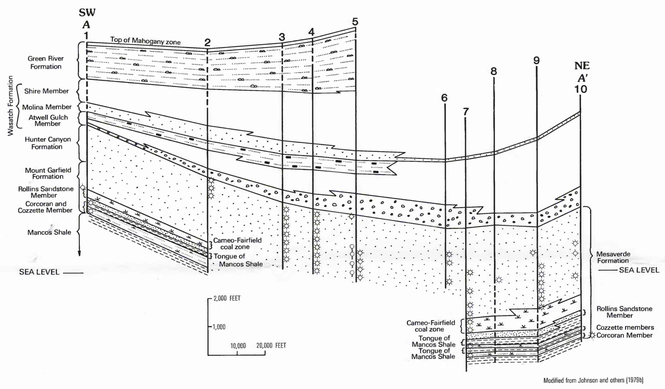
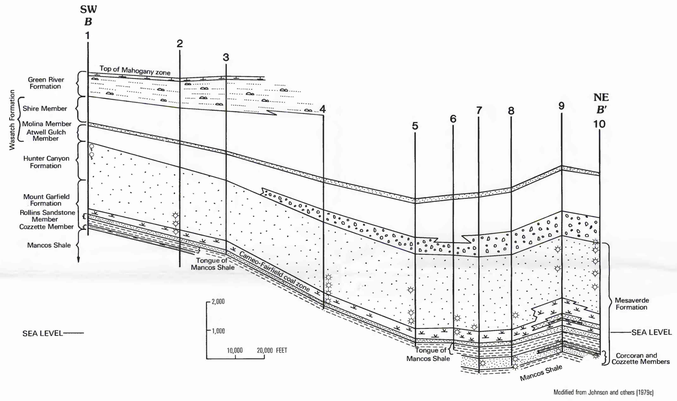
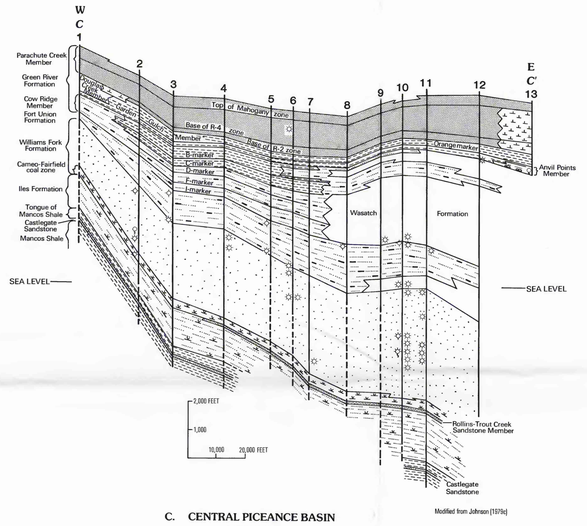


