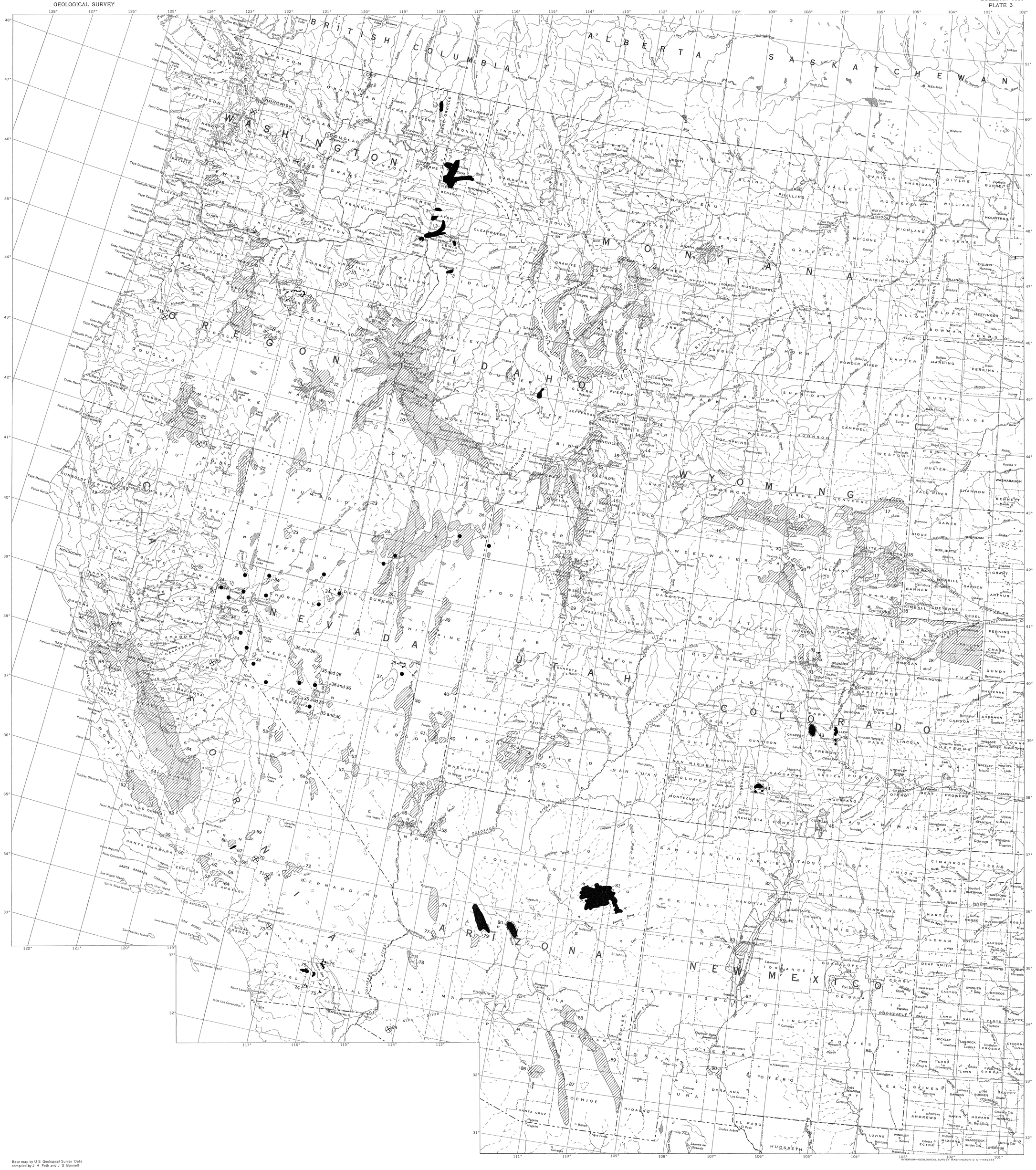

EXPLANATION

81 — Formation is wholly or largely lacustrine. Number refers to adjacent list

24 — Formation includes lake deposits. Number refers to adjacent list

84 — Formation may include lake deposits. Number refers to adjacent list

21 — Lake deposits reported, but formation not mapped or area too small to show at scale of map. Number refers to adjacent list

