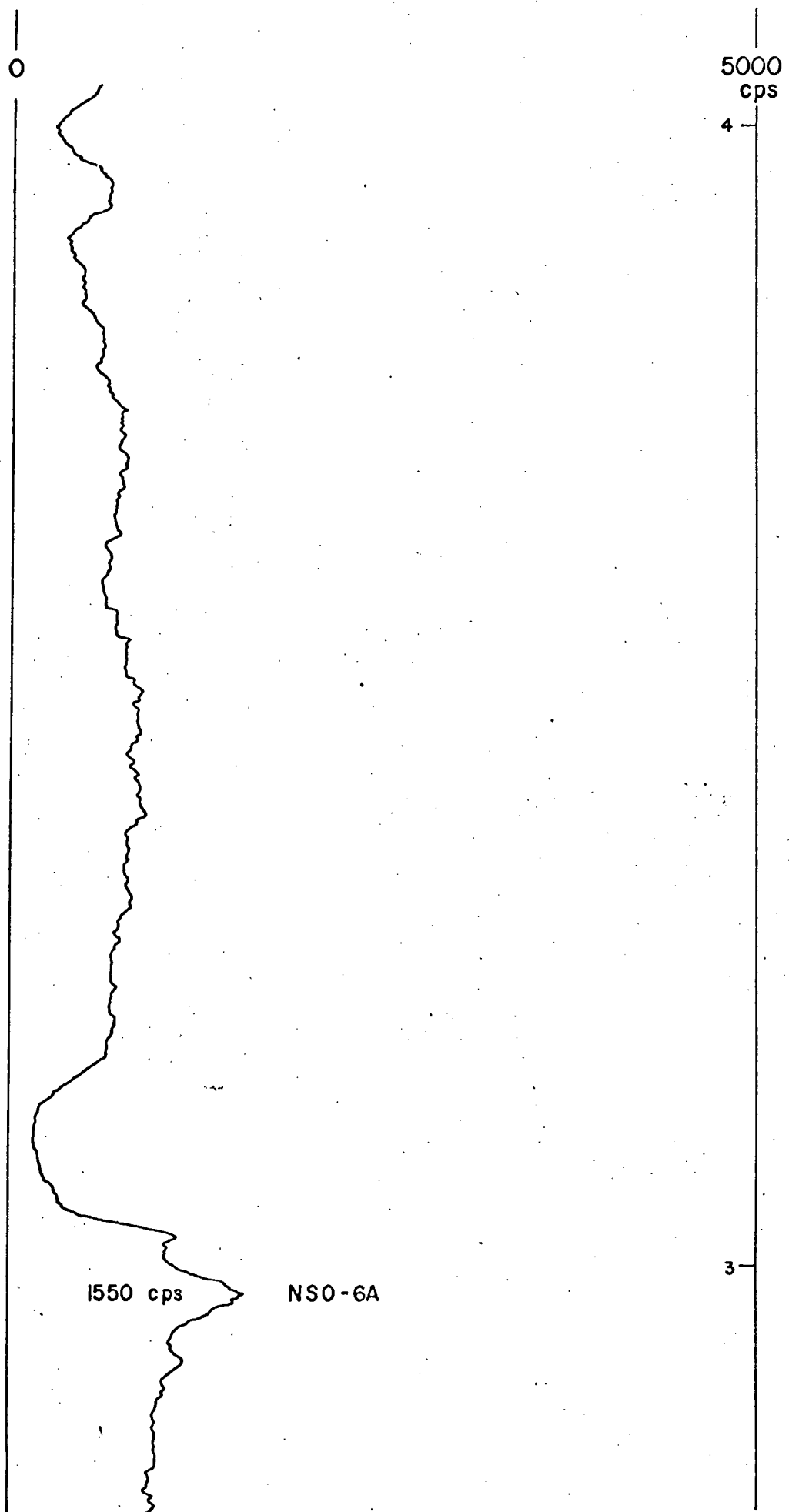
<u>Anomaly No.</u>	<u>Location</u>	<u>Nature</u>	<u>Comments</u>
NSO-41A	North of Cherry Lake	Sharp, distinct, 2290 cps <i>2.08</i>	Edge of swamp; area of known radioactivity. Background 1100 cps
-42A	North Edge of Cherry Lake	Broad, 1660 cps <i>1.66</i>	Edge of lake. Background 1000 cps
-42B	North of Cherry Lake	Sharp, pronounced, 2600 cps <i>2.13</i>	Area of known radioactivity. Background 1220 cps
-42C	Northwest of Cherry Lake	Broad, distinct, 2290 cps <i>1.89</i>	Area of known radioactivity. Background 1210 cps
-42D	Southwest of Spider Lake	Broad, poor, 1450 cps <i>1.45</i>	Edge of lake; area of known radioactivity. Background 1000 cps
-43A	Northwest of Cherry Lake	Broad, small, 1250 cps <i>1.36</i>	Area of known radioactivity. Background 920 cps
-43B	Northwest of Cherry Lake	Broad, 1360 cps <i>1.36</i>	Area of known radioactivity. Background 1000 cps
-43C	West of Cherry Lake	Broad, 1500 cps <i>1.36</i>	Area of known radioactivity. Background 1100 cps
-43D	West of Cherry Lake	Sharp, pronounced, 1250 cps <i>1.84</i>	Area of known radioactivity. Background 680 cps
-47A	West of Cherry Lake	Broad, 1850 cps <i>1.88</i>	Pegmatite or other high background rock. Background 1250 cps
-53A	Southwest of Cherry Lake	Broad, 1600 cps <i>1.68</i>	Background 950 cps
-53B	Southwest of Cherry Lake	Broad, 1510 cps <i>1.59</i>	Background 950 cps
-57A	North of Cherry Lake	Broad, pronounced, 1910 cps <i>1.96</i>	Background 1150 cps
-60A	Northwest of Cherry Lake	Sharp, pronounced, 1300 cps <i>1.47</i>	Background 900 cps
-61A	Northwest of Cherry Lake	Sharp, pronounced, 1820 cps <i>2.00</i>	Area of known radioactivity. Background 910 cps
-61B	Northwest of Cherry Lake	Broad, distinct, 1840 cps <i>1.84</i>	Located on fault. Background 1000 cps
-63A	North of Cherry Lake	Broad, pronounced, 1900 cps <i>1.90</i>	Area of known radioactivity. Background 1000 cps
-63B	West of Twin Lakes	Broad, 1920 cps <i>1.92</i>	Background 1000 cps

APPENDIX I (cont'd)

<u>Anomaly No.</u>	<u>Location</u>	<u>Nature</u>	<u>Comments</u>
NSO-64A	Northwest of Cherry Lake	Sharp, distinct, 2500 cps 2.5	Area of known radioactivity. Background 1000 cps
-64B	Northwest of Cherry Lake	Broad, 2100 cps 1.91	Area of known radioactivity. Background 1100 cps
-64C	South End of Twin Lakes	Broad, 2050 cps 2.05	Located on fault. Background 1000 cps
-64D	North of Cherry Lake	Broad, pronounced, 1600 cps 1.52	Located on fault. Background 1050 cps
-65A	East Side of Cherry Lake	Broad, 1550 cps 1.81	Edge of lake, poor. Background 1100 cps
-65B	West Side of Cherry Lake	Broad, pronounced, 1840 cps 1.67	Edge of lake. Background 1100 cps
-65C	Northwest of Cherry Lake	Broad, 2010 cps 1.83	Area of known radioactivity. Background 1100 cps
-65D	Northwest of Cherry Lake	Broad, 2210 cps 2.01	Area of known radioactivity. Background 1100 cps
-79A	North of Spider Lake	Very broad, sharp, peak, 1480 cps 1.98	Area of known radioactivity. Background 1000 cps
-95A	West of Split Lakes	Broad, 1550 cps 1.89	Poor, related to NSO-7A. Background 1080 cps
-96A	Northwest of Split Lakes	Sharp, distinct, 2000 cps 2.0	Good profile. Edge of lake. Background 1000 cps

APPENDIX II

RECORDER CHART PROFILES



0

5000
cps

4

1550 cps

NSO-6A

3



5000
cps

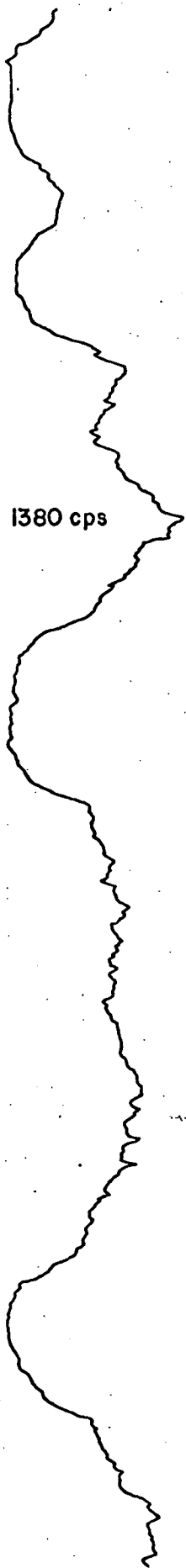
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1380 cps

