

MAR 19690009: POTTS LAKE

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19690009

ECONOMIC MINERALS
FILE REPORT No.
U-AF-008(3)

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RADEX MINERALS LIMITED
AIRBORNE RADIOMETRIC SURVEY
PERMIT NO. 31
POTTS LAKE, ALBERTA

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Trigg, Woollett & Associates Ltd.

August, 1969

E. Lipsett

RADEX MINERALS LIMITED

AIRBORNE RADIOMETRIC SURVEY

PERMIT NO. 31

POTTS LAKE, ALBERTA

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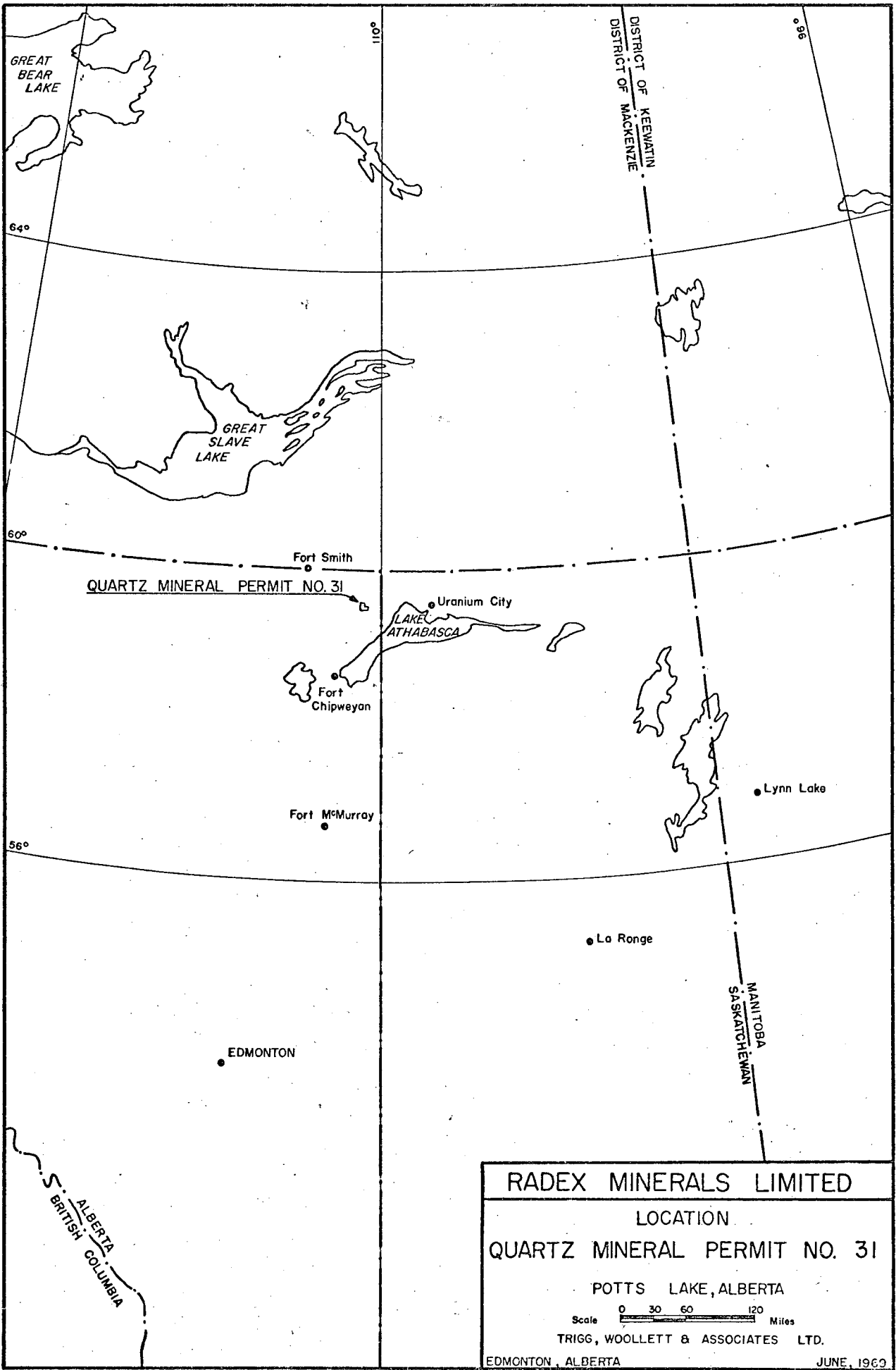
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RADEX MINERALS LIMITED
 LOCATION
 QUARTZ MINERAL PERMIT NO. 31
 POTTS LAKE, ALBERTA
 Scale 0 30 60 120 Miles
 TRIGG, WOOLLETT & ASSOCIATES LTD.
 EDMONTON, ALBERTA JUNE, 1969

RADEX MINERALS LIMITED

AIRBORNE RADIOMETRIC SURVEY

PERMIT NO. 31

POTTS LAKE, ALBERTA

SUMMARY

An airborne radiometric survey of Permit No. 31, Potts Lake, Alberta, was carried out between May 25 and May 27, 1969 and recorded a total of 26 radioactive occurrences. Ground investigation of these anomalies is recommended.

LOCATION AND PROPERTY

Permit No. 31 is located 65 miles west of Uranium City, Saskatchewan (Dwg. 9R31-1) in the Potts Lake area of northeast Alberta. The coordinates of the approximate centre of the permit are 59°45' north latitude, 110°20' west longitude. The permit containing an area of 36,480 acres is held under an option agreement by Radex Minerals Limited.

GEOLOGY

Permit No. 31 is underlain by metamorphic and igneous rocks of Archean age (Godfrey, 1966). Six rock groups are recognized by Godfrey: metasedimentary and associated rocks, porphyroblastic biotite granites, granite-gneiss, amphibolite, massive to foliated granites and pegmatites, and mylonites.

A major mylonite belt is present along the western edge of Permit No. 31. A less intense mylonite belt occurs on the east side of Whaleback Lake. Faults generally parallel the northerly trending mylonite belts. Two northeast transverse faults occur north and south of Camsell Lake.

Godfrey (1966) indicates that eight occurrences of radioactivity exist within Permit No. 31; five of these occurrences are adjacent to the mylonite belt along Charles Lake. The three other occurrences are near the south end of Potts Lake. Radioactivity is generally related to impure quartzite bands enclosed by biotite granite-gneiss.

SURVEY

An airborne radiometric survey of Permit No. 31 was carried out between May 25 and May 27, 1969 for Radex Minerals Limited by Trigg, Woollett & Associates Ltd. of Edmonton, Alberta and totalled 235 line miles. Survey flight lines were oriented west-east and spaced at intervals of 1320 feet. The actual flight path was recorded during flight on airphoto mosaics (scale two inches equals one mile) 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 drainage base map (scale two inches equals one mile) constructed from the airphoto mosaics.

Flight recorder charts were examined and interpreted. All significant radioactive responses were located and plotted on the survey base map as anomalies (Dwg. 9R31-3). This survey was flown under the supervision of E. Lipsett, P.Geoph., with M. R. Hegge, B.Sc., as technician.

EQUIPMENT

The following equipment was used to perform this survey:

- (a) Bell 47-G3B helicopter.
- (b) Mount Sopris Airborne Scintillometer, Model 160-12A with one 5"x4" sodium iodide crystal detector.
- (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 per cent |
| 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 |
| Instrument Sensitivity | 200 counts per second per microrentgen per hour |

CONCLUSIONS

Twenty-six radioactive occurrences were recorded in Permit No. 31 by the airborne radiometric survey (Dwg. 9R31-3). Anomalous radioactivity responses were classified as those exceeding 1200 counts per second. The majority of the anomalous

CONCLUSIONS (cont'd)


responses were between 1300 and 1500 counts per second; one anomaly in the northeast corner of the permit peaked at 1700 counts per second.

The anomaly characteristics suggest that the anomalies may have resulted from broad response sources such as specific rock types. Anomalies that might have been produced by uranium vein type sources were not evident among the anomalies recorded.

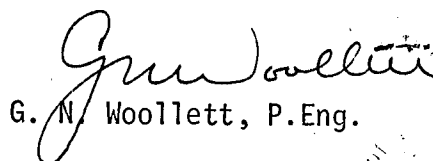
The broad response source and rock type relationship is typified through the concentration of anomalies occurring on the east side of Whaleback Lake in an area of impure quartzites enclosed by biotite granite-gneiss. Although these occurrences are coincident with particular rock types, the anomalies warrant further investigation.

RECOMMENDATIONS

A detailed ground investigation of all anomalies is warranted to determine the nature of the radioactive occurrences.



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



G. N. Woollett, P.Eng.

August 29, 1969.
Edmonton, Alberta.



REFERENCES

Godfrey, J. D. (1966)

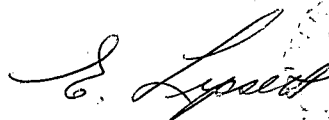
Geology of the Bayonet, Ashton,
Potts and Charles Lakes District,
Alberta; Research Council of
Alberta, Preliminary Report 65-6.

CERTIFICATION

I, E. LIPSETT, OF [REDACTED] EDMONTON, ALBERTA, CERTIFY AND DECLARE THAT I AM A GRADUATE OF THE UNIVERSITY OF ALBERTA WITH A B.SC. DEGREE IN PHYSICS AND CHEMISTRY. I AM REGISTERED AS A PROFESSIONAL GEOPHYSICIST WITH THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ALBERTA.

MY EXPERIENCE INCLUDES SERVICE AS FIELD GEOPHYSICIST, PARTY CHIEF AND INTERPRETATION SUPERVISOR, CANADIAN EXPLORATION CO. LTD., CALGARY; SENIOR GEOPHYSICIST, PAN AMERICAN PETROLEUM CORPORATION, CALGARY; HEAD, EXPLORATION DEPARTMENT, NORTHERN ALBERTA INSTITUTE OF TECHNOLOGY, EDMONTON.

I HAVE NO INTEREST DIRECT OR INDIRECT IN RADEX MINERALS LIMITED OR ANY OF THEIR PROPERTIES NOR DO I EXPECT TO RECEIVE ANY SUCH INTEREST.