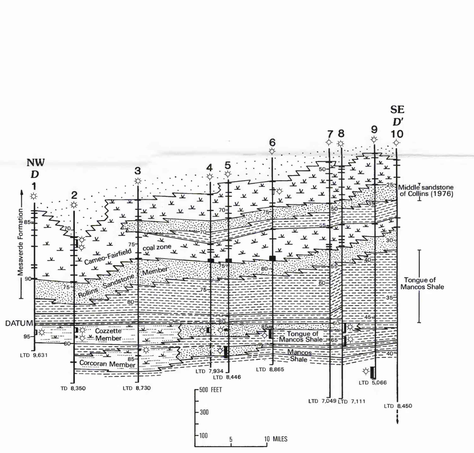
A. COLORADO RIVER VALLEY, SOUTHERN PICEANCE BASIN
DATUM IS SEA LEVEL



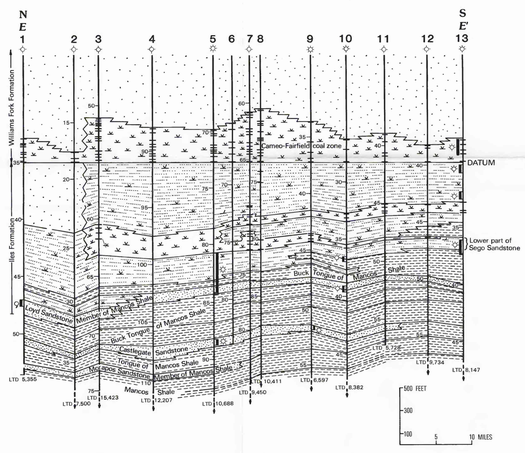
B. SOUTH OF THE COLORADO RIVER VALLEY, PICEANCE BASIN
DATUM IS SEA LEVEL



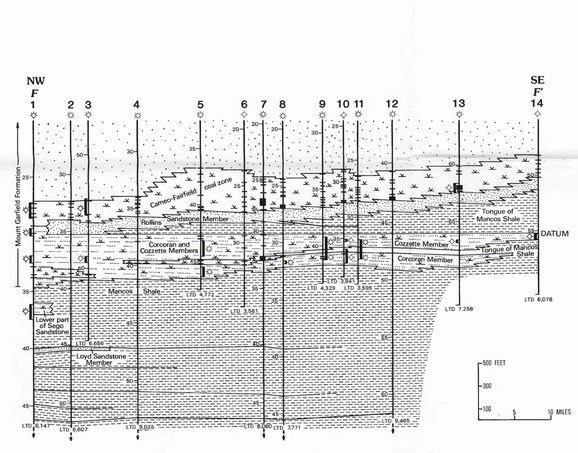
C. CENTRAL PICEANCE BASIN
DATUM IS SEA LEVEL



D. MESAVERDE REGRESSIVE CYCLES, SOUTHEASTERN PICEANCE BASIN
DATUM IS TOP OF COZZETTE MEMBER



E. MESAVERDE REGRESSIVE CYCLES, NORTHWESTERN PICEANCE BASIN
DATUM IS BASE OF CAMEO-FAIRFIELD COAL ZONE



F. MESAVERDE REGRESSIVE CYCLES, SOUTHWESTERN PICEANCE BASIN
DATUM IS TOP OF COZZETTE MEMBER

EXPLANATION

Well number: R
Drill-stem test results: Tight; Water and show of gas; Water
Perforation results: Gas; Show of gas
For sections D, E, F: Depth below top of well (in hundreds of feet); Coal beds
Total depth or log total depth of well (in feet): LTD 7,500
Gamma-ray markers shown as heavy lines

ENVIRONMENT	LITHOLOGY
Offshore carbonate-rich lacustrine	Carbonate-rich oil shale
Marginal lacustrine and offshore-lacustrine transition	Carbonate-rich oil shale; some sandstone and siltstone
Carbonate-rich marginal lacustrine	Stromatolitic, ostracodal, and oolitic limestone, sandstone, and carbonate-rich mudstone
Sandstone-rich marginal lacustrine	Sandstone and carbonate-rich mudstone; minor stromatolitic, ostracodal, and oolitic limestone
Nearshore freshwater lacustrine	Mollusk-rich sandstone, ostracodal limestone, gray shale, carbonaceous shale, and coal
Offshore marine and offshore lacustrine	Mostly dark gray to black shale
Coarse-grained fluvial	Conglomeratic sandstone and variegated mudstone
Fluvial	Nonpersistent sandstone, gray mudstone, minor variegated mudstone, and carbonaceous shale and coal
Well-drained fluvial	Nonpersistent sandstone and variegated mudstone
Complex marginal marine	Persistent to nonpersistent sandstone, gray shale, carbonaceous shale, and coal
Coal swamp	Carbonaceous shale and coal; some lenticular sandstone
Nearshore marine and beach	Persistent sandstone