NSO-7A

3

2



0

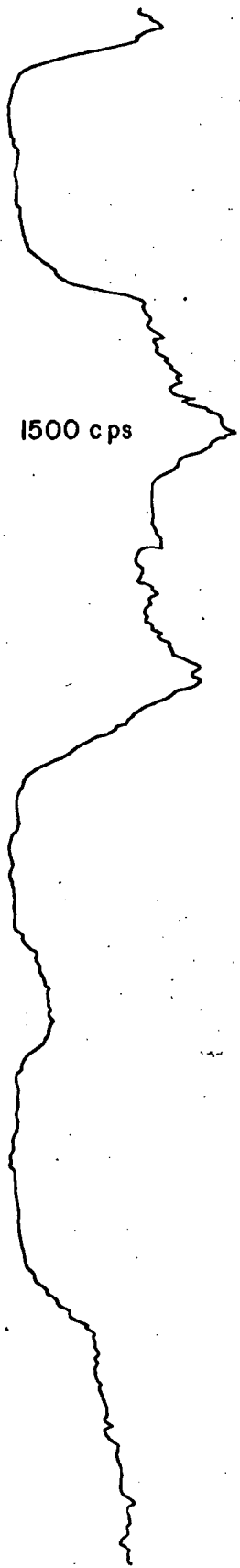
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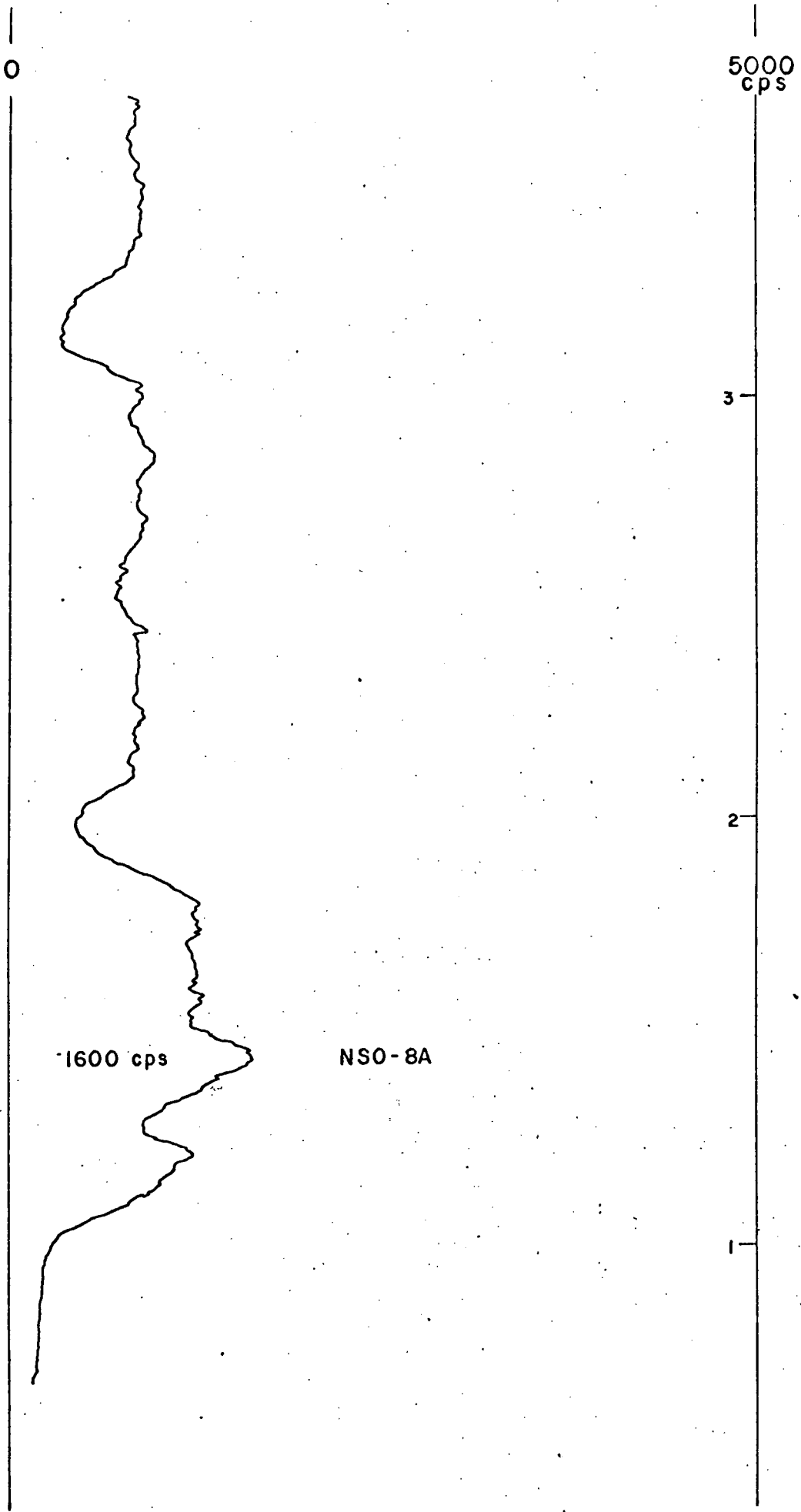
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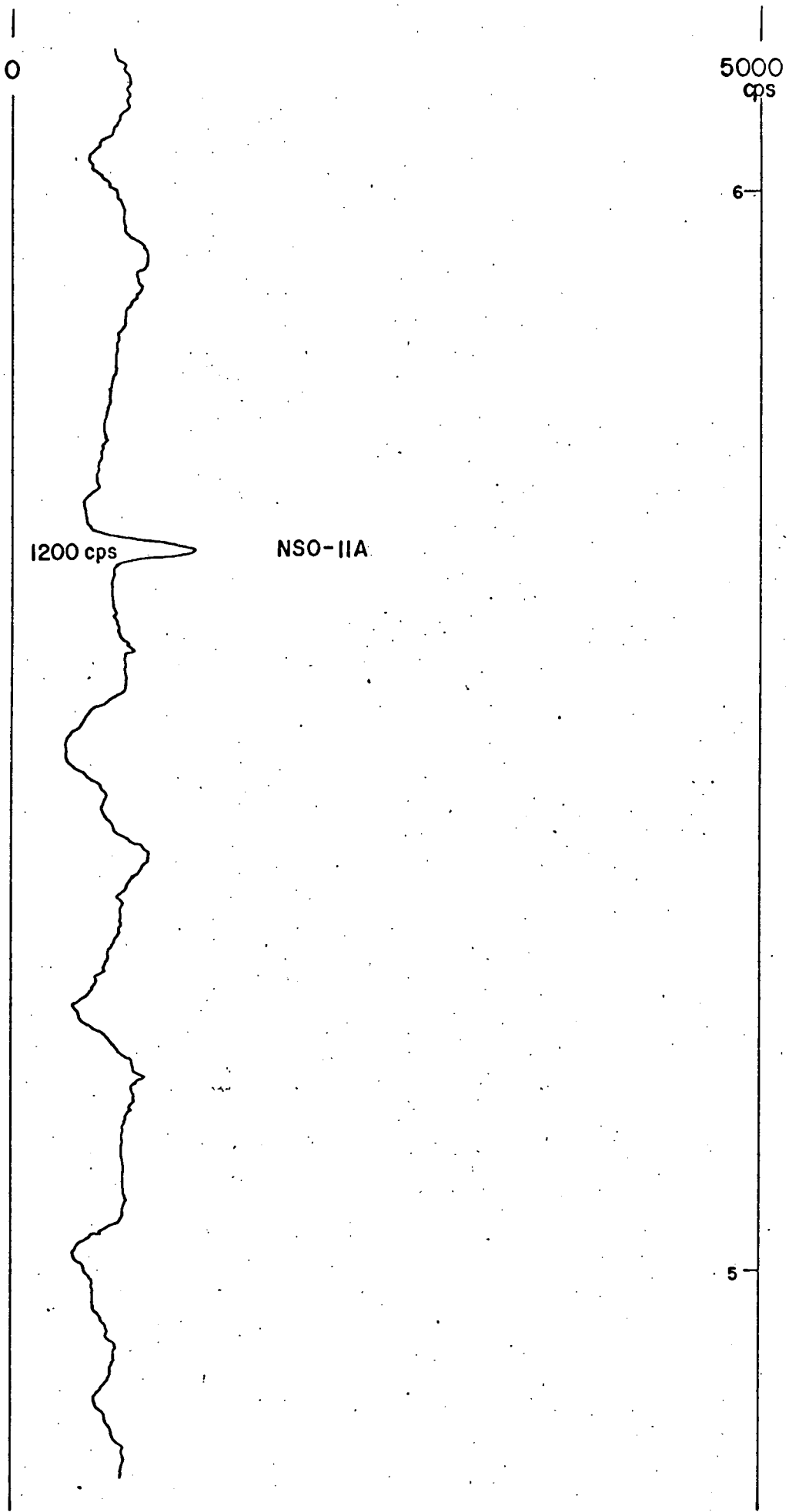
1500 cps

NSO-7A
RECHECK

4







0

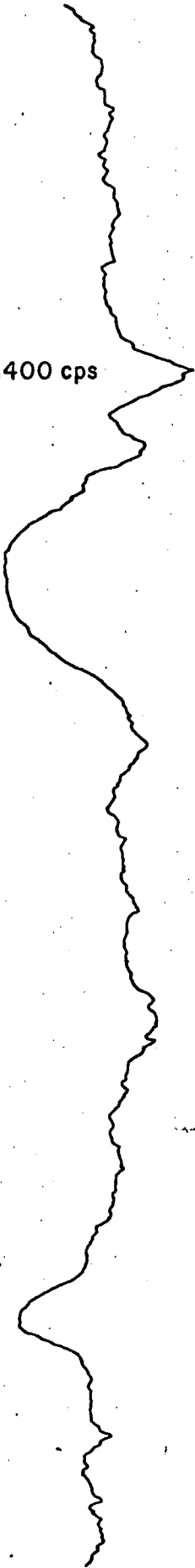
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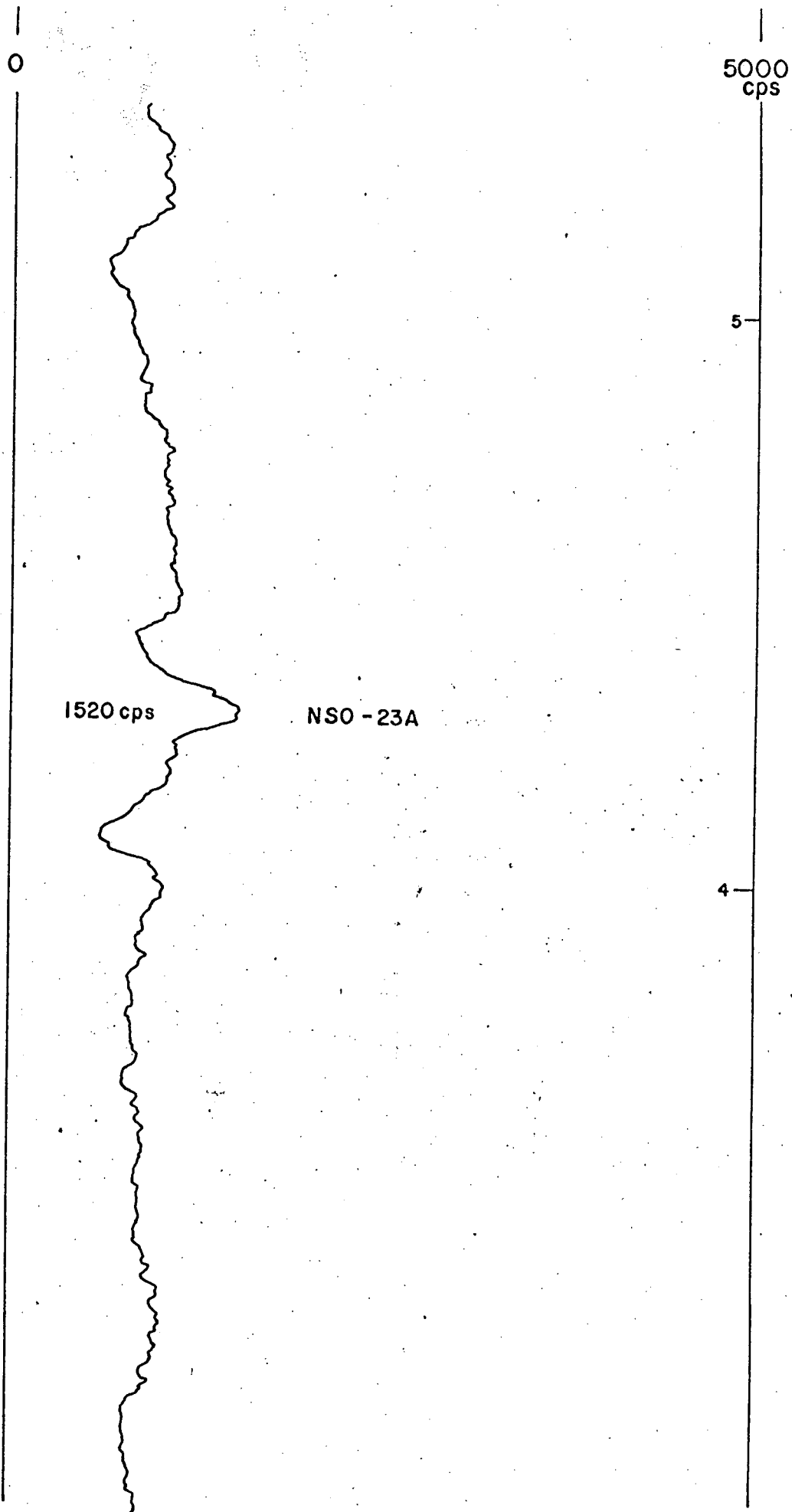
1400 cps