E. LIPSETT, B.SC., P.GEOPH.

APPENDIX I

PERMIT NO. 31 - POTTS LAKE

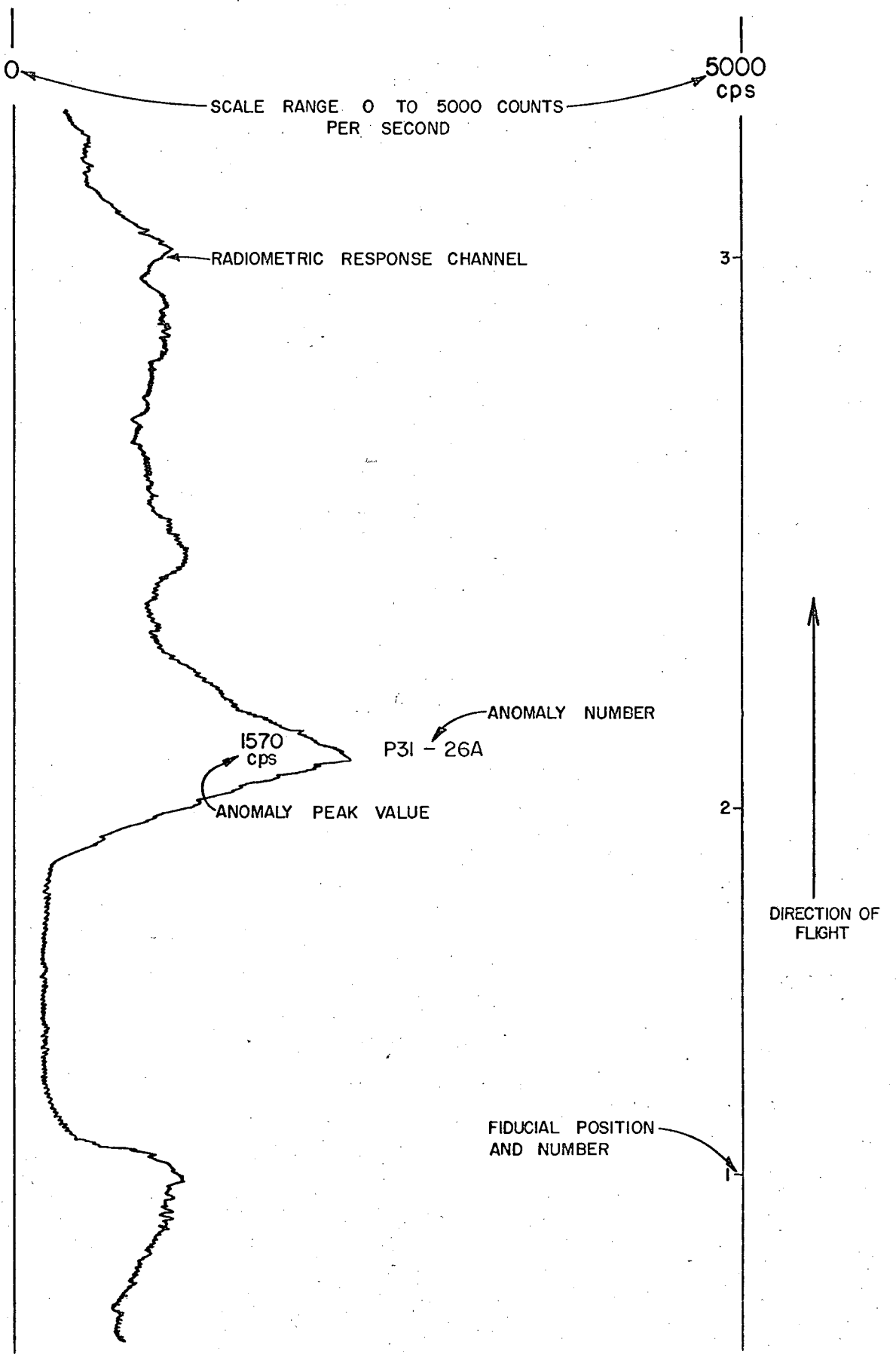
| <u>Anomaly No.</u> | <u>Location</u> | <u>Nature</u> | <u>Comments</u> |
|--------------------|--------------------------------------|-------------------------------|--|
| P31 - 7A | 3/4 mile north of Potts Lake. | Broad 1330 cps | Background 1000 cps |
| P31 - 7B | " | Broad 1400 cps | Background 1000 cps |
| P31 - 9A | 1/4 mile north of Potts Lake. | Broad 1310 cps | Background 1200 cps |
| P31 - 25A | 1 mile north of Whaleback Lake. | Broad 1310 cps | Background 1200 cps |
| P31 - 26A | 2 miles northeast of Whaleback Lake. | Broad, pronounced 1570 cps | Background 1000 cps |
| P31 - 26B | 1 mile north of Whaleback Lake. | Broad 1250 cps | Background 1100 cps |
| P31 - 27A | Northeast of Whaleback Lake. | Broad 1320 cps | Background 1000 cps |
| P31 - 27B | " | Broad, pronounced 1700 cps | Background 1000 cps |
| P31 - 28A | " | Broad 1400 cps | Background 1200 cps |
| P31 - 28B | " | Broad 1450 cps | Edge of sand covered area. Background 1200 cps. |
| P31 - 29A | " | Broad 1390 cps | Background 900 cps |
| P31 - 29B | " | Broad 1300 cps | Background 900 cps |
| P31 - 30A | " | Broad 1580 cps | Area of known radioactivity. Background 1150 cps |
| P31 - 31A | West of Camsell Lake. | Broad 1550 cps | Area of known radioactivity. Background 1100 cps |

| <u>Anomaly No.</u> | <u>Location</u> | <u>Nature</u> | <u>Comments</u> |
|--------------------|--------------------------|-------------------------------|---------------------|
| P31 - 31B | East of Camsell Lake. | Broad 1510 cps | Background 1100 cps |
| P31 - 31C | East of Whaleback Lake. | Broad 1360 cps | Background 1100 cps |
| P31 - 31D | East of Whaleback Lake. | Broad, dis- tinct 1610 cps | Background 1100 cps |
| P31 - 32A | " | Broad 1410 cps | Background 1200 cps |
| P31 - 32B | East of Camsell Lake. | Broad 1350 cps | Background 1200 cps |
| P31 - 33A | East of Whaleback Lake. | Broad 1400 cps | Background 1100 cps |
| P31 - 33B | " | Broad 1300 cps | " |
| P31 - 34A | " | Broad 1300 cps | " |
| P31 - 34B | West of Whaleback Lake. | Broad 1320 cps | " |
| P31 - 37A | East of Whaleback Lake. | Broad 1390 cps | " |
| P31 - 41A | South of Whaleback Lake. | Broad 1310 cps | " |
| P31 - 41B | Southwest of Potts Lake. | Broad 1300 cps | " |

