NATURAL RESOURCES

Index to Geologic and Geophysical Mapping of Washington, Part I—Published and Open-Filed Reports, 1899 to 2003

compiled by
Connie J. Manson

WASHINGTON
DIVISION OF GEOLOGY
AND EARTH RESOURCES

Revised July 2, 2003

*Supersedes Information Circular 77
and Open File Report 92-8*

WASHINGTON STATE DEPARTMENT OF
Natural Resources
Doug Sutherland - Commissioner of Public Lands

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Note: This index will be periodically revised as new maps become available. An index to thesis mapping has been released separately as Part II of this index.

INTRODUCTION

This work is a cumulated update to our previous indexes of geologic and geophysical mapping 1899 to 1983 (Manson, 1984) and 1984 to 1998 (Manson, 1999) and includes maps received in the Washington Division of Geology and Earth Resources (DGER) library to date. The index shows only pertinent and original mapping at scales from 1:480 through 1:580,000 as issued in published and open-filed reports. Superseded maps, sketch maps, mine maps, in-house unpublished maps, maps copied from other sources, and non-geologic or non-geophysical mapping have been excluded. Thesis mapping is not included here but has been indexed separately in Part II of this index.

How to Use This Index

The electronic version of this index is a simple copy of the printed index; it is not an interactive, searchable database. (While we greatly appreciate the advantages of that format, it is not possible for us at this time.) Users might find it easier to print out the maps and text for easy reference. The text and color maps print to standard 8½- by 11-inch paper. The text portion was originally designed for double-sided printing; therefore, a few intentionally blank pages appear within the text. The color maps were designed for single-sided printing.

The geologic mapping has been outlined on 14 sheets, separated by scale. The geophysical mapping has been outlined on 5 sheets, separated by scale and type. All map outlines are keyed by number to the Bibliography which gives the full citation for each map, numbered and listed alphabetically by author. If a report includes geologic and (or) geophysical mapping at different scales, the maps are outlined on the separate sheets as appropriate.

How to Obtain the Maps

All the maps listed here are held at the DGER library in Olympia, Washington. Materials are not loaned from the library collection, but are available for examination during our office hours.

Many of the maps are held at major geoscience libraries in Washington, especially the University of Washington in Seattle. Other major geoscience libraries which may hold many of these maps are listed in the Geoscience Information Society's *Directory of Geoscience Libraries, North America* (*see* http://www.geoinfo.org/ *for information on obtaining this directory*).

Many of these maps are still in print and available for sale from the publishers (for example, the U.S. Geological Survey or the Washington Division of Geology and Earth Resources).

History

The first index to geologic mapping of Washington State was produced by the U.S. Geological Survey's Leona Boardman in 1949 (as just one of the forty-seven state geologic map indexes she compiled). William H. Reichert produced an index to published, open-filed, and thesis geologic mapping in 1969, and to published geologic mapping in 1979. Connie J. Manson has continued Reichert's indexes since 1978 with published and open-filed reports on geologic, geophysical, and thesis mapping (for example, Manson 1984, 1999; the full list of those indexes is given in our publications list.)

Other Indexes to Geologic Mapping

The U.S. Geological Survey has a searchable database of geologic, geophysical, and thematic mapping of the United States at http://ngmdb.usgs.gov/.

Many state geological surveys produce map indexes for their areas.

ACKNOWLEDGMENTS

We are gratified that this map index project continues to be highly valued by the geoscience community. They deserve no less than our best efforts.

Because this has been a long-term project, there are many to thank: cartographers Keith Ikerd, Don Hiller, and Nancy Eberle, and editors Laura Bray, Kitty Reed, and Jari Roloff. We offer special thanks to editor Karen D. Meyers for the web version of the index. As ever, we are grateful to the administrators of the Division of Geology and Earth Resources for their continued support for this large, long-term project.

While great effort has been made to make this index as complete and accurate as possible, it is inevitable that some mistakes have been made. Any information about omissions or errors will be greatly appreciated.

REFERENCES CITED

Boardman, Leona, 1949, Geologic map index of Washington: U.S. Geological Survey, 1 sheet, scale 1:750,000.

Manson, C. J., compiler, 1984, Index to geologic and geophysical mapping of Washington, 1899-1983: Washington Division of Geology and Earth Resources Information Circular 77, 56 p., 14 plates.

Manson, C. J., compiler, 1986, Theses on Washington geology, 1901-1985: Washington Division of Geology and Earth Resources Information Circular 80, 400 p., 5 plates.

Manson, C. J., compiler, 1999, Geologic and geophysical mapping of Washington, 1984 through 1998, and, Theses on the geology of Washington, 1986 through 1998: Washington Division of Geology and Earth Resources Open File Report 99-1, 37 p., 9 plates.

Reichert, W. H., 1969, Compilation of geologic mapping in Washington through 1968—A continuation of Leona Boardman's Index to geologic mapping; also, Geologic maps from theses on Washington geology: Washington Division of Mines and Geology unpublished report, 43 p., 11 plates.

Reichert, W. H., 1979, Index to published geologic mapping in Washington, 1854-1970: Washington Division of Geology and Earth Resources Information Circular 68, 233 p.

Bibliography

Mapped areas are shown on Plates 1 through 15, which are arranged by map type and scale.

1. Aadland, R. K.; Bennett, E. H.; Mitchell, V. E.; Hustedde, G. S.; Ailee, R. Y., compilers, 1979, Geologic map of the Sandpoint quadrangle, Idaho and Washington: Idaho Bureau of Mines and Geology Geologic Map Series, 1 sheet, scale 1:250,000.

   Geologic map: scale 1:250,000.

2. Abrams, G. A.; Kucks, R. P.; Bracken, R. E., 1992, Aeromagnetic map of Morton and vicinity, Washington: U.S. Geological Survey Open-File Report 92-251, 1 p., 1 plate.

   Geophysical map (magnetic): scale 1:125,000.

3. Addicott, W. O., 1976, Molluscan paleontology of the lower Miocene Clallam Formation, northwestern Washington: U.S. Geological Survey Professional Paper 976, 44 p., 9 plates.

   Geologic map: Figure 2, Distribution of the Clallam Formation and fossil localities, scale 1:84,480.

4. Anderson, James Lee, 1987, rev. 1988, Geologic map of the Goldendale 15 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 87-15 revised, 9 p., 1 plate.

   Geologic map: Plate, scale 1:38,400.

5. Anderson, James Lee, 1987, Geologic map of the Klickitat 15 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 87-14, 13 p., 1 plate.

   Geologic map: Plate, scale 1:38,400.

6. Arndt, H. H.; Kent, B. H.; Packard, F. A.; Haushild, W. L., 1980, Evaluation of the Wilkeson–Carbonado coal field, Pierce County, Washington for hydraulic coal mining; Part 1, Geology; Part 2, Water resources: U.S. Geological Survey Open-File Report 80-802, 141 p., 1 plate.

   Geologic map: Plate 1, Geologic map and cross sections of the Wilkeson–Carbonado coal field, Pierce County, Washington, scale 1:24,000.

7. Artim, E. R., 1975, Ground water in the Methow Valley, Mazama to Winthrop: Washington Division of Geology and Earth Resources Open File Report 75-1, 9 p., 4 plates.

   Geologic maps: Plates 1 through 4, Okanogan County primary state highway 16, Mazama to Winthrop, topography map no. B-56, scale 1:2,400.

8. Artim, E. R.; Wunder, J. M., 1976, Preliminary geologic map of the La Conner quadrangle in Skagit County, Washington: Washington Division of Geology and Earth Resources Open File Report 76-1, 1 sheet, scale 1:24,000.

   Geologic map: scale 1:24,000.

9. Associated Earth Sciences, Inc., 1987, Snoqualmie Ridge project, King County, Washington—Soils, geology, geologic hazards and ground water hydrogeology: Associated Earth Sciences, Inc. [Kirkland, Wash., under contract to] Snoqualmie Ridge Associates, Inc., 2 v., 4 plates.

   Geologic map: [Plate] 2, scale 1:12,000.

10. Atwater, B. F.; Rinehart, C. D.; Fleck, R. J., 1984, Preliminary geologic map of the Colville Indian Reservation, Ferry and Okanogan Counties, Washington; with a table of potassium-argon ages: U.S. Geological Survey Open-File Report 84-389, 20 p., 4 plates.

    Geologic maps:

    10a Plate 1, Omak sheet, scale 1:100,000.
    10b Plate 2, Nespelem sheet, scale 1:100,000.
    10c Plate 3, Coulee Dam sheet, scale 1:100,000.

11. Babcock, L.; Beck, P.; Farley, W.; Lechler, P.; Lindgren, J.; Miller, D.; Pigott, J.; Sayala, D.; and others, 1981, An exploration systems approach to the Spokane Mountain area uranium deposits, northeastern Washington: U.S. Department of Energy GJBX-200(81); Bendix Field Engineering Corporation, 420 p., 1 sheet microfiche, 10 plates.

    Geologic map:

    11a Plate 1, Geologic map, scale 1:43,000.

    Geophysical maps:

    11b *(gravity)* Plate 4, Bouguer gravity of parts of the Okanogan, Sandpoint, Ritzville, and Spokane 1 degree x 2 degree quadrangles, scale 1:250,000.

    11c *(magnetic)* Plate 5, Aeromagnetic survey of parts of the Okanogan, Sandpoint, Ritzville, and Spokane 1 degree x 2 degree quadrangles, scale 1:250,000.

    11d *(magnetic)* Plate 6, Midnite–Sherwood mines, Washington, magnetic contour map, scale 1:62,500.

12. Bailey, J. S.; Lambert, D. P., 1987, Rural landfill site characterization, public health assessment and remedial action King County, Washington. *In* Renz, M. E.; Graves, B. J.; Butcher, Kathy, Proceedings of the NWWA FOCUS conference on northwestern ground water issues: National Water Well Association, p. 609-624.

    Geologic map: Fig. 3, Generalized geologic map, scale 1:48,000.

13. Banks, N. G.; Bennett, C. A.; Schmidt, J. M., 1978, Maps of photo lineaments and geomorphic features in the Spirit Lake quadrangle, Washington: U.S. Geological Survey Open-File Report 78-505, 2 sheets, scale 1:48,000.

    Geologic maps:

    Sheet A, Photo lineaments, scale 1:48,000.
    Sheet B, Photo geomorphic features, scale 1:48,000.

14. Banks, N. G.; Schmidt, J. M.; Ashley, R. P.; Bennett, C. A., 1979, Preliminary geologic and geophysical studies of the northeast quarter of the Spirit Lake quadrangle, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1046, 2 sheets, scale 1:48,000.

    Geologic map: Preliminary geologic map, scale 1:48,00.

    Geophysical maps (magnetic):

    Aeromagnetic map, scale l:48,000.
    Reconnaissance radiometric map, scale l:48,000.
    Reconnaissance total intensity ground magnetic map, scale l:48,000.

15. Barksdale, J. D., 1975, Geology of the Methow Valley, Okanogan County, Washington: Washington Division of Geology and Earth Resources Bulletin 68, 72 p., 1 plate.

    Geologic map: Plate 1, Geologic map of Methow Valley area, Washington, scale 1:125,000.

16. Battie, John; Johnston, Donnella; Searls, Craig, 1975, Environmental geology of the Parkland–Spanaway area, Washington: Washington Division of Geology and Earth Resources Open File Report 75-2, 7 sheets, scale 1:24,000.

    Geologic map: Sheet 4, Surficial geology, scale 1:24,000.

17. Bechtel, Inc., 1979, Report of geologic investigations in 1978–1979; Skagit Nuclear Power Project: Puget Sound Power and Light Company, 3 v., 3 plates.

    Geologic map:

    17a Appendix H, Sheet 1, Geologic map, scale 1:63,360.

    Geophysical map (magnetic):

    17b Appendix I, Aeromagnetic contour map and geologic map, scale 1:63,360.

18. Becraft, G. E., 1966, Geologic map of the Wilmont Creek quadrangle, Ferry and Stevens Counties, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-538, 1 sheet, scale 1:62,500.

    Geologic map: scale 1:62,500.

19. Becraft, G. E.; Weis, P. L., 1963, Geology and mineral deposits of the Turtle Lake quadrangle, Washington: U.S. Geological Survey Bulletin 1131, 73 p., 6 plates.

    Geologic maps:

    19 Plate 1, Geologic map and sections of the Turtle Lake quadrangle, Lincoln and Stevens Counties, Washington, scale 1:62,500.

    19a Plate 3, Geologic map of the Midnite mine, Turtle Lake quadrangle, Washington, scale 1:1,200.

    19b Plate 4, Geologic map and sections of the Northwest uranium mine, Turtle Lake quadrangle, Washington, scale 1:1,200.

    19c Plate 5, Geologic map of the Lowry lease, Turtle Lake quadrangle, Washington, scale 1:1,200.

20. Beeson, M. H.; Tolan, T. L., 1987, Columbia River Gorge—The geologic evolution of the Columbia River in northwestern Oregon and southwestern Washington. *In* Hill, M. L., editor, Cordilleran section of the Geological Society of America: Geological Society of America DNAG Centennial Field Guide 1, p. 321-326.

    Geologic map: Fig. 1, Map showing the geology and location of field guide sites described in the western portion of the Columbia River Gorge, scale 1:98,000.

21. Beeson, M. H.; Tolan, T. L.; Madin, I. P., 1991, Geologic map of the Portland quadrangle, Multnomah and Washington Counties, Oregon, and Clark County, Washington: Oregon Department of Geology and Mineral Industries Geological Map Series GMS-75, 1 sheet.

    Geologic map: scale 1:24,000.

22. Bela, J. L., compiler, 1982, Geologic and neotectonic evaluation of north-central Oregon—The Dalles 1 degree by 2 degree quadrangle: Oregon Department of Geology and Mineral Industries Geological Map Series GMS-27, 2 sheets, scale 1:250,000.

    Geologic map: scale 1:250,000.

23. Bennett, C. B., 1980, Ritzville 1 degree by 2 degree NTMS area, Washington—Data reports, hydrogeochemical and stream sediment reconnaissance: U.S. Department of Energy GJBX-162(80), DPST-80-146-3, 52 p., 1 plate.

    Geologic map: Plate 1A, Geologic map of the Ritzville quadrangle, scale 1:250,000.

24. Bennett, W. A. G., 1941, Preliminary report on magnesite deposits of Stevens County, Washington: Washington Division of Geology Report of Investigations 5, 25 p., 2 plates.

    Geologic maps:

    Plate 1, North half of the magnesite belt, Stevens County, Washington, scale 1:62,500.

    Plate 2, South half of the magnesite belt, Stevens County, Washington, scale 1:62,500.

25. Bentley, R. D., 1985, Structure contour maps on the top of the Grande Ronde, eastern Washington and northern Idaho: [Privately published by the author], 2 sheets.

    Geologic map: Sheets 1 and 2, scale 1:250,000.

26. Bentley, R. D.; Anderson, J. L.; Campbell, N. P.; Swanson, D. A., 1980, Stratigraphy and structure of the Yakima Indian Reservation, with emphasis on the Columbia River Basalt Group: U.S. Geological Survey Open-File Report 80-200, 85 p., 1 plate.

    Geologic map: Plate 1, Reconnaissance geologic map of the Yakima Indian Reservation, emphasizing the Columbia River basalt, scale 1:84,480.

27. Bentley, R. D.; Campbell, N. P., 1983, Geologic map of the Ellensburg quadrangle, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-28, 1 sheet, scale 1:62,500.

    Geologic map: scale 1:62,500.

28. Bentley, R. D.; Campbell, N. P., 1983, Geologic map of the Yakima quadrangle, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-29, 1 sheet, scale 1:62,500.

    Geologic map: 1:62,500.

29. Bentley, R. D.; Campbell, N. P.; Powell, J. E., 1988, Geologic map of the Bluelight 15-minute quadrangle, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-35, 1 sheet.

    Geologic map: Plate, scale 1:48,000.

30. Bentley, R. D.; Campbell, N. P.; Powell, J. E., 1988, Geologic map of the Logy Creek 15-minute quadrangle, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-37, 1 sheet.

    Geologic map: Plate, scale 1:48,000.

31. Bentley, R. D.; Campbell, N. P.; Powell, J. E., 1988, Geologic map of the Poisel Butte 15-minute quadrangle, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-36, 1 sheet.

    Geologic map: Plate, scale 1:48,000.

32. Bentley, R. D.; Campbell, N. P.; Powell, J. E., 1993, Geologic maps of part of the Yakima fold belt, northeastern Yakima County, Washington: Washington Division of Geology and Earth Resources Open File Report 93-3, 13 p., 5 plates.

    Geologic maps:

    32a Plate 1, scale 1:31,680.
    32b Plate 2, scale 1:31,680.
    32c Plate 3, scale 1:31,680.
    32d Plate 4, scale 1:31,680.

33. Bernardi, M. L.; Powell, L. K.; Wicklund, M. A., 1982, National Uranium Resource Evaluation, Okanogan quadrangle, Washington: U.S. Department of Energy PGJ/F-003(82); Bendix Field Engineering Corporation, 79 p., 6 sheets microfiche, 18 plates.

    Geologic map:

    33a Plate 13, scale 1:250,000.

    Geophysical maps (radiometric):

    33b Plate 3, Interpretation of aerial radiometric data, scale 1:250,000.

33c Plate 7, Reconnaissance airborne radiometric survey of west half of the Orient 15-minute quandrangle, scale 1:62,500.

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33e Plate 9, Reconnaissance airborne radiometric survey of the Sherman Peak 15-minute quandrangle, scale 1:62,500.

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33g Plate 11, Reconnaissance airborne radiometric survey of part of the Curlew Mountain 15-minute quandrangle, scale 1:62,500.

34. Berri, D. A.; Korosec, M. A., 1983, Geological and geothermal investigation of the lower Wind River valley, southwestern Washington Cascade Range: Washington Division of Geology and Earth Resources Open File Report 83-5, 48 p., 2 plates.

Geologic map: Plate 1, Geologic map of the lower Wind River valley, southwest Washington, scale 1:24,000.

35. Biggane, J. H., 1982, The low-temperature geothermal resource and stratigraphy of portions of Yakima County, Washington: Washington Division of Geology and Earth Resources Open-File Report 82-6, 128 p., 4 plates.

Geologic map: Plate 1, Preliminary structural geology and locations of stratigraphic correlation lines, scale 1:250,000.

Note: Study also issued as Washington State University College of Engineering Research Division Research Report 82/15-7, 126 p.

36. Bingham, J. W.; Londquist, C. J.; Baltz, E. H., Jr., 1970, Geologic investigation of faulting in the Hanford region, Washington: U.S. Geological Survey Open-File Report 70-27, 104 p., 10 plates.

Geologic maps:

36a Figure 6, Geologic map and cross section of Smyrna Bench with the profiles of two gullies, scale 1:24,000.

36b Figure 13, Geologic map and cross sections of Gable Mountain and Gable Butte, scale 1:24,000.

37. Birdseye, R. U., 1976, Geologic map of east-central Jefferson County, Washington: Washington Division of Geology and Earth Resources Open-File Report 76-26, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

38. Boleneus, D. E.; Derkey, R. E., 1996, Geohydrology of Peone Prairie, Spokane County, Washington: Washington Geology, v. 24, no. 1, p. 30-39.

Geologic map: Figure 2, scale 1:56,320.

39. Bonini, W. E.; Hughes, D. W.; Danes, Z. F., compilers, 1974, Complete Bouguer gravity anomaly map of Washington: Washington Division of Geology and Earth Resources Geologic Map GM-11, 1 sheet, scale 1:500,000.

Geophysical map (gravity): scale 1:500,000.

40. Booth, D. B., 1989, Surficial geology of the Granite Falls 15-minute quadrangle, Snohomish County, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-1852, 1 sheet.

Geologic map: scale 1:50,000.

41. Booth, D. B., 1990, Surficial geologic map of the Skykomish and Snoqualmie Rivers area, Snohomish and King Counties, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-1745, 2 sheets, with 22 p. text.

Geologic map: Sheet 1, scale 1:50,000.

42. Booth, D. B., 1991, Geologic map of Vashon and Maury Islands, King County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-2161, 1 sheet, with 6 p. text.

Geologic map: Plate, scale 1:24,000.

43. Booth, D. B., 1995, Surficial geologic map of the Maple Valley quadrangle, King County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-2297, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

44. Booth, D. B.; Minard, J. P., 1992, Geologic map of the Issaquah 7.5 quadrangle, King County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-2206, 1 sheet.

Geologic map: scale 1:24,000.

45. Brandon, M. T.; Cowan, D. S.; Vance, J. A., 1988, The Late Cretaceous San Juan thrust system, San Juan Islands, Washington: Geological Society of America Special Paper 221, 81 p., 1 plate.

Geologic map: Fig. 3, Geologic map of the San Juan Islands, scale 1:137,000.

46. British Columbia Ministry of Mines and Petroleum Resources; Geological Survey of Canada, 1979, Cape Flattery, British Columbia–Washington (92 C/7 E): British Columbia Ministry of Mines and Petroleum Resources–Geological Survey of Canada Geophysical Papers Map 9277G, 1 sheet.

Geophysical map (magnetic): scale 1:50,000.

47. British Columbia Ministry of Mines and Petroleum Resources; Geological Survey of Canada, 1979, River Jordan, British Columbia–Washington (92 C/8 E): British Columbia Ministry of Mines and Petroleum Resources–Geological Survey of Canada Geophysical Series Map 9271G, 1 sheet.

Geophysical map (magnetic): scale 1:50,000.

48. British Columbia Ministry of Mines and Petroleum Resources; Geological Survey of Canada, 1979, Joyce, British Columbia–Washington (92 B/4 E): British Columbia Ministry of Mines and Petroleum Resources–Geological Survey of Canada Geophysical Series Map 9262G, 1 sheet.

Geophysical map (magnetic): scale 1:50,000.

49. British Columbia Ministry of Mines and Petroleum Resources; Geological Survey of Canada, 1979, Victoria, British Columbia–Washington (92 B/6 W): British Columbia Ministry of Mines and Petroleum Resources–Geological Survey of Canada Geophysical Series Map 9259G, 1 sheet.

Geophysical map (magnetic): scale 1:50,000.

50. British Columbia Ministry of Mines and Petroleum Resources; Geological Survey of Canada, 1979, Port Angeles, British Columbia–Washington (92 B/3 W): British Columbia Ministry of Mines and Petroleum Resources–Geological Survey of Canada Geophysical Series Map 9258G, 1 sheet.

Geophysical map (magnetic): scale 1:50,000.

51. British Columbia Ministry of Mines and Petroleum Resources; Geological Survey of Canada, 1979, Victoria, British Columbia–Washington (92 B/6 E): British Columbia Ministry of Mines and Petroleum Resources–Geological Survey of Canada Geophysical Series Map 9255G, 1 sheet.

Geophysical map (magnetic): scale 1:50,000.

52. British Columbia Ministry of Mines and Petroleum Resources; Geological Survey of Canada, 1979, Cape Flattery, British Columbia–Washington, Canada–United States: British Columbia Ministry of Mines and Petroleum Resources–Geological Survey of Canada Geophysical Series Map 8192G, 1 sheet.