NSO-20A

6

5





0

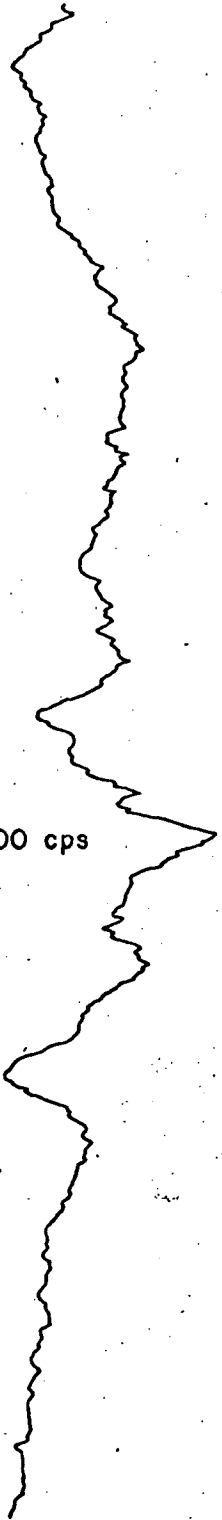
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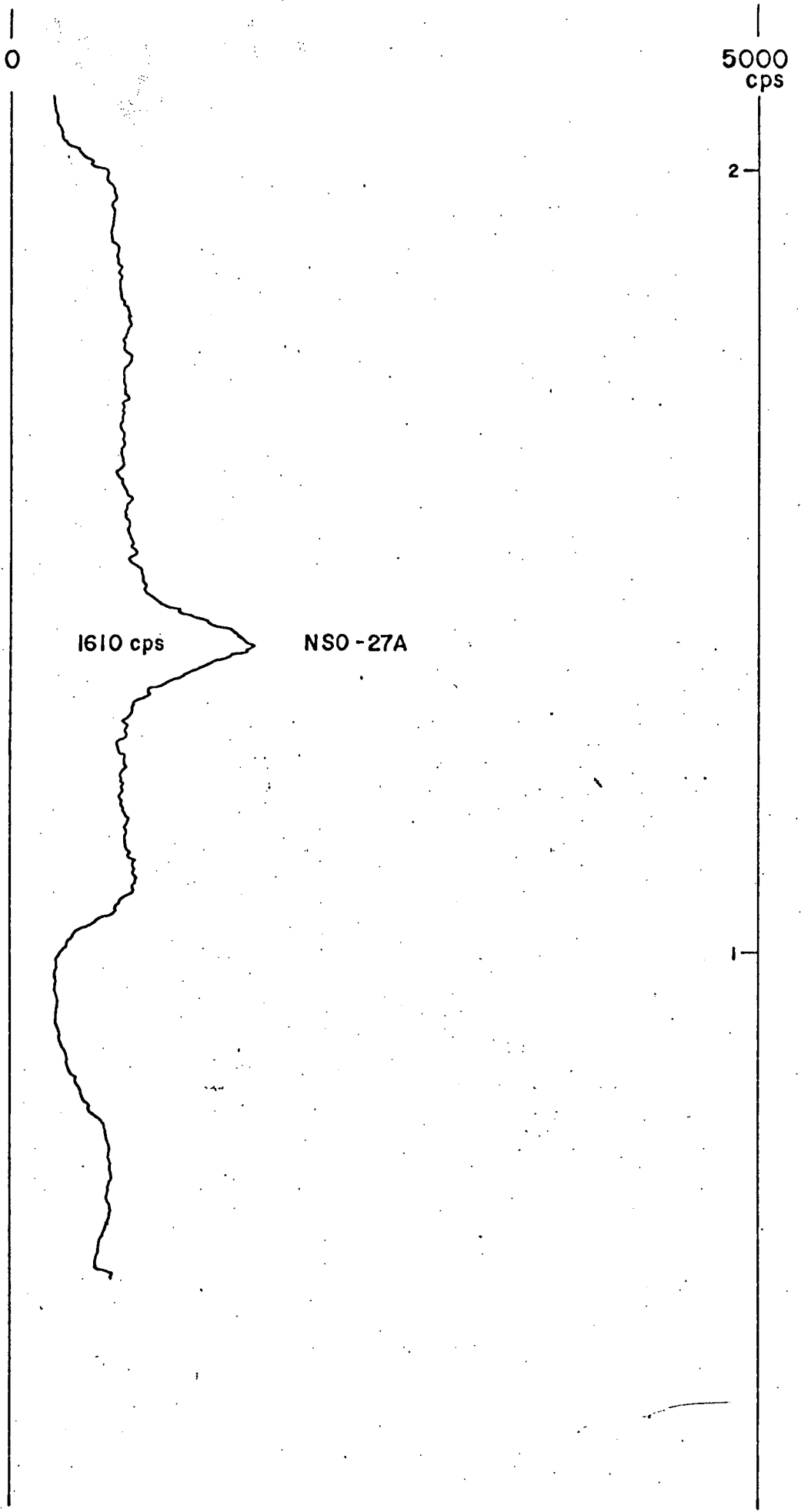
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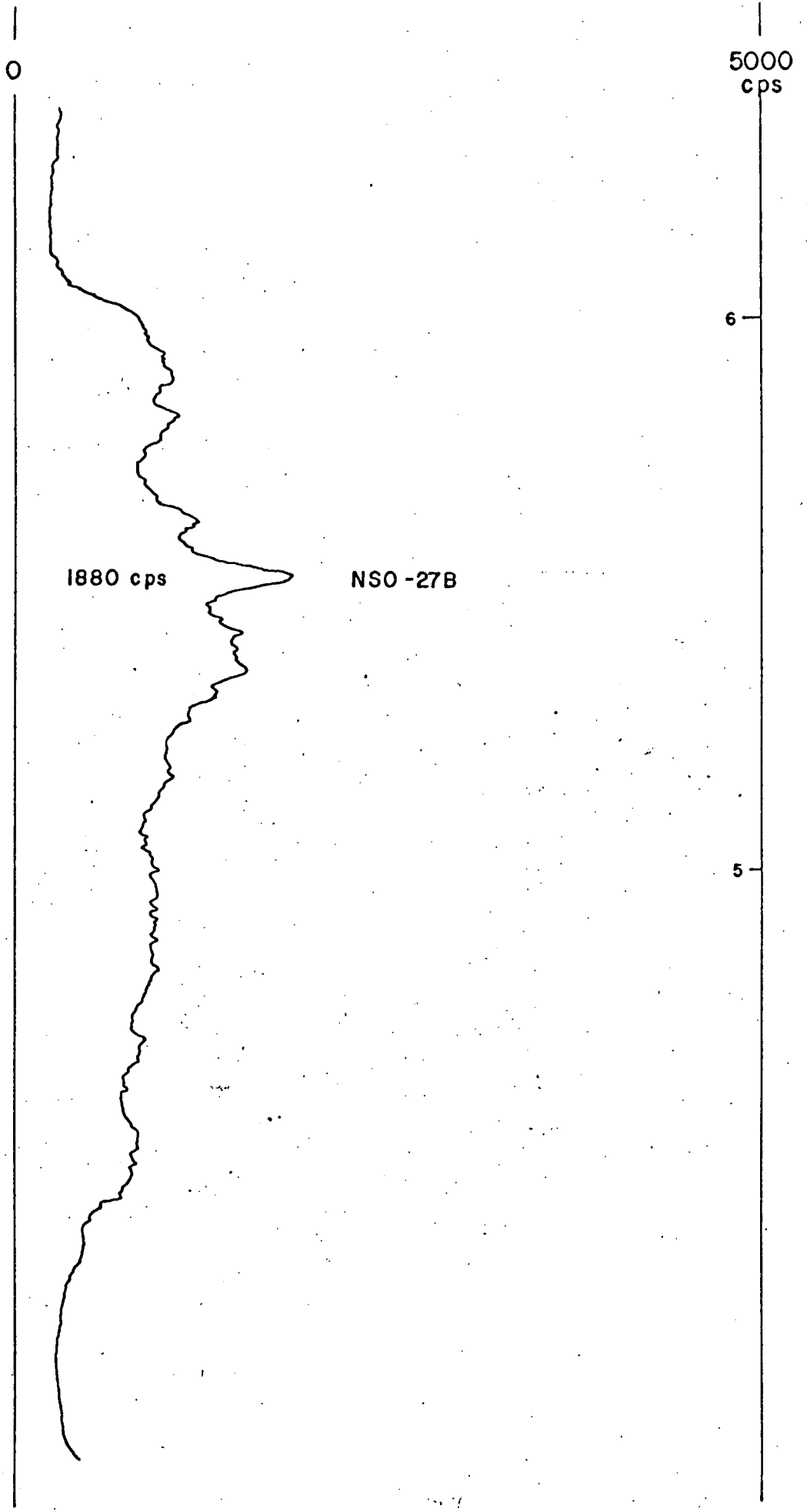
NSO-23A
RECHECK

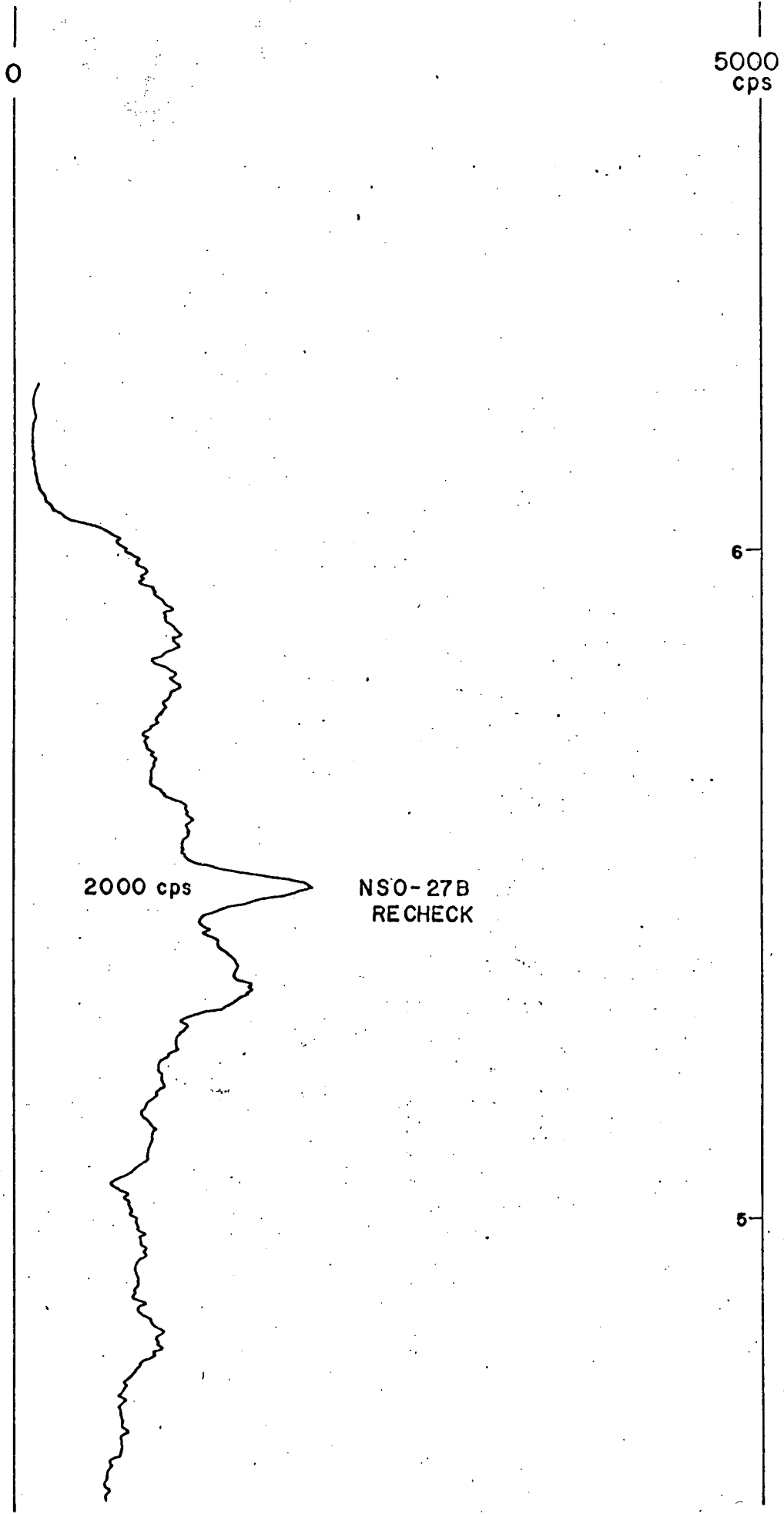
5

4









5000
cps

0

6

2000 cps

NSO-27B
RECHECK

5



0

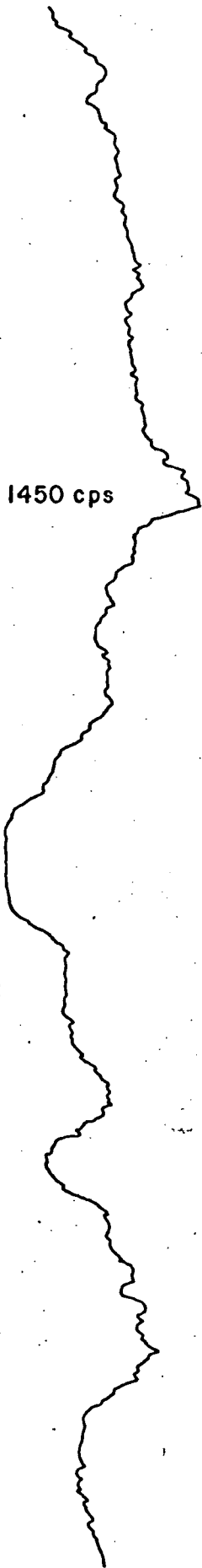
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cps

4

3

1450 cps

NSO-29A



0

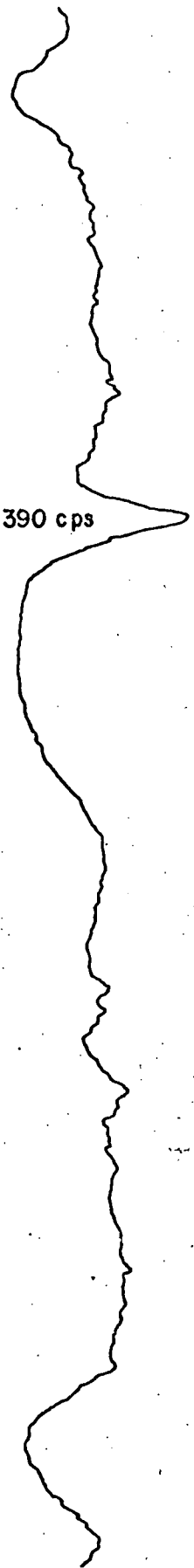
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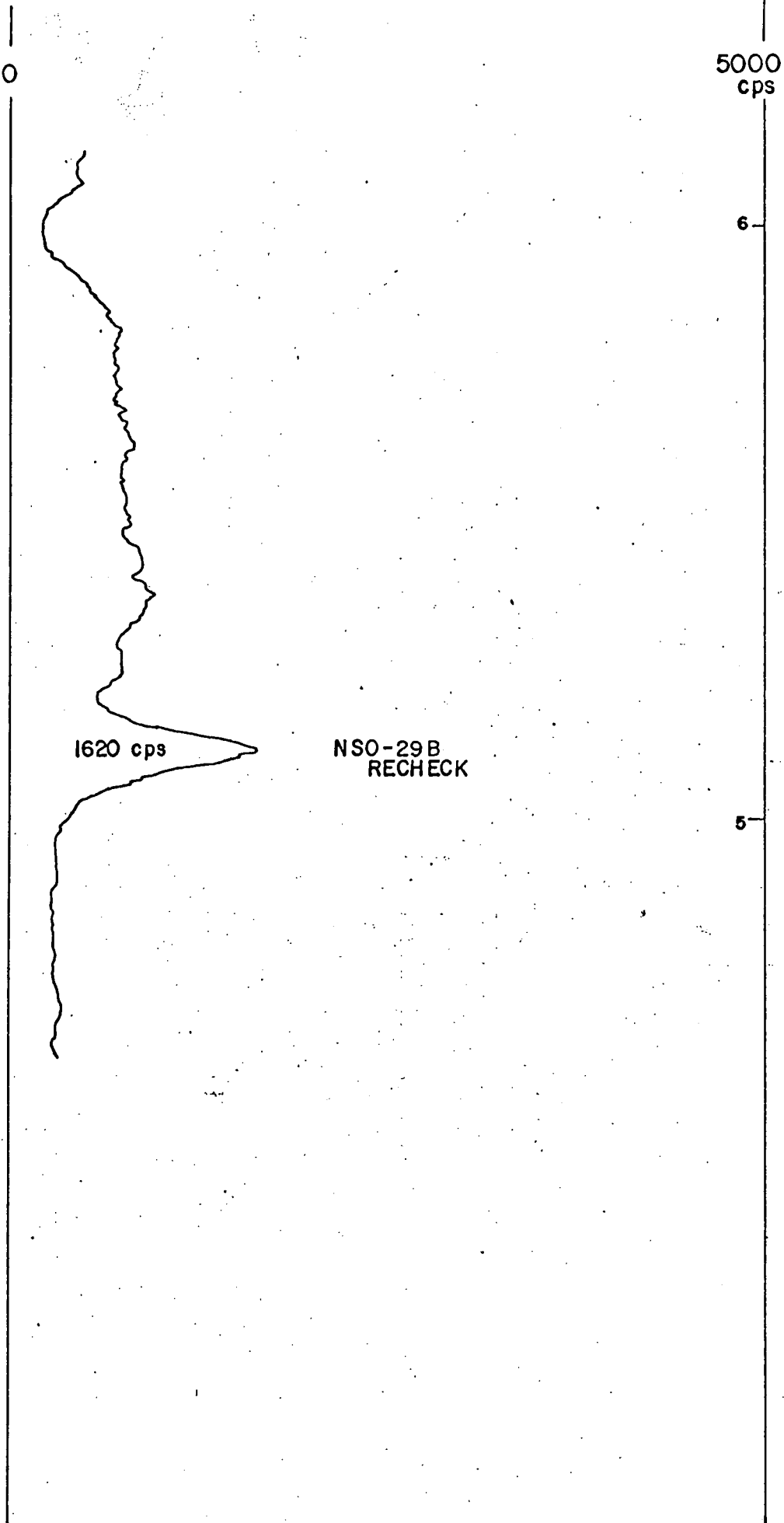
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1390 cps