APPENDIX II

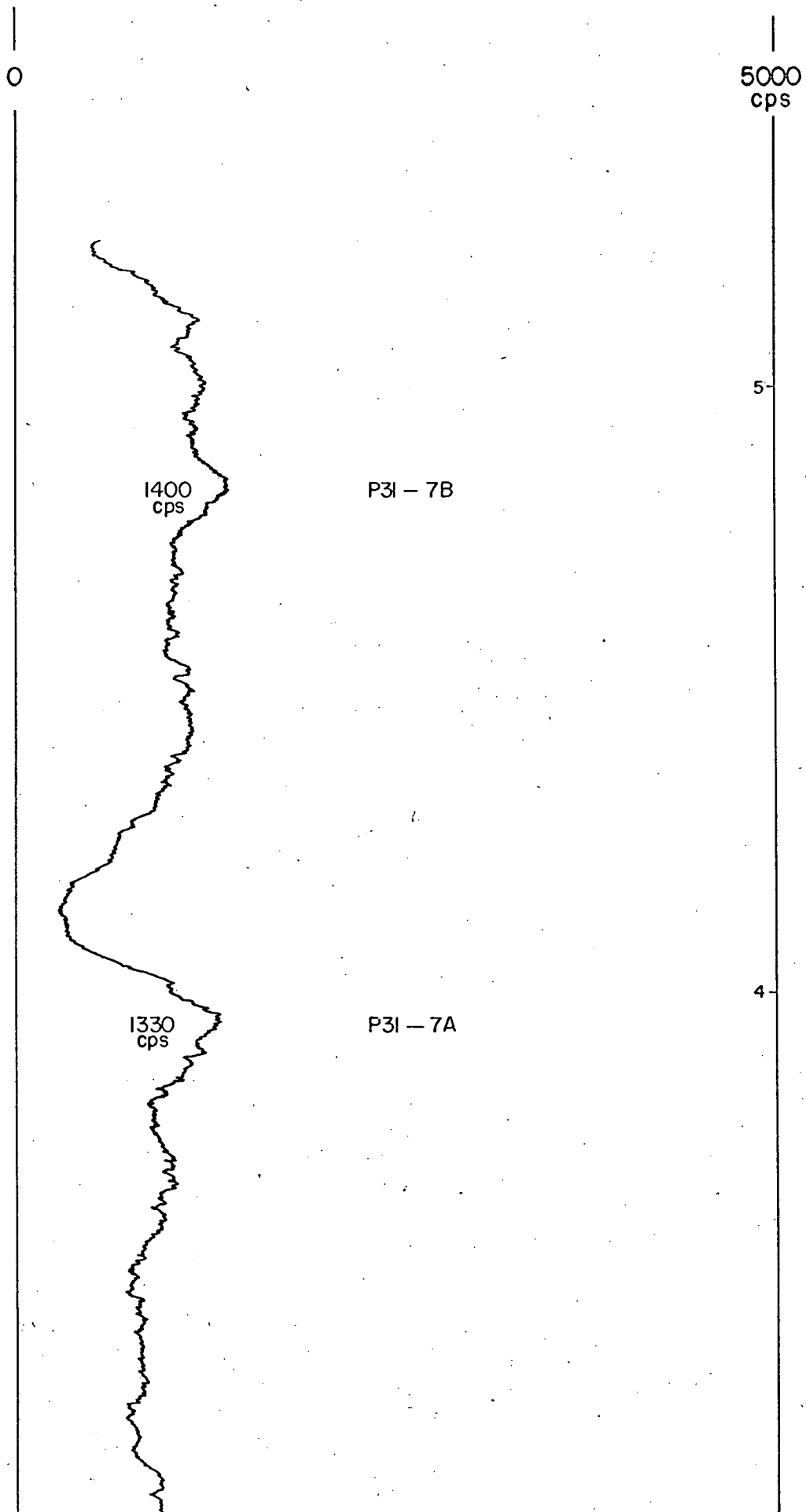
RECORDER CHART PROFILES

RECORDER CHART PROFILES LEGEND



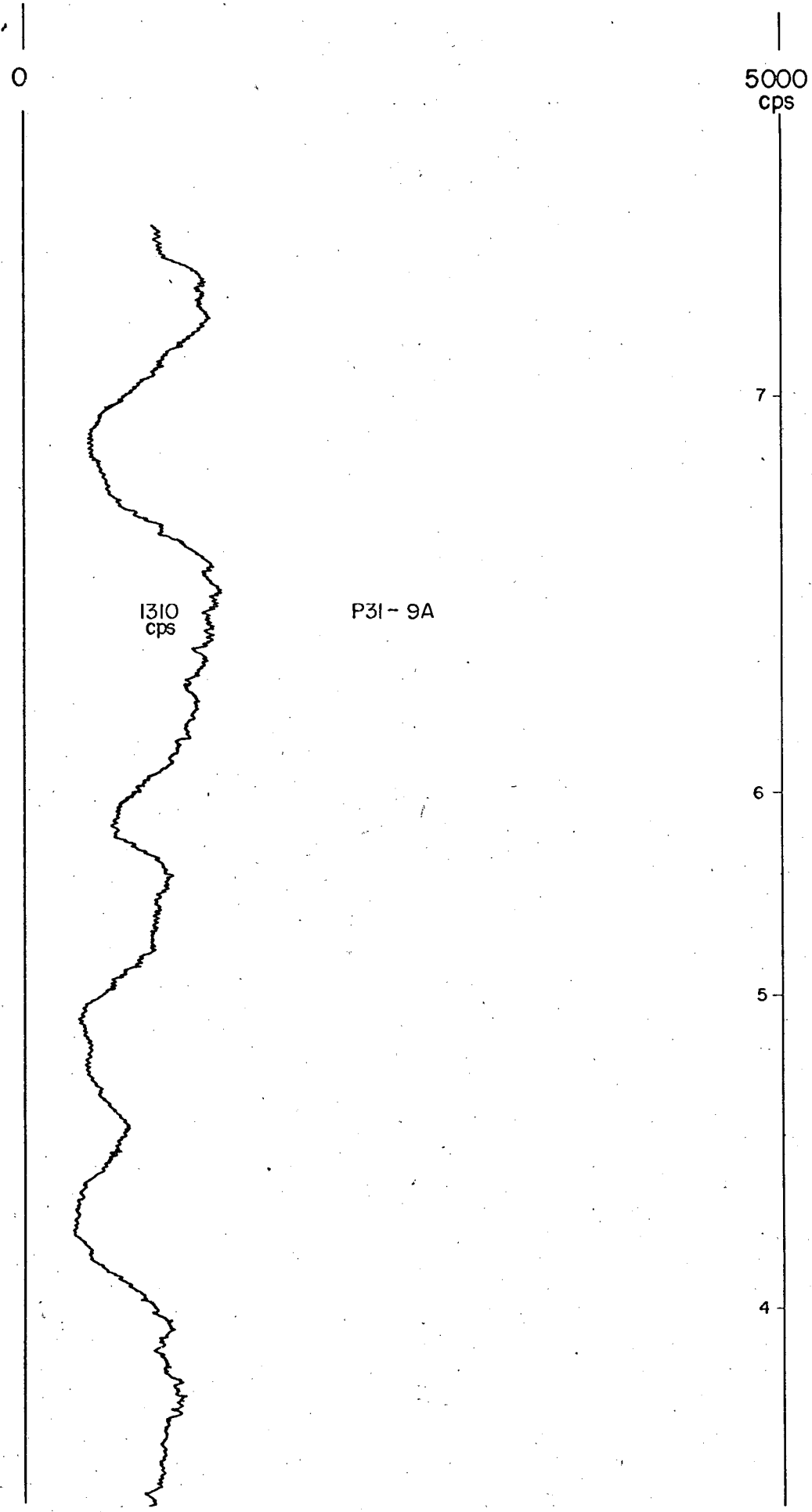
19690009

#12



19690009

3



19690009

#4

0

5000
cps



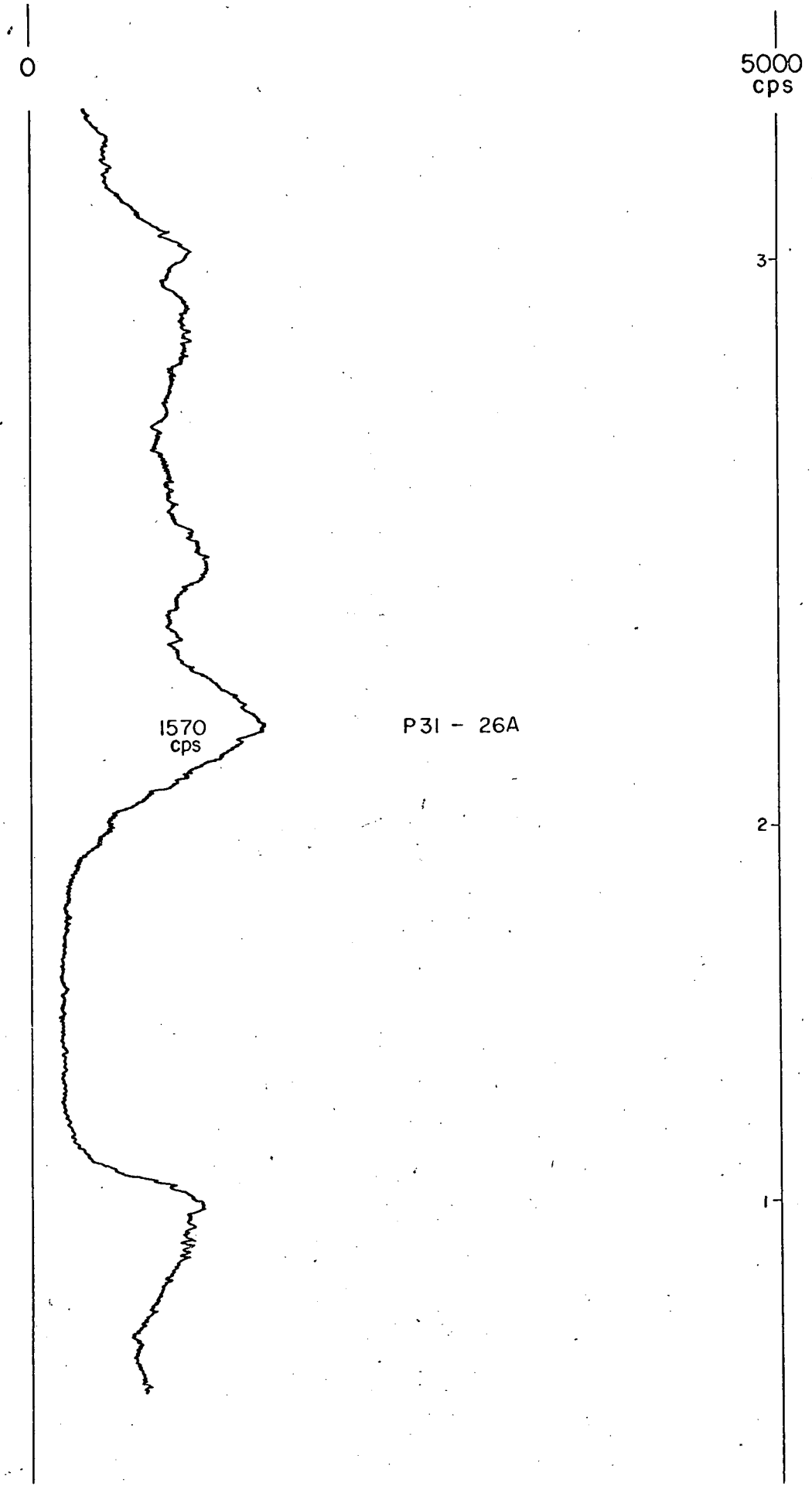
1310
cps

P31 - 25A

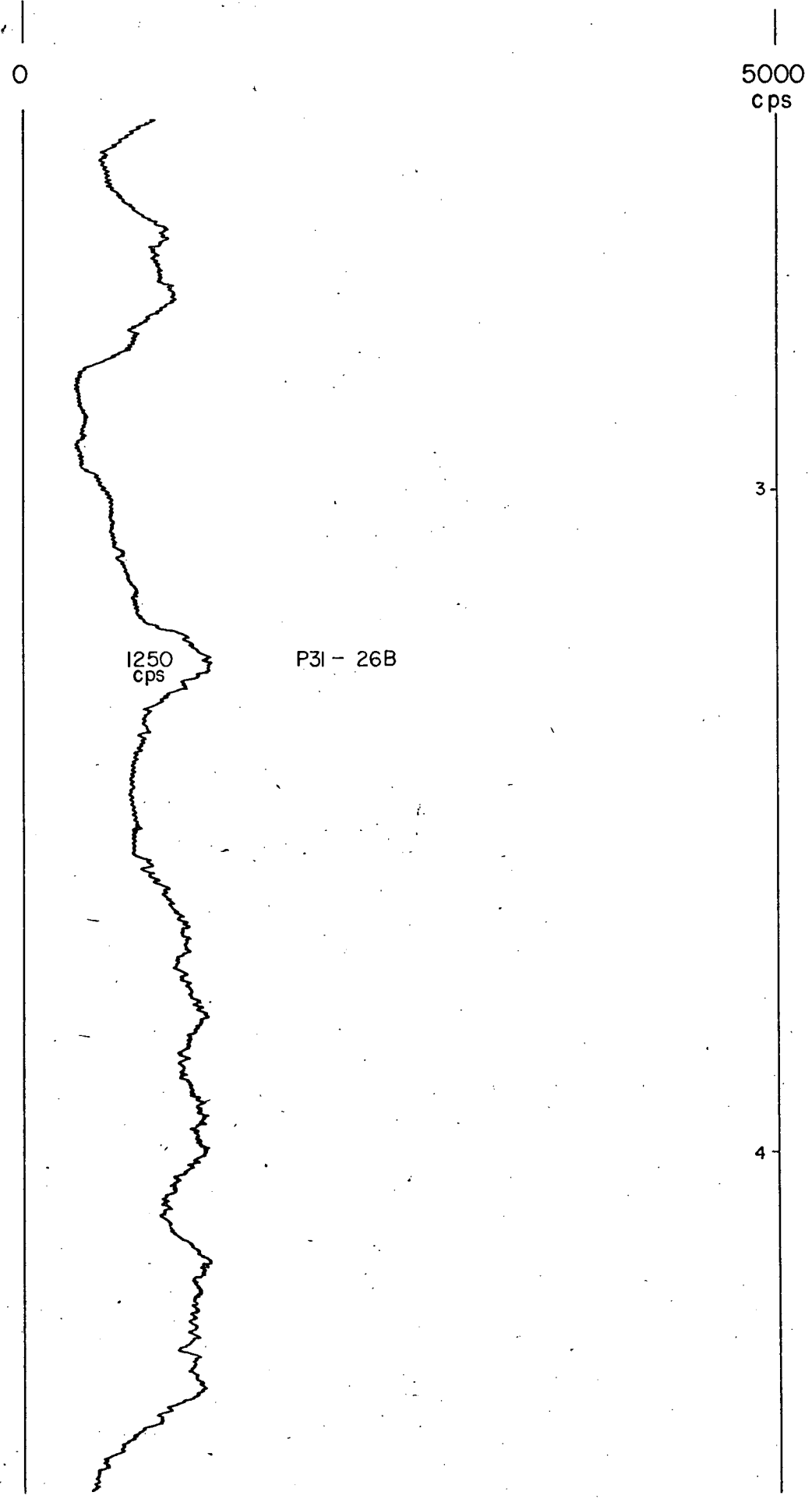
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13