Fresh-water diatomite occurrences reported by Van Houten (1956) Oligocene or Miocene in age

Dashed lines surrounding an area indicate inferred boundaries. Open ends indicate formation extends beyond area mapped by authors

REFERENCE LIST

1. Hammer Bluff Formation and equivalents	Glover (1936), Mullineaux and others (1959)
2 Ellensburg Formation and equivalents	Russell (1900); Weaver (1945)
3. Latah Formation and equivalents	Pardee and Bryan (1926); Kirkham and Johnson (1929); Weaver (1945)
4. Latour Formation	Hershey (1912)
5. "Tertiary lake beds"	Pardee (1925); Alden (1953); Lorenz and McMurtrey (1956)
6 Wilkes Formation and equivalents	Roberts (1958), Snavely and others (1958)
7. Dalles Formation	Piper (1932)
8. Mascal Formation and equivalents	Weaver (1945)
9. John Day Formation and equivalents	Weaver (1945)
10. Payette and Idaho Formations and equivalents	Kirkham (1931); Wheeler and Cook (1954); Baldwin (1959)
11 Numerous small deposits of leaf-bearing fine-grained laminated tuff in the Western Cascades Suggest evidence of small lakes of Oligocene and Miocene age	Peck, D. L (1961, oral communication)
12. Danforth Formation	Piper, Robinson and Park (1939)
13. Lake beds near Pass Creek	Umpleby (1917)
14. Towe'mot and Camp Davis Formations	Love (1956a, 1956b), Merritt (1956)
15. Salt Lake Formation and equivalents	Williams (1958)
16. Sweetwater Group	Hayden (1871)
17. White River Sediments	Darton (1901)
18. Chadron and Brule Formations	Rich, E. I. (1959, oral communication)
19 Weaverville Formation	MacGinitie (1937)
20 Yonna Formation and equivalents	Trauger (1950); Newcomb and Hart (1958), Wood (1960)
21. Lake beds of Modoc lava field	Powers (1932)
22. Alturas Formation and Cedarville Series	Russell (1928), LaMotte (1936)
23. Virgin Valley beds, Thousand Creek beds, and probable equivalents	Willden, C. R. (1959, oral communication)
24 Humboldt Formation	Sharp (1939)
25 Raft Lake Beds	Stearns, Crandall, and Steward (1938)
26. 6000 to 9000 feet of unconsolidated sediments	This paper, determined by geophysical survey
27. Lake deposits in Ogden and Morgan Valleys	Lofgren (1955)
28. Tibble Formation	Crittenden, M D (1959, oral communication)
29. Jordan Narrows Unit of Salt Lake Group	Slentz (1955)
30. North Park Formation	Beekly (1915), Montagne and Barnes (1957)
31. Antero and Balfour Formations	Stark and others (1949); Tweto (1957)
32 Mohawk Lake Beds	Turner (1896)
33. Cache Formation	Anderson (1936)
34. Truckee Formation and equivalents	Thompson (1956), Moore, J. G. (1959, oral communication)
35 Bald Mountain Lake Beds Member of Esmeralda Formation	Ferguson (1924)
36 Esmeralda Formation	Turner (1900), Spurr (1905)
37. Lake beds in Railroad Valley	Hance (1914)
38 Currant Tuff	Faust and Callaghan (1948)
39 Lake beds in Steptoe Valley	Clark and Riddell (1920)
40. Lake beds in ancient White River drainage system	Tschanz, C. M. (1959, oral communication)
41. Panaca Formation	Westgate and Knopf (1932)