Geophysical map (magnetic): scale 1:250,000.

53. British Columbia Ministry of Mines and Petroleum Resources; Geological Survey of Canada, 1979, Victoria–Vancouver, British Columbia–Washington, Canada-United States: British Columbia Ministry of Mines and Petroleum Resources–Geological Survey of Canada Geophysical Series Map 8191G, 1 sheet.

Geophysical map (magnetic): scale 1:250,000.

54. Broughton, W. A., 1943, The Blewett iron deposit, Chelan County, Washington, (with preliminary tonnage estimates): Washington Division of Geology Report of Investigations 10, 21 p., 1 plate.

Geologic map: Plate 1, Geologic map of the Blewett iron deposit, Chelan County, Washington, showing magnetic data, scale 1:3,000.

55. Broughton, W. A., 1943, The Buckhorn iron deposits of Okanogan County, Washington—Results of a magnetic survey: Washington Division of Geology Report of Investigations 8, 21 p., 1 plate.

Geologic map: Plate 1, Geologic map of the north and east slopes of Buckhorn Mountain, Okanogan County, Washington, scale 1:5,500.

56. Broughton, W. A., 1944, Economic aspects of the Blewett–Cle Elum iron ore zone, Chelan and Kittitas Counties, Washington: Washington Division of Geology Report of Investigations 12, 42 p., 7 plates.

Geologic map: Plate 1, Areal geology, Blewett–Cle Elum iron zone, Chelan and Kittitas Counties, Washington, scale 1:84,480.

57. Broughton, W. A., 1945, Some magnetite deposits of Stevens and Okanogan Counties, Washington: Washington Division of Geology Report of Investigations 14, 24 p., 5 plates.

Geologic and geophysical (magnetic) maps:

57a Plate 1, Geologic map of the Big Iron deposit, Stevens County, Washington, showing magnetic data, scale 1:740.

57b Plate 2, Geologic map of the Read iron deposit, Stevens County, Washington, showing magnetic data, scale 1:2,200.

57c Plate 3, Geologic map of the Connors iron deposit, Stevens County, Washington, showing magnetic data, scale 1:2,000.

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57e Plate 5, Geologic map of the Strawberry Lake iron deposit, Okanogan County, Washington, showing magnetic data, scale 1:500.

58. Brown and Caldwell; Sweet, Edwards and Associates; Robinson and Noble, Inc., 1985, Clover/Chambers Creek geohydrologic study; Final report: Tacoma–Pierce County Health Department, 1 v.

Geologic map: Fig. 5-8, Geology map of the Clover/Chambers Creek basin [on 2 sheets], scale 1:75,000.

59. Brown, David, and Associates, Inc., 2000, Thermal transport study of the Selah Lakes gravel mine, 1999 annual report: David Brown & Associates [under contract to] Central Pre-Mix Concrete Company, 1 v., 1 CD-ROM, 1 plate.

Geologic map: Figure 3, scale 1:18,000.

60. Brown, E. H.; Blackwell, D. L.; Christenson, B. W.; Frasse, F. I.; Haugerud, R. A.; Jones, J. T.; Leiggi, P. A.; Morrison, M. L.; Rady, P. M.; Reller, G. J.; Sevigny, J. H.; Silverberg, D. S.; Smith, M. T.; Sondergaard, J. N.; Ziegler, C. B., 1987, Geologic map of the northwest Cascades, Washington: Geological Society of America Map and Chart Series MC-61, 1 sheet, with 10 p. text.

Geologic map: scale 1:100,000.

61. Brown, J. C., 1979, Geology and water resources of Klickitat County: Washington Department of Ecology Water-Supply Bulletin 50, 413 p., 8 plates.

Geologic maps:

Plate IV, Reconnaissance map of bedrock geology, Klickitat County, Washington (west half), scale 1:94,000.

Plate V, Reconnaissance map of bedrock geology, Klickitat County, Washington (east half), scale 1:94,000.

62. Brown, R. D., Jr., 1970, Geologic map of the north-central part of the Olympic Peninsula, Washington: U.S. Geological Survey Open-File Report 70-43, 2 sheets, scale 1:62,500.

Geologic map: scale 1:62,500.

63. Brown, R. D., Jr.; Gower, H. D.; Snavely, P. D., Jr., 1960, Geology of the Port Angeles–Lake Crescent area, Clallam County, Washington: U.S. Geological Survey Oil and Gas Investigations Map OM-203, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

64. Buchanan-Banks, J. M.; Collins, D. S., 1994, Map showing depth to bedrock of the Tacoma and part of the Centralia 30' x 60' quadrangles, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-2265, 2 sheets.

Geologic map: Sheet 1, scale 1:100,000.

65. Bunning, B. B., compiler, 1990, Geologic map of the east half of the Twisp 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 90-9, 51 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

66. Burmester, R. F.; Miller, F. K., 1983, Preliminary geologic map of the Abercrombie Mountain area, Pend Oreille County, Washington: U.S. Geological Survey Open-File Report 83-600, 10 p., 1 plate.

Geologic map: scale 1:48,000.

67. Cady, J. W.; Meyer, R. F., 1976, Bouguer gravity map of the Okanogan, Sandpoint, Ritzville, and Spokane 1 degree by 2 degree quadrangles, northeastern Washington and northern Idaho: U.S. Geological Survey Geophysical Investigations Map GP-914, 1 sheet, scale 1:250,000.

Geophysical map (gravity): scale 1:250,000.

68. Cady, W. M.; Sorensen, M. L.; MacLeod, N. S., 1972, Geologic map of the Brothers quadrangle, Jefferson, Mason and Kitsap Counties, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-969, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

69. Cady, W. M.; Tabor, R. W.; MacLeod, N. S.; Sorensen, M. L., 1972, Geologic map of the Tyler Peak quadrangle, Clallam and Jefferson Counties, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-970, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

70. Caggiano, J. A.; Duncan, D. W., editors; and others, 1983, Preliminary interpretation of the tectonic stability of the reference repository location, Cold Creek syncline, Hanford site: Rockwell Hanford Operations RHO-BW-ST-19 P, 1 v., 5 plates.

Geophysical map (gravity): Plate 4-2, Simple Bouguer gravity, scale 1:320,000.

71. Campbell, A. B.; Raup, O. B., 1964, Preliminary geologic map of the Hunters quadrangle, Stevens and Ferry Counties, Washington: U.S. Geological Survey Mineral Investigations Field Studies Map MF-276, 1 sheet, scale 1:48,000.

Geologic map: scale 1:48,000.

72. Campbell, C. D., 1946, Lead-zinc deposits in part of the Northport district, Wash.: U.S. Geological Survey Open-File Report, 10 sheets.

Geologic maps:

72 Plate 1, Geologic map and sections of the Northport district, Stevens County, Washington, scale 1:125,000.

72a Plate 2, Geologic map of the Deep Lake area, Northport district, Stevens County, Washington, scale 1:12,000.

72b Plate 3, Geologic map of the Red Top area, Northport district, Stevens County, Washington, scale 1:12,000.

72c Plate 4, Geologic map of the Gladstone Mountain area, Northport district, Stevens County, Washington, scale 1:12,000.

72d Plate 5, Geologic map of the Deep Creek area, Northport district, Stevens County, Washington, scale 1:12,000.

72e Plate 6, Geologic and topographic map, Deep Creek mine area, including U.S. Bureau of Mines Gorien zinc project, Northport district, Stevens County, Washington, scale 1:2,400.

73. Campbell, C. D., 1947, Cambrian rocks of northeastern Stevens County: Geological Society of America Bulletin, v. 58, p. 597-612.

Geologic map: Plate 1, scale 1:95,000.

74. Campbell, C. D.; Gladstone, Irvin, 1944, Tom Cat and Hanley prospects, Metaline lead-zinc district, Pend Oreille County, Washington: U.S. Geological Survey Open-File Report ("Strategic Minerals Investigation, preliminary report"), 25 p., 1 plate.

Geologic map: Geologic and topographic map, scale 1:2,400.

75. Campbell, C. D.; Thorsen, G. W.; Livingston, V. E., Jr., compiler, 1975, rev. 1980, Geology of the Sherman Peak and west half of the Kettle Falls quadrangles, Ferry County, Washington: Washington Division of Geology and Earth Resources Open File Report 75-3, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

76. Campbell, Ian; Loofbourow, J. S., Jr., 1962, Geology of the magnesite belt of Stevens County, Washington: U.S. Geological Survey Bulletin 1142-F, 53 p., 2 plates.

Geologic map: Plate 1, Geologic map and sections of the magnesite belt, Stevens County, Washington, scale 1:36,000.

77. Campbell, N. P., 1976, Preliminary geologic map of the Yakima area: Washington Division of Geology and Earth Resources Open File Report 76-11, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

78. Campbell, N. P., 1977, Geology of the Selah area, Yakima County, Washington: Washington Division of Geology and Earth Resources Open File Report 77-7, 3 sheets, scale 1:24,000.

Geologic map: scale 1:24,000.

79. Campbell, N. P., 1977, Geology of the Snipes Mountain area, Yakima County, Washington: Washington Division of Geology and Earth Resources Open File Report 77-8, 3 sheets, scale 1:24,000.

Geologic map: scale 1:24,000.

80. Campbell, N. P., 1979, Surficial geologic map of The Dalles quad, Washington: Washington Division of Geology and Earth Resources Open File Report 79-12, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

81. Campbell, N. P., 1979, Surficial geologic map of the Pendleton quad, Washington: Washington Division of Geology and Earth Resources Open File Report 79-8, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

82. Campbell, N. P., 1979, Surficial geologic map of the Yakima quad, Washington: Washington Division of Geology and Earth Resources Open File Report 79-15, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

83. Campbell, N. P., 1987, Geology of the Rattlesnake Creek mile 4 damsite, central Washington: Association of Engineering Geologists Bulletin, v. 24, no. 4, p. 549-555.

Geologic map: Fig. 2, Geologic map of the Rattlesnake Creek area, scale 1:46,000.

84. Campbell, N. P., 1988, Structural geology along the northwestern Columbia River basalt margin, Washington: Washington Division of Geology and Earth Resources Open File Report 88-5, 108 p., 8 plates.

Geologic maps:

84a Plate 5, Geologic map of the northeastern portion of the study area—Cashmere, Rocky Reach Dam, Monitor, Wenatchee, Rock Island, Malaga NE, Mission Peak, Wenatchee Heights, Malaga, Rock Island Dam, Naneum Canyon, Colockum Pass, Stray Gulch, and West Bar 7.5 quadrangles, scale 1:48,000.

84b Plate 6, Geologic map of the northeastern portion of the study area—Liberty and Thorp 15 quadrangles, scale 1:48,000.

84c Plate 7, Geologic map of the northeastern portion of the study area—Cle Elum and Easton 15 quadrangles, scale 1:48,000.

84d Plate 8, Geologic map of the northeastern portion of the study area—Old Scab Mtn., Cliffdell, Manastash Lake, Timberwolf Mtn., Meeks Table, Nile, Rimrock Lake, Tieton Basin, Weddle Canyon, Darland Mtn., and Foundation Ridge 7.5 quadrangles, scale 1:48,000.

85. Campbell, N. P.; Gusey, Daryl, 1992, Geology of the Naches Ranger District, Wenatchee National Forest, Kittitas and Yakima Counties, Washington: Washington Division of Geology and Earth Resources Open File Report 92-3, 12 p., 2 plates.

Geologic map: Plate 1, scale 1:62,500.

86. Campbell, N. P.; Lillie, J. T.; Webster, G. D., 1979, Surficial geologic map of the Walla Walla quad, Washington: Washington Division of Geology and Earth Resources Open File Report 79-13, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

87. Capps, Gerald; Simmons, J. D.; Videgar, F. D., 1973, Preliminary report on the geology of southern Snohomish County, Washington: Washington Division of Geology and Earth Resources Open File Report 73-1, 11 p., 2 plates.

Geologic map: scale 1:24,000.

88. Carithers, Ward; Guard, A. K., 1945, Geology and ore deposits of the Sultan Basin, Snohomish County, Washington: Washington Division of Mines and Geology Bulletin 36, 90 p., 1 plate.

Geologic map: Plate 1, Geologic map and sections of the Sultan Basin, Snohomish County, Washington, scale 1:63,360.

89. Carlson, D. H., 1993, Geology and geochemistry of the Coulee Dam Intrusive Suite and associated younger intrusive rocks, Colville batholith, Washington: U.S. Geological Survey Bulletin 1846, 36 p., 1 plate.

Geologic map: Plate 1, Geologic map of the Grand Coulee Dam area, Washington, scale 1:48,000.

90. Carrara, P. E., 1990, Preliminary surficial geologic map of the Chewelah quadrangle, Stevens County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-2141, 1 sheet.

Geologic map: Plate, scale 1:24,000.

91. Carrara, P. E.; Kiver, E. P.; Stradling, D. F., 1995, Surficial geologic map of the Chewelah 30' x 60' quadrangle, Washington and Idaho: U.S. Geological Survey Miscellaneous Investigations Series Map I-2472, 1 sheet.

Geologic map: Plate, scale 1:100,000.

92. Carson Helicopters, Inc., 1981, NURE aerial gamma ray and magnetic detail survey of portions of northeast Washington; Final report: U.S. Department of Energy GJBX 1(82), 12 v.

Geologic maps:

92a Volume IIA, Flight line base map [west fork of the Sanpoil River, Washington], 6 sheets, scale 1:62,500.

92b Volume IIB, Part A, Flight line base map [Mount Leona–Nancy Creek, Washington], 16 sheets, scale 1:62,500.

92c Volume IIC, Part A, Flight line base map [Midnite–Sherwood mines, Washington], 15 sheets, scale 1:62,500.

92d Volume IID, Flight line base map [Lost Creek, Washington], 3 sheets, scale 1:62,500.

92e Volume IIE, Flight line base map [Gleason Mountain, Washington–Idaho], 1 sheet , scale 1:62,500.

92f Volume IIF, Flight line base map [Chelan, Washington], 2 sheets, scale 1:62,500.

92g Volume IIH, Flight line base map [Spirit pluton,Washington], 3 sheets, scale 1:62,500.

Geophysical maps (magnetic):

92h Volume IIA, Magnetic contour map, [west fork of the Sanpoil River, Washington], 6 sheets, scale 1:62,500.

92i Volume IIB, Part A, Magnetic contour map, [Mount Leona–Nancy Creek, Washington], 16 sheets, scale 1:62,500.

92j Volume IIC, Part A, Magnetic contour map, [Midnite–Sherwood mines, Washington], 15 sheets, scale 1:62,500.

92k Volume IID, Magnetic contour map, [Lost Creek, Washington], 3 sheets, scale 1:62,500.

92l Volume IIE, Magnetic contour map, [Gleason Mountain, Washington–Idaho], 1 sheet , scale 1:62,500.

92m Volume IIF, Magnetic contour map, [Chelan, Washington], 2 sheets, scale 1:62,500.

92n Volume IIH, Magnetic contour map, [Spirit pluton,Washington], 3 sheets, scale 1:62,500.

93. Carson, R. J., 1976, Geologic map of north-central Mason County, Washington: Washington Division of Geology and Earth Resources Open File Report 76-2, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

94. Carson, R. J., 1976, Preliminary geologic map of the Brinnon area, Jefferson County, Washington: Washington Division of Geology and Earth Resources Open File Report 76-3, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

95. Carson, R. J.; Smith, Mackey; Foxworthy, B. L., 1975, Geologic conditions related to waste-disposal planning in the southern Hood Canal area, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-853-D, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

96. Carson, R. J.; Tolan, T. L.; Reidel, S. P., 1987, Geology of the Vantage area, south-central Washington—An introduction to the Miocene flood basalts, Yakima Fold Belt, and the Channeled Scabland. *In* Hill, M. L., editor, Cordilleran Section of the Geological Society of America: Geological Society of America DNAG Centennial Field Guide 1, p. 357-362.

Geologic maps:

96a Fig. 3, A generalized geologic map of the Vantage, Washington area, scale 1:71,000.

96b Fig. 4, A generalized geologic map of the Frenchman Springs Coulee area, scale 1:48,000.

96c Fig. 5, A generalized geologic map of Sentinel Gap, scale 1:71,000.

97. Castor, S. B.; Berry, M. R.; Siegmund, B. L., 1982, National Uranium Resource Evaluation, Sandpoint quadrangle, Washington, Idaho, and Montana: U.S. Department of Energy PGJ/F-005(82); Bendix Field Engineering Corporation, 77 p., 7 sheets microfiche, 36 plates.

Geologic maps:

97a Plate 7a, Geologic map, scale 1:500,000.

97b Plate 7c, Geologic map of the northwest quarter of the Sandpoint quadrangle, scale 1:250,000.

97c Plate 7d, Geologic map of the southwest quarter of the Sandpoint quadrangle, scale 1:250,000.

98. Cater, F. W., 1969, The Cloudy Pass epizonal batholith and associated subvolcanic rocks: Geological Society of America Special Paper 116, 54 p., 1 plate.

Geologic map: Plate 1, Geologic map of the Cloudy Pass batholith and related rocks, Holden quadrangle, Chelan and Snohomish Counties, Washington, scale 1:62,500.

99. Cater, F. W.; Crowder, D. F., 1967, Geologic map of the Holden quadrangle, Snohomish and Chelan Counties, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-646, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

100. Cater, F. W.; Wright, T. L., 1967, Geologic map of the Lucerne quadrangle, Chelan County, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-647, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

101. Cheney, E. S., 1978, Interim report on the seismic and geologic hazards to the proposed Skagit nuclear power site, Sedro Woolley, Washington; prepared for Skagitonians Concerned About Nuclear Plants (SCANP) [revision]: [Privately published by the author], 116 p., 3 plates.

Geologic map: Figure 5, Geologic map of the Lake Chaplain area, scale 1:125,000.

102. Cheney, E. S., 1987, Major Cenozoic faults in the northern Puget Lowland of Washington. *In* Schuster, J. E., editor, Selected papers on the geology of Washington: Washington Division of Geology and Earth Resources Bulletin 77, p. 149-168.

Geologic map: Fig. 2, Tectonic map of the northern Puget Lowland, scale 1:430,000.

103. Cheney, E. S., 1999, Geologic map of the Easton area, Kittitas County, Washington: Washington Division of Geology and Earth Resources Open File Report 99-4, 11 p., 1 sheet.

Geologic map: scale 1:31,680.

104. Cheney, E. S.; Rasmussen, M. G., 1996, Regional geology of the Republic area: Washington Geology, v. 24, no. 2, p. 3-7.

Geologic map: Figure 2, scale 1:340,000.

105. Cheney, E. S.; Rhodes, B. P.; Wilson, J. R.; McMillen, D. D., 1982, Geologic excursion of high-grade metamorphic rocks and low-angle faults of the Kettle and Okanogan domes, Washington. *In* Roberts, Sheila; Fountain, David, editors, Tobacco Root Geological Society 1980 field conference guidebook: Tobacco Root Geological Society [Spokane, Wash.], p. 6-25.

Geologic map: p. 8-9, scale 1:290,000.

106. Chleborad, A. F.; Schuster, R. L., 1985, Stability of slope areas II and IV below the Sherwood uranium mine, Spokane Indian Reservation, northeastern Washington: U.S. Geological Survey Open-File Report 85-438, 10 p., 1 plate.

Geologic map: Plate 1, Geologic map of the study area, scale 1:12,000.

107. Church, S. E.; Mosier, E. L.; Tabor, R. W.; Willson, W. R.; McDougal, C. M., 1983, Analytical results and statistical analyses of rocks, ores, and stream pebbles from the Eagle Rock and Glacier Peak roadless areas, Snohomish and King Counties, Washington: U.S. Geological Survey Open-File Report 83-342, 84 p., 1 plate.

Geologic map: Plate 1, scale 1:100,000.

108. Ciancanelli, E. V., 1987, Geology and geothermal resource potential of Mt. Adams volcano, Washington. *In* Electric Power Research Institute, Proceedings—Tenth annual geothermal conference and workshop: Electric Power Research Institute Special Report AP-5059-SR, p. 12-45–12-59.

Geologic map: Fig. 1, scale 1:144,800.

109. Clark, L. D.; Miller, F. K., 1965, Preliminary geologic map of the Chewelah district, Stevens County, Washington: U.S. Geological Survey Open-File Report 65-32, 3 sheets, scale 1:24,000.

Geologic map: Sheet 1, scale 1:24,000.

110. Clark, L. D.; Miller, F. K., 1968, Geology of the Chewelah Mountain quadrangle, Stevens County, Washington: Washington Division of Mines and Geology Geologic Map GM-5, 2 sheets, scale 1:62,500, with 6 p. text.

Geologic map: Plate 1, Preliminary geologic map of athe Chewelah Mountain quadrangle, Stevens County, Washington, scale 1:62,500.

111. Clayton, G. A., 1980, Geology of White Pass–Tumac Mountain area, Washington: Washington Division of Geology and Earth Resources Open File Report 80-8, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

112. Cline, D. R., 1969, Ground-water resources and related geology of north-central Spokane and southeastern Stevens Counties of Washington: Washington Department of Water Resources Water-Supply Bulletin 27, 195 p., 2 plates.

Geologic map: Plate 2, Reconnaissance geologic map of north-central Spokane and southeastern Stevens Counties, Washington, scale 1:125,000.

113. Colville Confederated Tribes Geology Department, 1984, Revised geology and mineral potential of the Colville Indian Reservation, Washington, 1984: Colville Confederated Tribes, 2 v.

Geologic maps:

Plate I, Generalized bedrock map of the Colville Indian Reservation, Okanogan and Ferry Counties, Washington, scale 250,000.

Plate XIV, Quaternary deposits map of the Colville Indian Reservation, Okanogan and Ferry Counties, Washington, scale 1:250,000.

114. Converse Davis Dixon Associates, 1976, Swift Creek tributaries, Sumas River watershed, Whatcom County, Washington: Converse Davis Dixon Associates [Seattle, Wash., under contract to] U.S. Soil Conservation Service, 1 v.

Geologic maps:

Drawing 2, Geologic map of landslide, scale 1:4,800.
Drawing 3, Geologic map of flood plain, scale 1:4,800.

115. Coombs, H. A., 1936, Geology of Mount Rainier National Park: University of Washington Publications in Geology, v. 3, p. 131-212.

Geologic map: Map, scale 1:62,500.

116. Cowan, D. S.; Potter, C. J., compilers; Brandon, M. T.; Fountain, D. M.; Hyndman, D. W.; Johnson, S. Y.; Lewis, B. T. R.; McClain, K. J.; Swanson, D. A., 1986, B-3 Juan de Fuca spreading ridge to Montana thrust belt: Geological Society of America Centennial Continent/Ocean Transect 9, 3 sheets, with 12 p. text.

Geologic maps:

116a Sheet 2, [map A], scale 1:500,000.
116b Sheet 2, [map B], scale 1:500,000.