19690009
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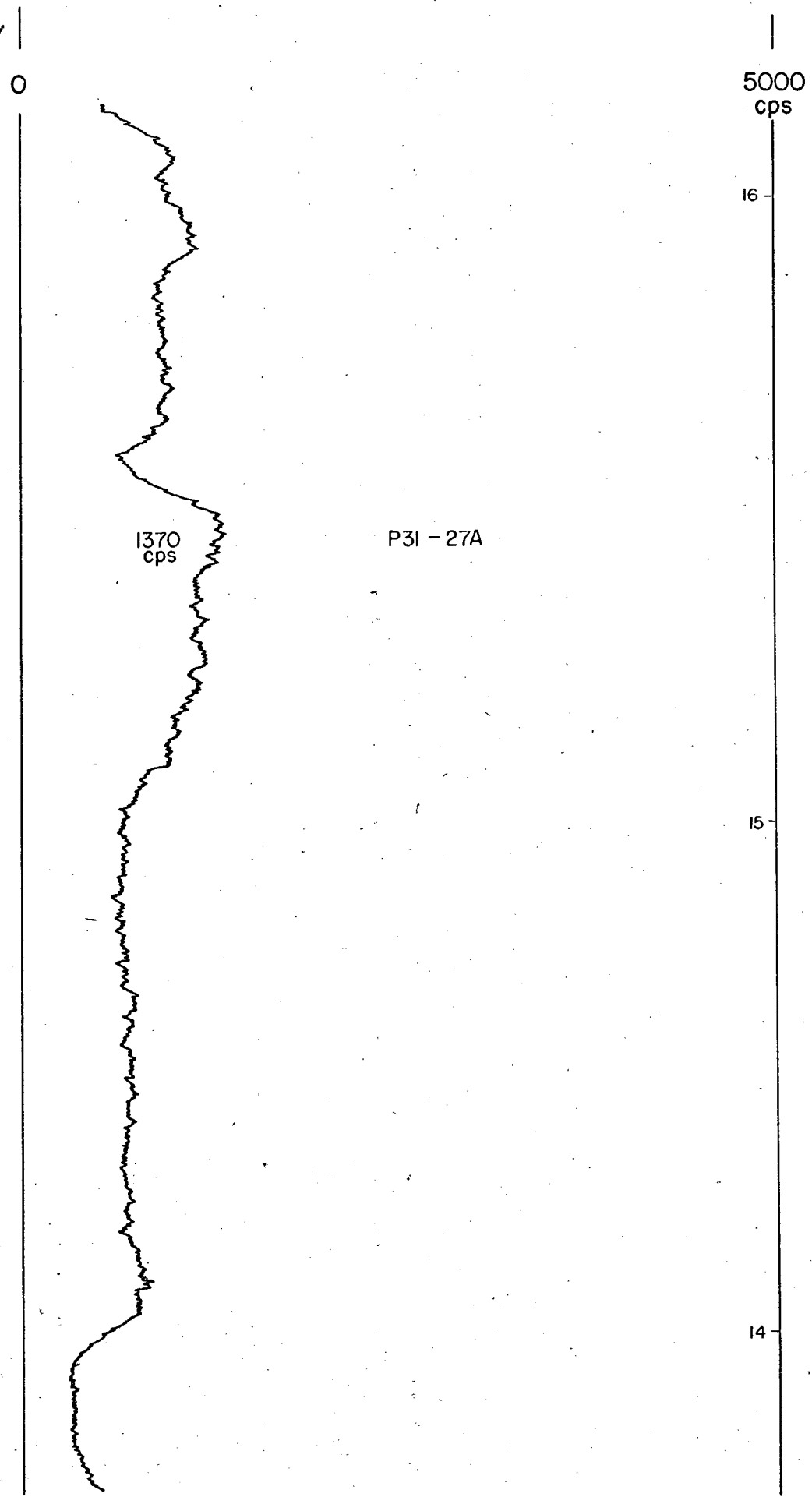


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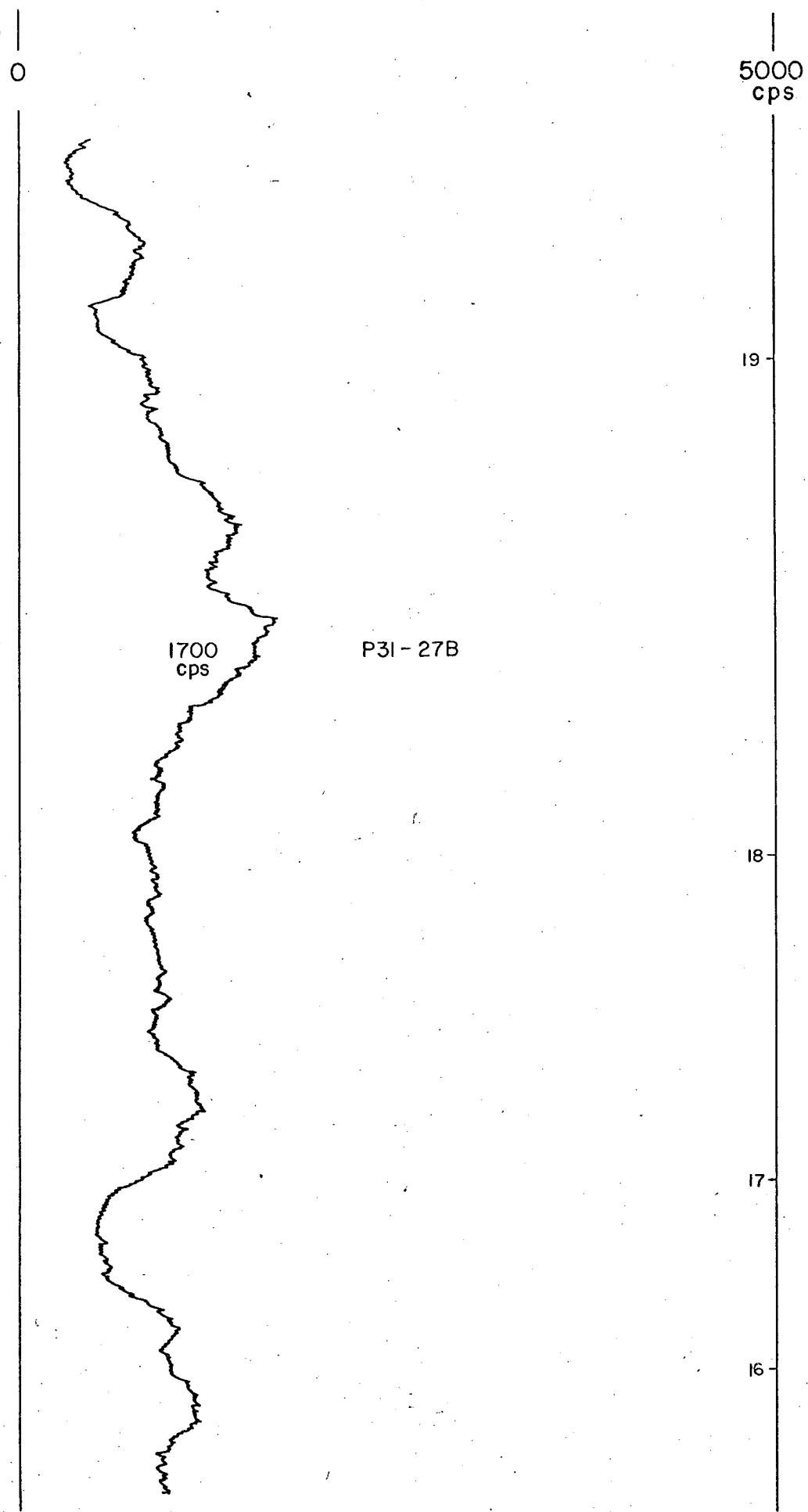
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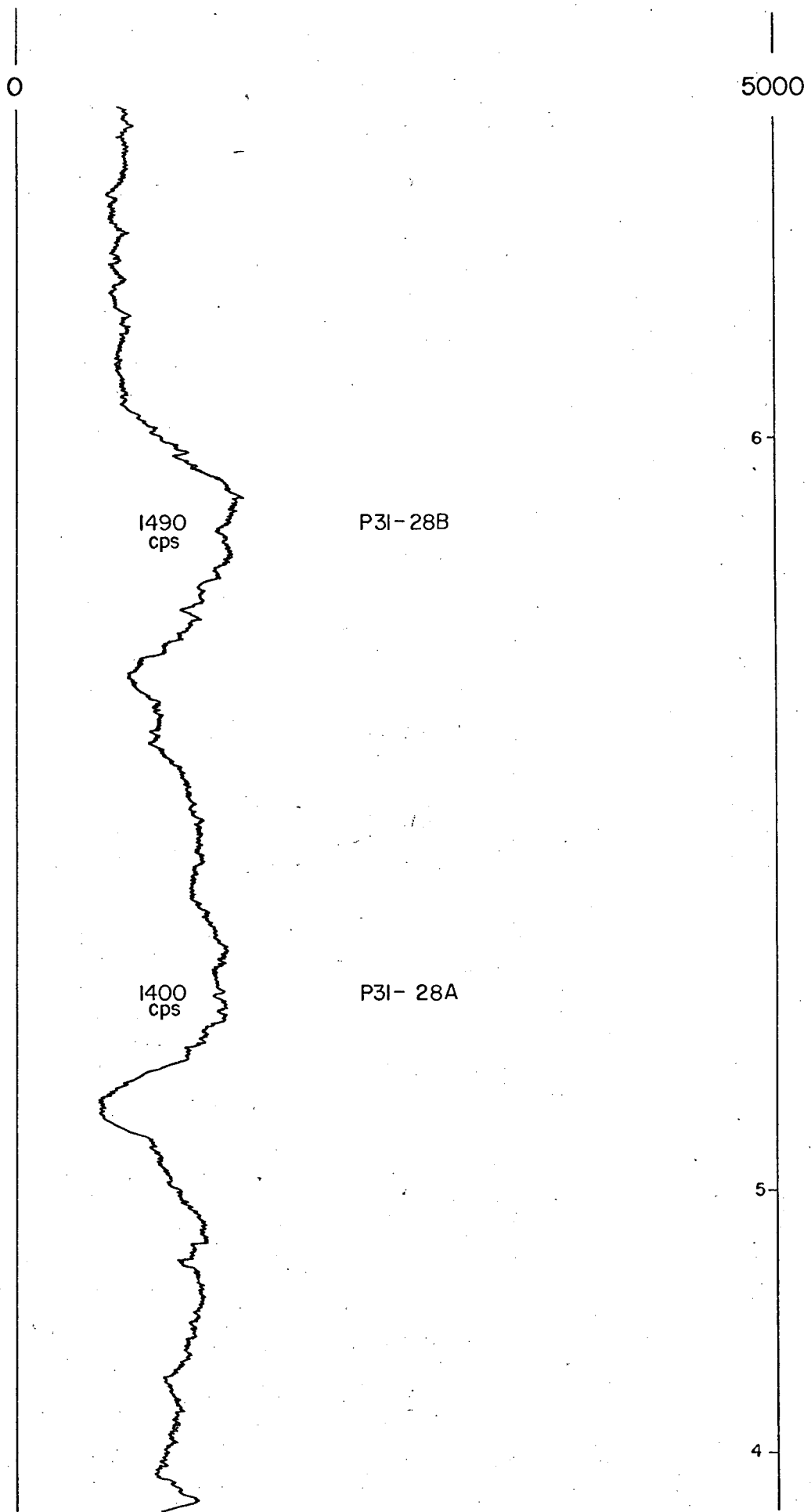