NSO-29B

5





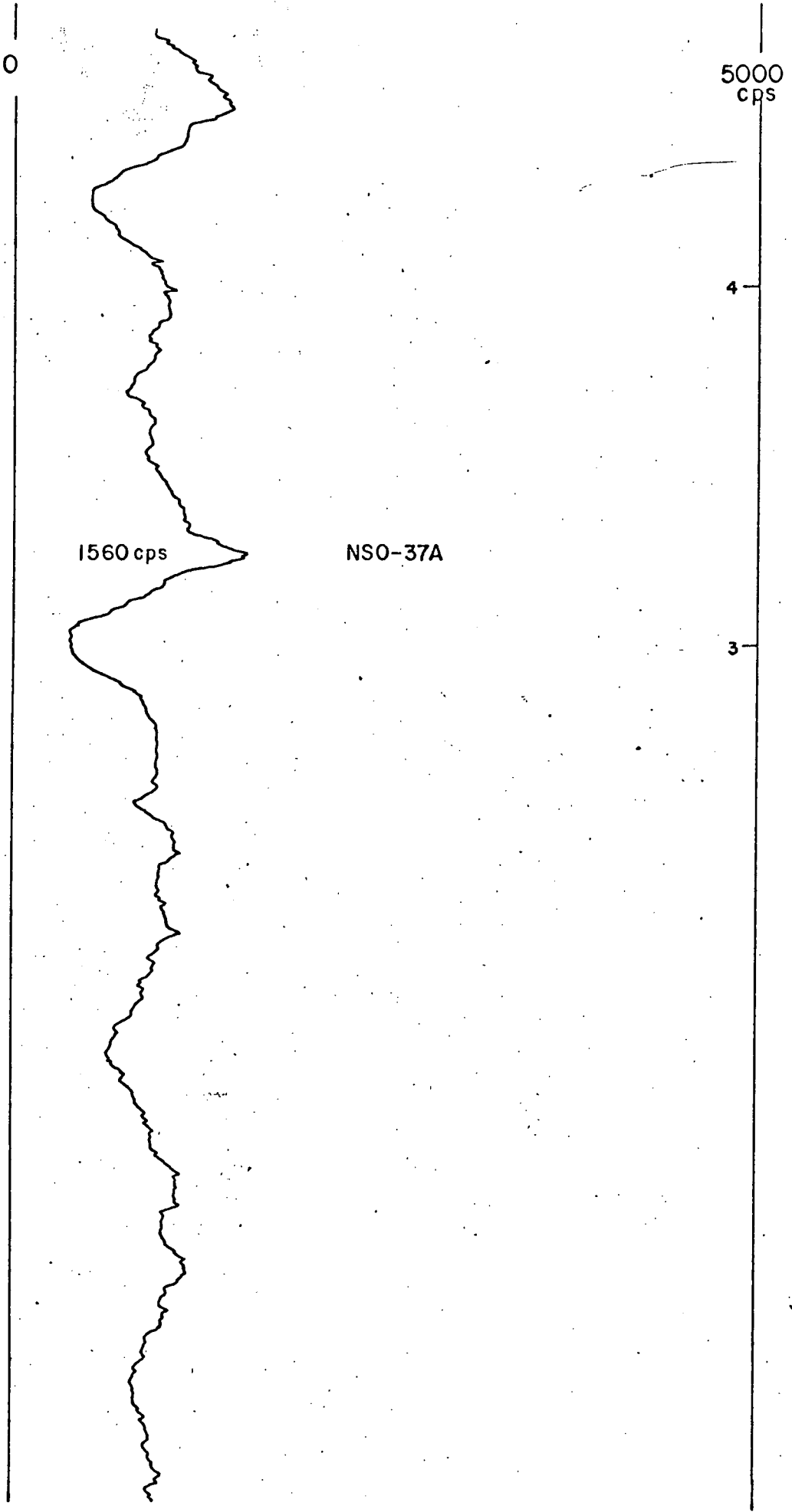
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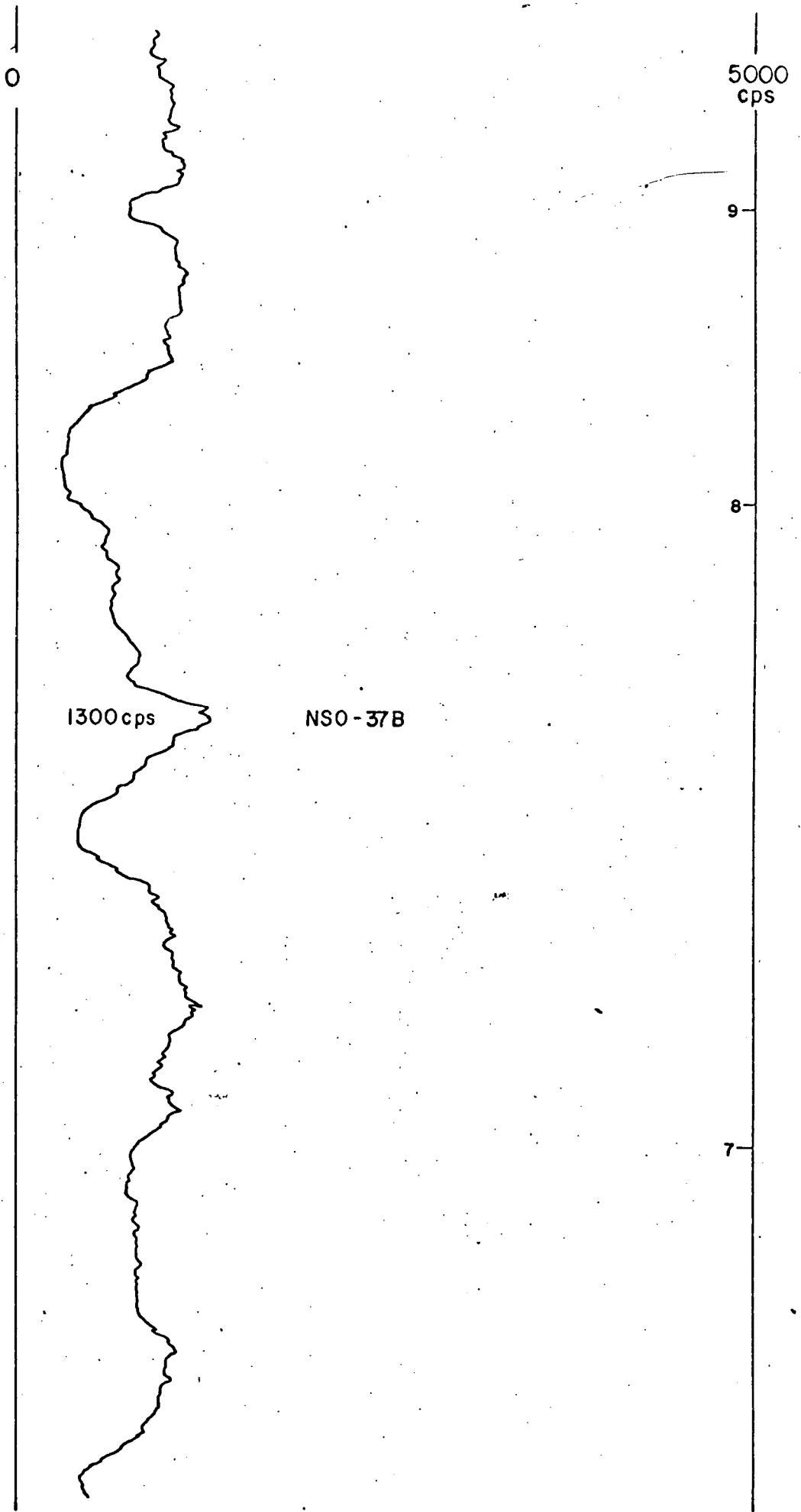
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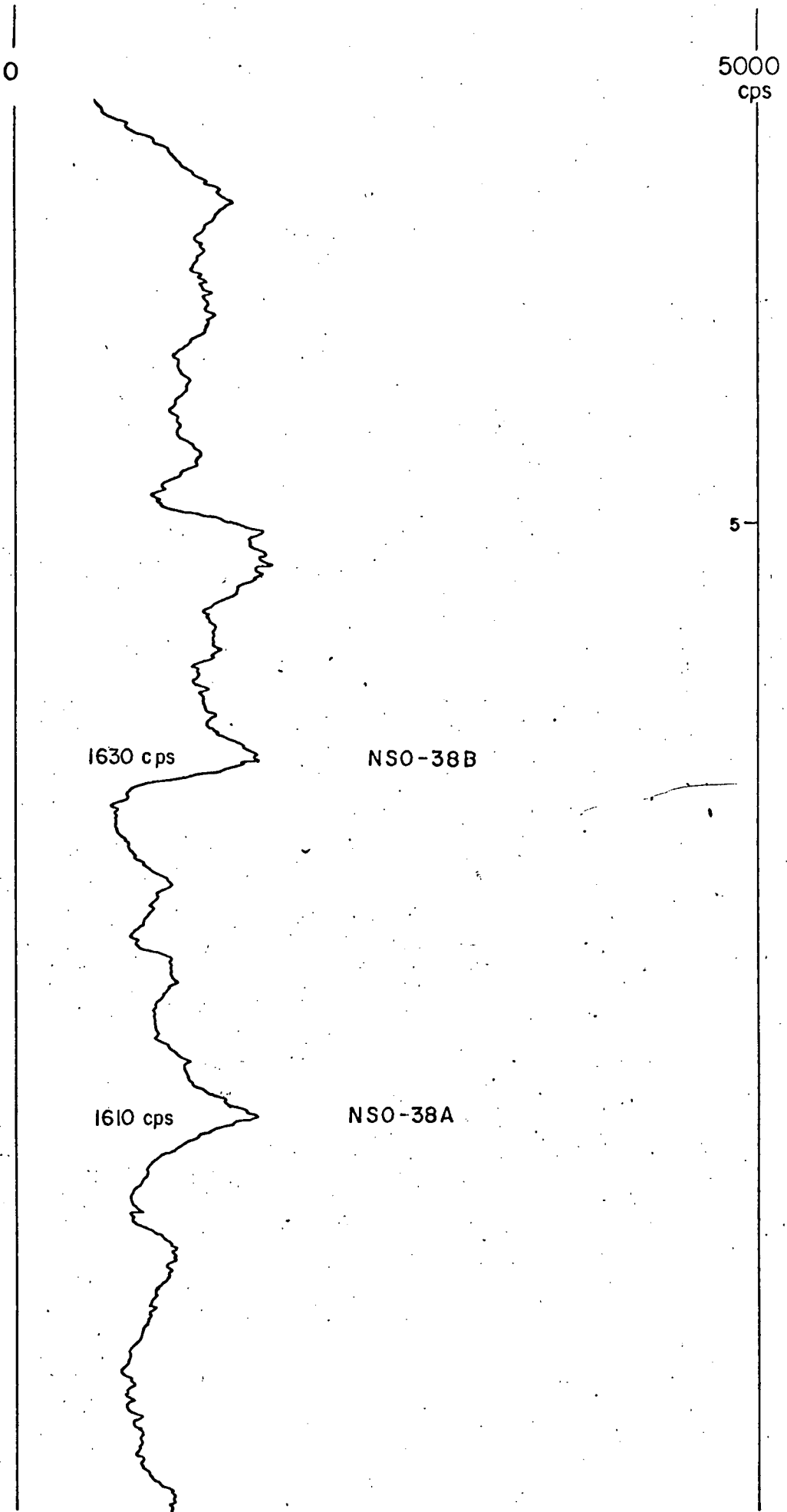
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6