117. Cox, S. E.; Kahle, S. C., 1999, Hydrogeology, ground-water quality, and sources of nitrate in lowland glacier aquifers of Whatcom County, Washington, and British Columbia, Canada: U.S. Geological Survey Water-Resources Investigations Report 98-4195, 251 p., 5 plates.

Geologic map: Plate 2, Surficial geology and hydrogeologic sections in lowland aquifers of Whatcom County, Washington, and southwestern British Columbia, scale 1:100,000.

118. Crandell, D. R., 1963, Surficial geology and geomorphology of the Lake Tapps quadrangle, Washington: U.S. Geological Survey Professional Paper 388-A, 84 p., 2 plates.

Geologic map: Plate 1, Surficial geologic map and section of the Lake Tapps quadrangle, Washington, scale 1:24,000.

119. Crandell, D. R., 1969, Surficial geology of Mount Rainier National Park, Washington: U.S. Geological Survey Bulletin 1288, 41 p., 1 plate.

Geologic map: Plate 1, Surficial geology of Mount Rainier National Park, Washington, scale 1:48,000.

120. Crandell, D. R.; Gard, L. M., Jr., 1959, Geology of the Buckley quadrangle, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-125, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

121. Crandell, D. R.; Miller, R. D., 1974, Quaternary stratigraphy and extent of glaciation in the Mount Rainier region, Washington: U.S. Geological Survey Professional Paper 847, 59 p., 2 plates.

Geologic map: Plate 1, Map showing distribution of Pleistocene surficial deposits and extent of Pleistocene glaciers in the Mount Rainier region, Washington, scale 1:250,000.

122. Crandell, D. R.; Mullineaux, D. R., 1978, Potential hazards from future eruptions of Mount St. Helens volcano, Washington: U.S. Geological Survey Bulletin 1383-C, 26 p., 2 plates.

Geologic map: Plate 1, Volcanic rocks and unconsolidated deposits formed at Mount St. Helens during the last 4,500 years, scale 1:250,000.

123. Creasey, S. C., 1945, Geology of the Starr molybdenum mine, Okanogan County, Washington: U.S. Geological Survey Open-File Report, 11 p., 5 plates.

Geologic map: Plate 1, Geologic map of the Starr molybdenum mine, Okanogan County, Washington, scale 1:480.

124. Creasey, S. C.; Storch, H. H., 1945, Winesap nickel prospect, Chelan County, Washington: U.S. Geological Survey Open-File Report (Strategic Mineral Investigations), 10 plates.

Geologic map: Plate, Winesap nickel prospect, Chelan County, Washington, scale 1:480.

125. Crowder, D. F., 1959, Granitization, migmatization, and fusion in the northern Entiat Mountains, Washington: Geological Society of America Bulletin, v. 70, no. 7, p. 827-877.

Geologic map: Plate 1, Geologic map of the northern Entiat Mountains, Washington, scale 1:42,000.

126. Crowder, D. F.; Tabor, R. W.; Ford, A. B., 1966, Geologic map of the Glacier Peak quadrangle, Snohomish and Chelan Counties, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-473, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

127. Cruson and Pansze, 1980, Geologic study of Kettle dome, northeast Washington—Final report: U.S. Department of Energy GJBX-253(80), 114 p., 3 plates.

Geologic maps:

127a Plate 1, Generalized bedrock geologic map and cross sections of Kettle dome, scale 1:62,500.

127b Plate 3, Geologic map and cross sections, Sand Creek-Deep Creek area, scale 1:12,000.

127c Plate 3, Geologic map and cross sections, Boyds–Nancy Creek area, scale 1:24,000.

127d Plate 3, Geologic map and cross section of the Mount Leona area, scale 1:2,400.

Geophysical map (radiometric):

127e Plate 2, Spectral radiometric survey of Kettle dome, scale 1:62,500.

128. Culver, H. E., 1919, The coal fields of southwestern Washington: Washington Geological Survey Bulletin 19, 155 p.

Geologic maps:

128a Plate X, Kelso–Castle Rock area, scale 1:63,360.
128b Plate XII, Coal Bank Rapids area, scale 1:63,360.
128c Plate XIII, Vader area, scale 1:63,360.
128d Plate XV, Centralia–Chehalis area, scale 1:63,360.
128e Plate XVI, Tenino–Mendota area, scale 1:63,360.
128f Plate XIX, Cinnabar area, scale 1:63,360.
128g Plate XX, Mineral Lake area, scale 1:63,360.
128h Plate XXII, Ashford area, scale 1:63,360.

129. Culver, H.E.; Broughton, W. A., 1945, Tungsten resources of Washington: Washington Division of Geology Bulletin 34, 89 p., 23 plates.

Geologic maps:

129a Plate 20, Geology of Blue Grouse Mountain, scale 1:24,000.

129b Plate 21, Geology of Germania area, scale 1:12,500.

130. Danes, Z. F., 1975, Gravity survey of Mt. Rainier, Washington: Washington Division of Geology and Earth Resources Open File Report 75-5, 10 p., 1 plate, scale 1:63,360.

Geophysical map (gravity): scale 1:63,360.

131. Danes, Z. F., 1979, Bouguer gravity map, Camas area, Washington and Oregon: Washington Division of Geology and Earth Resources Open File Report 79-6, 1 sheet, scale 1:62,500.

Geophysical map (gravity): scale 1:62,500.

132. Danes, Z. F.; Phillips, W. M., 1983, Complete Bouguer gravity anomaly map, Cascade mountains, Washington: Washington Division of Geology and Earth Resources Geophysical Map GM-27, 2 sheets, scale 1:250,000.

Geophysical maps (gravity):

132a Plate 1, Northern Cascade mountains, Washington, scale 1:250,000.

132b Plate 2, Southern Cascade mountains, Washington, scale 1:250,000.

133. Danner, W. R., 1966, Limestone resources of western Washington; with a section on the Lime Mountain deposit, by G. W. Thorsen: Washington Division of Mines and Geology Bulletin 52, 474 p.

Geologic map: Figure 23, Geologic sketch map of Roche Harbor and vicinity, San Juan County, scale 1:28,400.

Note: Report also includes numerous geologic sketch maps of specific limestone deposits in western Washington.

134. Deiss, Charles, 1955, Dolomite deposit near Marble, Stevens County, Washington: U.S. Geological Survey Bulletin 1027-C, p. 119-141, 2 plates.

Geologic map: Plate 14, Geologic map of dolomite deposits near Marble, Stevens County, Washington, scale 1:2,400.

135. Derkey, R. E., 1997, Geologic map of the Mead 7.5-minute quadrangle, Spokane County, Washington: Washington Division of Geology and Earth Resources Open File Report 97-3, 9 p., 2 plates.

Geologic map: Plate 1, scale 1:24,000.

136. Derkey, R. E.; Gerstel, W. J.; Logan, R. L., 1998, Geologic map of the Dartford 7.5-minute quadrangle, Spokane County, Washington: Washington Division of Geology and Earth Resources Open File Report 98-6, 9 p., 1 plate.

Geologic map: Plate 1, scale 1:24,000.

137. Derkey, R. E.; Hamilton, M. M.; Stradling, D. F.; Kiver, E. P., 1999, Preliminary geologic maps of the Spokane NE and SE 7.5-minute quadrangles, Spokane County, Washington: Washington Division of Geology and Earth Resources Open File Report 99-6, 3 sheets, scale 1:24,000.

Geologic maps:

137a Plate 1, Geologic map of the Spokane NE 7.5-minute quadrangles, Spokane County, Washington, scale 1:24,000.

137b Plate 2, Geologic map of the Spokane SE 7.5-minute quadrangles, Spokane County, Washington, scale 1:24,000.

138. Dethier, D. P., 1988, The soil chronosequence along the Cowlitz river, Washington: U.S. Geological Survey Bulletin 1590-F, 47 p.

Geologic map: Fig. 3, Quaternary and bedrock geology along Cowlitz River in central Lewis County, Wash., scale 1:84,480.

139. Dethier, D. P.; Bethel, J. P., 1981, Surficial deposits along the Cowlitz River near Toledo, Lewis County, Washington: U.S. Geological Survey Open-File Report 81-1043, 10 p., 1 plate, scale 1:62,500.

Geologic map: Plate, Surficial deposits along the Cowlitz River near Toledo, Lewis County, Washington, scale 1:62,500.

140. Dethier, D. P.; Safioles, S. A.; Minard, J. P., 1982, Preliminary geologic map of the Maxwelton quadrangle, Island County, Washington: U.S. Geological Survey Open-File Report 82-192, 13 p., 1 plate, scale 1:24,000.

Geologic map: Plate, scale 1:24,000.

141. Dethier, D. P.; Whetten, J. T., 1980, Preliminary geologic map of the Clear Lake SW quadrangle, Skagit and Snohomish Counties, Washington: U.S. Geological Survey Open-File Report 80-825, 11 p., 2 plates.

Geologic maps: Plates 1 and 2, scale 1:24,000.

142. Dethier, D. P.; Whetten, J. T., 1981, Preliminary geologic map of the Mount Vernon 7½ minute quadrangle, Skagit County, Washington: U.S. Geological Survey Open-File Report 81-105, 9 p., 1 plate.

Geologic map: scale 1:24,000.

143. Dethier, D. P.; Whetten, J. T.; Carroll, P. R., 1980, Preliminary geologic map of the Clear Lake SE quadrangle, Skagit County, Washington: U.S. Geological Survey Open-File Report 80-303, 11 p., 2 plates.

Geologic map: 2 plates, scale 1:24,000.

144. Dethier, D. P.; White, D. P.; Brookfield, C. M., 1996, Maps of the surficial geology and depth to bedrock of False Bay, Friday Harbor, Richardson, and Shaw Island 7.5-minute quadrangles, San Juan County, Washington: Washington Division of Geology and Earth Resources Open File Report 96-7, 7 p., 2 plates.

Geologic map: Plate 1, scale 1:24,000.

145. Diery, H. D.; McKee, Bates, 1969, Stratigraphy of the Yakima Basalt in the type area: Northwest Science, v. 43, no. 2, p. 47-64.

Geologic map: Figure 3, Geologic map of Yakima Canyon area, scale 1:125,000.

146. Diggles, M. F., editor, 1991, Assessment of undiscovered porphyry copper deposits within the range of the Northern Spotted Owl, northwestern California, western Oregon, and western Washington: U.S. Geological Survey Open-File Report 91-377, 58 p., 27 plates.

Geophysical maps:

146a *(magnetic)* Plate 5, Magnetic anomaly map, Washington, scale 1:500,000.

146b *(gravity)* Plate 8, Isostatic residual gravity map, Washington, scale 1:500,000.

147. Dings, M. G.; Whitebread, D. H., 1965, Geology and ore deposits of the Metaline zinc-lead district, Pend Oreille County, Washington: U.S. Geological Survey Professional Paper 489, 109 p., 6 plates.

Geologic map: Plate 1, Geologic map and sections of the Metaline zinc-lead district, scale 1:24,000.

148. Dishberger, D. M., 1983, Preparation of residual gravity maps for the southern Cascade mountains, Washington using Fourier analysis: Washington Division of Geology and Earth Resources Open File Report 83-4, 43 p., 3 plates.

Geophysical maps (gravity): Sheets 1, 2, 3, and 4, Residual gravity map of the southern Cascades, scale 1:250,000.

149. Dragovich, J. D.; Brunengo, M. J., 1995, Landslide map and inventory, Tilton River-Mineral Creek area, Lewis County, Washington: Washington Division of Geology and Earth Resources Open File Report 95-1, 165 p., 3 plates.

Geologic map: Plate 1, scale 1:36,200.

150. Dragovich, J. D.; Grisamer, C. L., 1998, Quaternary stratigraphy, cross sections, and general geohydrologic potential of the Bow and Alger 7.5-minute quadrangles, western Skagit County, Washington: Washington Division of Geology and Earth Resources Open File Report 98-8, 29 p., 6 plates.

Geologic map: Figure 3, scale 1:62,500.

151. Dragovich, J. D.; Norman, D. K., compilers, 1995, Geologic map of the west half of the Twisp 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 95-3, 63 p., 1 plate.

Geologic map: Plate 1, scale 1:100,000.

152. Dragovich, J. D.; Norman, D. K.; Grisamer, C. L.; Logan, R. L.; Anderson, Garth, 1998, Geologic map and interpreted geologic history of the Bow and Alger 7.5-minute quadrangles, western Skagit County, Washington: Washington Division of Geology and Earth Resources Open File Report 98-5, 80 p., 3 plates.

Geologic map: Plate 1, scale 1:24,000.

153. Dragovich, J. D.; Norman, D. K.; Haugerud, R. A.; Miller, R. B., 1997, Geologic map and bedrock history of the Gilbert 7.5-minute quadrangle, Chelan and Okanogan Counties, Washington; Geochronology, by W. C. McClelland and P. Renne: Washington Division of Geology and Earth Resources Geologic Map GM-46, 1 sheet, scale 1:24,000, with 67 p. text.

Geologic map: Plate 1, scale 1:24,000.

154. Dragovich, J. D.; Norman, D. K.; Lapen, T. J.; Anderson, Garth, 1999, Geologic map of the Sedro-Woolley North and Lyman 7.5-minute quadrangles, western Skagit County, Washington: Washington Division of Geology and Earth Resources Open File Report 99-3, 37 p., 4 plates.

Geologic map: Plate 1, Geologic map of the Sedro-Woolley North and Lyman 7.5-minute quadrangles, scale 1:24,000.

155. Drost, B. W., 1979, Water resources of the Swinomish Indian Reservation, Washington: U.S. Geological Survey Water-Resources Investigations Open-File Report 79-12, 83 p., 5 plates.

Geologic maps:

Plate 3, Approximate thickness of unconsolidated deposits and locations of seismic lines, scale 1:24,000.

Plate 4, Approximate thickness of stratified drift and locations of surface exposures of the clay unit, scale 1:24,000.

156. Drost, B. W.; Turney, G. L.; Dion, N. P.; Jones, M. A., 1998, Hydrology and quality of ground water in northern Thurston County, Washington: U.S. Geological Survey Water-Resources Investigations Report 92-4109 (revised), 230 p., 6 plates.

Geologic map: Sheet 1, scale 1:100,000.

157. Drost, B. W.; Whiteman, K. J.; Gonthier, J. B., 1990, Geologic framework of the Columbia Plateau aquifer system, Washington, Oregon, and Idaho: U.S. Geological Survey Water-Resources Investigations Report 87-4328, 10 p., 10 plates.

Geologic maps:

Sheet 1, Geologic map, scale 1:500,000.
Sheet 2, Structure features, scale 1:500,000.

158. Durham, J. W., 1944, Megafaunal zones of the Oligocene of northwestern Washington: University of California Department of Geological Sciences Bulletin, v. 27, no. 5, p. 101-212.

Geologic map: Map 1, Eocene and Oligocene of the Quimper Peninsula area, scale 1:70,000.

159. Easterbrook, D. J., 1976, Geologic map of western Whatcom County, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-854-B, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

160. Eddy, P. A., 1966, Preliminary investigation of the geology and ground-water resources of the lower Chehalis River valley, and adjacent areas, Grays Harbor County, Washington: Washington Division of Water Resources Water-Supply Bulletin 30, 70 p., 2 plates.

Geologic map: Plate 1, Geologic map of the lower Chehalis River valley, Grays Harbor County, Washington, scale 1:90,000.

161. Eddy, P. A., 1971, Geology and ground water resources in vicinity of Silverdale, Kitsap County, Washington: Washington Department of Ecology Technical Report 71-8, 11 p.

Geologic map: Figure 1, Well location and geologic map, scale 1:56,000.

162. Eddy, P. A., 1971, Geology and ground water resources of Arlington Heights, Snohomish County, Washington: Washington Department of Ecology Technical Report 71-16, 12 p.

Geologic map: Figure 2a, Geologic map, scale 1:36,000.

163. Eddy, P. A., 1971, Geology and ground water resources, vicinity of Toutle River and SR 504, Cowlitz County, Washington: Washington Department of Ecology Technical Report 71-18, 8 p.

Geologic map: Figure 2, Geologic map, scale 1:72,400.

164. Eddy, P. A., 1971, Ground water contamination along Interstate 405, southern Snohomish County, Washington: Washington Department of Ecology Technical Report 71-12, 17 p.

Geologic map: Figure 3, Geologic map, scale 1:24,000.

165. Eddy, P. A.; Carson, R. J., 1973, Geohydrology of the Chehalis River valley, Elma to Oakville, Grays Harbor County, Washington: Washington Department of Ecology Geohydrologic Monograph 3, 1 sheet.

Geologic map: scale 1:48,000.

166. Ellingson, J. A., 1972, The rocks and structure of the White Pass area, Washington: Northwest Science, v. 46, no. 1, p. 9-24.

Geologic map: Figure 9, Geologic map of the White Pass region, scale 1:200,000.

167. Embrey, S. S.; Hansen, A. J., Jr.; Cline, D. R., 1997, Ground-water resources of three areas on the Spokane and Kalispel Indian Reservations, northeastern Washington: U.S. Geological Survey Water-Resources Investigations Report 94-4235, 67 p., 1 plate.

Geologic map: Plate 1, scale 1:125,000.

168. Erdmann, C. E.; Bateman, A. F., Jr., 1951, Geology of dam sites in southwestern Washington; Part II- Miscellaneous dam sites on the Cowlitz River above Castle Rock, and the Tilton River, Washington: U.S. Geological Survey Open-File Report, 314 p., 18 plates.

Geologic map: Figure 2, Map of the Salkum–Cinebar–Riffe area, Lewis County, Washington, showing buried preglacial and glacial valleys with respect to dam site geology on Cowlitz and Tilton Rivers, scale 1:24,000.

169. Erikson, E. H., Jr., 1969, Petrology of the composite Snoqualmie batholith, central Cascade mountains, Washington: Geological Society of America Bulletin, v. 80, no. 11, p. 2213-2236, 1 plate.

Geologic map: Plate 1, Generalized geologic map of the Snoqualmie batholith, central Cascade Mountains, Washington, scale 1:125,000.

170. Erikson, E. H., Jr., 1976, Petrogenesis of the Mount Stuart batholith plutonic equivalent of the high-alumina basalt association: Washington Division of Geology and Earth Resources Open File Report 76-6, 38 p., 2 plates.

Geologic maps: 2 plates, scale 1:190,000.

171. Ertec Northwest, Inc., 1981, The origin(s) of uphill-facing scarps, north Cascade Range, Washington: Ertec Northwest, Inc. [prepared under contract to Puget Sound Power and Light Company], 90 p., 3 plates.

Geologic maps:

171a Plate 1, Geologic map of the Green Lake map-area, scale 1:15,000.

171b Plate 2, Geologic map of the Silver Creek map-area, scale 1:10,000.

171c Plate 3, Geologic map of the Helen Buttes map-area, scale 1:10,000.

172. Ertec Northwest, Inc., 1982, An investigation of the linear terraces within the Straight Creek Fault Zone, Grade Creek, Washington: Ertec Northwest, Inc. [prepared under contract to Puget Sound Power and Light Company], 43 p., 1 plate.

Geologic map: Plate, Geological map of the Sauk River–Suiattle River–Grade Creek valley, scale 1:24,000.

173. Evans, G. W., 1912, The coal fields of King County: Washington Geological Survey Bulletin 3, 247 p.

Geologic map: Plate 1, scale 1:62,500.

175. Evans, J. G., 1987, Geology of the Stensgar Mountain quadrangle, Stevens County, Washington: U.S. Geological Survey Bulletin 1679, 23 p., 1 plate.

Geologic map: Plate 1, Geologic map of the Stensgar Mountain quadrangle, Stevens County, Washington, scale 1:24,000.

176. Evans, S. H.; Jensen, R. E., 1996, Geohydrologic review of the Cedar River ground-water basin: Washington Geology, v. 24, no. 4, p. 3-13.

Geologic map: Figure 3, scale 1:96,000.

177. Evarts, R. C.; Ashley, R. P., 1984, Preliminary geologic map of the Spirit Lake quadrangle, Washington: U.S. Geological Survey Open-File Report 84-480, 1 sheet.

Geologic map: scale 1:48,000.

178. Evarts, R. C.; Ashley, R. P., 1990, Preliminary geologic map of the Cougar quadrangle, Cowlitz and Clark Counties, Washington: U.S. Geological Survey Open-File Report 90-631, 40 p., 1 plate.

Geologic map: Plate, scale 1:24,000.

179. Evarts, R. C.; Ashley, R. P., 1990, Preliminary geologic map of the Goat Mountain quadrangle, Cowlitz County, Washington: U.S. Geological Survey Open-File Report 90-632, 47 p., 1 plate.

Geologic map: Plate, scale 1:24,000.

180. Evarts, R. C.; Ashley, R. P., 1991, Preliminary geologic map of the Lakeview Peak quadrangle, Cowlitz County, Washington: U.S. Geological Survey Open-File Report 91-289, 35 p., 1 plate.

Geologic map: Plate, scale 1:24,000.

181. Evarts, R. C.; Ashley, R. P., 1992, Preliminary geologic map of the Elk Mountain quadrangle, Cowlitz County, Washington: U.S. Geological Survey Open-File Report 92-362, 44 p., 1 plate.

Geologic map: Plate, scale 1:24,000.

182. Evarts, R. C.; Ashley, R. P., 1993, Geologic map of the Cowlitz Falls quadrangle, Lewis and Skamania Counties, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-1682, 1 sheet, with 10 p. text.

Geologic map: scale 1:24,000.

183. Evarts, R. C.; Ashley, R. P., 1993, Geologic map of the Spirit Lake East quadrangle, Skamania County, Washington: U.S. Geological Survey Geologic Quadrangle Map 1679, 1 sheet, with 12 p. text.

Geologic map: scale 1:24,000.

184. Evarts, R. C.; Ashley, R. P., 1993, Geologic map of the Spirit Lake West quadrangle, Skamania and Cowlitz Counties, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-1681, 1 sheet, with 11 p. text.

Geologic map: Plate, scale 1:24,000.

185. Evarts, R. C.; Ashley, R. P., 1993, Geologic map of the Vanson Peak quadrangle, Lewis, Cowlitz, and Skamania Counties, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-1680, 1 sheet, with 12 p. text.

Geologic map: scale 1:24,000.

186. Farooqui, S. M., 1979, Evaluation of Quaternary faulting in the Warm Springs Canyon area, southeast Washington: Shannon & Wilson, Inc. [under contract to] Washington Public Power Supply System, 21 p., 6 plates.

Geologic map: Fig. 2, scale 1:24,000.

187. Fecht, K. R., 1978, Geology of Gable Mountain–Gable Butte area: Rockwell Hanford Operations RHO-BWI-LD-5, 57 p., 4 plates.

Geologic map: Plate 1, Preliminary geologic map of Gable Mountain and Gable Butte, scale 1:24,000.

188. Felts, W. M., 1939, A granodiorite stock in the Cascade mountains of southwestern Washington: Ohio Journal of Science, v. 39, no. 6, p. 297-316.

Geologic map: Fig. 3, scale 1:95,000.