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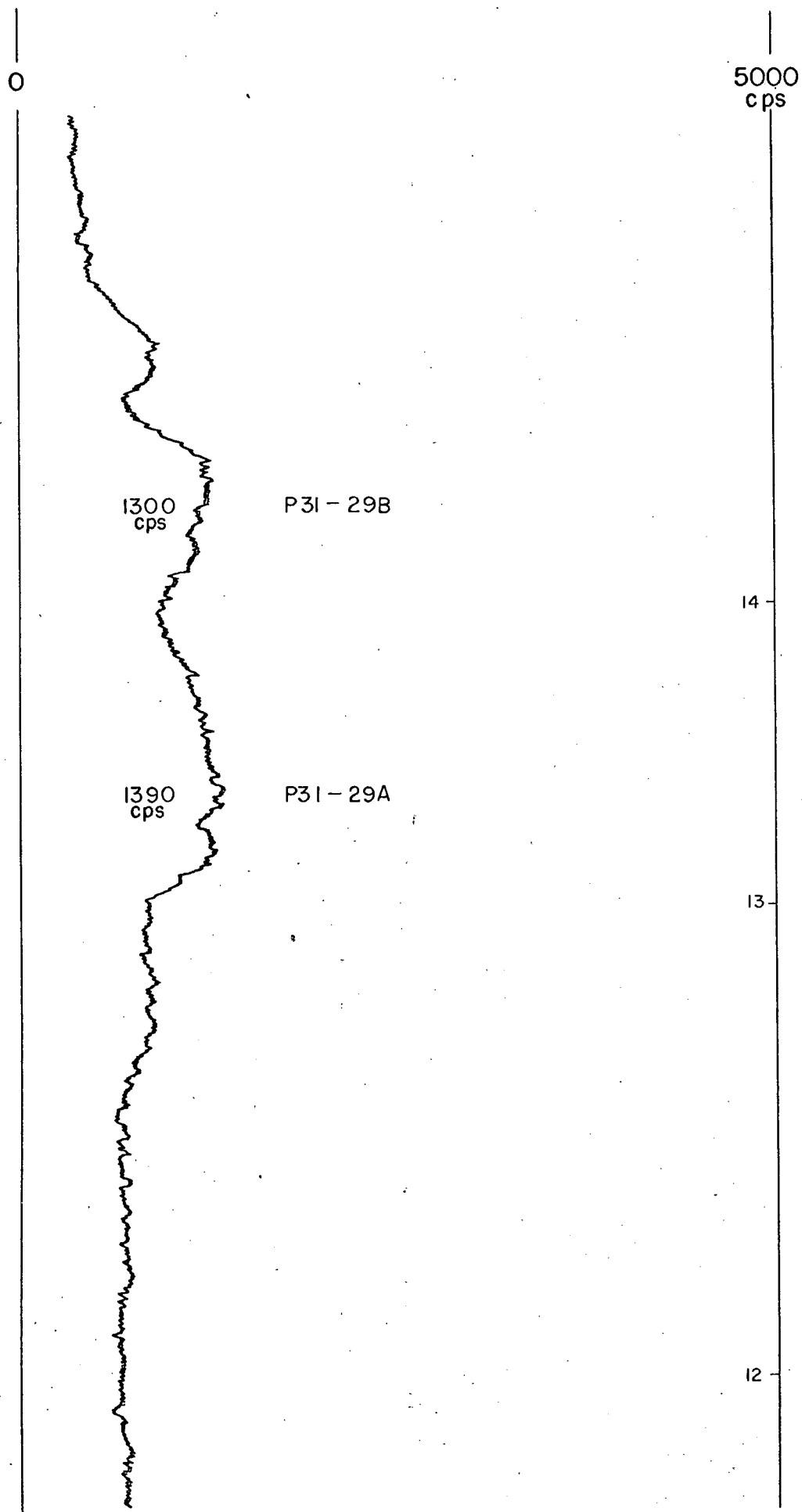


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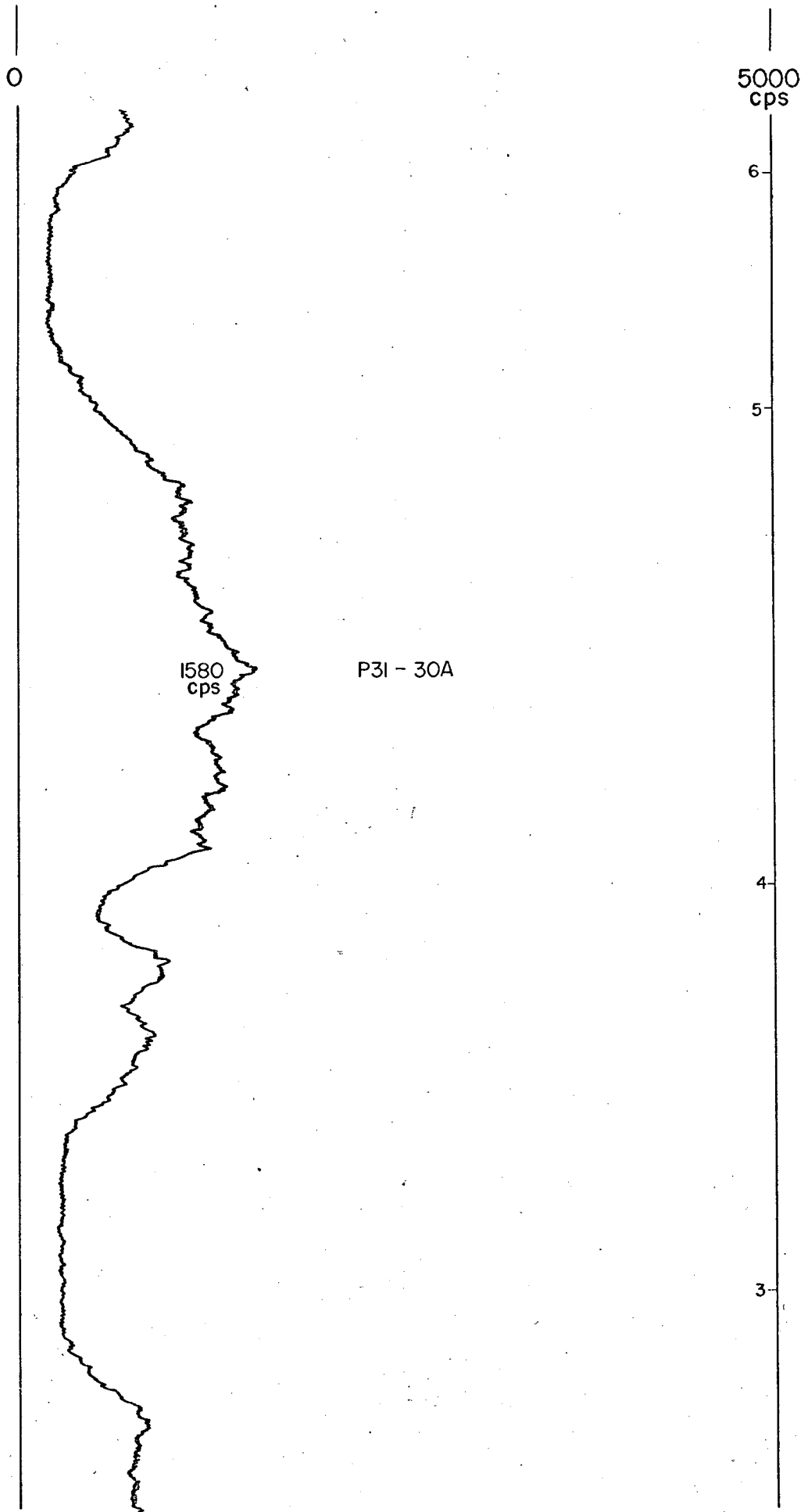
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