5







0

5000
cps

5

1630 cps

NSO-38B

1610 cps

NSO-38A

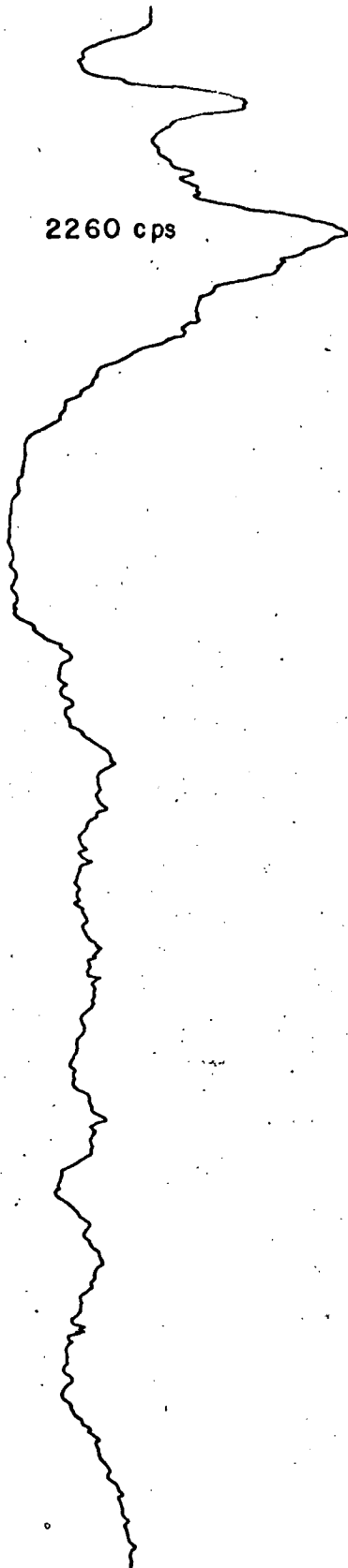
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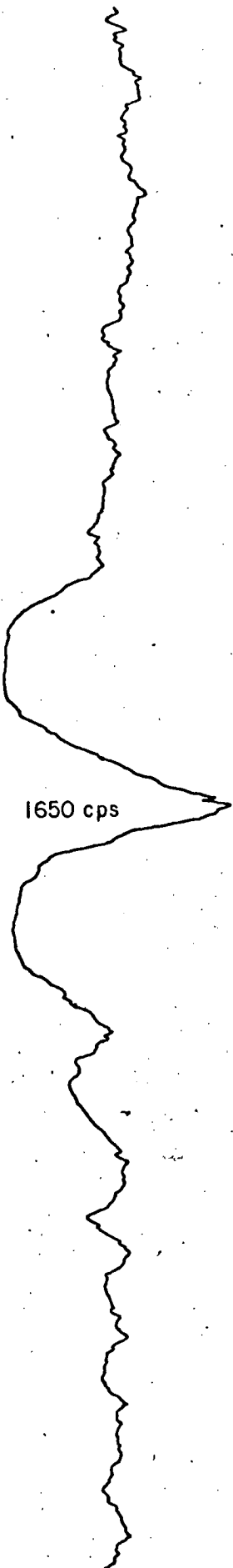
2260 cps

NSO-38 B
RECHECK





0



1650 cps

NSO-38C



5000
cps

9

8

0

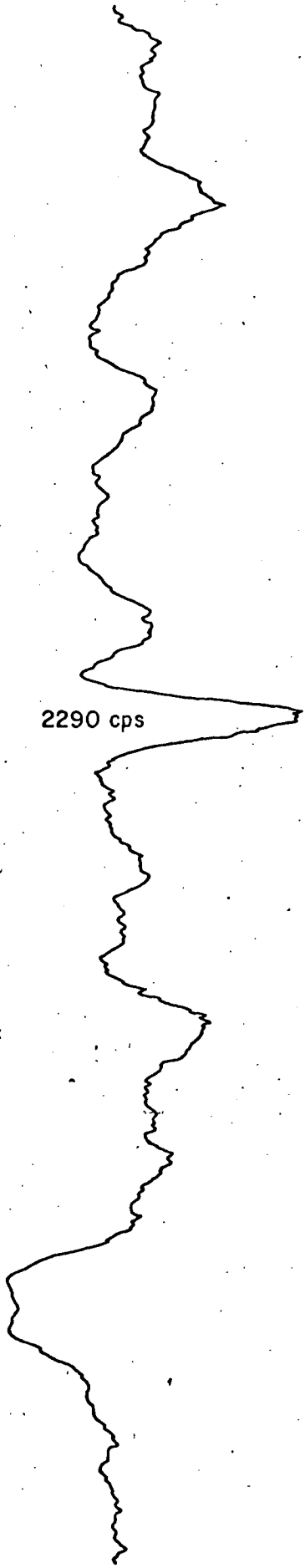
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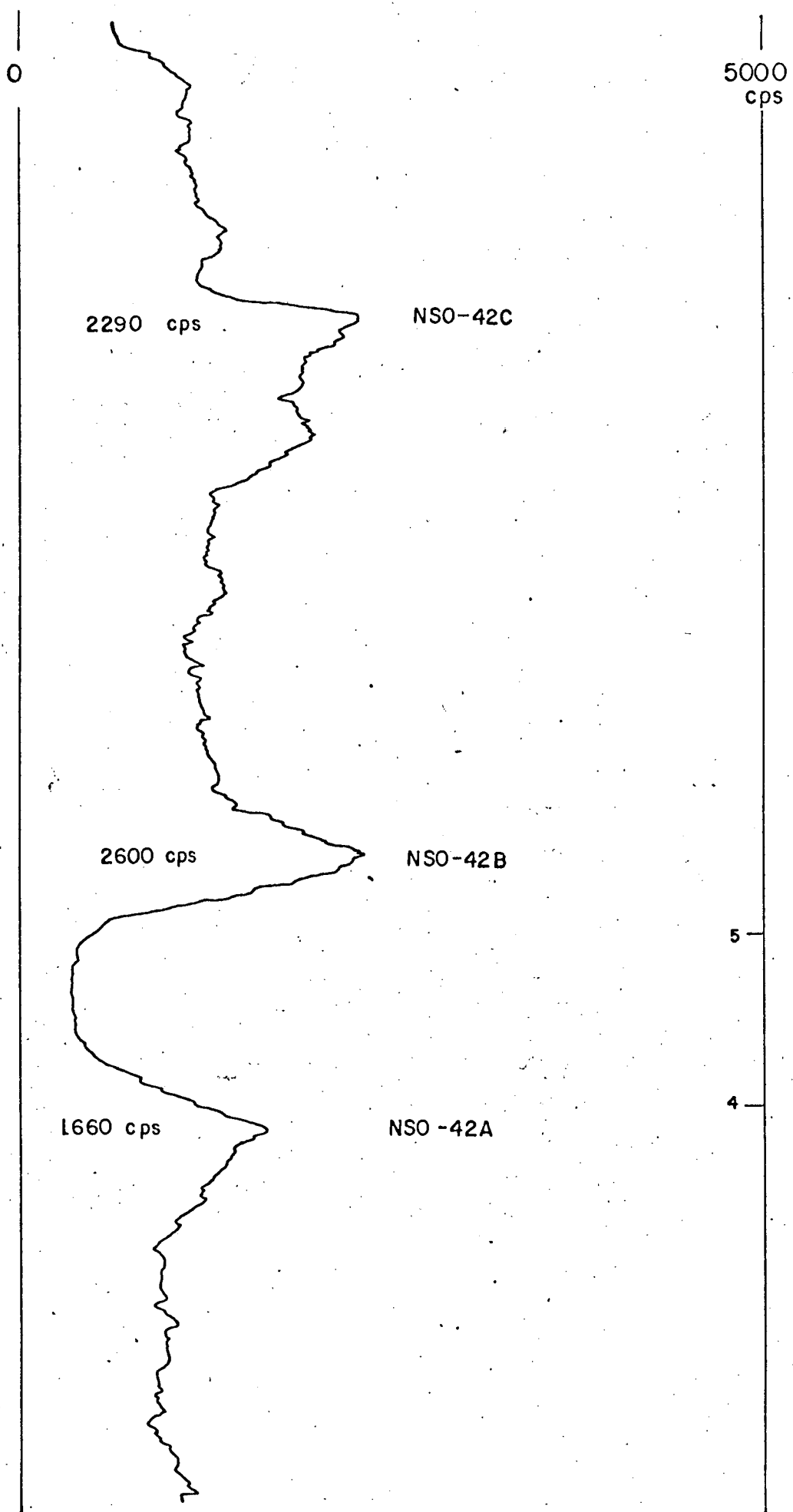
2290 cps