189. Fiksdal, A. J., 1978, Geology of southern Skamania County: Washington Division of Geology and Earth Resources unpublished map, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

190. Finn, Carol; Phillips, W. M.; Williams, D. L., 1991, Gravity anomaly and terrain maps of Washington: U.S. Geological Survey Geophysical Investigations Series Map GP-988, 5 sheets.

Geophysical maps (gravity):

Sheet 2, Map C1, Northwest section of complete Bouguer gravity anomaly, scale 1:500,000.

Sheet 2, Map C2, Southwest section of complete Bouguer gravity anomaly, scale 1:500,000.

Sheet 3, Map C3, Northeast section of complete Bouguer gravity anomaly, scale 1:500,000.

Sheet 3, Map C4, Southeast section of complete Bouguer gravity anomaly, scale 1:500,000.

191. Fischer, H. J., 1976, Field report, summer 1976—Outcrops of Metaline Limestone in Stevens and Pend Oreille Counties: Washington Division of Geology and Earth Resources Open File Report 76-14, 11 p., 1 plate.

Geologic map: scale 1:24,000.

192. Fiske, R. S.; Hopson, C. A.; Waters, A. C., 1963, Geology of Mount Rainier National Park, Washington: U.S. Geological Survey Professional Paper 444, 93 p., 1 plate.

Geologic map: Plate 1, Geologic map and sections of Mount Rainier National Park, scale 1:62,500.

Note: also published as: Fiske, R. S.; Hopson, C. A.; Waters, A. C., 1964, Geologic map and section of Mount Rainier National Park, Washington: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-432, 1 sheet, scale 1:62,500.

193. Flanigan, V. J.; Ford, A. B.; Sherrard, M. S., 1983, Geologic interpretation of aeromagnetic survey of Glacier Peak Wilderness, northern Cascades, Washington: U.S. Geological Survey Open-File Report 83-650, 22 p., 2 plates.

Geologic map: Plate 2, Geologic interpretation of the aeromagnetic map of Glacier Peak Wilderness and vicinity, North Cascades, Washington, scale 1:100,000.

Note: Geophysical map (Plate 1) superseded by USGS Map MF-1652-B, #194, this list.

194. Flanigan, V. J.; Sherrard, M. S., 1985, Aeromagnetic map of the Glacier Peak Wilderness and adjacent areas, Chelan, Skagit, and Snohomish Counties, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1652-B, 1 sheet.

Geophysical map (magnetic): scale 1:100,000.

195. Flanigan, V. J.; Sherrard, M. S., 1986, Preliminary geologic interpretation of the aeromagnetic map of the Colville Indian Reservation, Washington: U.S. Geological Survey Open-File Report 86-516, 17 p., 2 plates.

Geophysical map (magnetic): Plate 1, Aeromagnetic map of the Colville Indian Reservation, Washington, scale 1:125,000.

196. Fleshman, B. R., 1979, Uranium resource evaluation, Spokane quadrangle, Washington and Idaho: U.S. Department of Energy PGJ 009, 28 p.

Geologic map: Plate 6, scale 1:250,000.

197. Fleshman, B. R.; Dodd, S. P., 1982, National Uranium Resource Evaluation, Ritzville quadrangle, Washington: U.S. Department of Energy PGJ/F-041(82), 62 p., 3 sheets microfiche, 18 plates.

Geologic maps:

197a Plate 9, Reconnaissance geologic map of the Mica Mountain area, Ferry–Lincoln Counties, Washington, scale 1:69,000;

197b Plate 13, Geologic map, scale 1:500,000.

198. Foster, R. J., 1960, Tertiary geology of a portion of the central Cascade mountains, Washington: Geological Society of America Bulletin, v. 71, no. 2, p. 99-125, 1 plate.

Geologic map: Plate 1, Geologic map and cross sections, central Cascades, Washington, scale 1:125,000.

199. Foster, R. J., 1967, Geology of the Rampart Ridge–Keechelus Ridge area, central Cascade mountains, Washington: Northwest Science, v. 41, no. 1, p. 32-41.

Geologic map: Figure 2, Geology of Rampart Ridge–Keechelus Ridge area, scale 1:92,000.

200. Foundation Sciences, Inc., 1980, Geologic reconnaissance of parts of the Walla Walla and Pullman, Washington, and Pendleton, Oregon 1° by 2° AMS quadrangles: U.S. Army Corps of Engineers, 83 p., 3 plates.

Geologic maps:

200a Plate 1, Reconnaissance geologic and tectonic map of the Service anticline, Washington and Oregon, scale 1:125,000.

200b Plate 2, Reconnaissance geologic and tectonic map of the lower Snake River corridor and the Mill Creek–Kooskooskie area, Washington, scale 1:125,000.

200c Plate 3, Reconnaissance geologic and tectonic map of the Hite fault and lower Snake River corridor, Washington, scale 1:125,000.

201. Fox, K. F., Jr., 1970, Geologic map of the Oroville quadrangle, Okanogan County, Washington: U.S. Geological Survey Open-File Report 70-128, 3 sheets, scale 1:62,500.

Geologic map: scale 1:62,500.

202. Fox, K. F., Jr., 1978, Geologic map of the Mt. Bonaparte quadrangle, Okanogan County, Washington: U.S. Geological Survey Open-File Report 78-732, 2 sheets, scale 1:48,000.

Geologic map: scale 1:48,000.

203. Fox, K. F., Jr., 1981, Reconnaissance geologic map of the Churchill Mtn. quadrangle, Stevens County, Washington: U.S. Geological Survey Open-File Report 81-169, 3 sheets, scale 1:24,000.

Geologic map: scale 1:24,000.

204. Fox, K. F., Jr.; Becraft, G. E., 1994, Geologic map of the Twin Lakes 15' quadrangle, Ferry County, Washington: U.S. Geological Survey Open-File Report 93-715, 11 p., 2 plates.

Geologic map: Plate 1, scale 1:62,500.

205. Fox, K. F., Jr.; Rinehart, C. D., 1968, Geologic map of the Loomis quadrangle, Okanogan County, Washington: U.S. Geological Survey Open-File Report 68-105, 2 sheets, scale 1:48,000.

Geologic map: scale 1:48,000.

206. Fox, K. F., Jr.; Rinehart, C. D., 1968, Geology of magnesite deposits in northern Okanogan County, Washington—A preliminary report: U.S. Geological Survey Bulletin 1272-B, 15 p., 1 plate.

Geologic map: Plate 1, Generalized and detailed geologic maps in part of northern Okanogan County, Washington, scale 1:200,000.

207. Fox, K. F., Jr.; Rinehart, C. D., 1972, Distribution of copper and other metals in gully sediments of part of Okanogan County, Washington: Washington Division of Mines and Geology Bulletin 65, 38 p., 4 plates.

Geologic map: Plate 1, Geologic map of part of Okanogan County, Washington, scale 1:96,000.

208. Fox, K. F., Jr.; Rinehart, C. D., 1994, Geologic map of the Tonasket quadrangle, Okanogan County, Washington: U.S. Geological Survey Open-File Report 93-391, 7 p., 2 plates.

Geologic map: Plate 1, scale 1:48,000.

209. Fox, K. F., Jr.; Rinehart, C. D.; Engels, J. C., 1977, Plutonism and orogeny in north-central Washington—Timing and regional context: U.S. Geological Survey Professional Paper 989, 27 p.

Geologic map: Figure 2, Geologic map of Okanogan Highlands and vicinity showing radiometric ages, scale 1:500,000.

210. Foxworthy, B. L., 1962, Geology and ground-water resources of the Ahtanum Valley, Yakima County, Washington: U.S. Geological Survey Water-Supply Paper 1598, 100 p., 3 plates.

Geologic map: Plate 1, Geologic map and sections of Ahtanum Valley, showing location of representative wells, Yakima County, Washington, scale 1:62,500.

211. Foxworthy, B. L.; Washburn, R. L., 1963, Ground water in the Pullman area, Whitman County, Washington: U.S. Geological Survey Water-Supply Paper 1655, 71 p., 3 plates.

Geologic map: Plate 1, Map of Pullman area showing hydrologic and geologic features, scale 1:63,360.

212. Frank, D. G., 1983, Origin, distribution, and rapid removal of hydrothermally formed clay at Mount Baker, Washington: U.S. Geological Survey Professional Paper 1022-E, 31 p., 1 plate.

Geologic map: Plate 1, Reconnaissance geologic map of Sherman Crater, Mount Baker, Washington, scale 1:2,400.

213. Fraser, D. C., 1983, Airborne electromagnetic surveys of the Cascade Range, western United States; with a preface by D. B. Hoover: U.S. Geological Survey Open-File Report 83-92, 64 p., 30 plates.

Geophysical maps:

213a *(resistivity)* Sheet 26, Mount St. Helens, Washington, resistivity—900 Hz, scale 1:24,000; Sheet 27, Mount St. Helens, Washington, resistivity—3600 Hz, scale 1:24,000.

213b *(magnetic)* Sheet 28, Mount St. Helens, Washington, magnetics, scale 1:24,000; Sheet 29, Mount St. Helens, Washington, enhanced magnetics, scale 1:24,000; Sheet 30, Mount St. Helens, Washington, electromagnetics, scale 1:24,000.

214. Friends of the Pleistocene, 1996, Quaternary glaciation and tectonism on the western Olympic Peninsula, Washington—A field guide for the Friends of the Pleistocene 3rd annual Pacific Northwest Cell field conference: Friends of the Pleistocene, 1 v., 2 plates.

Geologic map: Plate 1 [in 2 parts], scale 1:100,000.

216. Fryxell, Roald, 1973, Salvage of geochronological information in the Wells Reservoir area, Washington (1964–1972): Washington State University Laboratory of Anthropology, 35 p.

Geologic map: Plate, Southern Okanogan valley and plateau, Washington, isometric projection, scale 1:125,000.

217. Fugro Northwest, Inc., 1979, Interim report on geologic feasibility studies for Copper Creek dam: Seattle City Light, 152 p., 2 plates.

Geologic maps:

217a Plate A, Geologic and structural map of the Copper Creek dam area, scale 1:15,840.

217b Plate B, Geological map of the proposed Copper Creek dam abutment area, scale 1:2,400.

218. Gager, B. R., 1983, Stratigraphy of the Tiger Formation, northeastern Washington: Northwest Geology, v. 12, p. 25-41.

Geologic maps:

218a Fig. 4, Simplified geologic map of the Ione region, scale 1:130,000.

218b Fig. 5, Simplified geologic map of the Cusick region, scale 1:130,000.

218c Fig. 7, Simplified geologic map of the Cliff Ridge region, scale 1:42,240.

219. Galster, R. W.; Laprade, W. T., 1991, Geology of Seattle, Washington, United States of America: Association of Engineering Geologists Bulletin, v. 28, no. 3, p. 235-302, 1 plate.

Geologic map: Plate 1, Generalized geologic map of Seattle and suburban areas, scale 1:79,200.

220. Gannett, M. W.; Caldwell, R. R., 1998, Geologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-A, 32 p., in folder with 8 plates.

Geologic map: Plate 1, scale 1:250,000.

221. Gard, L. M., Jr., 1968, Bedrock geology of the Lake Tapps quadrangle, Pierce County, Washington: U.S. Geological Survey Professional Paper 388-B, 33 p., 2 plates.

Geologic map: Plate 1, Map and sections showing bedrock geology and structure of part of the Lake Tapps quadrangle, Pierce County, Washington, scale 1:24,000.

222. Gard, L. M., Jr.; Waldron, H. H., 1954, Geology of the Starbuck quadrangle, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-38, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

223. Garling, M. E.; Molenaar, Dee; and others, 1965, Water resources and geology of the Kitsap Peninsula and certain adjacent islands: Washington Division of Water Resources Water-Supply Bulletin 18, 309 p., 5 plates.

Geologic map: Plate 1, Geologic map and diagrammatic sections of the Kitsap Peninsula and certain adjacent islands (in two halves), scale 1:60,000.

224. Gayer, M. J., 1976, Geologic map of northeastern Jefferson County, Washington: Washington Division of Geology and Earth Resources Open File Report 76-21, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

225. Geological Survey of Canada, 1992, Aeromagnetic total field, Cape Flattery, British Columbia: Geological Survey of Canada Geophysical Series Map 8192G, 1 sheet.

Geophysical map (magnetic): scale 1:250,000.

226. Geomatrix Consultants, Inc., 1988, Seismotectonic evaluation of the northern Cascade mountains geomorphic province for Bumping Lake, Tieton, Keechelus, Kachess, Cle Elum, and Clear Lake dams: Geomatrix Consultants, Inc. [San Francisco, Calif., under contract to] U.S. Bureau of Reclamation, 154 p., 12 plates.

Geologic map: Plate 2, Major structural elements and lineaments, scale 1:250,000.

227. Geomatrix Consultants, Inc., 1989, Seismotectonic evaluation—Northwest Rocky Mountains–Okanogan uplands geomorphic province; Final report: Geomatrix Consultants, Inc. [under contract to U.S. Bureau of Reclamation], 124 p., 4 plates.

Geologic map: Plate 2, Major structural elements and lineaments, northwest Rocky Mountains–Okanogan Uplands, scale 1:250,000.

228. Geomatrix Consultants, Inc., 1990, Seismotectonic evaluation, Walla Walla section of the Columbia Plateau geomorphic province; Final report: Geomatrix Consultants, Inc. [under contract to] U.S. Bureau of Reclamation, 1 v., 6 plates.

Geologic map: Fig. 2, Major structural elements, seismotectonic evaluation, Columbia Plateau province, Washington, scale 1:250,000.

229. Geoscience Research Consultants (Bond, J. G.; Kauffman, J. D.; Miller, D. A.; Barrash, Warren; Brown, J. C.; Bush, J. H., Jr.; Hall, W. B.; and others), 1978, Geology of the southwestern Pasco Basin: Rockwell Hanford Operations RHO-BWI-C-25, 217 p., in folder with 43 plates.

Geologic maps:

229a Plate 1-A, Badger Mountain geologic map, scale 1:24,000.

229b Plate 1-B, Webber Canyon geologic map, scale 1:24,000.

229c Plate 1-C, Whitstran NE geologic map, scale 1:24,000.

229d Plate 1-D, Whitstran geologic map, scale 1:24,000.

229e Plate 1-E, Richland geologic map, scale 1:24,000.

229f Plate 1-F, Benton City geologic map, scale 1:24,000.

229g Plate 1-G, Corral Canyon geologic map, scale 1:24,000.

229h Plate 1-H, Snipes Creek geologic map, scale 1:24,000.

229i Plate 1-I, Grandview SE geologic map, scale 1:24,000.

229j Plate 1-J, Grandview SW geologic map, scale 1:24,000.

229k Plate 1-K, Richland NE geologic map, scale 1:24,000.

229l Plate 1-L, Horn Rapids Dam geologic map, scale 1:24,000.

229m Plate 1-M, Iowa Flats geologic map, scale 1:24,000.

229n Plate 1-N, Snively Basin geologic map, scale 1:24,000.

229o Plate 1-O, Maiden Spring geologic map, scale 1:24,000.

229p Plate 1-P, Sulphur Spring geologic map, scale 1:24,000.

230. Gerstel, W. J.; Lingley, W. S., Jr., compilers, 2000, Geologic map of the Forks 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 2000-4, 36 p., 2 plates.

Geologic map: scale 1:100,000.

231. Gerstel, W. J.; Palmer, S. P., 1994, Geologic and geophysical mapping of the Spokane aquifer—Relevance to growth management: Washington Geology, v. 22, no. 2, p. 18-24.

Geologic map: Fig. 2, scale 1:31,680.

232. Glicken, Harry; Meyer, William; Sabol, Martha, 1989, Geology and ground-water hydrology of Spirit Lake blockage, Mount St. Helens, Washington, with implications for lake retention: U.S. Geological Survey Bulletin 1789, 33 p., 3 plates.

Geologic map: Plate 1, Geologic map of Spirit Lake blockage, showing locations of drill holes, drainage divides, and critical points relative to potential lake breakout, scale 1:2,400.

233. Goff, F.E., 1981, Preliminary geology of eastern Umtanum Ridge, south-central Washington: Rockwell Hanford Operations RHO-BWI-C-21, 99 p., 2 plates.

Geologic map: Plate 1, Geologic map of eastern Umtanum Ridge and Yakima Ridge, south-central Washington, scale 1:24,000 (on 2 sheets).

234. Golder Associates, Inc., 1998, Hydrogeologic and geomorphological study of the Selah gravel pit (near) Selah, Washington: Golder Associates, Inc. [under contract to] Central Pre-Mix Concrete Co., 1 v., 2 plates.

Geologic map: Plate 2-3, "Surface geology of the Selah Valley", scale 1:24,000.

235. Goodge, J. W.; Hansen, V. L., 1983, Petrology and structure of rocks in the southwest portion of Okanogan Dome, north-central Washington: Northwest Geology, v. 12, p. 13-24.

Geologic map: Fig. 1, Geologic sketch map and cross section of the Omak Lake 15 quadrangle, Washington, scale 1:200,000.

236. Goodge, J. W.; Hansen, V. L., 1994, Geologic map of the Omak Lake 15' quadrangle, Okanogan County, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-1726, 1 sheet, with 20 p. text.

Geologic map: Plate, scale 1:62,500.

237. Gordy, P. L., 1988, Evaluation of the hydrocarbon potential of the Georgia Depression: British Columbia Ministry of Energy, Mines and Petroleum Resources, 1 v., 10 plates.

Geologic map: Enclosure 1, Geological and well reference map, 'Georgia depression,' scale 1:250,000.

238. Gower, H. D., 1960, Geology of the Pysht quadrangle, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-129, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

239. Gower, H. D., 1980, Bedrock geologic and Quaternary tectonic map of the Port Townsend area, Washington: U.S. Geological Survey Open-File Report 80-1174, 19 p., 1 sheet, scale 1:100,000.

Geologic map: scale 1:100,000.

240. Gower, H. D.; Pease, M. H., Jr., 1965, Geology of the Montesano quadrangle, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-374, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

241. Gower, H. D.; Wanek, A. A., 1963, Preliminary geologic map of the Cumberland quadrangle, King County, Washington: Washington Division of Mines and Geology Geologic Map GM-2, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

242. Gower, H. D.; Yount, J. C.; Crosson, R. S., 1985, Seismo-tectonic map of the Puget Sound region, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-1613, 1 sheet, with 15 p. text.

Geologic map: scale 1:250,000.

243. Grant, A. R., 1969, Chemical and physical controls for base metal deposition in the Cascade Range of Washington: Washington Division of Mines and Geology Bulletin 58, 107 p.

Geologic maps:

243a Figure 6, Cloudy Pass pluton, North Cascades, Washington, showing distribution of three intrusive phases, scale 1:69,000.

243b Figure 13, Geologic map and cross section, transverse structural response along the Glacier Peak structure, Sloan Peak area, scale 1:75,000.

243c Figure 21, Geologic map of Davis property, Whatcom County, scale 1:960.

243d Figure 22, Geologic map of the southeastern part of the Mount Buckindy massif, Skagit County, scale 1:48,000.

243e Figure 24, General geologic map of the Sultan Basin, Vesper Peak, Silver Creek area, Snohomish County, scale 1:78,000.

243f Figure 27, Geology of the Quartz Creek property, King County, Washington, scale 1:4,000.

243g Figure 28, Areal distribution of the principal sulfide zones at the Middle Fork of the Snoqualmie River property, King County, Washington, scale 1:52,000.

243h Figure 30, Generalized geologic map of wetern Kittitas County in the Gold Creek and Mineral Creek areas, scale 1:125,000.

243i Figure 31, Geology of the Silver Star area, Clark and Skamania Counties, Washington, scale 1:88,000.

244. Grant, A. R., 1982, Summary report of findings and conclusions, reconnaissance economic geology and probable future mineral activity target areas on the Colville National Forest, Washington: U.S. Forest Service [Okanogan, Wash.], 2 v., 15 plates.

Geologic maps:

244a Plate IB, Generalized geologic map and mineral prospect locations—Republic block, scale 1:62,500.

244b Plate IIB, Generalized geologic map and mineral prospect locations—Sherman Pass block, scale 1:62,500.

244c Plate IIIB, Generalized geologic map and mineral prospect locations—Orient–Flagstaff block, scale 1:31,680.

244d Plate IVB, Generalized geologic map and mineral prospect locations—Little Pend Oreille block, scale 1:62,500.

244e Plate VB, Generalized geologic map and mineral prospect locations—Metaline block, scale 1:62,500.

244f Plate VI B, Generalized geologic map and mineral prospect locations—Newport block, scale 1:31,680.

245. Grant, A. R., 1982, Summary report of findings and conclusions, reconnaissance economic geology and probable future mineral activity target areas on the Okanogan National Forest, Washington (excluding the Pasayten Wilderness Area): U.S. Forest Service [Okanogan, Wash.], 2 v., 15 plates.

Geologic maps:

245a Plate IB, Generalized geologic map and mineral prospect locations—Granite–West Fork Methow block, scale 1:31,680.

245b Plate IIB, Generalized geologic map and mineral prospect locations—Early Winters–Upper Twisp block, scale 1:31,680.

245c Plate IIIB and VB, Generalized geologic map and mineral prospect locations—Methow–South Okanogan Range block, scale 1:62,500.

245d Plate IVB, Generalized geologic map and mineral prospect locations—North Okanogan Range block, scale 1:62,500.

245e Plate VIB, Generalized geologic map and mineral prospect locations—Tonasket block, scale 1:62,500.

246. Grant, W. P.; Perkins, W. J.; Youd, T. L., 1998, Evaluation of liquefaction potential in Seattle, Washington. *In* Rogers, A. M.; Walsh, T. J.; Kockelman, W. J.; Priest, G. R., editors, Assessing earthquake hazards and reducing risk in the Pacific Northwest: U.S. Geological Survey Professional Paper 1560, v. 2, p. 441-473.

Geologic map: Plate 1, scale 1:24,000.

247. Greeley, Ronald; Hyde, J. H., 1972, Lava tubes of the cave basalt, Mount St. Helens, Washington: Geological Society of America Bulletin, v. 83, no. 8, p. 2397-2418, 2 plates.

Geologic map: Figure 2, Geological map of the study area, scale 1:84,480.

248. Gregory, D. I.; Jackson, D. B., 1976, Bouguer gravity map Moscow, Idaho–Pullman, Washington area: U.S. Geological Survey Open-File Report 76-280, 1 sheet, scale 1:62,500.

Geophysical map (gravity): scale 1:62,500.

249. Gresens, R. L., 1975, Geologic mapping of the Wenatchee area: Washington Division of Geology and Earth Resources Open File Report 75-6, 2 sheets, scale 1:12,000.

Geologic map: scale 1:12,000.

250. Gresens, R. L., 1983, Geology of the Wenatchee and Monitor quadrangles, Chelan and Douglas Counties, Washington: Washington Division of Geology and Earth Resources Bulletin 75, 75 p., 3 plates.

Geologic maps:

250a Plate 1, Geologic map of the Wenatchee quadrangle, scale 1:24,000.

250b Plate 2, Geologic map of the Monitor quadrangle, scale 1:24,000.