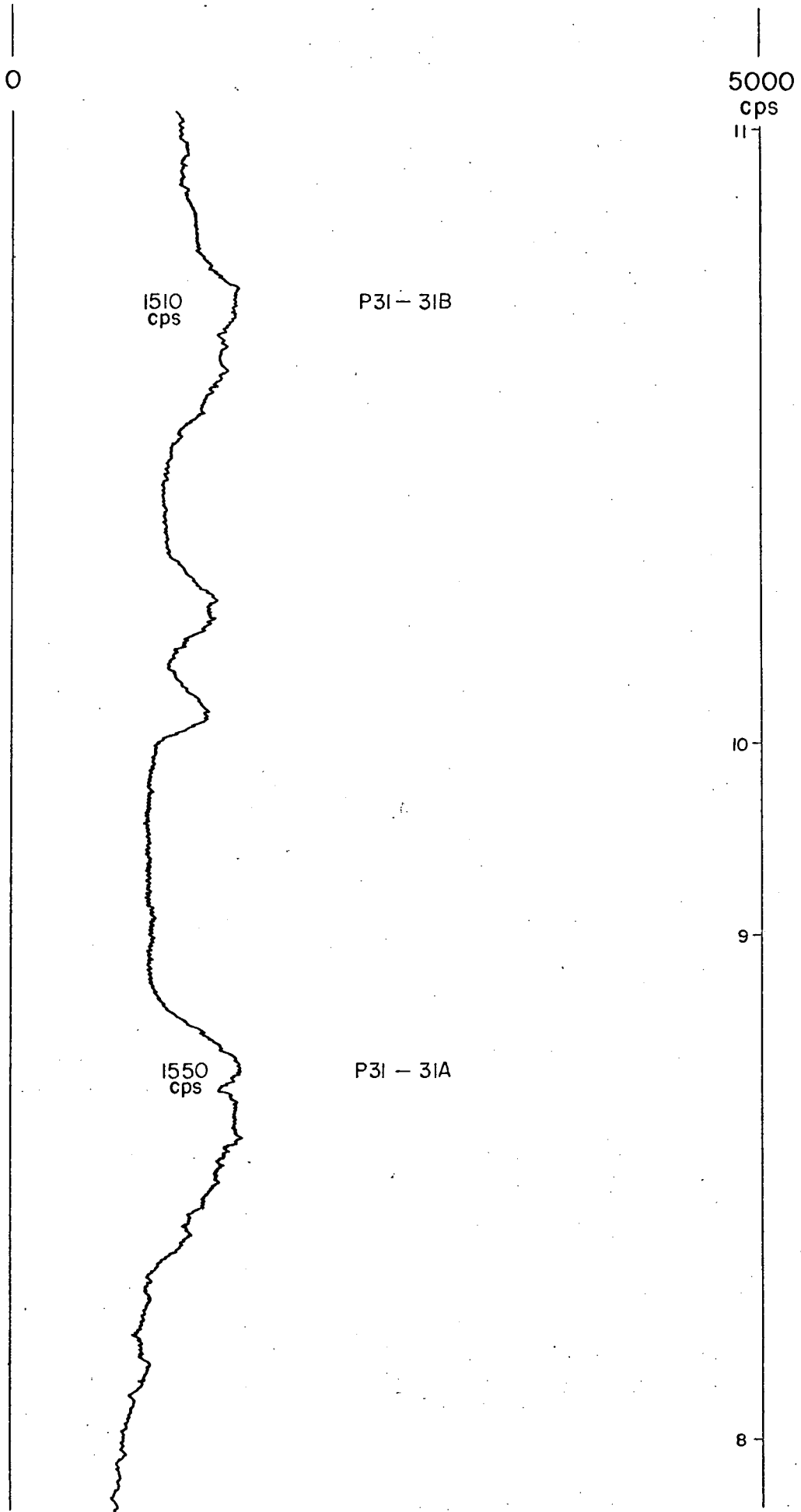
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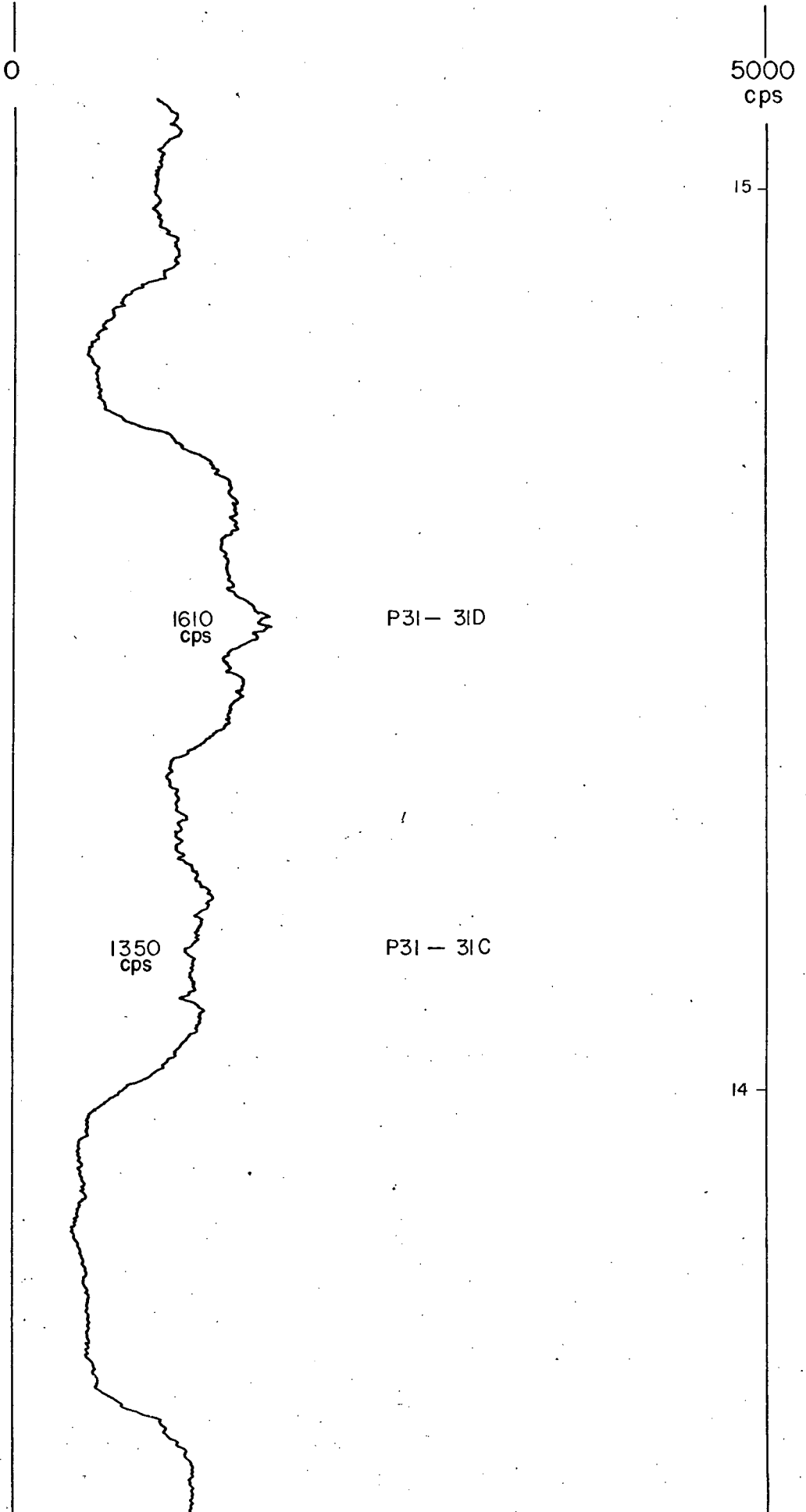
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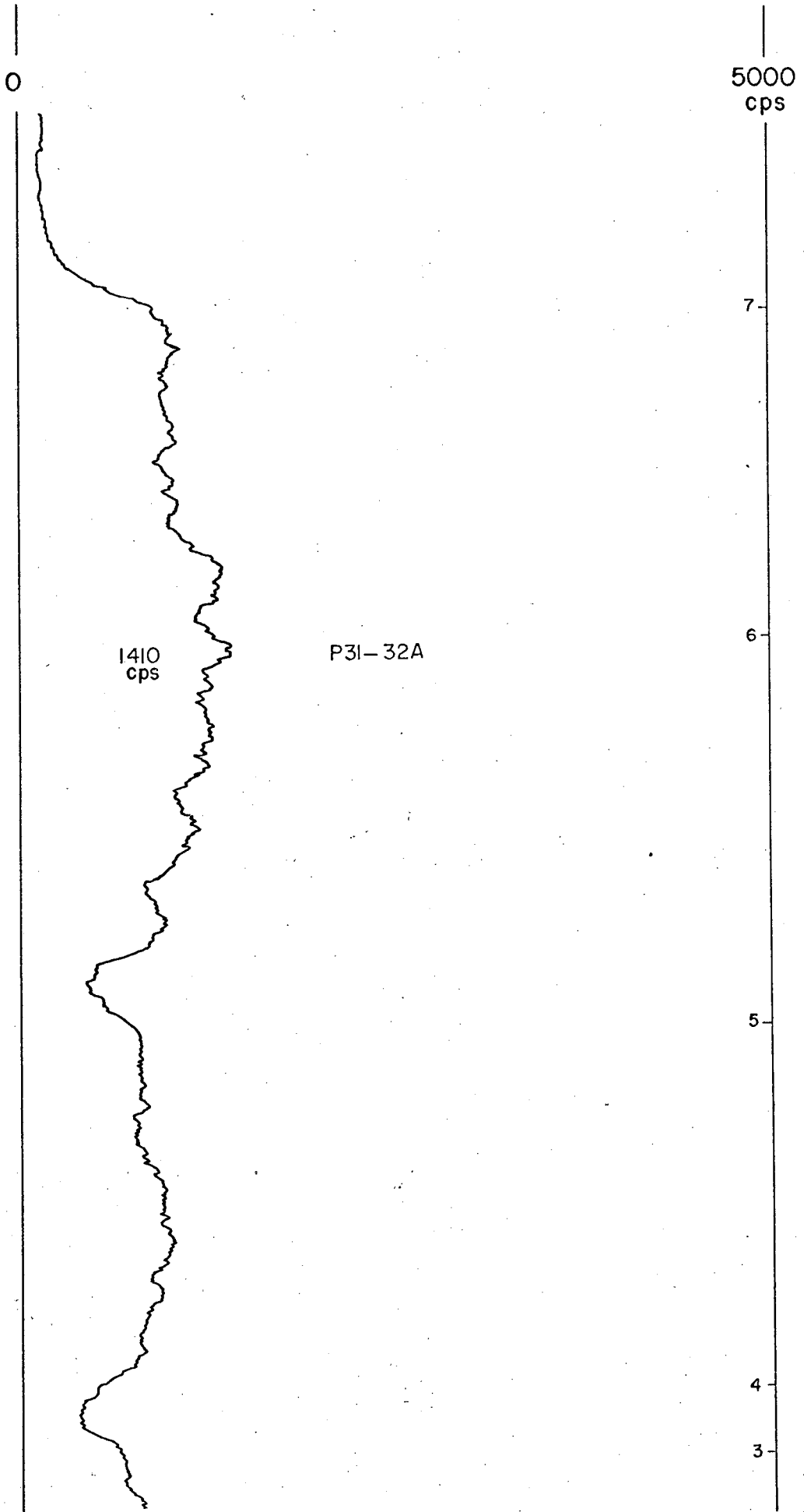
9690009