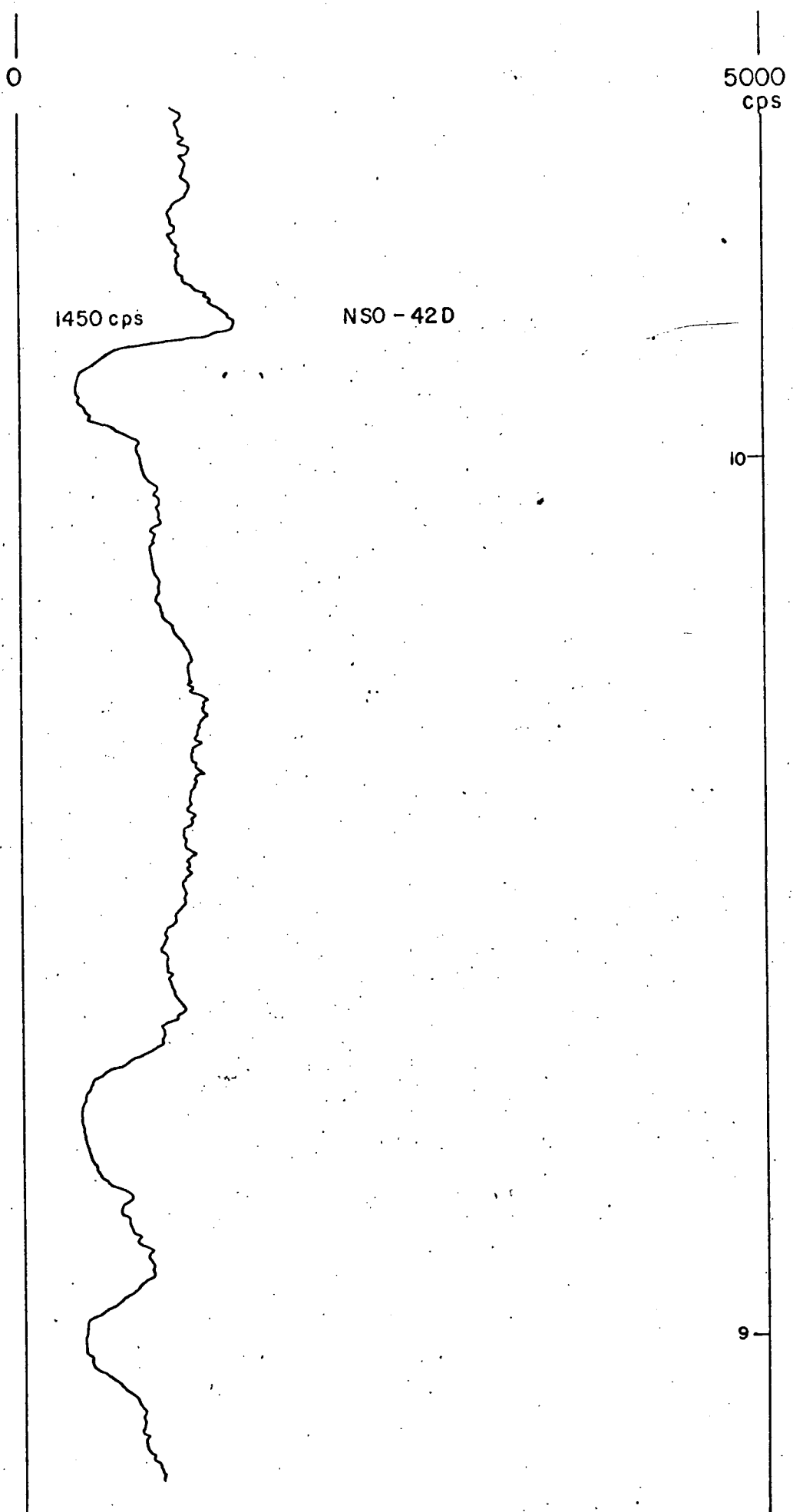
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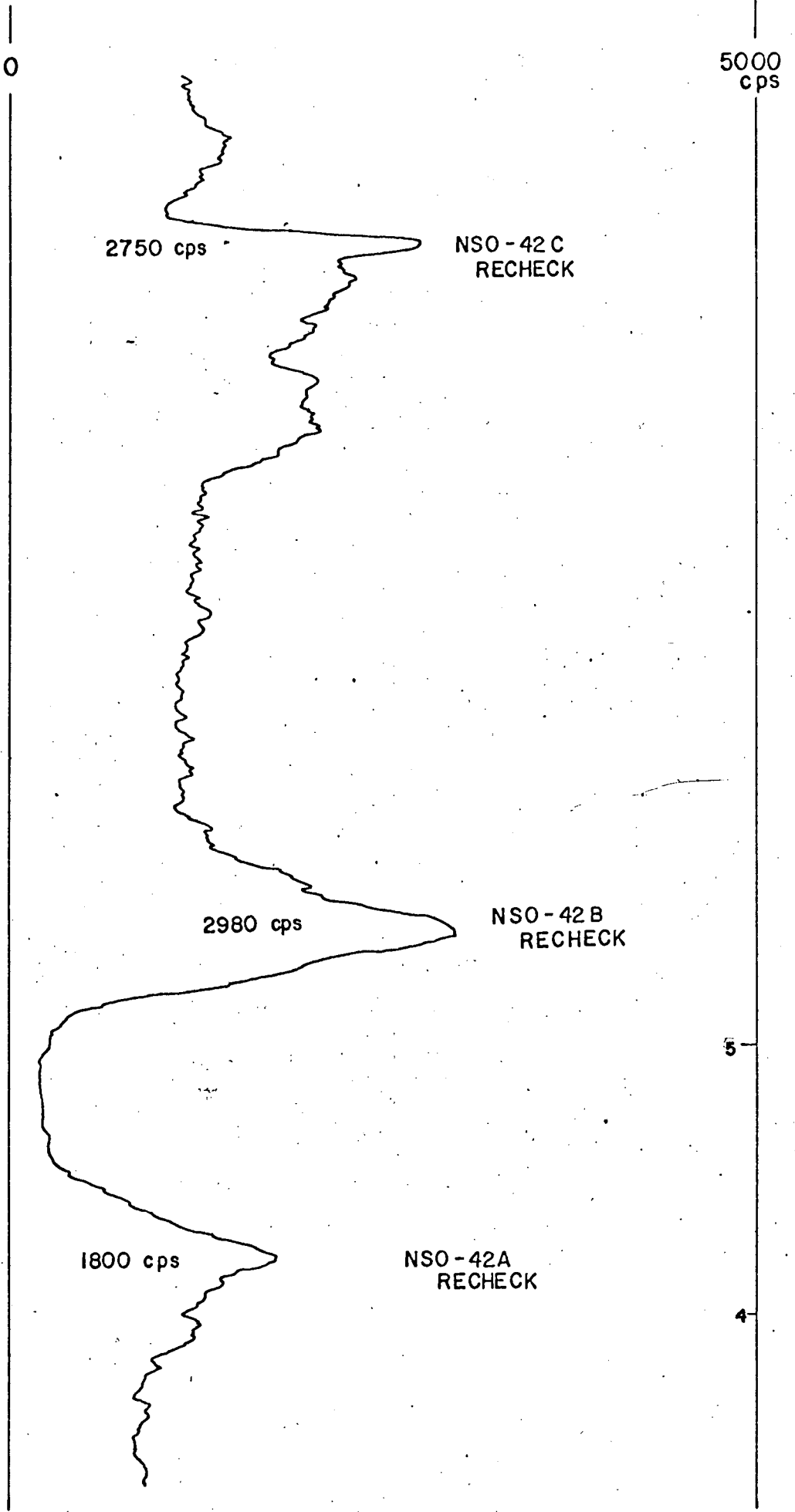
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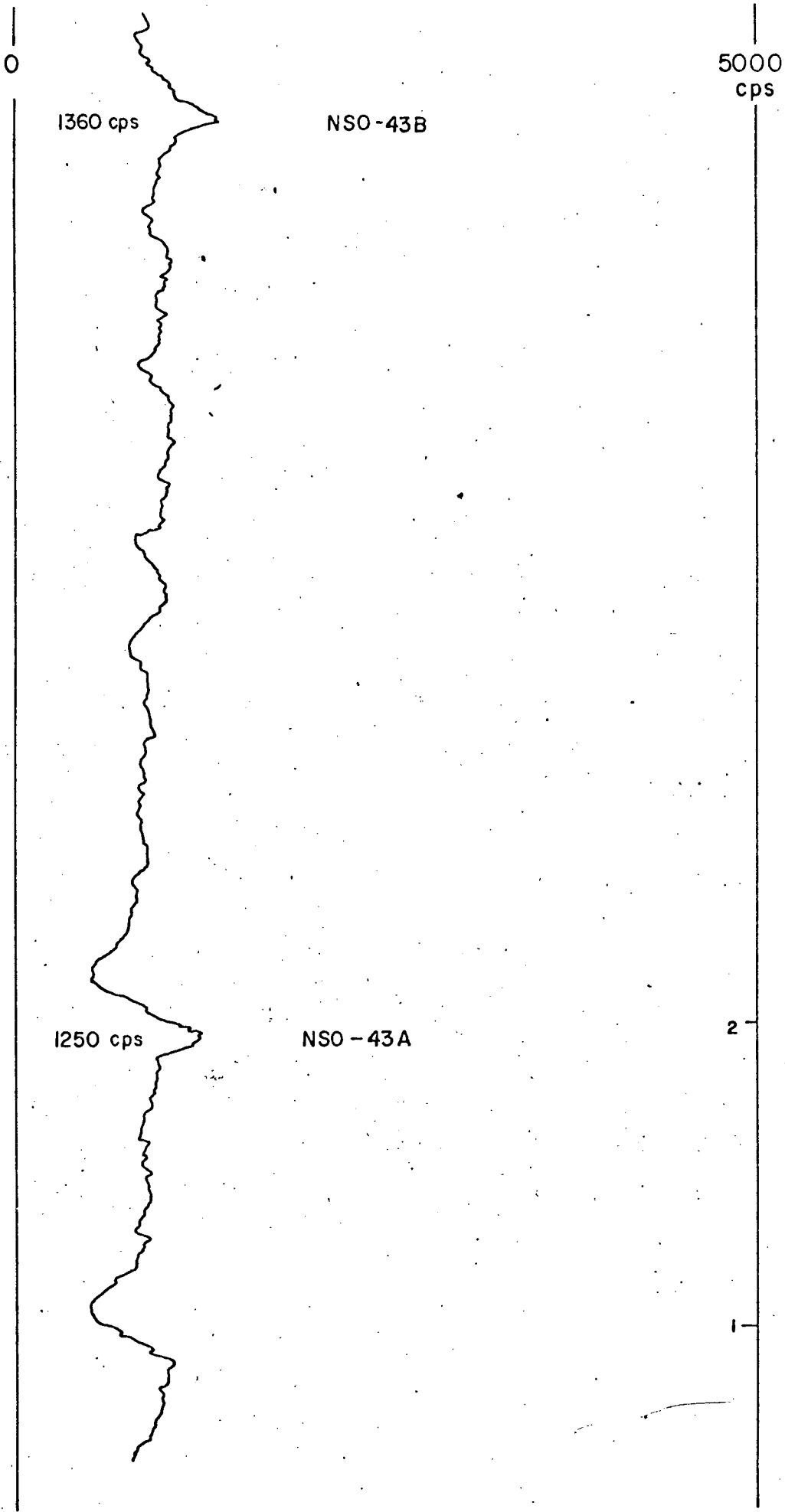
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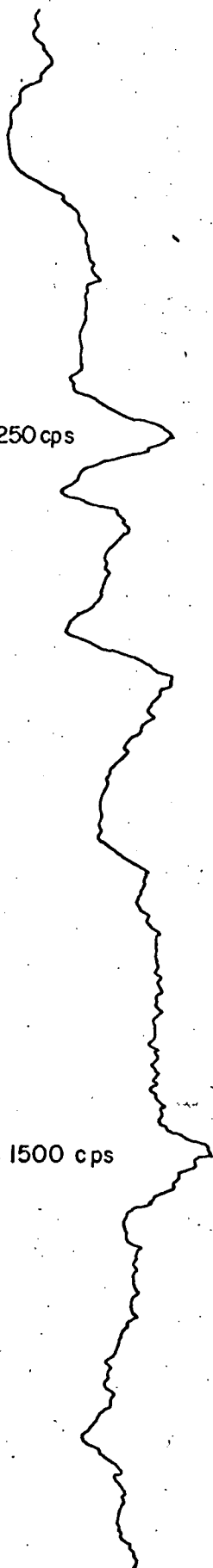
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cps

1250 cps

NSO -43 D

1500 cps

NSO -43 C



0

5000
cps

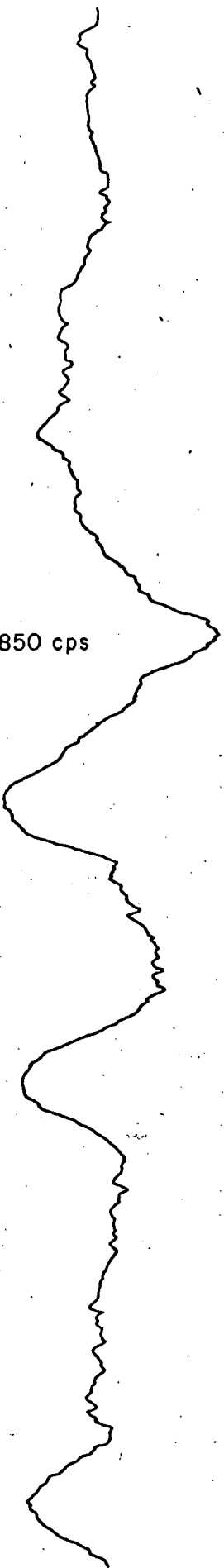
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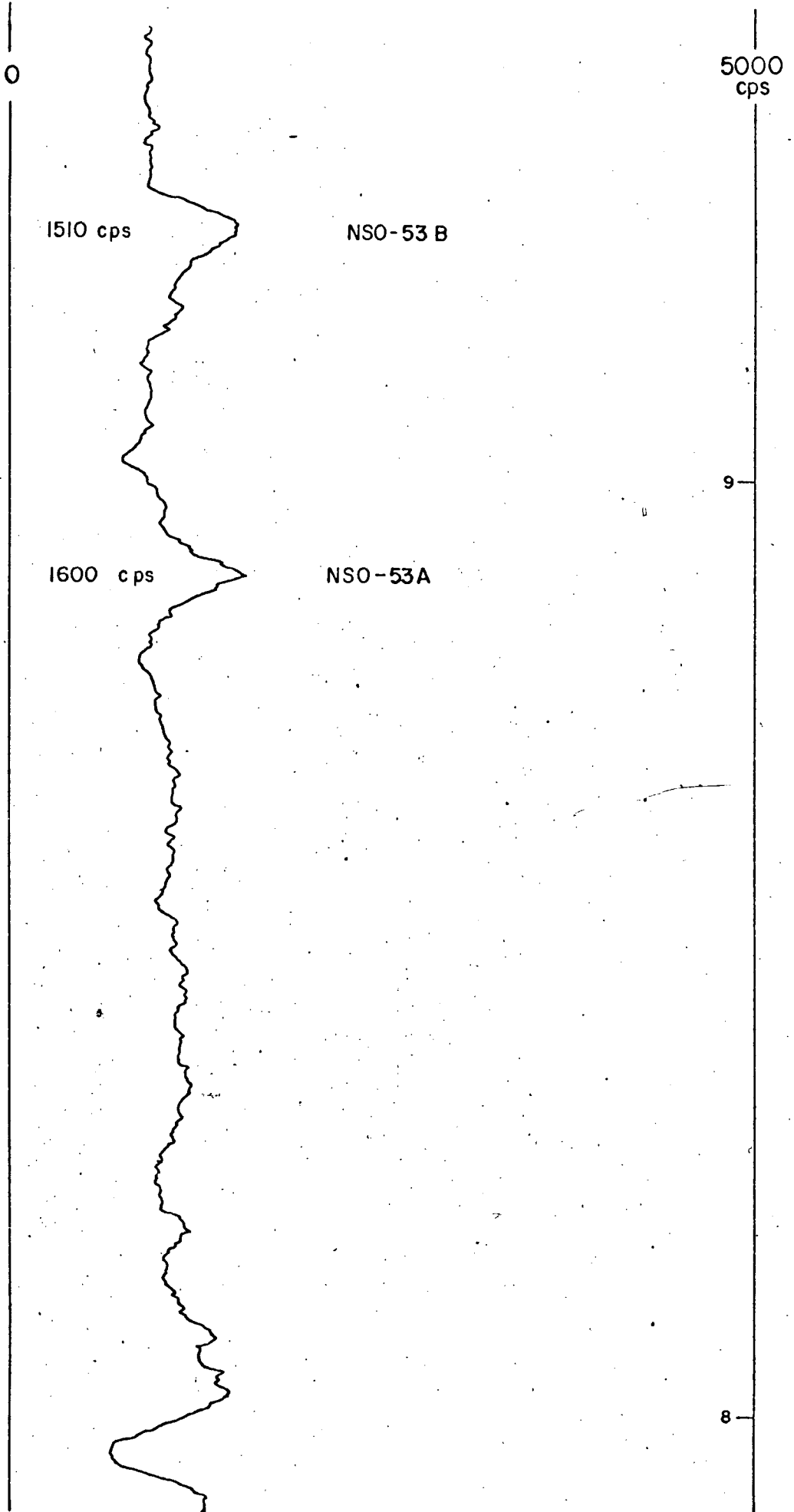
NSO-47A