251. Gresens, R. L.; Naeser, C. W.; Whetten, J. T., 1978, The Chumstick and Wenatchee Formations—Fluvial and lacustrine rocks of Eocene and Oligocene age in the Chiwaukum graben, Washington: Washington Division of Geology and Earth Resources Open File Report, 42 p.

Geologic maps:

251a Figure 3, Geologic sketch map showing bedrock lithologies of the Chumstick Formation in the central part of the Chiwaukum graben, scale 1:92,000.

251b Figure 6, Distribution of Wenatchee Formation around the city of Wenatchee, Washington, and locations of type and reference sections, scale 1:92,600.

252. Griggs, A. B., 1966, Reconnaissance geologic map of the west half of the Spokane quadrangle, Washington and Idaho: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-464, 1 sheet.

Geologic map: scale 1:125,000.

253. Griggs, A. B., 1973, Geologic map of the Spokane quadrangle, Washington, Idaho, and Montana: U.S. Geological Survey Miscellaneous Geologic Investigations Series Map I-768, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

254. Grimstad, Peder, 1971, Geology and ground water resources, Lake McMurray area, Snohomish and Skagit Counties, Washington: Washington Department of Ecology Technical Report 7l-19, 30 p.

Geologic map: Figure 2, Geologic map with well locations, McMurray aquifer area, scale 1:12,000.

255. Grimstad, Peder; Carson, R. J., 1981, Geology and ground-water resources of eastern Jefferson County, Washington: Washington Department of Ecology Water-Supply Bulletin 54, 125 p., 3 plates.

Geologic map: Plate I, Geologic map of eastern Jefferson County, scale 1:48,000.

256. Grolier, M. J.; Bingham, J. W., 1971, Geologic map and sections of parts of Grant, Adams, and Franklin Counties, Washington: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-589, 6 sheets, scale 1:62,500.

Geologic map: scale 1:62,500.

257. Grolier, M. J.; Foxworthy, B. L., 1961, Geology of the Moses Lake North quadrangle, Washington: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-330, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

258. Gualtieri, J. L.; Simmons, G. C.; Thurber, H. K.; Miller, M. S., 1973, Mineral resources of the Alpine Lakes study area, Chelan, King, and Kittitas Counties, Washington; with a section on Aeromagnetic interpretation, by W. E. Davis: U.S. Geological Survey Open-File Report 73-93, 132 p., 2 plates.

Geologic and geophysical (magnetic) map: Plate 1, Geologic and aeromagnetic map of the Alpine Lakes study area, Chelan, King, and Kittias Counties, Washington, scale 1:62,500.

259. Gualtieri, J. L.; Thurber, H. K.; Miller, M. S.; McMahan, A. B.; Federspiel, F. E., 1975, Mineral resources of additions to the Alpine Lakes study area, Chelan, King, and Kittitas Counties, Washington: U.S. Geological Survey Open-File Report 75-3, 161 p., 2 plates.

Geologic map: Plate 1, Geologic map of the Alpine Lakes study area and additions, Chelan, King, and Kittitas Counties, Washington, scale 1:62,500.

260. Gulick, C. W., compiler, 1990, Geologic map of the Moses Lake 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 90-1, 9 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

261. Gulick, C. W., compiler, 1990, Geologic map of the Ritzville 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 90-2, 7 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

262. Gulick, C. W., compiler, 1994, Geologic map of the Connell 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 94-14, 18 p., 1 plate.

Geologic map: Plate 1, scale 1:100,000.

263. Gulick, C. W., compiler, 1994, Geologic map of the Pullman 1:100,000 quadrangle, Washington–Idaho: Washington Division of Geology and Earth Resources Open File Report 94-6, 22 p., 1 plate.

Geologic map: Plate 1, scale 1:100,000.

264. Gulick, C. W.; Korosec, M. A., compilers, 1990, Geologic map of the Banks Lake 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 90-6, 20 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

265. Gulick, C. W.; Korosec, M. A., compilers, 1990, Geologic map of the Omak 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 90-12, 52 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

266. Gusey, Daryl; Brown, E. H., 1987, The Fidalgo ophiolite, Washington. *In* Hill, M. L., editor, Cordilleran section of the Geological Society of America: Geological Society of America DNAG Centennial Field Guide 1, p. 389-392.

Geologic map: Fig. 1, Geologic map of Fidalgo Island and field trip localities, scale 1:87,000.

267. Haeussler, P. J.; Clark, K. P., 2000, Preliminary geologic map of the Wildcat Lake 7.5' quadrangle, Kitsap and Mason Counties, Washington: U.S. Geological Survey Open-File Report 00-356, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

Note: Available online at http://geopubs.wr.usgs.gov/.

268. Haeussler, P. J.; Yount, J. C.; Wells, R. E., 1999, Preliminary geologic map of the Uncas 7.5' quadrangle, Clallam and Jefferson Counties, Washington: U.S. Geological Survey Open-File Report 99-421, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

269. Hagood, M. C., 1986, Structure and evolution of the Horse Heaven Hills in south-central Washington: Rockwell Hanford Operations RHO-BW-SA-344 P, 190 p., 1 plate.

Geologic map: Plate 1, Geologic map of a portion of the Horse Heaven Hills, south-central Washington, [and] Bedrock outcrop map of a portion of the Horse Heaven Hills, south-central Washington, scale 1:24,000.

270. Hall, J. B.; Othberg, K. L., 1974, Thickness of unconsolidated sediments, Puget Lowland, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-12, 1 sheet, scale 1:250,000, with 3 p. text.

Geologic map: scale 1:250,000.

271. Hammatt, H. H.; Blinman, Eric, drafter, 1977, Late Quaternary geology of the Lower Granite Reservoir area, lower Snake River, Washington: Geological Society of America Map and Chart Series MC-18, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

272. Hammond, P. E., 1973, Preliminary geologic map of the southern Cascade Range: Washington Division of Geology and Earth Resources Open File Report 73-3, 5 sheets, scale 1:500,000.

Geologic map: Map 1, Generalized geologic map of southern Cascade Range, Washington, scale 1:500,000.

273. Hammond, P. E., 1975, Preliminary geologic map and cross-sections with emphasis on Quaternary volcanic rocks, southern Cascade mountains, Washington: Washington Division of Geology and Earth Resources Open File Report 75-13, 1 sheet, scale 1:125,000.

Geologic map: scale 1:125,000.

274. Hammond, P. E., 1980, Reconnaissance geologic map and cross sections of southern Washington Cascade Range, latitude 45 degrees 30 minutes–47 degrees 15 minutes N., longitude 120 degrees 45 minutes–122 degrees 22.5 minutes W.: Portland State University Department of Earth Sciences, 31 p., 2 plates.

Geologic map: scale 1:125,000.

275. Hammond, P. E., 1987, Lone Butte and Crazy Hills—Subglacial volcanic complexes, Cascade Range, Washington. *In* Hill, M. L., editor, Cordilleran section of the Geological Society of America: Geological Society of America DNAG Centennial Field Guide 1, p. 339-344.

Geologic map: Fig. 2, Geologic map of Lone Butte–Crazy Hills subglacial volcanic complex in southern Washington Cascade Range, scale 1:24,000.

276. Hanson, K. L., 1976, Geologic map of the Uncas–Port Ludlow area, Jefferson County, Washington: Washington Division of Geology and Earth Resources Open File Report 76-20, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

277. Hanson, L. G., 1979, Surficial geologic map of the Okanogan quad, Washington: Washington Division of Geology and Earth Resources Open File Report 79-7, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

278. Hanson, L. G., 1979, Surficial geologic map of the Wenatchee quad, Washington: Washington Division of Geology and Earth Resources Open File Report 79-14, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

279. Hanson, L. G.; Kiver, E. P.; Rigby, J. G.; Stradling, D. F., 1979, Surficial geologic map of the Ritzville quad, Washington: Washington Division of Geology and Earth Resources Open File Report 79-10, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

280. Hart-Crowser and Associates, Inc., 1980, Design phase subsurface exploration and geotechnical engineering study, Phase I—Gold Creek property, Tacoma, Washington: Hart-Crowser and Associates, Inc. [Seattle, Wash], 1 v., 2 plates.

Geologic map: Fig. 2, Geologic map of area southwest of Gold Creek, scale 1:2,400.

281. Hart-Crowser and Associates, Inc., 1981, Proposed demonstration of mine opening closure for steeply pitching, abandoned, underground coal mines, King County, Washington: Hart-Crowser and Associates, Inc., 1 v.

Geologic map: Plate 1, Generalized geologic map of the Cougar Mountain area, scale 1:16,000.

282. Haugerud, R. A., 1979, Map of the bedrock geology of the North Cascades and surrounding areas: Western Washington University Department of Geology, 2 sheets, scale 1:250,000.

Geologic map: scale 1:250,000.

283. Haugerud, R. A.; Van der Heyden, Peter; Tabor, R. W.; Stacey, J. S.; Zartman, R. E., 1991, Late Cretaceous and early Tertiary plutonism and deformation in the Skagit Gneiss Complex, north Cascade Range, Washington and British Columbia: Geological Society of America Bulletin, v. 103, no. 10, p. 1297-1307.

Geologic map: Fig. 2, Geologic map of northern part of the Chelan block, north Cascade Range, scale 1:164,075.

284. Hausback, B. P., 2000, Geologic map of the Sasquatch Steps area, north flank of Mount St. Helens, Washington: U.S. Geological Survey Geologic Investigations Series Map I-2463, 1 sheet, scale 1:4,000.

Geologic map: scale 1:4,000.

285. Hawkins, J. W., Jr., 1968, Regional metamorphism, metasomatism, and partial fusion in the northwestern part of the Okanogan Range, Washington: Geological Society of America Bulletin, v. 79, no. 12, p. 1785-1819, 1 plate.

Geologic map: Plate 1, Geology of the northwestern part of the Okanogan Range, Washington, scale 1:63,360.

286. Hays, W. H.; Schuster, R. L., 1987, Maps showing ground-failure hazards in the Columbia River valley between Richland and Priest Rapids Dam, south-central Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-1699, 2 sheets.

Geologic map: scale 1:100,000.

287. Heller, P. L., 1979, Map showing surficial geology of parts of the lower Skagit and Baker Valleys, North Cascades, Washington: U.S. Geological Survey Open-File Report 79-964, 16 p., 1 plate, scale 1:62,500.

Geologic map: Map showing surficial geology of the lower Skagit and Baker Valleys, North Cascades, Washington, scale 1:62,500.

288. Henderson, J. R.; Tyson, N. S.; McGowan, E. F.; and others, 1958, Aeromagnetic map of part of the Yelm quadrangle, Thurston and Lewis Counties, Washington: U.S. Geological Survey Geophysical Investigations Map GP-182, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

289. Henderson, J. R.; Tyson, N. S.; Gilchrist, S. A.; and others, 1958, Aeromagnetic map of the Onalaska quadrangle, Lewis County, Washington: U.S. Geological Survey Geophysical Investigations Map GP-189, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

290. Henderson, J. R.; Tyson, N. S.; McGowan, E. F.; and others, 1958, Aeromagnetic map of part of the Tenino quadrangle, Thurston and Lewis Counties, Washington: U.S. Geological Survey Geophysical Investigations Map GP-181, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

291. Henderson, J. R.; Tyson, N. S.; McGowan, E. F.; and others, 1958, Aeromagnetic map of the Aberdeen quadrangle, Grays Harbor and Pacific Counties, Washington: U.S. Geological Survey Geophysical Investigations Map GP-177, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

292. Henderson, J. R.; Tyson, N. S.; McGowan, E. F.; and others, 1958, Aeromagnetic map of the Adna quadrangle, Lewis County, Washington: U.S. Geological Survey Geophysical Investigations Map GP-187, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

293. Henderson, J. R.; Tyson, N. S.; McGowan, E. F.; and others, 1958, Aeromagnetic map of the Cape Shoalwater quadrangle, Pacific County, Washington: U.S. Geological Survey Geophysical Investigations Map GP-183, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

294. Henderson, J. R.; Tyson, N. S.; McGowan, E. F.; and others, 1958, Aeromagnetic map of the Centralia quadrangle, Lewis County, Washington: U.S. Geological Survey Geophysical Investigations Map GP-188, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

295. Henderson, J. R.; Tyson, N. S.; McGowan, E. F.; and others, 1958, Aeromagnetic map of the Grayland quadrangle, Grays Harbor and Pacific Counties, Washington: U.S. Geological Survey Geophysical Investigations Map GP-176, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

296. Henderson, J. R.; Tyson, N. S.; McGowan, E. F.; and others, 1958, Aeromagnetic map of the Malone quadrangle, Grays Harbor, Pacific, and Lewis Counties, Washington: U.S. Geological Survey Geophysical Investigations Map GP-179, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

297. Henderson, J. R.; Tyson, N. S.; McGowan, E. F.; and others, 1958, Aeromagnetic map of the Montesano quadrangle, Grays Harbor and Pacific Counties, Washington: U.S. Geological Survey Geophysical Investigations Map GP-178, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

298. Henderson, J. R.; Tyson, N. S.; McGowan, E. F.; and others, 1958, Aeromagnetic map of the Pe Ell quadrangle, Pacific and Lewis Counties, Washington: U.S. Geological Survey Geophysical Investigations Map GP-186, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

299. Henderson, J. R.; Tyson, N. S.; McGowan, E. F.; and others, 1958, Aeromagnetic map of the Rochester quadrangle, Thurston, Grays Harbor, and Lewis Counties, Washington: U.S. Geological Survey Geophysical Investigations Map GP-180, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

300. Henderson, J. R.; Tyson, N. S.; McGowan, E. F.; and others, 1958, Aeromagnetic map of the South Bend quadrangle, Pacific County, Washington: U.S. Geological Survey Geophysical Investigations Map GP-184, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

301. Henderson, J. R.; Tyson, N. S.; McGowan, E. F.; and others, 1958, Aeromagnetic map of the Willapa quadrangle, Pacific County, Washington: U.S. Geological Survey Geophysical Investigations Map GP-185, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

302. Henriksen, D. A., 1956, Eocene stratigraphy of the Lower Cowlitz River–eastern Willapa Hills area, southwestern Washington: Washington Division of Mines and Geology Bulletin 43, 122 p.

Geologic map: Plate 1, Geologic map and sections of the lower Cowlitz River–eastern Willapa Hills area, scale 1:83,000.

303. Herdrick, M. A.; Newport, G. R.; Heinemeyer, G. R., 1995, Geology of the North Fork Snoqualmie porphyry copper deposit, King County, Washington. *In* Pierce, F. W.; Bolm, J. G., editors, Porphyry copper deposits of the American Cordillera: Arizona Geological Society Digest 20, p. 243-250.

Geologic map: Figure 2, scale 1:15,840.

304. Hibbard, M. J., 1971, Evolution of a plutonic complex, Okanogan Range, Washington: Geological Society of America Bulletin, v. 82, no. 11, p. 3013-3047, 1 plate.

Geologic map: Figure 3, Geologic map of the Toats Coulee Creek region, Okanogan Range, Washington, scale 1:62,500.

305. High Life Helicopters, Inc., 1981, Airborne gamma-ray spectrometer and magnetometer survey, Vancouver, The Dalles, Pendleton, Walla Walla, Yakima, Hoquiam quadrangles, Washington–Oregon; Final report: U.S. Department of Energy GJBX 291(81), 7 v.

Geologic maps:

305a Volume IIA, Appendix B, Geology map [Pendleton quadrangle], scale 1:500,000; Appendix D, Flight line/geology, scale 1:500,000.

305b Volume IIB, Appendix B, Geology map [The Dalles quadrangle], scale 1:500,000; Appendix D, Flight line/geology, scale 1:500,000.

305c Volume IIC, Appendix B, Geology map [Vancouver quadrangle], scale 1:500,000; Appendix D, Flight line/geology, scale 1:500,000.

305d Volume IID, Appendix B, Geology map [Walla Walla quadrangle], scale 1:500,000; Appendix D, Flight line/geology, scale 1:500,000.

305e Volume IIE, Appendix B, Geology map [Yakima quadrangle], scale 1:500,000; Appendix D, Flight line/geology, scale 1:500,000.

305f Volume IIF, Appendix B, Geology map [Hoquiam quadrangle], scale 1:500,000; Appendix D, Flight line/geology, scale 1:500,000.

Geophysical maps (magnetic):

305g Volume IIA, Appendix E, Pseudo-contour maps—Magnetic [Pendleton quadrangle], scale 1:500,000.

305h Volume IIB, Appendix E, Pseudo-contour maps—Magnetic [The Dalles quadrangle], scale 1:500,000.

305i Volume IIC, Appendix E, Pseudo-contour maps—Magnetic [Vancouver quadrangle], scale 1:500,000.

305j Volume IID, Appendix E, Pseudo-contour maps—Magnetic [Walla Walla quadrangle], scale 1:500,000.

305k Volume IIE, Appendix E, Pseudo-contour maps—Magnetic [Yakima quadrangle], scale 1:500,000.

305l Volume IIF, Appendix E, Pseudo-contour maps—Magnetic [Hoquiam quadrangle], scale 1:500,000.

306. High Life Helicopters, Inc., 1981, Airborne gamma-ray spectrometer and magnetometer survey, Copalis Beach, Seattle, Cape Flattery, Victoria quadrangles (Washington); Final report: U.S. Department of Energy GJBX 135(81), 5 v.

Geologic maps:

306a Volume IIA, Appendix B, Geology map [Copalis Beach quadrangle], scale 1:500,000; Appendix D, Flight line/geology, scale 1:500,000.

306b Volume IIB, Appendix B, Geology map [Seattle quadrangle], scale 1:500,000; Appendix D, Flight line/geology, scale 1:500,000.

306c Volume IIC, Appendix B, Geology map [Victoria quadrangle], scale 1:500,000; Appendix D, Flight line/geology, scale 1:500,000.

306d Volume IID, Appendix B, Geology map [Cape Flattery quadrangle], scale 1:500,000; Appendix D, Flight line/geology, scale 1:500,000.

Geophysical maps (magnetic):

306e Volume IIA, Appendix E, Pseudo-contour maps—Magnetic [Copalis Beach quadrangle], scale 1:500,000.

306f Volume IIB, Appendix E, Pseudo-contour maps—Magnetic [Seattle quadrangle], scale 1:500,000.

306g Volume IIC, Appendix E, Pseudo-contour maps—Magnetic [Victoria quadrangle], scale 1:500,000.

306h Volume IID, Appendix E, Pseudo-contour maps—Magnetic [Cape Flattery quadrangle], scale 1:500,000.

307. High Life Helicopters, Inc., 1981, Airborne gamma-ray spectrometer and magnetometer survey, Wenatchee, Concrete quadrangles (Washington); Final report: U.S. Department of Energy GJBX 136(81), 3 v.

Geologic maps:

307a Volume IIA, Appendix B, Geology of the Wenatchee quadrangle, scale 1:500,000; Volume IIA, Appendix D, Flight line/geology map, scale 1:500,000.

307b Volume IIB, Appendix B, Geology of the Concrete quadrangle, scale 1:500,000; Volume IIB, Appendix D, Flight line/geology map, scale 1:500,000.

Geophysical maps (magnetic):

307c Volume IIA, Appendix E, Pseudo-contour maps—Magnetic [Wenatchee quadrangle], scale 1:500,000.

307d Volume IIB, Appendix E, Pseudo-contour maps—Magnetic [Concrete quadrangle], scale 1:500,000.

308. Hildreth, Wes; Fierstein, Judy, 1995, Geologic map of the Mount Adams volcanic field, Cascade Range of southern Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-2460, 2 sheets, scale 1:50,000, with 39 p. text.

Geologic map: Plate 1, scale 1:50,000.

309. Hobbs, S. W.; Pecora, W. T., 1941, Nickel-gold deposit near Mount Vernon, Skagit County, Washington: U.S. Geological Survey Bulletin 931-D, p. 57-78.

Geologic map: Plate 12, Geologic map and sections of Mount Vernon nickel-gold deposit, scale 1:800.

310. Hodge, E. T., 1932, Report of dam sites on lower Columbia River: U.S. Army Corps of Engineers Pacific Division, 84 p.

Geologic map: Plate 3, Geologic map, lower Columbia Gorge, scale 1:125,000.

311. Hooper, P. R.; Gillespie, B. A., 1996, Geologic map of the Pomeroy area, southeastern Washington: Washington Division of Geology and Earth Resources Open File Report 96-5, 26 p., 1 plate.

Geologic map: Plate 1, scale 1:38,000.

312. Hooper, P. R.; Webster, G. D., 1982, Geology of the Pullman, Moscow West, Colton, and Uniontown 7½ minute quadrangles, Washington and Idaho: Washington Division of Geology and Earth Resources Geologic Map GM-26, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

313. Hooper, P. R.; Webster, G. D.; Camp, V. E., 1985, Geologic map of the Clarkston 15-minute quadrangle, Washington and Idaho: Washington Division of Geology and Earth Resources Geologic Map GM-31, 1 sheet, with 48 p. text.

Geologic map: scale 1:48,000.

314. Hosterman, J. W., 1969, Clay deposits of Spokane County, Washington: U.S. Geological Survey Bulletin 1270, 96 p., 1 plate.

Geologic map: Plate 1, Pre-Palouse geologic map and section, including Quaternary alluvium, of the Mica–Manito–Saxby area, Washington-Idaho, scale 1:24,000.

315. Hosterman, J. W.; Scheid, V. E.; Allen, V. T.; Sohn, I.G., 1960, Investigations of some clay deposits in Washington and Idaho: U.S. Geological Survey Bulletin 1091, 147 p., 9 plates.

Geologic map: Plate 3, Geologic map of the Excelsior high-alumina clay deposit, Spokane County, Washington, scale 1:12,000.

316. Hougland, Everett, 1935, A report on a geologic reconnaissance of the St. Helens mining district, Washington: Washington Division of Geology Report of Investigations 3, 5 p.

Geologic map: Map, Preliminary geologic map of the St. Helens mining district, scale 1:125,000.

317. Hunting Geophysical Services, Inc., 1960, Geological interpretation of airborne magnetometer and scintillometer survey—Mt. Bonaparte, Bodie Mountain, Curlew, Aeneas, and Republic quadrangles, Okanogan and Ferry Counties, Washington: Washington Division of Mines and Geology Report of Investigations 20, 34 p., 25 plates.

Geophysical maps (magnetic):

317a Plate 1, Aeromagnetic and scintillometer survey of Mount Bonaparte quadrangle, scale 1:62,500.

317b Plate 2, Aeromagnetic and scintillometer survey of Bodie Mountain quadrangle, scale 1:62,500.

317c Plate 3, Aeromagnetic and scintillometer survey of Curlew quadrangle, scale 1:62,500.

317d Plate 4, Aeromagnetic and scintillometer survey of Aeneas quadrangle, scale 1:62,500.

317e Plate 5, Aeromagnetic and scintillometer survey of Republic quadrangle, scale 1:62,500.

Note: Report includes overlay for each quadrangle showing geology interpreted from aeromagnetic data.