Note vertical and horizontal scales vary among views

LIST OF DRILL HOLES

Cross section *A–A'*
1. Horsethief Mountain measured section (Johnson and May (1978)) Secs. 17-1S, 23, 26, T. 9 S., R. 96 W. Pacific Natural Gas No. 14-30-3 Govt. Sec. 30, T. 9 S., R. 96 W.
2. Rounds Kennon No. 1 Sec. 15, T. 8 S., R. 96 W.
3. Southern Union Production No. 30-95 Govt. Sec. 30, T. 7 S., R. 95 W.
4. Southern Union Production No. 28-95 Federal Sec. 28, T. 7 S., R. 95 W.
5. Austral Oil No. 25-95 Hayward Sec. 25, T. 7 S., R. 95 W.
6. Austral Oil No. 3-94 Govt. Sec. 3, T. 7 S., R. 94 W.
7. Southern Union Production No. 1 Juhan-Federal Sec. 35, T. 6 S., R. 94 W.
8. Carter and Carter No. 1R Juhan Sec. 1, T. 7 S., R. 94 W.
9. Chevron No. 1 Skonberg Sec. 9, T. 7 S., R. 93 W.
10. California No. 1 Shaeffer Sec. 12, T. 7 S., R. 93 W.

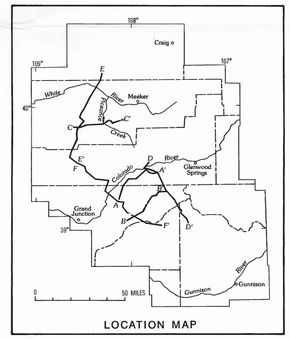
Cross section *B–B'*
1. Pacific Natural Gas No. 1-C Smith Sec. 30, T. 11 S., R. 95 W.
2. Apache No. 1 Smith-Govt. Sec. 13, T. 11 S., R. 95 W.
3. Western Frontier Drilling No. 1 Big Creek Sec. 4, T. 11 S., R. 94 W.
4. Fred Pool No. 1 Robbins Sec. 11, T. 10 S., R. 94 W.
5. Victor Drilling No. 1 Gunderson Sec. 20, T. 9 S., R. 93 W.
6. Union Oil No. 2 Buzzard Creek Sec. 14, T. 9 S., R. 93 W.
7. Union Oil No. 1 Buzzard Creek Sec. 12, T. 9 S., R. 93 W.
8. Apache-Pacific No. 1 U.S. Rushmore-C Sec. 5, T. 9 S., R. 92 W.
9. Pacific Natural Gas No. 31-2 Buzzard Sec. 2, T. 9 S., R. 92 W.
10. El Paso Natural Gas No 1. Hells Gulch Sec. 22, T. 8 S., R. 92 W.

Cross section *C–C'*
1. Tommy's Draw measured section (Cashion and Roehler, 1975) Sec. 34, T. 2 S., R. 100 W. Secs. 3, 4, 10, 11, T. 3 S., R. 100 W.
2. American Minerals No. 3 Ryan Creek Sec. 32, T. 2 S., R. 99 W.
3. American Minerals No. 2 Ryan Creek Sec. 27, T. 2 S., R. 99 W.
4. Equity Oil No. 7 Sulfur Creek Sec. 19, T. 2 S., R. 98 W.
5. Stuarco Oil No. 1 Govt. Sulfur Creek Sec. 22, T. 2 S., R. 98 W.
6. Equity Oil No. 1 Sulfur Creek Govt. Sec. 24, T. 2 S., R. 98 W.
7. Equity Oil No. 5 Sulfur Creek Sec. 19, T. 2 S., R. 97 W.
8. Equity Oil No. 2 Johnson Sec. 21, T. 2 S., R. 97 W.
9. Mobil Oil No. 68-11 Sec. 11, T. 2 S., R. 97 W.
10. Mobil Oil No. 54-13 Sec. 13, T. 2 S., R. 97 W.
11. Mobil Oil No. 52-19G Sec. 19, T. 2 S., R. 96 W.
12. General Petroleum No. 84 Govt. Sec. 15, T. 2 S., R. 96 W.
13. General Petroleum No. 27-8 Govt. Sec. 8, T. 2 S., R. 95 W.