13



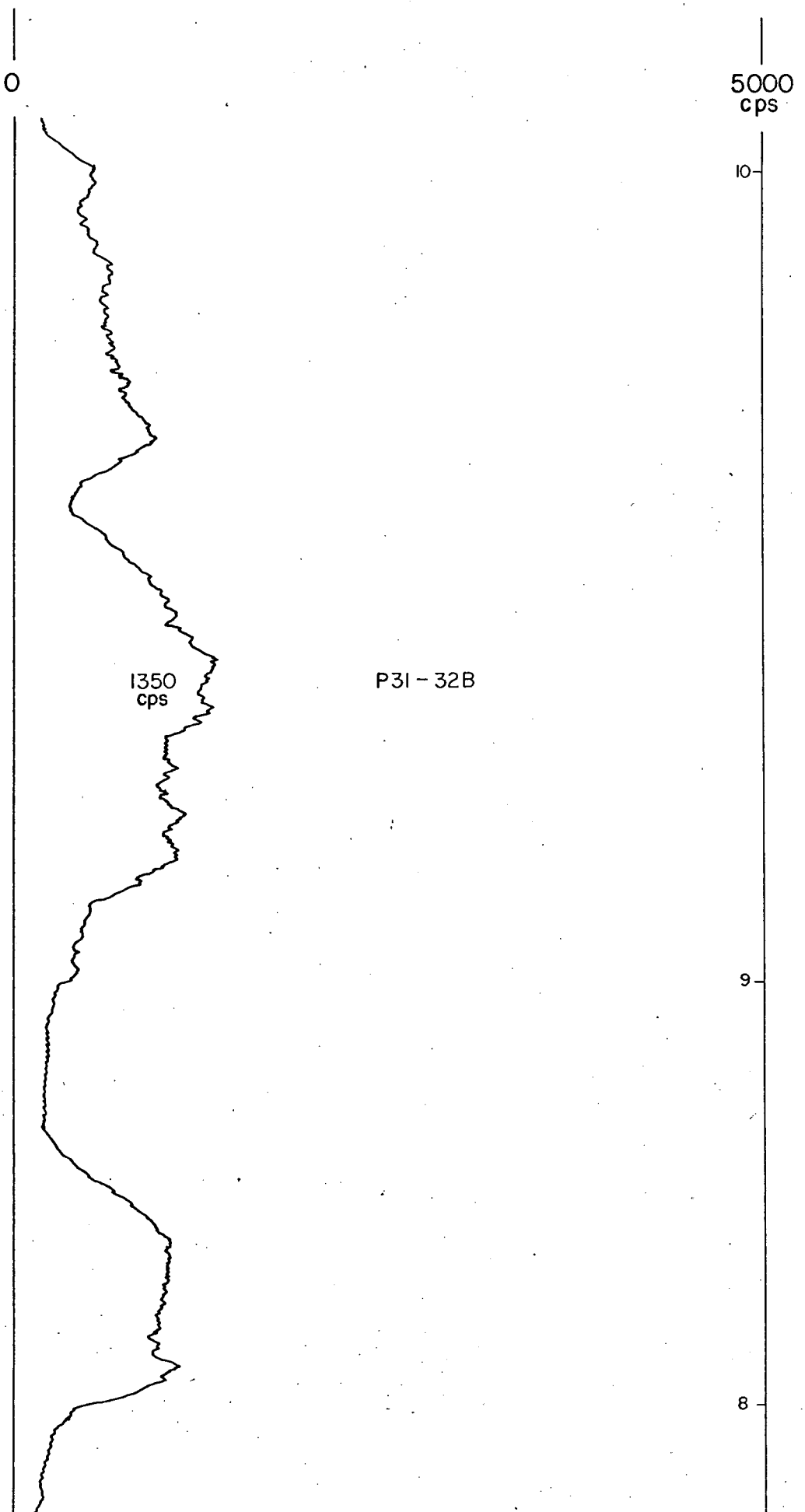
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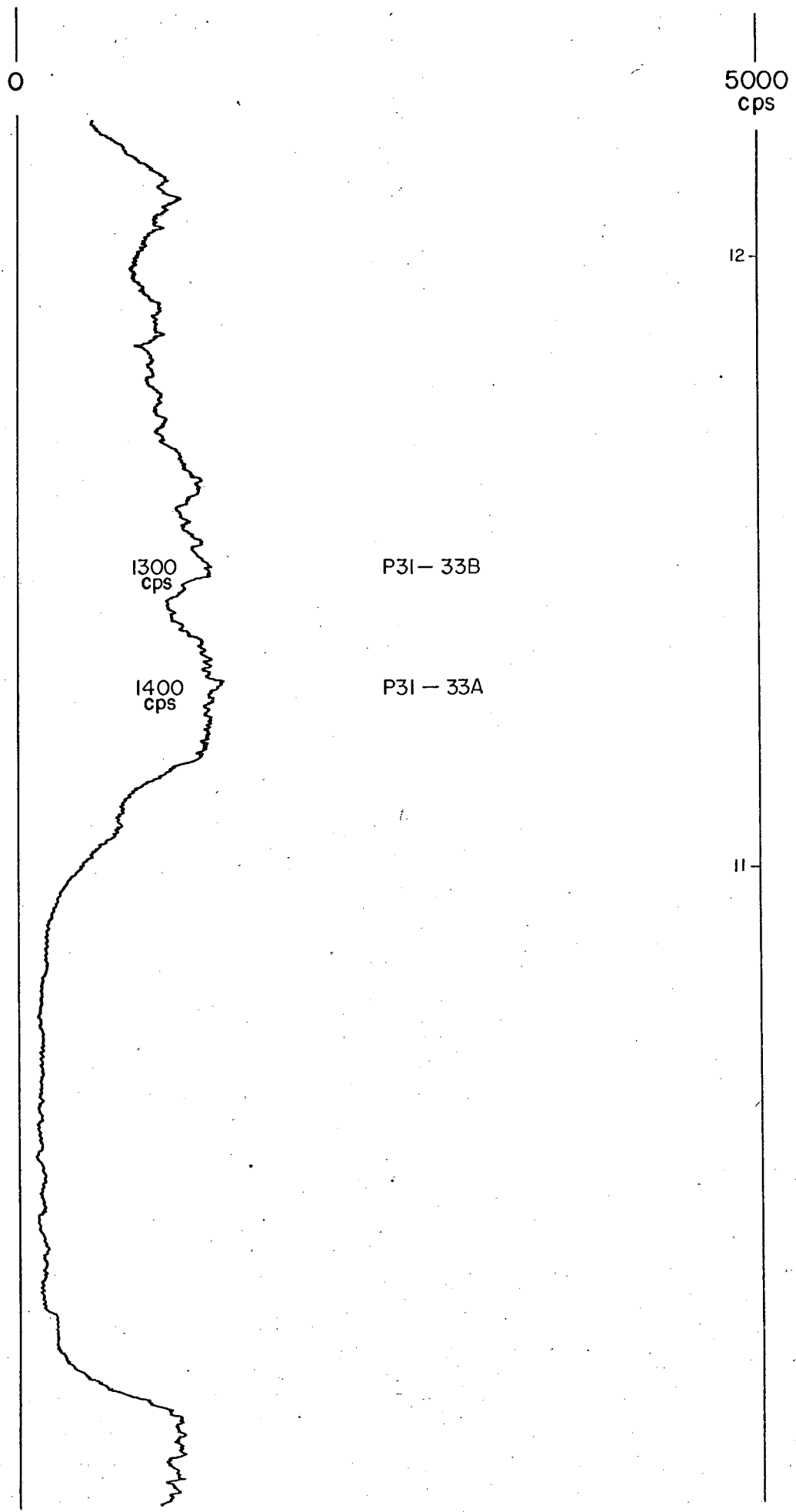
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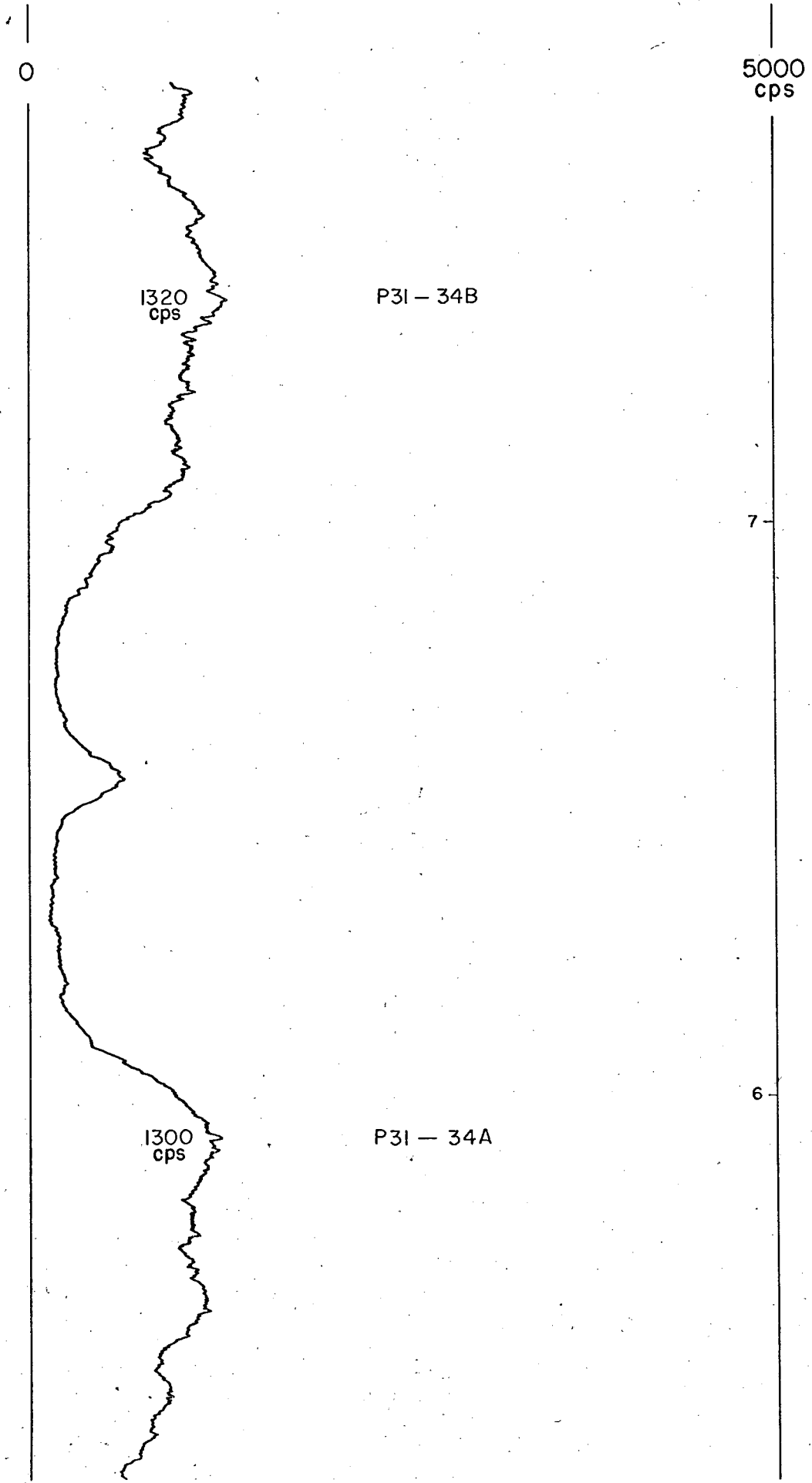


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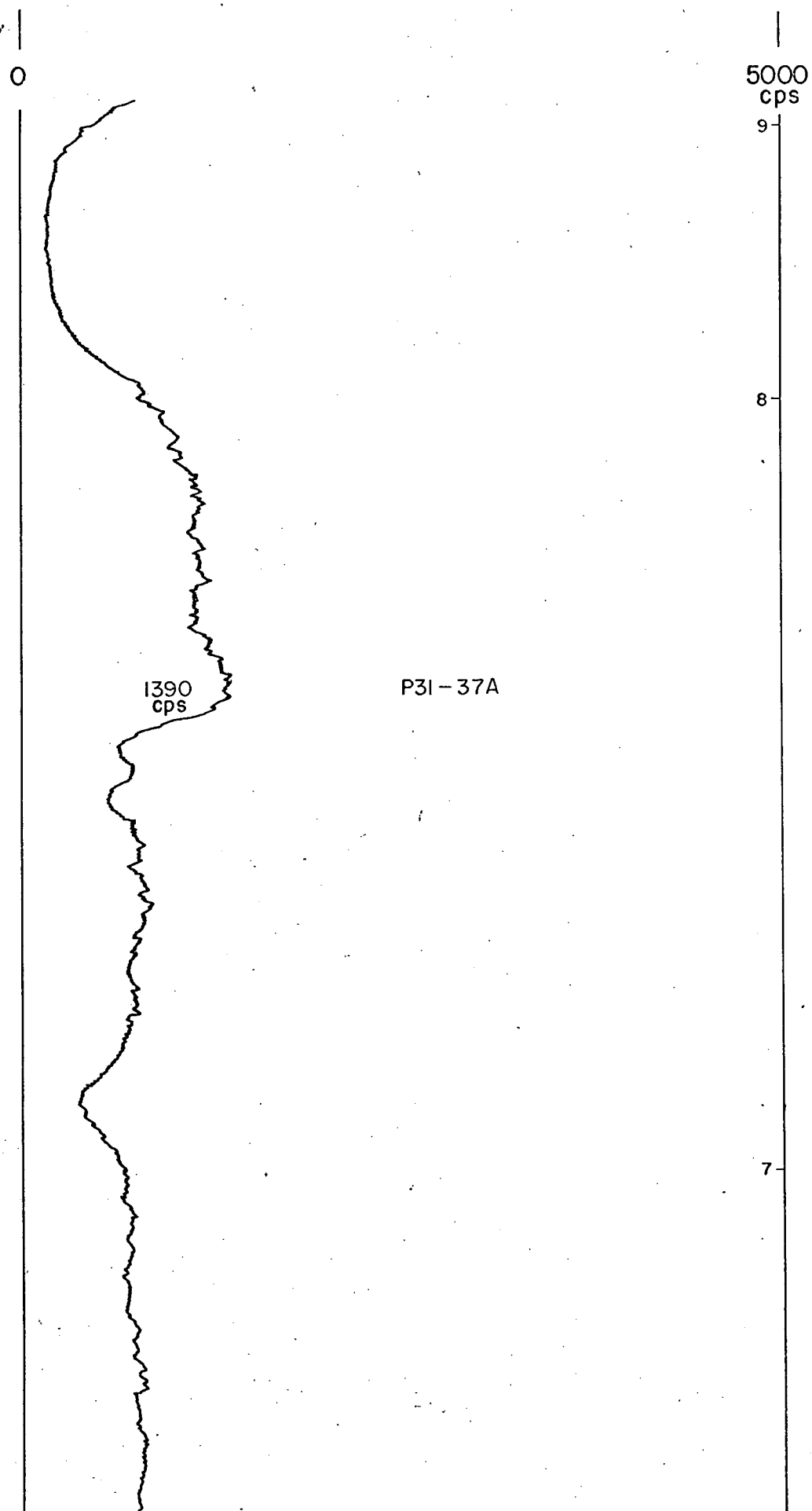