318. Huntting, M. T., 1949, Perlite and other volcanic glass occurrences in Washington: Washington Division of Mines and Geology Report of Investigations 17, 77 p.

Geologic map: Figure 5, Geologic map of the Wenatchee perlite area, scale 1:62,500.

319. Huntting, M. T.; Bennett, W. A. G.; Livingston, V. E., Jr.; Moen, W. S., 1961, Geologic map of Washington: Washington Division of Mines and Geology Geologic Map, 2 sheets, scale 1:500,000.

Geologic map: scale 1:500,000.

320. International Exploration, 1980, Geology of the Pullman quadrangle: U.S. Department of Energy, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

321. International Exploration, 1982, Geophysical interpretation of airborne magnetic data, Midnite–Sherwood mines, NE Washington: U.S. Department of Energy GJBX-110(82), 55 p., 9 plates.

Geologic maps:

321a Sheets 5 through 15, Structural interpretation overlays, scale 1:62,500.

Geophysical maps (magnetic):

321b Appendix H, Magnetic maps [on 10 sheets], scale 1:62,500.

322. James, H. L.; Albers, J. P., 1944, Zinc-lead deposits of the Lead Hill area on Slate Creek, Metaline district, Pend Oreille County, Washington: U.S. Geological Survey Open-File Report, 13 p., 3 plates.

Geologic map: Plate 1, Geologic map of Lead Hill area, Slate Creek district, Pend Oreille County, Washington, scale 1:1,200.

323. Jenkins, O. P., 1923, Geological investigation of the coal fields of western Whatcom County, Washington: Washington Division of Geology Bulletin 28, 135 p., 2 plates.

Geologic map: Plate 1, Geologic map of the coal measures of western Whatcom County, scale 1:84,480.

324. Jenkins, O. P., 1924, Geological investigation of the coal fields of Skagit County, Washington: Washington Division of Geology Bulletin 29, 63 p., 2 plates.

Geologic map: Plate I, Map of the coal measures of Skagit County, scale 1:90,000.

325. Jenkins, O. P., 1924, Lead deposits of Pend Oreille and Stevens Counties, Washington: Washington Division of Geology Bulletin 31, 153 p.

Geologic map: Plate III, Topographical and geologic map of the Cleveland mine and vicinity, scale 1:7,200.

326. Jenkins, O. P.; Cooper, H. H., 1921, Geological investigation of the proposed Grand Coulee Reservoir: Washington Geological Survey Open File Report 21-0, 21 p., 1 plate.

Geologic map: Plate, Map of Grand Coulee showing geological conditions relative to proposed reservoir of the Columbia Basin Project, scale 1:63,360.

327. Johnson, B. R.; Derkey, P. D.; Frost, T. P.; Derkey, R. E.; Lackaff, B. B., 1998, Digital geologic map of Spokane County and vicinity, Washington and Idaho: U.S. Geological Survey Open-File Report 98-503, 42 p.

Geologic map: Figure 3, scale 1:500,000.

328. Jones, E. L., Jr., 1917, Reconnaissance of the Conconully and Ruby mining districts, Washington. *In* Ransome, F. L.; Gale, H. S., Contributions to economic geology (short papers and preliminary reports) 1916; Part I—Metals and nonmetals except fuels: U.S. Geological Survey Bulletin 640, p. 11-36.

Geologic map: Plate 1, Topographic and reconnaissance geologic map of Conconully and Ruby districts, Washington, with location of mines and prospects, scale 1:125,000.

329. Jones, F. O., 1960, Engineering planning report, Volume II—Geology and foundation explorations: Klickitat County Public Utility District no. 1, 214 p.

Geologic maps:

329a Plate GE-1, Geologic map of Trout Lake damsite area, scale 1:8,500.

329b Plate GE-8, Geologic map and damsite section, Crystal Springs area, scale 1:12,800.

330. Jones, F. O.; Deacon, R. J., 1966, Geology and tectonic history of the Hanford area and its relation to the geology and tectonic history of the State of Washington and the active seismic zones of western Washington and western Montana: Douglas United Nuclear, 44 p.

Geologic map: Plate 4, Structural geology of the Hanford Plant area, scale 1:100,000.

331. Jones, F. O.; Embody, D. R.; Peterson, W. L., 1961, Landslides along the Columbia River Valley, northeastern Washington: U.S. Geological Survey Professional Paper 367, 98 p., 6 plates.

Geologic maps:

331a Plate 1, Geologic map of the Reed Terrace area, Washington, scale 1:9,600.

331b Plate 3, Geologic map and landslide classification of the Ninemile area, Franklin D. Roosevelt Lake, Washington, scale 1:31,680.

331c Plate 5, Geologic map of the Nespelem River area, Lake Rufus Woods, Washngton, scale 1:31,680.

331d Plate 6, Geologic map and landslide classificaiton of the Almeda Flat area, Lake Rufus Woods, Washington, scale 1:31,680.

332. Jones, J. T.; Blackwell, D. L.; Ziegler, C. B., 1984, The geology, structure and surficial features of West Church Mountain and Canyon Creek, North Cascades, Washington: U.S. Forest Service, 15 p., 1 plate.

Geologic map: Plate, scale 1:15,840.

333. Jones, M. A.; Orr, L. A.; Ebbert, J. C.; Sumioka, S. S., 1999, Ground-water hydrology of the Tacoma–Puyallup area, Pierce County, Washington: U.S. Geological Survey Water-Resources Investigations Report 99-4013, 154 p.

Geologic map: Figure 6, scale 1:100,000.

334. Jones, M. G.; Landon, R. D., 1978, Geology of the Nine Canyon map area: Rockwell Hanford Operations RHO-BWI-LD-6, 54 p., 5 plates.

Geologic maps:

334a Plate 1, Preliminary geologic map of the Nine Canyon vicinity [Kennewick quadrangle], scale 1:24,000.

334b Plate 2, Preliminary geologic map of the Nine Canyon vicinity [Pasco quadrangle], scale 1:24,000.

334c Plate 3, Preliminary geologic map of the Nine Canyon vicinity [Johnson Butte quadrangle], scale 1:24,000.

334d Plate 4, Preliminary geologic map of the Nine Canyon vicinity [Nine Canyon quadrangle], scale 1:24,000.

335. Joseph, N. L., compiler, 1990, Geologic map of the Colville 1:100,000 quadrangle, Washington–Idaho: Washington Division of Geology and Earth Resources Open File Report 90-13, 78 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

336. Joseph, N. L., compiler, 1990, Geologic map of the Nespelem 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 90-16, 47 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

337. Joseph, N. L., compiler, 1990, Geologic map of the Spokane 1:100,000 quadrangle, Washington–Idaho: Washington Division of Geology and Earth Resources Open File Report 90-17, 29 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

338. Kahle, S. C., 1998, Hydrogeology of Naval Submarine Base Bangor and vicinity, Kitsap County, Washington: U.S. Geological Survey Water-Resources Investigations Report 97-4060, 107 p., 7 plates.

Geologic maps:

338a Map 1, Maps showing the locations of inventoried wells and springs and generalized surficial geology of Naval Submarine Base Bangor and vicinity, Kitsap County, Washington, scale 1:40,000.

338b Map 2, Map of surficial geology of Naval Submarine Basin Bangor, Kitsap County, Washington, scale 1:12,000.

339. Kahle, S. C.; Olsen, T. D., 1995, Hydrogeology and quality of ground water on Guemes Island, Skagit County, Washington: U.S. Geological Survey Water-Resources Investigations Report 94-4236, 83 p., 1 plate.

Geologic map: Plate 1, scale 1:24,000

340. Kea Pacific Holdings, Inc., 1993, Report on geochemical testing of—Ore and low grade ore, Crown Jewel Project: Battle Mountain Gold Company [Oroville, Wash.], 1 v., 1 plate.

Geologic map: Appendix C, scale 1:6,000.

Note: This same map is given as Appendix D of:
Kea Pacific Holdings, Inc., 1993, Report on the waste rock geochemical testing program, Crown Jewel project: Battle Mountain Gold Company [Oroville, Wash.], 1 v., 1 plate.

341. Kent Associates, 1981, Geothermal exploration project, Phase I—Temperature gradient drilling: Kent Associates [Lake Oswego, Ore.], 165 p., 19 plates.

Geologic maps:

341a Plate 1, Vicinity geologic map, scale 1:125,000.
341b Plate 4, Site map, scale 1:15,360.

342. Kienle, C. F., Jr.; Bentley, R. D.; Anderson, J. L., 1977, Geologic reconnaissance of the Cle Elum–Wallula lineament and related structures: Shannon & Wilson [Portland, Ore.], 75 p.

Geologic maps:

342a Figure A-1, Geologic map, Cleman Mountain, scale 1:63,360.

342b Figure A-2, Geologic map, Umtanum Ridge at Baldy, scale 1:24,000.

342c Figure A-4, Geologic map, Umtanum Ridge near Hog Ranch Buttes, scale 1:24,000.

342d Figure A-5, Geologic map, Yakima Ridge in the Nelson Springs–Black Rock Springs area, scale 1:24,000.

342e Figure A-7, Geologic map, Rattlesnake Hills in the Horsethief Point area, scale 1:63,360.

342f Figure A-8, Geologic map, Rattlesnake Hills at Racehorse Canyon area, scale 1:24,000.

343. Kienle, C. F., Jr.; Farooqui, S. M.; Strazer, R. J.; Hamill, M. L.; 1978, Investigation of the Ribbon Cliff landslide, Entiat, Washington: Shannon & Wilson, Inc., 26 p.

Geologic map: Fig. 3, Detailed geology map, scale 1:6,000.

344. Kinnison, H. B.; Sceva, J. E., 1963, Effects of hydraulic and geologic factors on streamflow of the Yakima River basin, Washington: U.S. Geological Survey Water-Supply Paper 1595, 134 p., 3 plates.

Geologic map: Plate 1, Geologic map of the Yakima River basin, scale 1:250,000.

345. Kiver, E. P.; Rigby, J. G.; Stradling, D. F., 1979, Surficial geologic map of the Spokane quad, Washington: Washington Division of Geology and Earth Resources Open File Report 79-11, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

346. Koler, T. E., 1982, Geological report for area planning—Lands End and Tie Thru timber sales, Quinault Ranger District: U.S. Forest Service, 12 p., 2 plates.

Geologic map: Plate 1, scale 1:23,000.

347. Korosec, M. A., compiler, 1987, Geologic map of the Hood River quadrangle, Washington and Oregon: Washington Division of Geology and Earth Resources Open File Report 87-6, 40 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

348. Korosec, M. A., compiler, 1987, Geologic map of the Mount Adams quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 87-5, 39 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

349. Kriens, B. J.; Hawley, D. L.; Chappelear, F. D.; Mack, P. D.; Chan, A. F., 1995, Spatial and temporal relations between early Tertiary shortening and extension in NW Washington, based on geology of the Pipestone Canyon Formation and surrounding rocks: Tectonics, v. 14, no. 3, p. 719-735.

Geologic map: Plate 1, scale 1:40,000.

350. Kriens, B. J.; Wernicke, B. P., 1990, Nature of the contact zone between the North Cascades crystalline core and the Methow sequence in the Ross Lake area, Washington—Implications for Cordilleran tectonics: Tectonics, v. 9, no. 5, p. 953-981.

Geologic map: Plate 1, Geologic map of the Ross Lake area, Washington, scale 1:94,000.

351. Kuntz, M. A.; Rowley, P. D.; MacLeod, N. S., 1990, Geologic maps of pyroclastic-flow and related deposits of the 1980 eruptions of Mount St. Helens, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-1950, 2 sheets.

Geologic map: Map A, scale 1:12,000.

352. Lamey, C. A., 1950, The Blewett iron-nickel deposit, Chelan County, Washington: U.S. Geological Survey Bulletin 969-D, p. 87-103, 2 plates.

Geologic map: Plate 17, Geologic and topographic map and section of the Blewett iron-nickel deposit, Chelan County, Washington, scale 1:1,200.

353. Lamey, C. A.; Hotz, P. E., 1952, The Cle Elum River nickeliferous iron deposits, Kittitas County, Washington: U.S. Geological Survey Bulletin 978-B, p. 27-67, 2 plates.

Geologic map: Plate 9, Geologic map and sections of the Cle Elum River nickeliferous iron deposits, Kittitas County, Washington, scale 1:4,800.

354. Lasmanis, Raymond; Hall, Tammy, 1985, A geologic feasibility study for the Superconducting Super Collider: Washington Division of Geology and Earth Resources Open File Report 85-3, 41 p., 6 plates.

Geologic maps:

354a Plate 1, Geologic map of Lewis County site, scale 1:100,000.

354b Plate 6, Geologic map of Pierce–Thurston County site, scale 1:100,000.

355. Lewellen, D. G.; Walker, C. W.; Cushman, C. D., 1985, Geology and coal potential of the Taneum–Manastash area, Kittitas County, Washington: Washington Division of Geology and Earth Resources Open File Report 83-9, 79 p., 2 plates.

Geologic map: Plate 2, Geologic map of part of the Taneum and Manastash Creek area, Kittitas County, Washington, scale 1:24,000.

356. Liesch, B. A.; Price, C. E.; Walters, K. L., 1963, Geology and ground-water resources of northwestern King County, Washington: Washington Division of Water Resources Water-Supply Bulletin 20, 241 p., 3 plates.

Geologic map: Plate 1, Generalized geologic map of northwestern King County, Washington, scale 1:48,000.

357. Lillie, J. T.; Tallman, A. M.; Caggiano, J. A., 1978, Preliminary geologic map of the late Cenozoic sediments of the western half of the Pasco Basin: Rockwell Hanford Operations RHO-BWI-LD-8, 16 p., 13 plates.

Geologic maps:

357a Plate 1, Beverly quadrangle, scale 1:62,500.
357b Plate 2, Smyrna quadrangle, scale 1:62,500.
357c Plate 3, Corfu quadrangle, scale 1:62,500.
357d Plate 4, Priest Rapids quadrangle, scale 1:62,500.
357e Plate 5, Coyote Rapids quadrangle, scale 1:62,500.
357f Plate 6, Hanford quadrangle, scale 1:62,500.
357g Plate 7, Grandview quadrangle, scale 1:62,500.
357h Plate 8, Corral Canyon quadrangle, scale 1:62,500.
357i Plate 9, Richland quadrangle, scale 1:62,500.
357j Plate 10, Prosser quadrangle, scale 1:62,500.
357k Plate 11, Whitstran quadrangle, scale 1:62,500.
357l Plate 12, Badger Mountain quadrangle, scale 1:62,500.
357m Plate 13, Pasco quadrangle, scale 1:62,500.

358. Lindgren, Waldemar; Bancroft, Howland, 1914, Republic (Eureka) district. *In* Bancroft, Howland, The ore deposits of northeastern Washington: U.S. Geological Survey Bulletin 550, p. 133-166.

Geologic map: Plate XII, Geologic map and sections of the Republic mining camp, Ferry County, Washington, scale 1:62,500.

359. 124. Lindsey, K. A., 1988, Geology of the upper Proterozoic to lower Cambrian Three Sisters Formation, Gypsy Quartzite, and Addy Quartzite, Stevens and Pend Oreille Counties, Washington: Washington Division of Geology and Earth Resources Open File Report 88-3, 18 p., 6 plates.

Geologic maps:

359a Plate 1, Geologic map of the Addy Quartzite on Stensgar and Huckleberry Mtns., Stevens County, Washington, scale 1:24,000.

359b Plate 2, Geologic map of the Addy Quartzite on Dunn Mtn., Stevens County, Washington, scale 1:24,000.

359c Plate 3, Geologic map of the Gypsy Quartzite and Three Sisters Formation, Sullivan Mtn. area, Pend Oreille County, Washington, scale 1:24,000.

359d Plate 4, Geology of the Addy Quartzite, Iron Mountains area, central Stevens County, Washington, scale 1:24,000.

359e Plate 5, Geology of the Addy Quartzite, Adams and southern Huckleberry Mountains, southern Stevens County, Washington, scale 1:24,000.

360. Lingley, W. S., Jr.; Logan, R. L.; Walsh, T. J.; Gerstel, W. J.; Schasse, H. W., 1996?, Reconnaissance geology of the Matheny Ridge–Higley Peak areas, Olympic Peninsula, Washington: Washington Division of Geology and Earth Resources [contract report], 31 p., 1 plate.

Geologic map: Plate 1, scale 1:62,500.

361. Lipman, P. W.; Mullineaux, D. R., editors, 1981, The 1980 eruptions of Mount St. Helens, Washington: U.S. Geological Survey Professional Paper 1250, 844 p.

Geologic map: Plate, Geologic map of proximal deposits and features of 1980 eruptions of Mount St. Helens, Washington, scale 1:50,000.

362. Livingston, V. E., Jr., 1966, Geology and mineral resources of the Kelso–Cathlamet area, Cowlitz and Wahkiakum Counties, Washington: Washington Division of Mines and Geology Bulletin 54, 110 p., 2 plates.

Geologic maps:

362a Figure 22, Geologic map and cross section of the Kelso 7½-minute quadrangle, scale 1:24,000.

362b Figure 23, Preliminary geologic map and cross section of the Cathlamet–Coal Creek area, Cowlitz and Wahkiakum Counties, Washington, scale 1:62,500.

363. Livingston, V. E., Jr., 1971, Geology and mineral resources of King County, Washington: Washington Division of Mines and Geology Bulletin 63, 200 p., 8 plates.

Geologic map: Plate 1, Geologic map of King County, Washington, scale 1:125,000.

364. LKB Resources, 1979, NURE aerial gamma-ray and magnetic reconnaissance survey, NE Washington area, Okanogan NM 11-10, Sandpoint NM-11-11 quadrangles: U.S. Department of Energy GJBX-142(79), 3 v.

Geologic maps:

364a Volume IIA, Geologic base map, Okanogan quadrangle, scale 1:500,000.

364b Volume IIB, Geologic base map, Sandpoint quadrangle, scale 1:500,000.

365. Logan, R. L., compiler, 1987, Geologic map of the Chehalis River and Westport quadrangles, Washington: Washington Division of Geology and Earth Resources Open File Report 87-8, 16 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

366. Logan, R. L., compiler, 1987, Geologic map of the south half of the Shelton and the south half of the Copalis Beach quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 87-9, 15 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

367. Long, W. A., 1975, Glaciations in the Humptulips River drainage basin, southwestern Olympic Peninsula, Washington: U.S. Forest Service, 25 p., 1 plate.

Geologic map: Plate 1, scale 1:62,500.

368. Lum, W. E., II; Walters, K. L., 1976, Reconnaissance of ground-water resources of the Squaxin Island Indian Reservation, Washington: U.S. Geological Survey Open-File Report 76-382, 49 p.

Geologic map: Figure 2, Generalized geology of Squaxin Island and location of the geologic section, scale 1:34,000.

369. Lupher, R. L., 1944, Stratigraphic aspects of the Blewett–Cle Elum iron ore zone, Chelan and Kittitas Counties, Washington: Washington Division of Geology Report of Investigations 11, 63 p., 2 plates.

Geologic map: Plate 2, Geologic map of the Cle Elum Formation of the Blewett district, scale 1:3,250.

370. Luzier, J. E., 1969, Geology and ground-water resources of southwestern King County, Washington: Washington Department of Water Resources Water-Supply Bulletin 28, 260 p., 3 plates.

Geologic map: Plate 1, Geologic map of southwestern King County, Washington, scale 1:48,000.

371. Luzier, J. E., 1969, Ground-water occurrence in the Goldendale area, Klickitat County, Washington: U.S. Geological Survey Hydrologic Investigations Atlas HA-313, 1 plate, scale 1:62,500.

Geologic map: scale 1:62,500.

372. Luzier, J. E.; Burt, R. J., 1974, Hydrology of basalt aquifers and depletion of ground water in east-central Washington: Washington Department of Ecology Water-Supply Bulletin 33, 53 p., 3 plates.

Geologic map: Plate 1, Generalized geologic map showing extent of channeled scablands and loess-covered areas, east-central Washington, scale 1:500,000.

373. Madin, I. P., 1990, Earthquake-hazard geology maps of the Portland metropolitan area, Oregon—Text and map explanation: Oregon Department of Geology and Mineral Industries Open-File Report O-90-2, 21 p., 8 plates.

Geologic maps:

Mount Tabor quadrangle, scale 1:24,000.
Portland quadrangle, scale 1:24,000.

374. Madin, I. P.; Swanson, R. D., 1992, Earthquake-hazard geology maps of southwestern Clark County: Intergovernmental Resource Center [Vancouver, Wash], 5 p., 2 plates.

Geologic maps:

374a Plate [1], scale 1:24,000.
374b Plate [2], scale 1:24,000.

375. McCleary, J. R.; Dohrenwend, J. C.; Cluff, Lloyd; Hanson, K. L., 1978, 1872 Earthquake studies, Washington Public Power Supply System, Nuclear projects nos. 1 and 4, Straight Creek fault zone study: Woodward-Clyde Consultants, 72 p.

Geologic maps:

375a Figure 13, Geology of the Marblemount area, scale 1:62,500.

375b Figure 15, Geologic map of the Diobsud Ridge area, scale 1:21,000.

376. McFarland, W. D.; Morgan, D. S., 1996, Description of the ground-water flow system in the Portland basin, Oregon and Washington: U.S. Geological Survey Water-Supply Paper 2470-A, 58 p., 7 plates.

Geologic map: Plate 1, Hydrogeologic map, cross sections and streamflow measurement sites in the Portland Basin, Oregon and Washington, scale 1:250,000.

377. McGroder, M. F.; Garver, J. I.; Mallory, V. S., 1990, Bedrock geologic map, biostratigraphy, and structure sections of the Methow basin, Washington and British Columbia: Washington Division of Geology and Earth Resources Open-File Report 90-19, 32 p., 3 plates.

Geologic maps:

377a Plate 2, Geologic map of the Methow basin from 48° 30 to 49° N, scale 1:100,000.

377b Plate 3, Geologic map of the Methow basin between lower Twisp River and 48° 30 N, scale 1:100,000.

378. McLellan, R. D., 1927, The geology of the San Juan Islands: University of Washington Publications in Geology, v. 2, 185 p., 1 plate.

Geologic map: Plate, The San Juan Islands, Washington, scale 1:62,500.

379. McLucas, G. B., compiler, 1980, Preliminary fault map of Washington: Washington Division of Geology and Earth Resources Open File Report 80-2, 5 p., 1 plate.

Geologic map: Fault map of Washington, scale 1:500,000.

380. McLucas, G. B., 1980, Surficial geology of the Springdale and Forest Center quadrangles, Stevens County, Washington: Washington Division of Geology and Earth Resources Open File Report 80-3, 29 p., 2 plates.

Geologic maps:

Plate 1, Reconnaissance surficial geologic map of the Springdale quadrangle, scale 1:24,000.

Plate 2, Reconnaissance surficial geologic map of the Forest Center quadrangle, scale 1:24,000.

381. McLucas, G. B., 1981, Detailed fault maps—Hoquiam, Vancouver, Yakima, and The Dalles quadrangles: Washington Division of Geology and Earth Resources Open File Report 81-1, 5 sheets, scale 1:250,000.