9

8

7

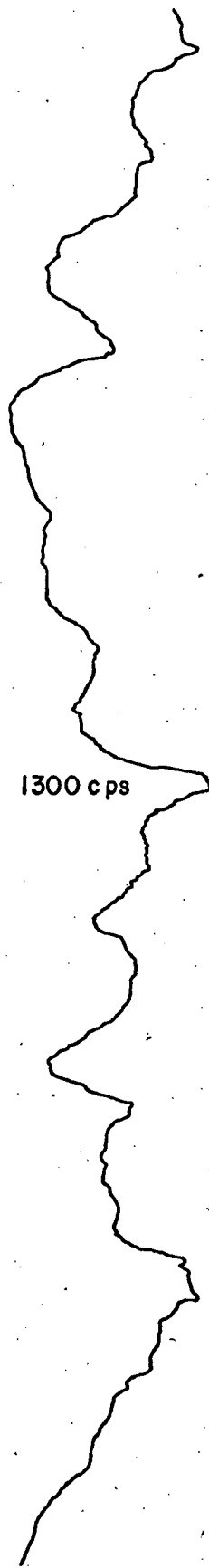






0

5000
cps



1300 cps

NSO-60A

3

2



0

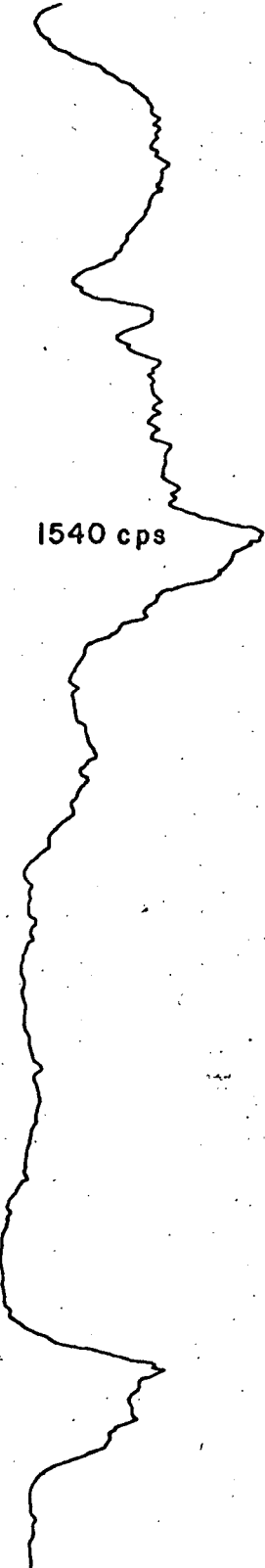
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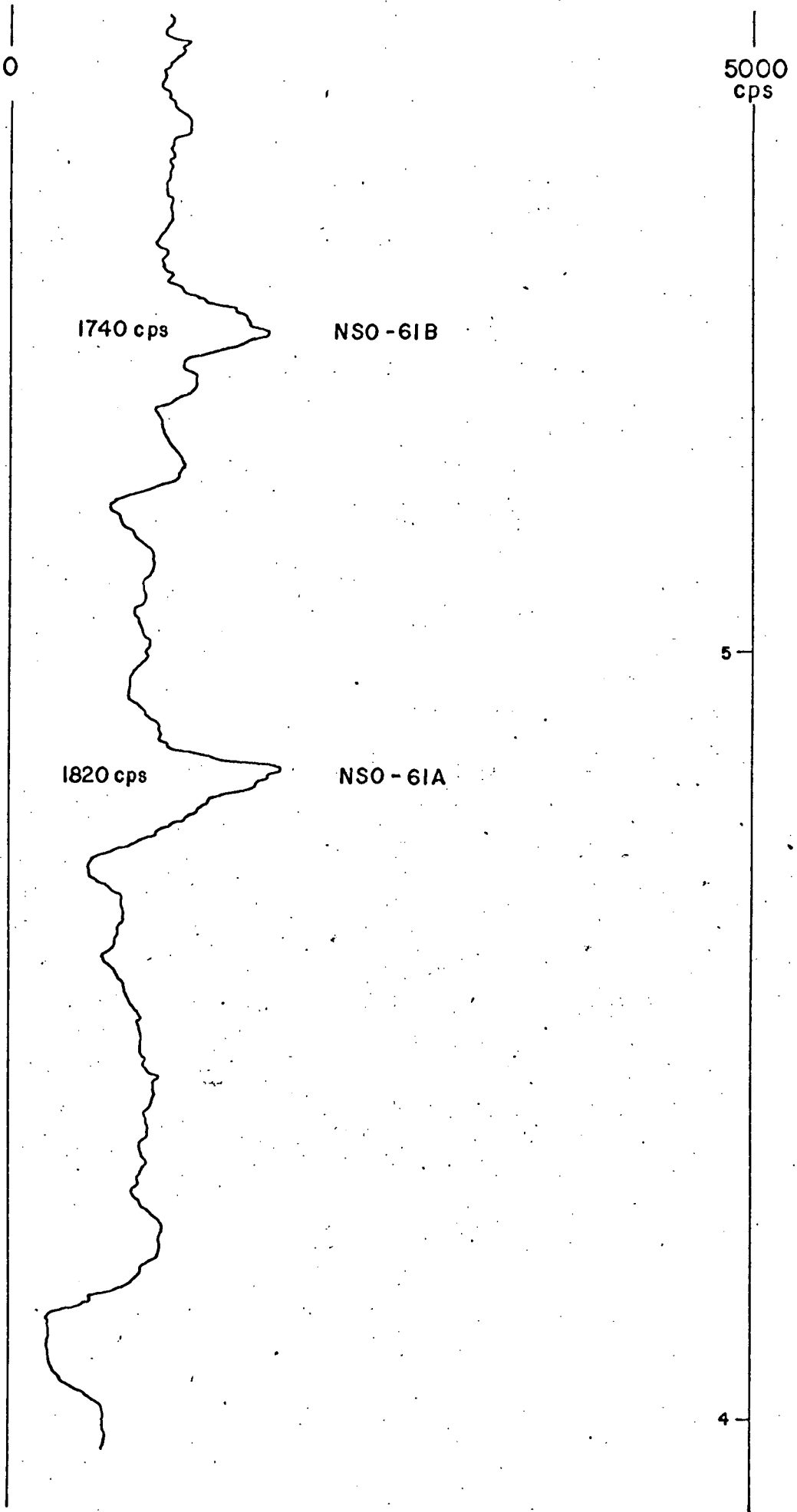
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1540 cps

NSO-60A
RECHECK

3





0

5000
cps

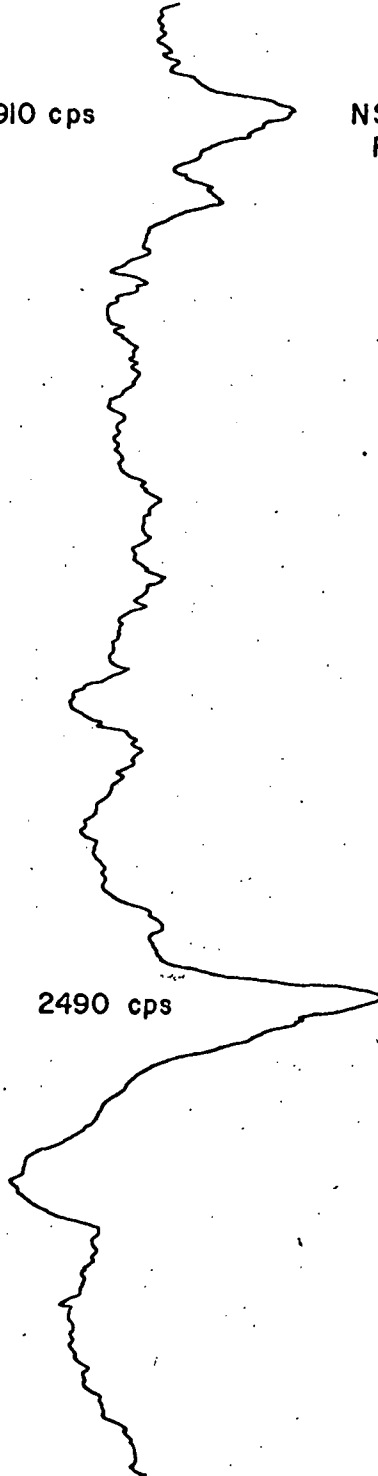
1910 cps

NSO-61B
RECHECK

2490 cps

NSO-61A
RECHECK

5



0

5000
cps

1920 cps

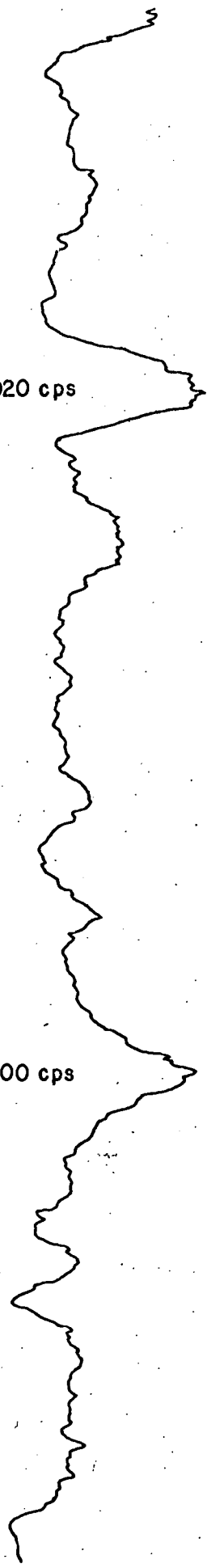
NSO - 63 B

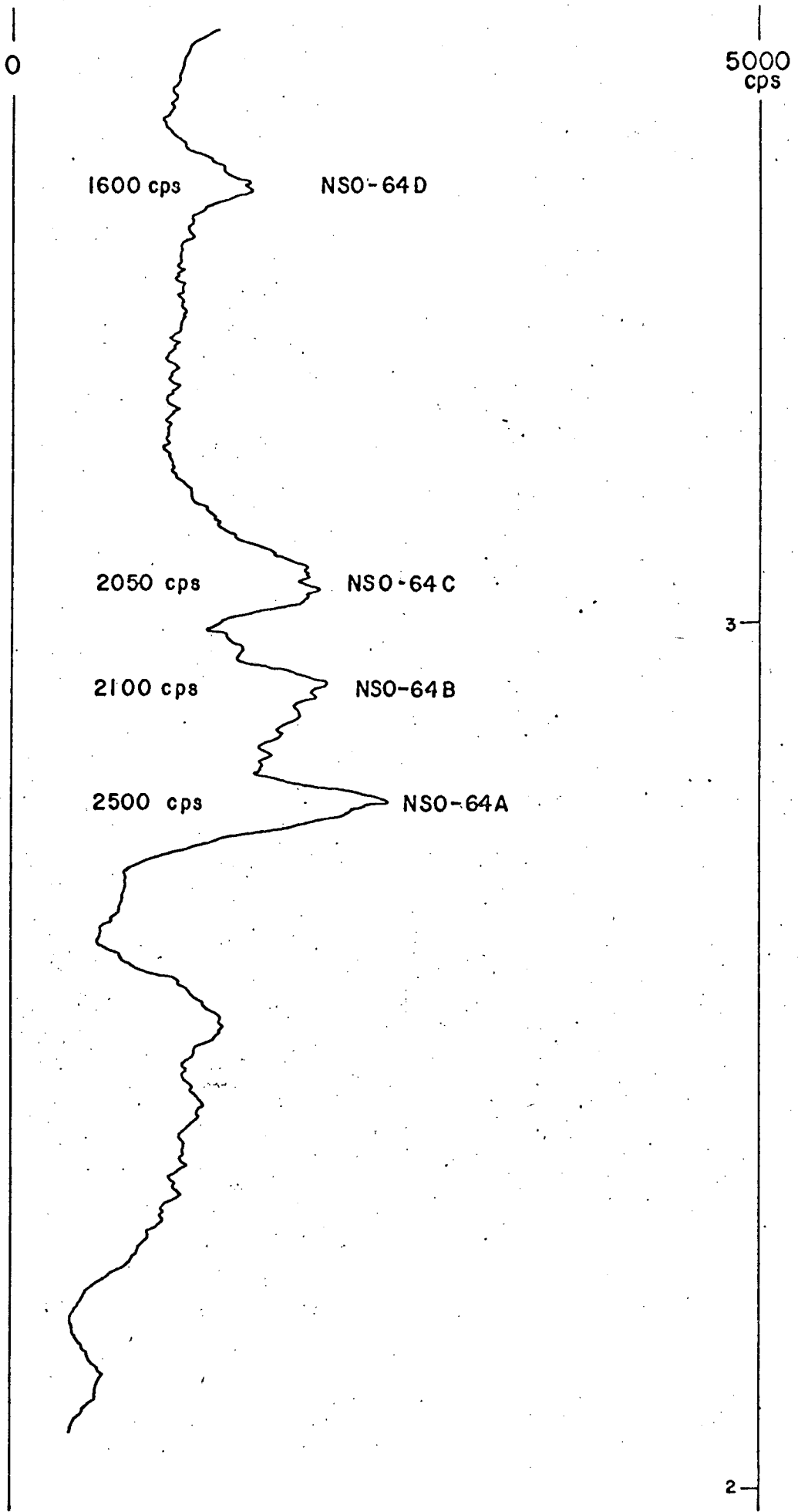
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1900 cps