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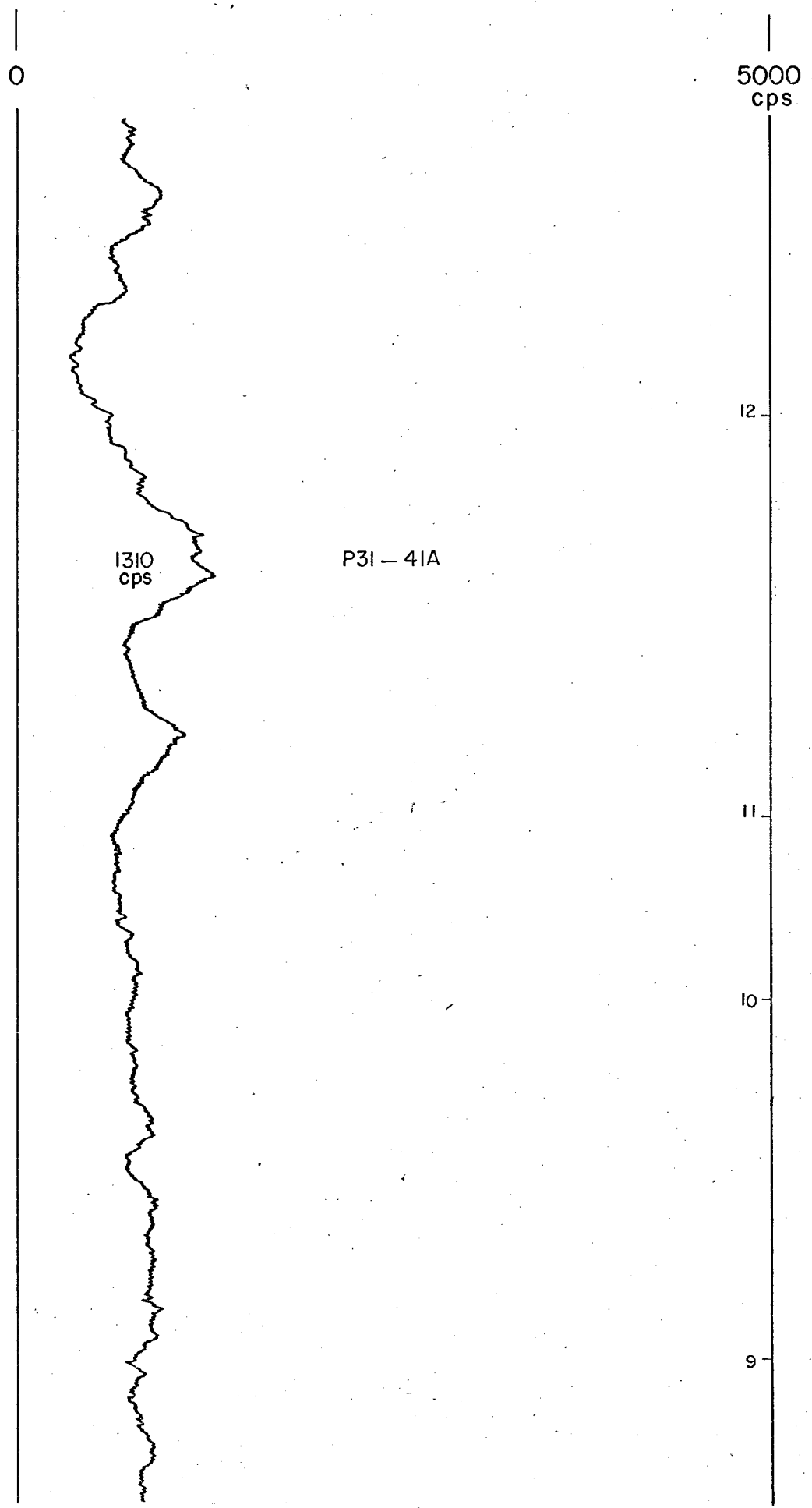


19690009

#18



19690009
#19



19690009
#20

0

5000
cps

17

16

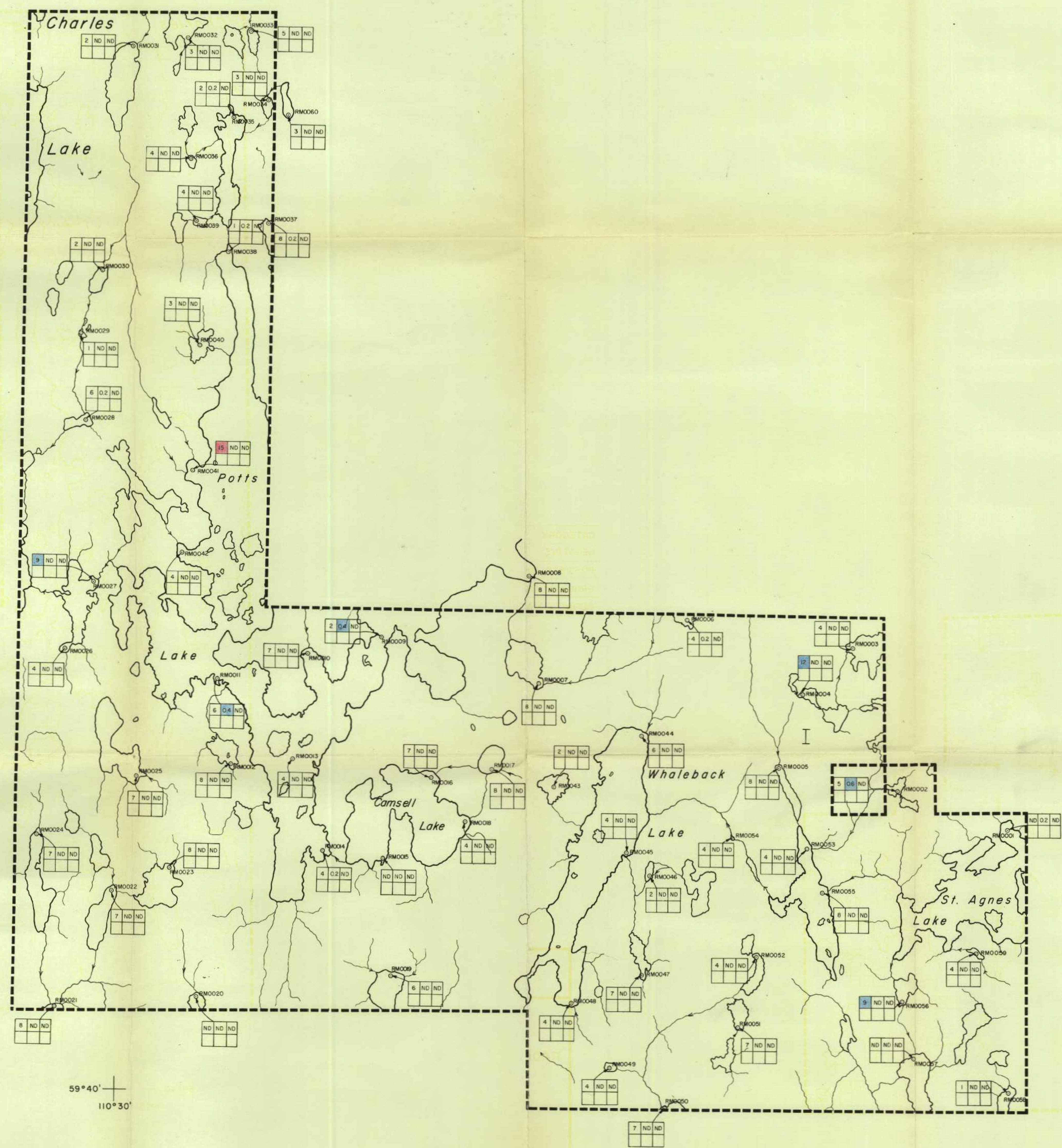
1320
cps

P31 - 41B

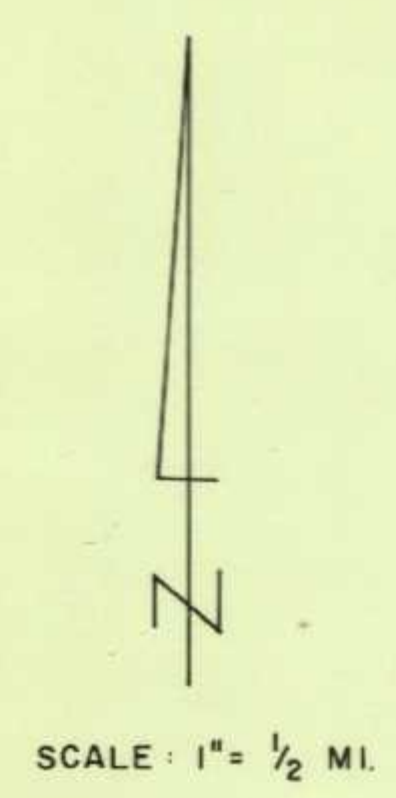
15



110°30'
59°50'



59°40'
110°30'



GENERAL LEGEND:

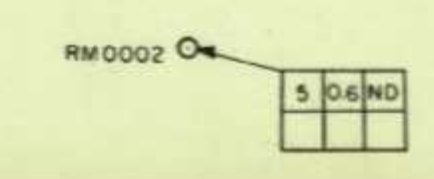
- DRAINAGE DIRECTION
- BOUNDARY LINE OF PERMIT
- RM - 0001 LAKE AND STREAM SAMPLE LOCATION

GEOCHEMICAL LEGEND:

CLASSIFICATION OF DATA

| CATEGORY | Rn(ppci) | U(ppb) | Cu(ppb) | SYMBOL |
|----------------------|----------|-----------|---------|--------|
| NEGATIVE | ND - 8 | ND - 0.3 | ND | |
| POSSIBLY ANOMALOUS | 9 - 12 | 0.4 - 0.6 | - | |
| PROBABLY ANOMALOUS | 13 - 16 | - | - | |
| DEFINITELY ANOMALOUS | 16 + | - | - | |

DATA PRESENTATION



DETAIL OF DATA PRESENTATION

| (222) Rn(ppci) | U (ppb) | Cu (ppb) |
|-------------------|---------|----------|
| | | |

ANOMALY - I

RADEX MINERALS LIMITED

MAP I

RADON, URANIUM AND COPPER CONTENTS OF WATER

HYDROGEOCHEMICAL SURVEY

PERMIT 31

POTTS LAKE,

ALBERTA

| CONSULTANTS | GEOCHEMISTRY | CARTOGRAPHY | DATE |
|-----------------------------------|--------------------------|-----------------------|-----------------|
| TRIGG, WOOLLETT & ASSOCIATES LTD. | BONDAR CLEGG COMANY LTD. | GEOPHOTO SERVICE LTD. | SEPT. 15, 1969. |