Geologic maps: Sheets 2, 3, 4, and 5, scale 1:250,000.

382. Menzer, F. J., Jr., 1982, Bed rock geologic map, central Okanogan Range, Wash., with, A note on the gravity of the central Okanogan Range, Washington, by C. A. Swanberg: Western States College Foundation [Gunnison, Colo.], 1 p., 2 plates.

Geophysical map (gravity): Plate 2, scale 1:63,360.

383. Menzer, F. J., Jr., 1983, Metamorphism and plutonism in the central part of the Okanogan Range, Washington: Geological Society of America Bulletin, v. 94, no. 4, p. 471-498.

Geologic map: Figure 1, scale 1:80,000.

384. Menzer, F. J., Jr.; Swanberg, C. A.; Taylor, H. C., 1970, The Darling Lake mafic and ultramafic pluton, Washington—Petrology, gravity, and structure: Northwest Science, v. 44, no. 2, p. 95-101.

Geologic map: Figure 1, Geologic map and index map of Darling Lake area, Washington, scale 1:34,000.

385. Miller, F. K., 1969, Preliminary geologic map of the Loon Lake quadrangle, Stevens and Spokane Counties, Washington: Washington Division of Mines and Geology Geologic Map GM-6, 1 sheet, scale 1:62,500, with 7 p. text.

Geologic map: scale 1:62,500.

386. Miller, F. K., 1971, The Newport fault and associated mylonites, northeastern Washington: U.S. Geological Survey Professional Paper 750-D, p. D77-D79.

Geologic map: Figure 1, Generalized geologic map showing the location of the Newport fault zone and the chief lithologic units in the Newport 30-minute quadrangle, scale 1:330,000.

387. Miller, F. K., 1974, Preliminary geologic map of the Newport Number 1 quadrangle, Pend Oreille County, Washington and Bonner County, Idaho: Washington Division of Geology and Earth Resources Geologic Map GM-7, 1 sheet, scale 1:62,500, with 6 p. text.

Geologic map: scale 1:62,500.

388. Miller, F. K., 1974, Preliminary geologic map of the Newport Number 2 quadrangle, Pend Oreille and Stevens Counties, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-8, 1 sheet, scale 1:62,500, with 6 p. text.

Geologic map: scale 1:62,500.

389. Miller, F. K., 1974, Preliminary geologic map of the Newport Number 3 quadrangle, Pend Oreille, Stevens and Spokane Counties, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-9, 1 sheet, scale 1:62,500, with 7 p. text.

Geologic map: scale 1:62,500.

390. Miller, F. K., 1974, Preliminary geologic map of the Newport Number 4 quadrangle, Spokane and Pend Oreille Counties, Washington, and Bonner County, Idaho: Washington Division of Geology and Earth Resources Geologic Map GM-10, 1 sheet, scale 1:62,500, with 6 p. text.

Geologic map: scale 1:62,500.

391. Miller, F. K., 1982, Geologic map of Salmo–Priest Wilderness Study Area (RARE E6-981 A1-981), Pend Oreille County, Washington, and Boundary County, Idaho: U.S. Geological Survey Miscellaneous Field Studies Map MF-1192-A, 1 sheet, scale 1:48,000.

Geologic map: scale 1:48,000.

392. Miller, F. K., 1983, Preliminary geologic map of the Gypsy Peak area, Pend Oreille County, Washington, and Bonner and Boundary Counties, Idaho: U.S. Geological Survey Open-File Report 83-601, 14 p., 1 plate.

Geologic map: scale 1:48,000.

393. Miller, F. K., 1990, Preliminary geologic map of the Orwig Hump area, Washington and Idaho: U.S. Geological Survey Open-File Report 91-24, 20 p., 1 plate.

Geologic map: Plate, scale 1:48,000.

394. Miller, F. K., 1996, Geologic map of the Addy area, Stevens County, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-2492, 1 sheet, scale 1:48,000.

Geologic map: scale 1:48,000.

395. Miller, F. K., 1996, Geologic map of the Empey Mountain area, Stevens County, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-2493, 1 sheet, scale 1:48,000.

Geologic map: scale 1:48,000.

396. Miller, F. K.; Clark, L. D., 1975, Geology of the Chewelah–Loon Lake area, Stevens and Spokane Counties, Washington, with a section on potassium-argon ages of the plutonic rocks, by J. C. Engels: U.S. Geological Survey Professional Paper 806, 74 p., 2 plates.

Geologic maps:

396a Plate 1, Geologic map of the north half of the Chewelah–Loon Lake area, Stevens and Spokane Counties, Washington, scale 1:62,500.

396b Plate 2, Geologic map of the south half of the Chewelah–Loon Lake area, Stevens and Spokane Counties, Washington, scale 1:62,500.

397. Miller, F. K.; Theodore, T. G., 1982, Molybdenum and tungsten mineralization associated with two stocks in the Harvey Creek area, northeastern Washington: U.S. Geological Survey Open-File Report 82-295, 31 p., 2 plates.

Geologic maps:

397a Figure 2, Geologic sketch map showing known occurrences of granitic rock similar to granodiorite of Hall Mountain, scale 1:100,000.

397b Figure 3, Geologic map showing setting of Hall Mountain and Harvey Creek bodies of granodiorite of Hall Mountain, scale 1:40,000.

398. Miller, F. K.; Yates, R. G., compilers, 1976, Geologic map of the west half of the Sandpoint 1 degree by 2 degree quadrangle: U.S. Geological Survey Open-File Report 76-327, 2 sheets, scale 1:125,000.

Geologic map: scale 1:125,000.

399. Miller, G. M., 1979, Western extent of the Shuksan and Church Mountain thrust plates in Whatcom, Skagit, and Snohomish Counties, Washington: Northwest Science, v. 53, no. 4, p. 229-241.

Geologic maps:

399a Figure 4, Geologic map of the lower Skagit Valley and vicinity, scale 1:400,000.

399b Figure 5, Geologic map of the Cultus–Frailey–Devils Mountain area, scale 1:400,000.

400. Miller, G. M.; Misch, Peter, 1963, Early Eocene angular unconformity at western front of northern Cascades, Whatcom County, Washington: American Association of Petroleum Geologists Bulletin, v. 47, no. 1, p. 163-174.

Geologic map: Geologic map of American Sumas Mountain and vicinity, scale 1:169,000.

401. Miller, R. B., 1985, The pre-Tertiary Rimrock Lake inlier, southern Cascades Washington: Washington Division of Geology and Earth Resources Open File Report 85-2, 16 p., 1 plate.

Geologic map: Plate 1, Geologic map of pre-Tertiary rocks in the Mount Rainier 1:100,000 quadrangle, scale 1:100,000.

402. Miller, R. B., 1987, Geology of the Twisp River–Chelan Divide region, North Cascades, Washington: Washington Division of Geology and Earth Resources Open File Report 87-17, 12 p., 12 plates.

Geologic maps:

Sheet 1, Geologic map of the Twisp River–Chelan Divide region, Washington, scale 1:100,000.

Note: Sheets 2 through 11 are at scale 1:24,000, are all within the area of Sheet 1, and are not individually outlined.

Sheet 2, Geologic map of part of the McGregor Mtn. quadrangle, Washington.

Sheet 3, Geologic map of part of the McAlestor Mtn. quadrangle, Washington.

Sheet 4, Geologic map of part of the Gilbert quadrangle, Washington.

Sheet 5, Geologic map of part of the Midnight Mtn. quadrangle, Washington.

Sheet 6, Geologic map of part of the Stehekin quadrangle, Washington.

Sheet 7, Geologic map of part of the Sun Mtn. quadrangle, Washington.

Sheet 8, Geologic map of part of the Oval Peak quadrangle, Washington.

Sheet 9, Geologic map of part of the Hoodoo Peak quadrangle, Washington.

Sheet 10, Geologic map of part of the Prince Creek quadrangle, Washington.

Sheet 11, Geologic map of part of the Martin Peak quadrangle, Washington.

403. Miller, R. B.; Bowring, S. A., 1990, Structure and chronology of the Oval Peak batholith and adjacent rocks—Implications for the Ross Lake fault zone, North Cascades, Washington: Geological Society of America Bulletin, v. 102, no. 10, p. 1361-1377.

Geologic map: Fig. 3, Geologic map of the Oval Peak batholith and adjacent rocks, scale 1:78,756.

404. Mills, J. W., 1962, High-calcium limestones of eastern Washington, with a section on limestone in Boundary, Leadpoint, Spirit, and Deep Lake quadrangles of northern Stevens County, by R. G. Yates: Washington Division of Mines and Geology Bulletin 48, 268 p., 7 plates.

Geologic maps:

404a Plate 2, Geologic map of the Metaline mining district, Pend Oreille County, Washington, scale 1:80,000.

404b Plate 5, Geologic map of Heidegger Hill district, scale 1:27,000.

404c Plate 6, Geologic map of Colville district, scale 1:80,000.

404d Plate 7, Geologic map of Wannacut Lake area, scale 1:28,000.

405. Mills, J. W., 1985, Geologic maps of the Marcus and Kettle Falls quadrangles, Stevens and Ferry Counties, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-32, 2 sheets, with 18 p. text.

Geologic maps:

405a Plate 1, Geologic map of the Kettle Falls quadrangle, Stevens and Ferry Counties, Washington, scale 1:24,000.

405b Plate 2, Geologic map of the Marcus quadrangle, Stevens and Ferry Counties, Washington, scale 1:24,000.

406. Mills, J. W.; Duncan, G. W.; Brainard, R. C.; Hogge, C. E.; Laskowski, E. R., 1985, Geologic maps of the Echo Valley and the north part of the Colville 7 ½-minute quadrangles, Washington: Washington Division of Geology and Earth Resources Open File Report 85-7, 2 sheets.

Geologic maps:

406a Sheet [1], Echo Valley quadrangle, scale 1:24,000.
406b Sheet [2], Colville quadrangle, scale 1:24,000.

407. Mills, J. W.; Nordstrom, H. E., 1973, Multiple deformation of Cambrian rocks in the Kootenay arc, near Northport, Stevens County, Washington: Northwest Science, v. 47, no. 3, p. 185-202.

Geologic maps:

407a Figure 2, Geologic map of north part of study area, scale 1:9,600.

407b Figure 3, Geologic map of south part of study area, scale 1:9,600.

408. Milne, P. C., 1979, An assessment of the uranium potential in the Ellensburg Formation, south-central Washington: Washington Division of Geology and Earth Resources Open File Report 79-2, 32 p., 4 plates.

Geologic map: Map 1, Geologic map of south-central Washington, scale 1:250,000.

409. Minard, J. P., 1982, Distribution and description of geologic units in the Mukilteo quadrangle, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1438, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

410. Minard, J. P., 1983, Geologic map of the Edmonds East and part of the Edmonds West quadrangles, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1541, 1 sheet.

Geologic map: scale 1:24,000.

411. Minard, J. P., 1983, Geologic map of the Kirkland quadrangle, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1543, 1 sheet.

Geologic map: scale 1:24,000.

412. Minard, J. P., 1985, Geologic map of Quaternary deposits of the Pothole quadrangle, Okanogan County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1680, 1 sheet.

Geologic map: scale 1:24,000.

413. Minard, J. P., 1985, Geologic map of the Arlington East quadrangle, Snohomish County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1739, 1 sheet.

Geologic map: scale 1:24,000.

414. Minard, J. P., 1985, Geologic map of the Arlington West quadrangle, Snohomish County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1740, 1 sheet.

Geologic map: scale 1:24,000.

415. Minard, J. P., 1985, Geologic map of the Bothell quadrangle, Snohomish and King Counties, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1747, 1 sheet.

Geologic map: scale 1:24,000.

416. Minard, J. P., 1985, Geologic map of the Everett 7.5-minute quadrangle, Snohomish County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1748, 1 sheet.

Geologic map: scale 1:24,000.

417. Minard, J. P., 1985, Geologic map of the Lake Stevens quadrangle, Snohomish County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1742, 1 sheet.

Geologic map: scale 1:24,000.

418. Minard, J. P., 1985, Geologic map of the Maltby quadrangle, Snohomish and King Counties, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1746, 1 sheet.

Geologic map: scale 1:24,000.

419. Minard, J. P., 1985, Geologic map of the Marysville quadrangle, Snohomish County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1743, 1 sheet.

Geologic map: scale 1:24,000.

420. Minard, J. P., 1985, Geologic map of the Snohomish quadrangle, Snohomish County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1745, 1 sheet.

Geologic map: scale 1:24,000.

421. Minard, J. P., 1985, Geologic map of the Stanwood quadrangle, Snohomish County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1741, 1 sheet.

Geologic map: scale 1:24,000.

422. Minard, J. P., 1985, Geologic map of the Tulalip quadrangle, Island and Snohomish Counties, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1744, 1 sheet.

Geologic map: scale 1:24,000.

423. Minard, J. P.; Booth, D. B., 1988, Geologic map of the Redmond quadrangle, King County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-2016, 1 sheet.

Geologic map: scale 1:24,000.

424. Misch, Peter, 1966, Tectonic evolution of the northern Cascades of Washington—A west-cordilleran case history. *In* Canadian Institute of Mining and Metallurgy; and others, A symposium on the tectonic history and mineral deposits of the western Cordillera in British Columbia and neighbouring parts of the United States, Vancouver, 1964: Canadian Institute of Mining and Metallurgy Special Volume 8, p. 101-148, 1 plate.

Geologic map: Plate 7.1, Geologic map of Skagit region of northern Cascades, scale 1:530,000.

425. Misch, Peter, 1977, Bedrock geology of the North Cascades; field trip number 1. *In* Brown, E. H.; Ellis, R. C., editors, Geological excursions in the Pacific Northwest: Western Washington University, p. 1-62.

Geologic map: Fig. 4, Mount Baker Highway (WA 542) from Maple Falls to Baker Lodge (Leg B-II, E. part and Leg B-III), scale 1:126,700.

426. Misch, Peter, 1979, Geologic map of the Marblemount quadrangle, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-23, 1 sheet, scale 1:48,000.

Geologic map: scale 1:48,000.

427. Misch, Peter, 1987, The type section of the Skagit Gneiss, North Cascades, Washington. *In* Hill, M. L., editor, Cordilleran Section of the Geological Society of America: Geological Society of America DNAG Centennial Field Guide 1, p. 393-398.

Geologic map: Fig. 2, Geological sketch map of upper Skagit region, scale 1:370,000.

428. Moak, D. J.; Wintczak, T. M., 1980, Near-surface test facility phase I geologic site characterization report: Rockwell Hanford Operations RHO-BWI-ST-8, 235 p.

Geologic map: Figure 9, Geology of Gable Mountain, scale 1:31,680.

429. Moen, W. S., 1962, Geology and mineral deposits of the north half of the Van Zandt quadrangle, Whatcom County, Washington: Washington Division of Mines and Geology Bulletin 50, 129 p., 4 plates.

Geologic map: Plate 1, Geologic map of north half of the Van Zandt quadrangle, Whatcom County, Washington, scale 1:62,500.

430. Moen, W. S., 1964, Barite in Washington: Washington Division of Mines and Geology Bulletin 51, 112 p., 2 plates.

Geologic map: Plate 2, Geologic map and cross sections of the O'Toole Mountain barite deposits, Stevens County, Washington, scale 1:1,600.

431. Moen, W. S., 1973, Conconully mining district of Okanogan County, Washington: Washington Division of Mines and Geology Information Circular 49, 42 p.

Geologic map: Figure 3, General geology and mines and prospects of the Conconully area, scale 1:72,000.

432. Moen, W. S., 1980, Myers Creek and Wauconda mining districts of northeastern Okanogan County, Washington: Washington Division of Geology and Earth Resources Bulletin 73, 96 p., 6 plates.

Geologic map:

432a Plate 1, Geologic map of east half of Myers Creek mining district, Okanogan County, Washington, scale 1:80,000.

Geophysical map (magnetic):

432b Plate 6, Generalized aeromagnetic map of parts of Myers Creek and Wauconda mining districts, Okanogan County, Washington, scale 1:100,000.

433. Molenaar, Dee, 1968, A geohydrologic reconnaissance of northwestern Walla Walla County, Washington: Washington Department of Water Resources Monograph 1, 1 sheet, scale 1:63,360.

Geologic map: scale 1:63,360.

434. Molenaar, Dee; Noble, J. B., 1970, Geology and related groundwater occurrence, southeastern Mason County, Washington: Washington Department of Water Resources Water-Supply Bulletin 29, 145 p., 2 plates.

Geologic map: Plate 1, Geology of southeastern Mason County, Washington, scale 1:62,500.

435. Morgan, D. S.; McFarland, W. D., 1994, Simulation analysis of the ground-water flow system in the Portland basin, Oregon and Washington: U.S. Geological Survey Open-File Report 94-505, 86 p.

Geologic map: Plate 1, scale 1:250,000.

436. Moye, F. J., 1987, Republic graben, Washington. *In* Hill, M. L., editor, Cordilleran Section of the Geological Society of America: Geological Society of America DNAG Centennial Field Guide 1, p. 399-402.

Geologic map: Fig. 2, Geologic map and location of field trip stops at the southern end of the Republic graben, scale 1:400,000.

437. Muessig, S. J., 1967, Geology of the Republic quadrangle and a part of the Aeneas quadrangle, Ferry County, Washington: U.S. Geological Survey Bulletin 1216, 135 p., 1 plate.

Geologic map: Plate 1, Geologic map and sections of the Republic and a part of the Aeneas quadrangles, Ferry County, Washington, scale 1:62,500.

438. Mullineaux, D. R., 1965, Geologic map of the Auburn quadrangle, King and Pierce Counties, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-406, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

439. Mullineaux, D. R., 1965, Geologic map of the Black Diamond quadrangle, King County, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-407, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

440. Mullineaux, D. R., 1965, Geologic map of the Renton quadrangle, King County, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-405, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

441. Mundorff, M. J., 1964, Geology and ground-water conditions of Clark County, Washington, with a description of a major alluvial aquifer along the Columbia River: U.S. Geological Survey Water-Supply Paper 1600, 268 p., 3 plates.

Geologic map: Plate 2, Geologic map of western part of Clark County, Washington, scale 1:48,000.

442. Mundorff, M. J.; Reis, D. J.; Strand, J. R., 1952, Progress report on ground water in the Columbia Basin project, Washington: U.S. Geological Survey Ground-Water Report 3, 229 p., 5 plates.

Geologic map: Plate 1, Bedrock contour map of the Quincy basin, area, Washington, scale 1:150,000.

443. Mundorff, M. J.; Weigle, J. M.; Holmberg, G. D., 1955, Ground water in the Yelm area, Thurston and Pierce Counties, Washington: U.S. Geological Survey Circular 356, 58 p., 2 plates.

Geologic map: Plate 1, Geologic map of Yelm area, Thurston and Pierce Counties, Washington, scale 1:72,000.

444. Myers, C. W.; Price, S. M., editors, 1981, Subsurface geology of the Cold Creek syncline: Rockwell Hanford Operations RHO-BWI-ST-14, 1 v.

Geologic map: Figure 8-2b, Bedrock-geologic map, areas 1, 2, and 3, scale 1:70,000.

445. Myers, C. W.; Price, S. M.; and others, 1979, Geologic studies of the Columbia Plateau—A status report: Rockwell Hanford Operations RHO-BWI-ST-4, 541 p., 53 plates.

Geologic maps:

445a Plates II-1 through II-10, Reconnaissance geologic map of the Columbia River Basalt Group in eastern Washington and northern Idaho, by D. A. Swanson, J. L. Anderson, and others, scale 1:250,000. (*Note:* Also available as U.S. Geological Survey Open-File Report 79-1363.)

445b Plate II-11, Surficial geologic map of the Spokane quadrangle, Washington, by E. P. Kiver, J. G. Rigby, and D. R. Stradling, scale 1:250,000. (*Note:* Also available as Washington Division of Geology and Earth Resources Open File Report 79-11.)

445c Plate II-12, Surficial geologic map of the Okanogan quadrangle, Washington, by L. G. Hanson, scale 1:250,000. (*Note:* Also available as Washington Division of Geology and Earth Resources Open File Report 79-7.)

445d Plate II-13, Surficial geologic map of the Ritzville quadrangle, Washington, by L. G. Hanson, E. P. Kiver, and others, scale 1:250,000. (*Note:* Also available as Washington Division of Geology and Earth Resources Open File Report 79-10.)

445e Plate II-14, Surficial geologic map of the Wenatchee quadrangle, Washington, by N. P. Campbell, scale 1:250,000. (*Note:* Also available as Washington Division of Geology and Earth Resources Open File Report 79-14.)

445f Plate II-15, Surficial geologic map of the Yakima quadrangle, Washington, by N. P. Campbell, scale 1:250,000. (*Note:* Also available as Washington Division of Geology and Earth Resources Open File Report 79-15.)

445g Plate II-16, Surficial geologic map of the Walla Walla quadrangle, Washington, by N. P. Campbell, J. T. Lillie, and G. D. Webster, scale 1:250,000. (*Note:* Also available as Washington Division of Geology and Earth Resources Open File Report 79-13.)

445h Plate II-17, Surficial geologic map of the Pendleton quadrangle, Washington, by N. P. Campbell, scale 1:250,000. (*Note:* Also available as Washington Division of Geology and Earth Resources Open File Report 79-8.)

445i Plate II-18, Surficial geologic map of The Dalles quadrangle, Washington, by N. P. Campbell, scale 1:250,000. (*Note:* Also available as Washington Division of Geology and Earth Resources Open File Report 79-12.)

445j Plate II-19, Surficial geologic map of the Pullman quadrangle, Washington, by G. D. Webster, scale 1:250,000. (*Note:* Also available as Washington Division of Geology and Earth Resources Open File Report 79-9.)

445k Plate III-1, Compilation geologic map of the Pasco Basin, south-central Washington, scale 1:62,500 [on 12 sheets]; Plate III-4a, Top of basalt contour map, scale 1:62,500 [on 2 sheets]; Plate III-4b, Top of Wanapum basalt structure contour map, scale 1:62,500 [on 2 sheets].

Geophysical map (magnetic):

445l Plate III-6a, Total magnetic field, scale 1:62,500; Plate III-6b, Magnetic features maps, scale 1:62,500.

446. Myers, D. A., 1970, Availability of ground water in western Cowlitz County, Washington: Washington Department of Ecology Water-Supply Bulletin 35, 63 p., 2 plates.

Geologic map: Plate 1, Generalized geology of western Cowlitz County, Washington, scale 1:125,000.

447. Nash, J. T., 1978, Geologic map and cross sections of the Midnite uranium mine, Stevens County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-943, 2 sheets, scale 1:1,200 and 1:600.

Geologic maps:

Sheet 1, Geologic map and cross section of the Midnite uranium mine, Stevens County, Washington, scale 1:1,200.

Sheet 2, Geologic map of Midnite mine, scale 1:600.

448. Nassar, E. G.; Walters, K. L., 1975, Water in the Palouse River basin, Washington: Washington Department of Ecology Water-Supply Bulletin 39, 246 p., 1 plate.