42 Brian Head and Paruinweap Formations	Gregory, (1945, 1949)
43. Florissant Lake Beds and equivalents	MacGinitie (1953)
44. Creede Formation	Larsen and Cross (1956)
45 Alamosa Formation	Siebenthal (1910)
46 Petaluma Formation and Sonoma Volcanics	Taliaferro (1951), Weaver (1949), Kunkel and Upson (1960)
47. Tehama Formation	Taliaferro (1951), Thomasson, Olmsted, and LeRoux (1960)
48 Volcanic sediments	Thomasson, Olmsted, and LeRoux (1960)
49. Green Valley, Orinda and Siesta Formations	Lawson (1914), Taliaferro (1951)
50 Tulare Formation and equivalents	Thomasson, Olmsted, and LeRoux (1960)
51 Tulare Formation and equivalents	Davis, Green, Olmsted, and Brown (1959), Davis and Poland (1957), Davis, G. H. (1959, written communication)
52 Lake beds near Dardanelle	Stager, Harold (1959, oral communication)
53 Paso Robles Formation	Worts (1951)
54. San Joaquin Formation	Barbat and Galloway (1934)
55. "Tertiary lake beds"	Jenkins (1951, see bibliography in text)
56. Furnace Creek Formation	Noble and Wright (1954)
57. Oak Springs Formation	Johnson and Hibbard (1957)
58. Muddy Creek Formation	Longwell (1928, 1936)
59. Quatal Red Clay Facies of Santa Margarita Formation	Ver Planck (1952)
60. Morales Formation	Hills, Carlson, and Dibblee (1958)
61 Peace Valley Beds	Crowell (1960)
62. Lake beds in Ridge Basin	Eaton (1939)
63. Vasquez Series	Irwin, W. P. (1960, oral communication)
64 Mint Canyon Formation	Jahns (1940)
65 Anaverde Formation	Wallace (1949)
66. Bopesta and Kinnick Formations	Buwalda (1954)
67. Lake beds in Antelope Valley	Buwalda (1954)
68. Bissell and Horned Toad Formations	Dibblee (1958)
69. Ricardo Formation	Dibblee (1952)
70. Kramer Hills Lake Beds	Bowen (1954), Gale (1946)
71. Tropico Group	Dibblee (1960)
72. Barstow Formation	Palmer and others (1957)
73. Mount Eden Formation	Frick (1921)
74 Fish Creek Gypsum	Dibblee (1954)
75 Borrego Formation	Dibblee (1954)
76 "Older Fill"	Morrison (1960)
77. Chapin Wash Formation	Lasky and Webber (1949)
78 Lake(?) beds underlying Renegras Plain	Metzger (1962)
79. Lake beds in Chino and Cherry Valleys	Krieger, M. H (1959, oral communication)
80 Verde Formation	Jenkins (1923); Lehner (1958)
81 Bidahochi Formation	Repenning and Irwin (1954)
82 Sante Fe Formation	Bryan (1938)
83 Sante Fe Formation	Wright (1946)
84. Pliocene cap rock	Judson (1950)
85. Lake beds near Wellton	Lance and Wood (1958)
86. Pantano Formation	Moore and others (1941)
87. Lake beds in San Pedro Valley	Gidley (1926)
88. Lake beds in Gila and San Carlos Valleys	Feth and Hem (1963)
89 Lake beds in San Simon Valley	Schwennesen (1917)
90. Lake beds in Black Range	Kuellmer (1956)

Base map by U S Geological Survey Data
compiled by J H Feth and J S Bonnell

INTERIOR—GEOLOGICAL SURVEY WASHINGTON D C—W62363

MAP OF WESTERN CONTERMINOUS UNITED STATES SHOWING KNOWN AND INFERRED LAKE DEPOSITS OF OLIGOCENE, MIOCENE, AND PLIOCENE AGE

SCALE 1:2 500 000

50 0 50 100 MILES

50 0 50 100 KILOMETERS