

- EXPLANATION
- OUTCROP OF THE MAHOGANY BED
  - FAULT—Dashed where approximately located; dotted where concealed; U, upthrown side; D, downthrown side
  - ANTICLINE—Shows direction of plunge on top of the Mahogany zone
  - SYNCLINE—Shows direction of plunge on top of the Mahogany zone
  - 1000—STRUCTURE, ISOPACH, AND RESOURCE CONTOURS—Drawn on the Mahogany zone; dashed where Mahogany zone has been eroded
  - DRILL HOLE FOR OIL AND GAS
  - COREHOLE FOR OIL-SHALE EVALUATION

The Parachute Creek Member of the Roan Green River Formation in the Piceance Creek basin, Colorado contains zones of alternating rich and lean oil shale. The thickest and richest of these is the Mahogany zone bounded by sequences of lean oil shale called the "A" and "B" groups.

An isopach and structure contour map of the Mahogany zone were hand drawn utilizing a combination of Fischer assay data, geophysical log data and surface control. Extensive additional control in areas where the Mahogany zone outcrops. The Mahogany zone can easily be correlated on Fischer assay, silty-siltstone histograms and on density, sonic, and gamma-ray logs. Electric logs were also used for correlation purposes where other logs were lacking, although individual beds are not as easily distinguished due to factors other than oil-shale richness affecting resistivity. A comparison between different nutes of these logs are shown on the north-south-trending cross section.

The two resource maps, oil yield in gallons per ton and resource in thousands of barrels per acre, were computer contoured by Petroleum Information. The control utilized in constructing the resource maps was restricted to correlation because Fischer assays from samples of core are the only reliable means of quantifying oil-shale richness. Methods of converting density and sonic log characteristics to oil yield have been published, however, these results have not been carefully compared with Fischer assay data and were therefore not used. Resource contours were estimated in areas along the margins of the basins where control is sparse. Total in-place resources were computed on a township basis. The information shown on the resource maps is not as detailed as that shown on either the structure or isopach maps. Due to the nature of the control, comparisons made between oil-shale richness and thickness, or structure can only be of a general nature.