NSO - 63 A

3





0

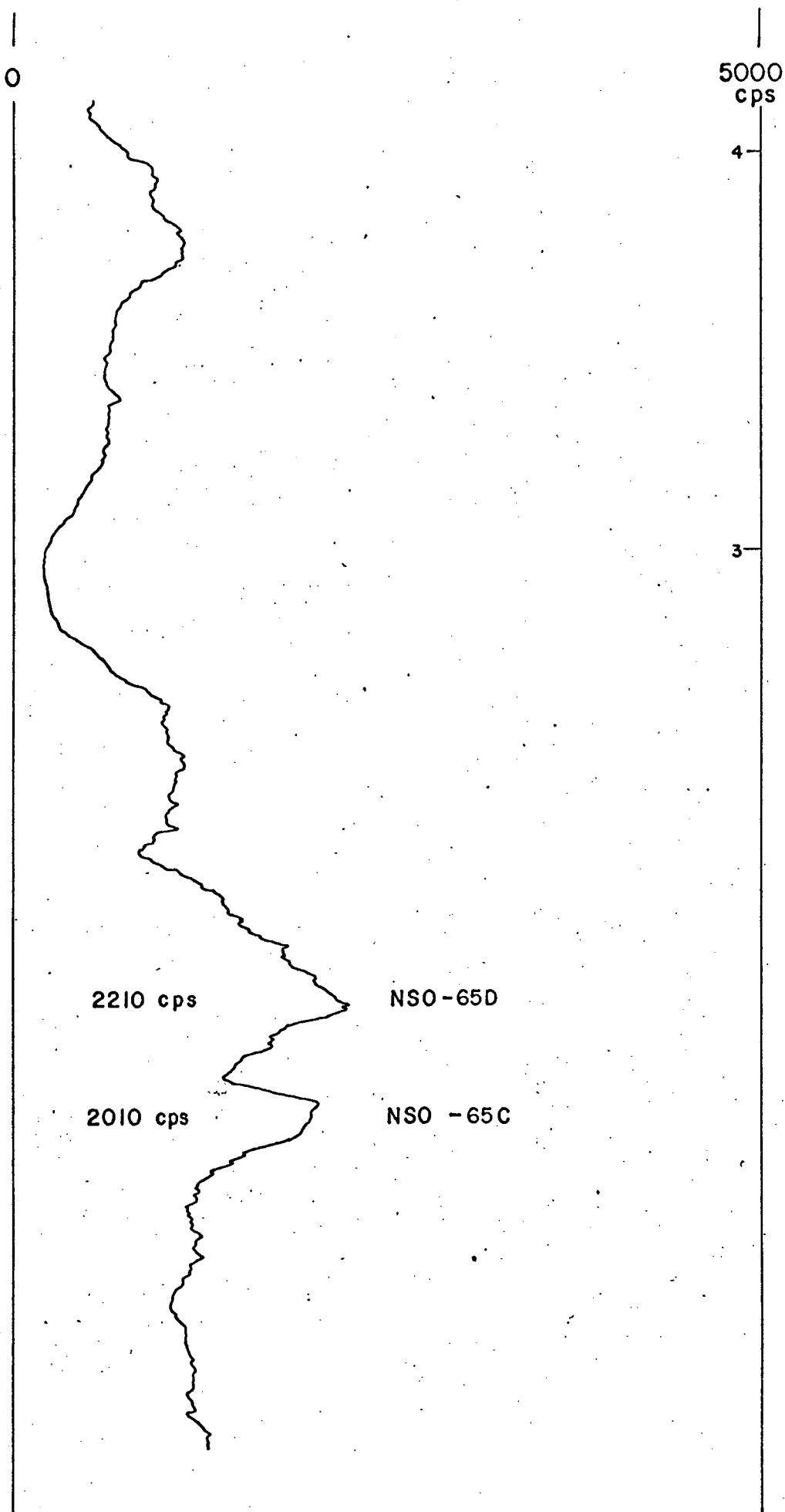
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1850 cps

NSO-65B

1550 cps

NSO-65A



5000
cps

4

3

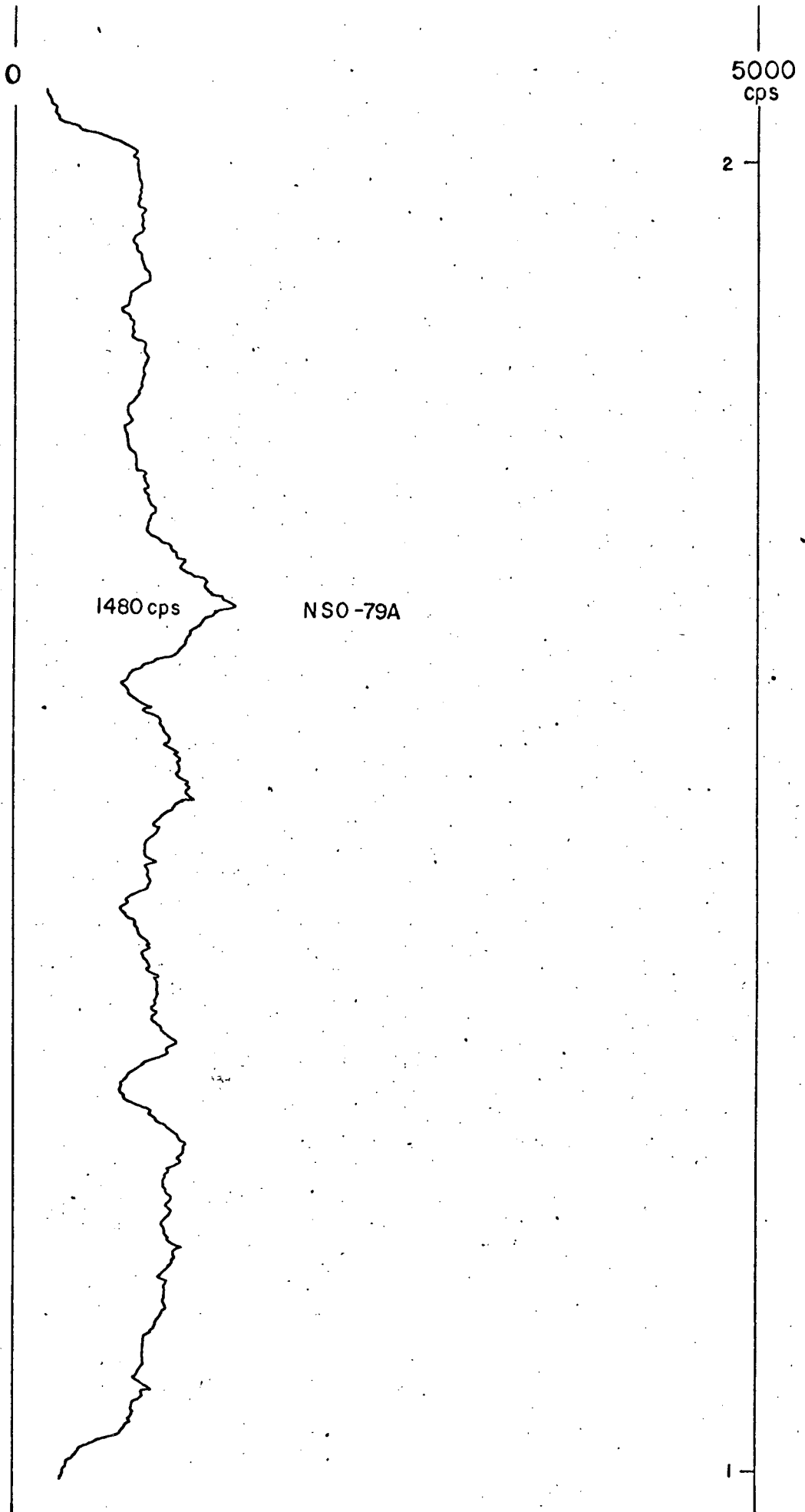
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2210 cps

NSO-65D

2010 cps

NSO-65C



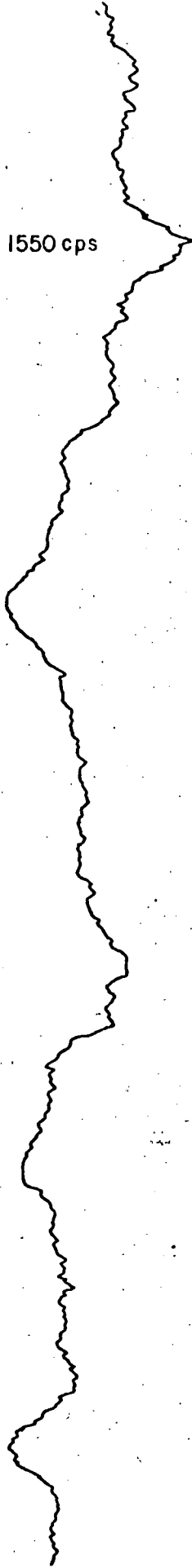
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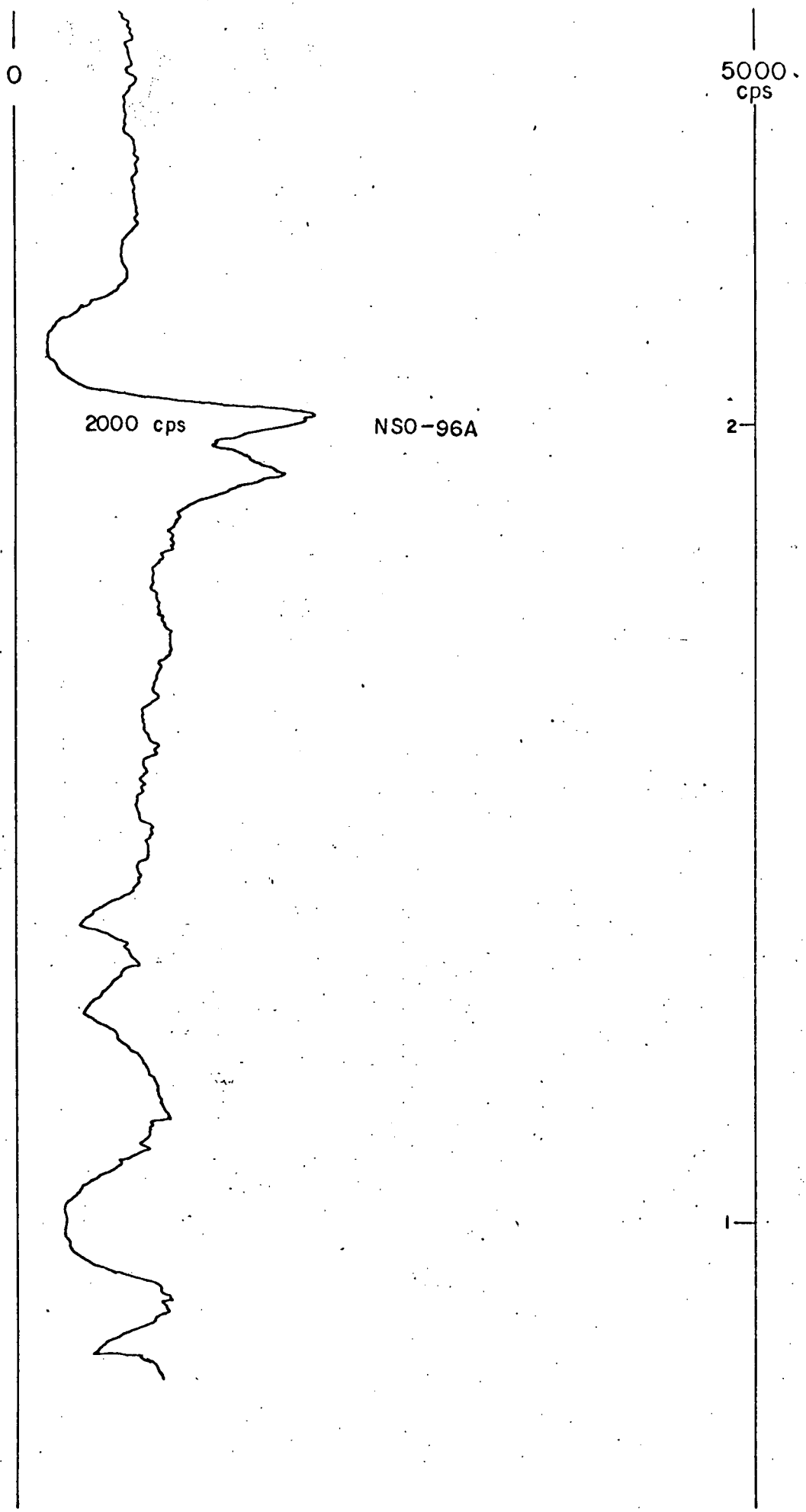
5000
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1550 cps

NSO-95A

2





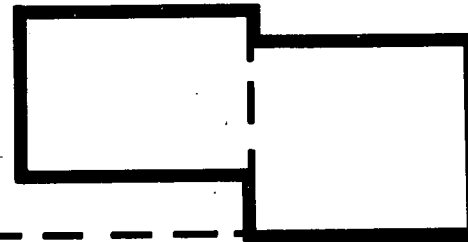
QUARTZ MINERAL EXPLORATION PERMIT No. 6

CANCELLED
PREVIOUSLY TRANSFERRED TO:
NEW SENATOR-ROUYN LIMITED(NO PERSONAL
LIABILITY)

SUITE 2014,
44- KING STREET WEST,
TORONTO 1, ONTARIO.

DATE OF ISSUE - OCTOBER 16, 1967
AREA - 12,320 ACRES.

NO LEASES SELECTED



TP. 124

TP. 123

TP. 122

R. 2

R. 1 W. 4 M.

MCINTYRE PORCUPINE MINES LIMITED

AIRBORNE SCINTILLOMETER SURVEY

NEW SENATOR OPTION

SCALE 1/2 1/4 0 1/2 1 MILES

TRIGG, WOOLLETT & ASSOCIATES LTD.

EDMONTON, ALBERTA

JULY, 1968

DWG. 8MNSO-2

LEGEND
COUNTS PER SECOND
ABOVE BACKGROUND

- ① 0 - 200
- ② 200 - 400
- ③ 400 - 600
- ④ 600 - 800
- ⑤ 800 - 1000
- ⑥ 1000 +
- NOT DETERMINABLE

FIGURAL POINTS INCREASING
IN DIRECTION OF FLIGHT