Cross section *D–D'*
1. Northwest Exploration No. 9 Clough Sec. 7, T. 6 S., R. 93 W.
2. CER MWX-1 Sec. 34, T. 6 S., R. 94 W.
3. The California Company No. 1 Shaeffer Sec. 12, T. 7 S., R. 93 W.
4. El Paso Mineral Gas No. 1 Hells Gulch Sec. 22, T. 8 S., R. 92 W.
5. Pacific Natural Gas No. 31-2 East Buzzard Creek Sec. 2, T. 9 S., R. 92 W.
6. Mountain States Sun No. 28-1 Sec. 28, T. 9 S., R. 91 W.
7. Ralston No. 31 Federal Sec. 31, T. 10 S., R. 90 W.
8. Ralston No. 11-90 -7NE Petro-Lewis Sec. 7, T. 11 S., R. 90 W.
9. Delhi-Taylor No. 1 Pasco Spatafore Sec. 27, T. 11 S., R. 90 W.
10. Petro-Lewis No. 3-11 Hotchkiss Ranch Sec. 11, T. 12 S., R. 90 W.

Cross section *E–E'*
1. Champlin No. 1 Govt. Mobil Sec. 20, T. 4 N., R. 97 W.
2. Trident No. 3 Coyote Basin Sec. 25, T. 3 N., R. 98 W.
3. Shell No. 31-10 Govt. Sec. 10, T. 2 N., R. 98 W.
4. Pacific Transmission Supply No. 22-12 Federal Sec. 12, T. 1 N., R. 99 W.
5. Teton No. 16-3 Yellow Creek Federal Sec. 16, T. 1 S., R. 99 W.
6. Sun Gas No. 2 29-1-99A Sagebrush Hills Sec. 29, T. 1 S., R. 99 W.
7. Daud Munson No. 2-8 Sagebrush Hills Unit 2 Sec. 8, T. 2 S., R. 99 W.
8. Sun Gas No. 11 16-2-99 Sagebrush Hills Sec. 16, T. 2 S., R. 99 W.
9. Twin Arrows No. 3-11 Coors Sec. 11, T. 3 S., R. 100 W.
10. Mountain Fuels No. 1 Cathedral Bluffs Sec. 2, T. 4 S., R. 100 W.
11. Tipperary No. 1 33-0-1 Soldier Canyon Sec. 33, T. 4 S., R. 100 W.
12. Tipperary No. 1-30F Bear Gulch Sec. 30, T. 5 S., R. 100 W.
13. Chorney No. 7 Roan Creek Sec. 7, T. 6 S., R. 100 W.

Cross section *F–F'*
1. Chorney No. 7 Roan Creek Sec. 7, T. 6 S., R. 100 W.
2. Nucorp. Energy No. 1-25 Tate Sec. 25, T. 3 N., R. 100 W.
3. El Paso No. 1 Standard Shale Sec 6, T. 7 S. R. 99 W.
4. Coors No. 2-36 DF Spears Sec. 36, T. 7 S., R. 99 W.
5. Coors No. 1-SLW USA Sec. 5, T. 8 S., R. 97 W.
6. Teton No. 1 Coon Hollow Sec. 36, T. 8 S., R. 98 W.
7. Coors No. 1-5 Panther Sec. 5, T. 9 S., R. 97 W.
8. Koch No. 4-21 Horseshoe Canyon Sec. 21, T. 9 S., R. 97 W.
9. Chandler No. 11-32 Plateau Creek Sec. 32, T. 9 S., R. 96 W.
10. Flying Diamond No. 10-1 Federal Sec. 10, T. 10 S., R. 96 W.
11. Chandler No. 6-22 Barnard Sec. 22, T. 10 S., R. 96 W.
12. Coors No. 1-5 Swetland Sec. 5, T. 11 S., R. 95 W.
13. Apache No. 2 Mickelson-Government Sec. 34, T. 11 S., R. 94 W.
14. Sunray No. 1 Government T-C Sec. 8, T. 12 S., R. 92 W.



LOCATION MAP

Compiled by R.C. Johnson, 1979–1986

CROSS SECTIONS SHOWING LITHOLOGIES, ENVIRONMENTS OF DEPOSITION, AND RESULTS OF DRILL-STEM TESTS AND PERFORATIONS, PICEANCE BASIN, COLORADO