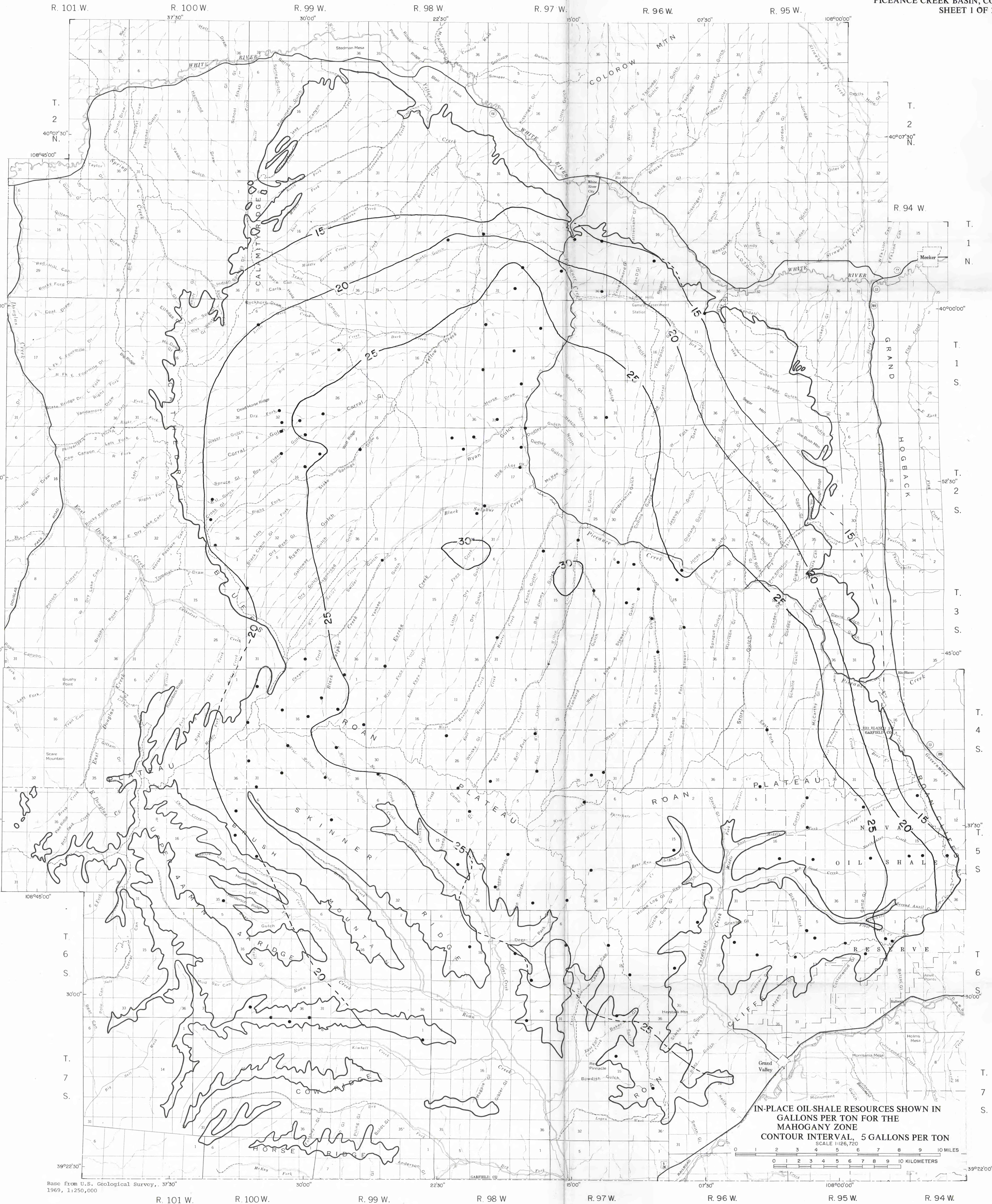
CONTOUR VALUES

Feet	Meters
8400	2560
8000	2438
7600	2316
7200	2194
6800	2073
6400	1951
6000	1829
5600	1707
5200	1585

Meters equal feet times 0.3048  
Metric equivalents to the nearest meter are shown above English units

In-place oil-shale resources shown in thousands of barrels for the Mahogany zone

Location	Total resource
T. N. R. W.	
2 97	161,069
2 98	1,058,367
2 99	789,834
1 96	1,403,776
1 97	5,097,122
1 98	5,740,181
1 99	3,464,872
1 100	167,481
T. S. R. W.	
1 95	1,272,147
1 96	6,198,594
1 97	8,345,431
1 98	4,872,266
1 99	2,813,863
1 100	2,044,619
2 95	2,252,731
2 96	6,378,481
2 97	7,680,361
2 98	6,869,942
2 99	5,234,224
2 100	1,767,740
3 94	226,265
3 95	4,833,740
3 96	7,098,816
3 97	7,447,141
3 98	5,819,722
3 99	4,160,823
3 100	425,763
4 94	1,281,420
4 95	5,918,413
4 96	6,255,423
4 97	5,708,767
4 98	4,538,500
4 99	3,540,981
4 100	1,100,739
5 101	9,142
5 94	3,123,880
5 95	4,443,359
5 96	4,440,714
5 97	4,474,505
5 98	2,759,827
5 99	2,185,995
5 100	1,028,917
5 101	114,075
6 94	106,495
6 95	1,250,875
6 96	1,856,525
6 97	1,251,134
6 98	1,331,957
6 99	661,725
6 100	544,470
6 101	350,260
7 96	461,287
7 97	1,030,937
7 98	252,052
7 99	391,412
7 100	390,007
7 101	96,079
8 99	330,862
8 100	64,636
8 101	8,077
Total	172,742,560



ISOPACH, STRUCTURE CONTOUR, AND RESOURCE MAPS OF THE MAHOGANY OIL-SHALE ZONE, GREEN RIVER FORMATION, PICEANCE CREEK BASIN, COLORADO

By  
Janet K. Pitman and Ronald C. Johnson  
1978