Geologic map: Plate 1, Generalized geologic map of the Palouse River basin in Washington, and mean annual precipitation and data-collection sites in Palouse River basin in Washington and Idaho, scale 1:250,000.

449. Newcomb, R. C., 1952, Ground-water resources of Snohomish County, Washington: U.S. Geological Survey Water-Supply Paper 1135, 133 p.

Geologic map: Plate 1, Geologic map of the western part of Snohomish County, Washington, scale 1:62,500.

450. Newcomb, R. C., 1965, Geology and ground-water resources of the Walla Walla River basin, Washington–Oregon: Washington Division of Water Resources Water-Supply Bulletin 21, 151 p., 4 plates.

Geologic map: Plate 1, Geology and hydrologic map of Walla Walla River basin, Washington–Oregon, scale 1:95,000.

451. Newcomb, R. C., 1969, Effect of tectonic structure on the occurrence of ground water in the basalt of the Columbia River Group of The Dalles area, Oregon and Washington: U.S. Geological Survey Professional Paper 383-C, 33 p., 1 plate.

Geologic map: Plate 1, Geologic map of The Dalles area, Oregon and Washington, scale 1:62,500.

452. Newcomb, R. C., 1970, Tectonic structure of the main part of the basalt of the Columbia River Group, Washington, Oregon, and Idaho: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-587, 1 sheet, scale 1:500,000.

Geologic map: scale 1:500,000.

453. Newcomb, R. C., 1971, Geologic map of the proposed Paterson Ridge pumped-storage reservoir, south-central Washington: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-653, 1 sheet, scale 1:31,680, with 4 p. text.

Geologic map: scale 1:31,680.

454. Newcomb, R. C.; Sceva, J. E.; Stromme, Olaf, 1949, Ground-water resources of western Whatcom County, Washington: U.S. Geological Survey Open-File Report 50-7, 134 p., 2 plates.

Geologic map: Plate 2, Geologic map of western Whatcom County, scale 1:62,500.

455. Newcomb, R. C.; Strand, J. R.; Frank, F. J., 1972, Geology and ground-water characteristics of the Hanford Reservation of the U.S. Atomic Energy Commission, Washington: U.S. Geological Survey Professional Paper 717, 78 p., 3 plates.

Geologic map: Plate 1, Geohydrologic map of the Hanford Reservation of the U.S. Atomic Energy Commission, Washington, scale 1:62,500.

456. Nichols, R. L., 1943, Preliminary report on the Cowlitz high-alumina clay deposit near Castle Rock, Cowlitz County, Washington: U.S. Geological Survey Open-File Report 45-12, 18 p., 9 plates.

Geologic map: Figure 2, Geologic map showing ore bodies in area drilled by U.S. Bureau of Mines Project 1201, Cowlitz high alumina clay deposit near Castle Rock, Cowlitz County, Washington, scale 1:6,000.

457. Nichols, R. L., 1945, Preliminary report on the King County, Washington, high-alumina clay deposits: U.S. Geological Survey Open-File Report 46-9, 46 p., 7 plates.

Geologic map: Figure 4, Geologic map of the Kangley deposit, scale 1:480.

458. Nielson, D. L.; Moran, M. R., 1980, Geologic interpretation of the geothermal potential of the North Bonneville area: University of Utah Research Institute, 18 p., 2 plates.

Geologic map: Plate I, Geology of North Bonneville, Washington and vicinity, scale 1:24,000.

459. Noble, J. B., 1960, A preliminary report on the geology and ground-water resources of the Sequim-Dungeness area, Clallam County, Washington: Washington Division of Water Resources Water Supply Bulletin 11, 43 p., 3 plates.

Geologic map: Plate 2, Geologic map of the Sequim-Dungeness area, scale 1:34,000.

460. Noble, J. B.; Wallace, E. F., 1966, Geology and ground-water resources of Thurston County, Washington; Volume 2: Washington Division of Water Resources Water-Supply Bulletin 10, v. 2, 141 p., 5 plates.

Geologic maps:

Plate 1, Geologic map of Thurston County, Washington, west half, scale 1:72,400.

Plate 2, Geologic map of Thurston County, Washington, east half, scale 1:72,400.

461. Olson, T. M.; Gilmour, E. H.; Bacon, Marion; Gaddy, J. L.; Robinson, G. A.; Parker, O. J., 1975, Geology, groundwater, and water quality of part of southern Spokane County, Washington: Washington Department of Ecology Water Resources Information System WRIS Technical Bulletin 15, 146 p., 2 plates.

Geologic map: Plate 1, Geologic map of part of southern Spokane County, Washington, scale 1:50,000.

462. Orr, K. E.; Cheney, E. S., 1987, Kettle and Okanogan domes, northeastern Washington and southern British Columbia. *In* Schuster, J. E., editor, Selected papers on the geology of Washington: Washington Division of Geology and Earth Resources Bulletin 77, p. 55-71.

Geologic map: Fig. 2, Preliminary geologic map of the northern part of the Okanogan and Kettle metamorphic core complexes, scale 1:480,000

463. Othberg, K. L., 1975, Geologic interpretive map showing areas of unstable slopes, Kitsap County, Washington: Washington Division of Geology and Earth Resources Open File Report 75-7, 11 sheets, scale 1:24,000.

Geologic map: scale 1:24,000.

464. Othberg, K. L.; Palmer, Pamela, 1979, Preliminary surficial geologic map of part of the Gardiner quadrangle, Clallam County, Washington: Washington Division of Geology and Earth Resources Open File Report 79-19, 3 p., 1 plate, scale 1:24,000.

Geologic map: scale 1:24,000.

465. Othberg, K. L.; Palmer, Pamela, 1979, Preliminary surficial geologic map of the Dungeness quadrangle, Clallam County, Washington: Washington Division of Geology and Earth Resources Open File Report 79-17, 3 p., 1 plate, scale 1:24,000.

Geologic map: scale 1:24,000.

466. Othberg, K. L.; Palmer, Pamela, 1979, Preliminary surficial geologic map of the Sequim quadrangle, Clallam County, Washington: Washington Division of Geology and Earth Resources Open File Report 79-18, 4 p., 1 plate, scale 1:24,000.

Geologic map: scale 1:24,000.

467. Othberg, K. L.; Palmer, Pamela, 1982, Preliminary surficial geologic map of the Carlsborg quadrangle, Clallam County, Washington: Washington Division of Geology and Earth Resources Open File Report 79-20, 1 sheet, scale 1:24,000.

Geologic map: Map 1A, scale 1:24,000.

468. Pacific Gas and Electric Company, 1988, Technical report on geological, soil, and paleontological resources—PGT–PG&E pipeline expansion project: Pacific Gas and Electric Company, 1 v.

Geologic maps:

Segment 2, Milepost 100.0–200.0, scale 1:250,000.
Segment 3, Milepost 200.0–300.0, scale 1:250,000.

469. Page, L. R., 1942, Tin and tungsten deposits at Silver Hill, Spokane County, Washington: U.S. Geological Survey Bulletin 931-H, p. 177-203, 2 plates.

Geologic map: Plate 32, Geologic map of Silver Hill, Spokane County, Washington, scale 1:2,400.

470. Palmer, Pamela, 1977, Investigation of tectonic deformation in the Puget Lowland, Washington: Washington Division of Geology and Earth Resources Open File Report 77-6, 36 p., 3 plates.

Geologic maps: Sheets 1 through 3, Geologic and geomorphic map of terraces and associated surficial geology of western Whatcom County, Washington, scale 1:24,000.

471. Pardee, J. T., 1918, Geology and mineral deposits of the Colville Indian Reservation, Washington: U.S. Geological Survey Bulletin 677, 186 p., 1 plate.

Geologic map: Plate 1, Geologic reconnaissance map of the Colville Indian Reservation, Washington, scale 1:250,000.

472. Pardee, J. T., 1928, Geology of reservoir sites near Washtucna and Kahlotus, Washington: U.S. Geological Survey Open-File Report, 25 p., 1 plate.

Geologic map: Figure 4, Geology—Kahlotus site, scale 1:125,000.

473. Pardee, J. T.; Bryan, Kirk, 1926, Geology of the Latah formation in relation to the lavas of the Columbia Plateau near Spokane, Washington. *In* Shorter contributions to general geology 1925: U.S. Geological Survey Professional Paper 140, p. 1-16.

Geologic map: Plate 1, Reconnaissance geologic map of area near Spokane, Washington, scale 1:250,000.

474. Park, C. F., Jr.; Cannon, R. S., Jr., 1943, Geology and ore deposits of the Metaline quadrangle, Washington: U.S. Geological Survey Professional Paper 202, 81 p., 5 plates.

Geologic map: Plate 1, Geologic map and cross sections of the Metaline quadrangle, Washington and Idaho, scale 1:96,000.

475. Parker, R. L.; Calkins, J. A., 1964, Geology of the Curlew quadrangle, Ferry County, Washington: U.S. Geological Survey Bulletin 1169, 95 p., 4 plates.

Geologic map: Plate 1, Geologic map and sections of the Curlew quadrangle, Ferry County, Washington, scale 1:62,500.

476. Parson, Brinckerhoff, Quade and Douglas, Inc., 1974, Water resources and geology technical study. *In* U.S. Navy, Trident support site, Bangor, Washington—Draft environmental impact statement; Appendices [F, G], Air quality–Water resources and geology: U.S. Navy [Bangor, Wash], 1 v.

Geologic map: Fig. 10, scale 1:24,000.

477. Pearson, R. C., 1967, Geologic map of the Bodie Mountain quadrangle, Ferry and Okanogan Counties, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-636, 1 sheet, scale 1:62,500, with 4 p. text.

Geologic map: scale 1:62,500.

478. Pearson, R. C., 1977, Preliminary geologic map of the Togo Mountain quadrangle, Ferry County, Washington: U.S. Geological Survey Open-File Report 77-371, 1 sheet, scale 1:48,000.

Geologic map: scale 1:48,000.

479. Pearson, R. C.; Obradovich, J. D., 1977, Eocene rocks in northeast Washington—Radiometric ages and correlation: U.S. Geological Survey Bulletin 1433, 41 p., 1 plate.

Geologic map: Plate 1, Geologic map showing Tertiary rocks, northeast Washington, scale 1:300,000.

480. Pease, M. H., Jr.; Hoover, Linn, Jr., 1957, Geology of the Doty–Minot Peak area, Washington: U.S. Geological Survey Oil and Gas Investigations Map OM-188, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

481. Pessl, Fred, Jr.; Dethier, D. P.; Booth, D. B.; Minard, J. P., 1989, Surficial geologic map of the Port Townsend 30- by 60-minute quadrangle, Puget Sound region, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-1198-F, 1 sheet, with 13 p. text.

Geologic map: scale 1:100,000.

482. Phillips, W. M., 1984, Compilation geologic map of the Green River coal district, King County, Washington: Washington Division of Geology and Earth Resources Open File Report 84-4, 4 p., 3 plates.

Geologic map: Plate 1, scale 1:24,000.

483. Phillips, W. M., compiler, 1987, Geologic map of the Mount St. Helens quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 87-4, 59 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

484. Phillips, W. M., compiler, 1987, Geologic map of the Vancouver quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 87-10, 41 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

485. Phillips, W. M.; Walsh, T. J., compilers, 1987, Geologic map of the northwest part of the Goldendale quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 87-13, 7 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

486. Piper, A. M., 1932, Geology and ground-water resources of The Dalles region, Oregon: U.S. Geological Survey Water-Supply Paper 659-B, 189 p., 1 plate.

Geologic map: Plate 11, Geologic map and section of The Dalles region, Oregon, showing location of typical wells and springs, scale 1:62,500.

487. Pitkin, J. A.; Duval, J. S., 1980, Interpretation of an aerial radiometric and magnetic survey of the proposed Salmo–Priest study area (RARE E6-981 A1-981), Pend Oreille County, Washington and Boundary County, Idaho: U.S. Geological Survey Miscellaneous Field Studies Map MF-1192-B, 4 sheets, scale 1:48,000.

Geophysical maps (magnetic):

Map A, Location of flight lines of aerial radiometric and magnetic survey in the Salmo–Priest study area, Washington–Idaho, scale 1:48,000.

Map B, Radiometric map of apparent surface concentrations of eU in parts per million, in the Salmo–Priest study area, Washington–Idaho, scale 1:48,000.

Map C, Radiometric map of Priest study area, Washington–Idaho, scale 1:48,000.

Map D, Radiometric map of apparent surface concentrations of K in percent, Salmo–Priest study area, Washington–Idaho, scale 1:48,000.

Map E, Radiometric map of the ratio of apparent surface concentrations eU/eTh, in the Salmo–Priest study area, Washington–Idaho, scale 1:48,000.

Map F, Radiometric map of the ratio of apparent surface concentrations eU/K, in the Salmo–Priest study area, Washington–Idaho, scale 1:48,000.

Map G, Radiometric map of ratio of apparent surface concentrations eTh/K, in the Salmo–Priest study area, Washington–Idaho, scale 1:48,000.

Map H, Map of the residual aeromagnetic field, in gammas, in the Salmo–Priest study area, Washington–Idaho, region field (GRD) was subtracted, scale 1:48,000.

488. Purdy, C. P., Jr., 1951, Antimony occurrences of Washington: Washington Division of Mines and Geology Bulletin 39, 186 p.

Geologic map: Figure 9, Geologic map of the Carlton area showing the location of antimony occurrences, scale 1:125,000.

489. Quinault Indian Nation; U.S. Forest Service; U.S. Park Service; U.S. Geological Survey; and others, 1999, Quinault River watershed analysis: Quinault Indian Nation, 1 v., 18 plates.

Geologic maps:

Map 2.3A, Mass wasting map of the Quinault watershed, scale 1:100,000.

Map 2.3B, Slope morphology and susceptibility to mass wasting, scale 1:100,000.

Map 2.3C, Geology of the Quinault watershed, scale 1:100,000.

Map 2.3D, Geomorphology of the Quinault watershed, scale 1:100,000.

490. Rau, W. W., 1966, Stratigraphy and Foraminifera of the Satsop River area, southern Olympic Peninsula, Washington: Washington Division of Mines and Geology Bulletin 53, 66 p., 8 plates.

Geologic map: Plate 2, Geologic map of the Satsop River area of western Washington, scale 1:24,000.

491. Rau, W. W., 1967, Geology of the Wynoochee Valley quadrangle, Grays Harbor County, Washington: Washington Division of Mines and Geology Bulletin 56, 51 p., 1 plate.

Geologic map: Figure 2, Geologic map and sections of the Wynoochee Valley quadrangle, Washington, scale 1:62,500.

492. Rau, W. W., 1975, Geologic map of the Destruction Island and Taholah quadrangles, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-13, 1 sheet, scale 1:63,360.

Geologic map: scale 1:63,360

493. Rau, W. W., 1979, Geologic map in the vicinity of the lower Bogachiel and Hoh River valleys, and the Washington coast: Washington Division of Geology and Earth Resources Geologic Map GM-24, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

494. Rau, W. W., 1986, Geologic map of the Humptulips quadrangle and adjacent areas, Grays Harbor County, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-33, 1 sheet.

Geologic map: scale 1:62,500.

495. Reidel, S. P., 1978, Geology of the Saddle Mountains between Sentinel Gap and 119 degrees 30 minutes longitude: Rockwell Hanford Operations RHO-BWI-LD-4, 75 p., 4 plates.

Geologic maps:

495a Plate 1, Preliminary geologic map of the Saddle Mountains between Sentinel Gap and longitude 119 degrees 30 minutes [Beverly quadrangle], scale 1:24,000.

495b Plate 2, Preliminary geologic map of the Saddle Mountains between Sentinel Gap and longitude 119 degrees 30 minutes [Beverly SE quadrangle], scale 1:24,000.

495c Plate 3, Preliminary geologic map of the Saddle Mountains between Sentinel Gap and longitude 119 degrees 30 minutes [south half of the Smyrna quadrangle], scale 1:24,000.

Note: In List of Plates, Plate 1 is called Figure 10; Plate 2 is called Figure 11; and Plate 3 is called Figure 12.

496. Reidel, S. P., 1988, Geologic map of the Saddle Mountains, south-central Washington: Washington Division of Geology and Earth Resources Geologic Map GM-38, 5 plates, with 28 p. text.

Geologic maps:

496a Plate 1, scale 1:48,000.
496b Plate 2, scale 1:48,000.
496c Plate 3, scale 1:48,000.

497. Reidel, S. P.; Fecht, K. R., compilers, 1994, Geologic map of the Priest Rapids 1:000,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 94-13, 22 p., 1 plate.

Geologic map: Plate 1, scale 1:100,000.

498. Reidel, S. P.; Fecht, K. R., compilers, 1994, Geologic map of the Richland 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 94-8, 21 p., 1 plate.

Geologic map: Plate 1, scale 1:100,000.

499. Reidel, S. P.; Hooper, P. R.; Webster, G. D.; Camp, V. E., 1992, Geologic map of southeastern Asotin County, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-40, 1 sheet, with 22 p. text.

Geologic map: Plate, scale 1:48,000.

500. Richardson, Donald; Bingham, J. W.; Madison, R. J., 1968, Water resources of King County, Washington: U.S. Geological Survey Water-Supply Paper 1852, 74 p., 2 plates.

Geologic map: Plate 1, Generalized geologic map and section of King County and certain adjacent areas, Washington, scale 1:250,000.

501. Rigby, J. G.; Othberg, K. L.; Campbell, N. P.; Hanson, L. G.; Kiver, E. P.; Stradling, D. F.; Webster, G. D., 1979, Reconnaissance surficial geologic mapping of the late Cenozoic sediments of the Columbia Basin, Washington: Washington Division of Geology and Earth Resources Open File Report 79-3, 94 p., 7 plates.

Geologic maps:

501a Plate 10, Geologic map of the Toppenish Ridge, by N. P. Campbell, scale 1:12,000.

501b Plate 11, Geologic map of the north flank of Saddle Mountains and Smyra Bench, by N. P. Campbell, scale 1:12,000.

502. Rinehart, C. D., 1981, Reconnaissance geochemical survey of gully and stream sediments, and geologic summary, in part of the Okanogan Range, Okanogan County, Washington: Washington Division of Geology and Earth Resources Bulletin 74, 24 p., 3 plates.

Geologic map: Plate 1, Geologic map of part of the Okanogan Range, Washington, scale 1:96,000.

503. Rinehart, C. D.; Fox, K. F., Jr., 1972, Geology and mineral deposits of the Loomis quadrangle, Okanogan County, Washington: Washington Division of Mines and Geology Bulletin 64, 124 p., 3 plates.

Geologic map: Plate 1, Geologic map of the Loomis quadrangle, Okanogan County, Washington, scale 1:62,500.

504. Rinehart, C. D.; Fox, K. F., Jr., 1976, Bedrock geology of the Conconully quadrangle, Okanogan County, Washington: U.S. Geological Survey Bulletin 1402, 58 p., 1 plate.

Geologic map: Plate 1, Geologic map of the Conconully quadrangle, Okanogan County, Washington, scale 1:62,500.

505. Rinehart, C. D.; Fox, K. F., Jr., 1994, Geologic map of the Aeneas Valley quadrangle, Okanogan County, Washington: U.S. Geological Survey Open-File Report 93-709, 7 p., 2 plates.

Geologic map: Plate 1, scale 1:48,000.

506. Rinehart, C. D.; Greene, R. C., 1988, Geologic map of the northwestern three-fourths of the Aeneas quadrangle, Okanogan and Ferry Counties, Washington: U.S. Geological Survey Open-File Report 88-281, 18 p., 1 plate.

Geologic map: Plate, scale 1:48,000.

507. Robbins, S. L.; Burt, R. J.; Gregg, D. O., 1975, Gravity and aeromagnetic study of part of the Yakima River Basin, Washington: U.S. Geological Survey Professional Paper 726-E, 7 p., 1 plate.

Geologic map: Figure 7, Structural contour map on the top of the Yakima Basalt surface in the Toppenish Creek basin and part of the Ahtanum Valley based on gravity data, scale 1:250,000.

Geologic and geophysical (gravity, magnetic) maps:

Figure 2, Complete Bouguer gravity and generalized geologic map of part of the Yakima basin, Washington, scale 1:250,000.

Figure 3, Aeromagnetic and geologic map of part of the Yakima basin, Washington, scale 1:250,000.

Geophysical maps (gravity):

Figure 4, Upward continuation gravity map computed for the 3-mile level (Yakima basin, Washington), scale 1:250,000.

Figure 5, Residual gravity map after removal of 3-mile continued field (Yakima basin, Washington), scale 1:250,000.

508. Roberts, A. E., 1958, Geology and coal resources of the Toledo–Castle Rock district, Cowlitz and Lewis Counties, Washington: U.S. Geological Survey Bulletin 1062, 71 p., 6 plates.

Geologic map: Plate 1, Geologic map and structure section of the Toutle quadrangle and the Castle Rock quadrangle east of the Cowlitz River, Washington, scale 1:62,500.

509. Ross, M. E., 1989, Stratigraphic relationships of subaerial, invasive, and intracanyon flows of Saddle Mountains Basalt in the Troy basin, Oregon and Washington. *In* Reidel, S. P.; Hooper, P. R., editors, Volcanism and tectonism in the Columbia River flood-basalt province: Geological Society of America Special Paper 239, p. 131-142.

Geologic map: Fig. 1, Bedrock geologic map and location map of the Troy basin–Blue Mountains area, scale 1:200,000.

510. Ruppel, B. D., 1979, A note on the simple Bouguer gravity field in the eastern Strait of Juan de Fuca, Washington: U.S. Geological Survey Open-File Report 79-1674, 8 p.

Geophysical map (gravity): Figure 1, Revised simple Bouguer gravity field, eastern Strait of Juan de Fuca, scale 1:500,000.

511. Russell, R. H., editor, 1975, Geology and water resources of the San Juan Islands, San Juan County, Washington: Washington Department of Ecology Water-Supply Bulletin 46, 171 p., 3 plates.

Geologic map: Plate 1, Geologic map of the San Juan Islands, San Juan County, Washington, scale 1:70,000.

512. Russell, R. H.; Eddy, P. A., 1972, Geohydrologic evaluation of Aeneas Lake–Horse Springs Coulee, Okanogan County, Washington: Washington Department of Ecology Technical Report 72-2, 31 p., 2 plates.

Geologic map: Plate 1, Geohydrologic map of Aeneas Lake–Horse Springs Coulee, Okanogan County, Washington, scale 1:62,500.

513. Sabol, M. A.; Turney, G. L.; Ryals, G. N., 1988, Evaluation of available data on the geohydrology, soil chemistry, and groundwater chemistry of Gas Works Park and surrounding region, Seattle, Washington: U.S. Geological Survey Water-Resources Investigations Report 87-4045, 49 p., 1 plate.

Geologic map: Plate 1, Geology of Gas Works Park and surrounding region, Seattle, Washington, scale 1:100,000.

514. Salisbury and Dietz, 1980, Geology of the Concrete quadrangle: U.S. Department of Energy, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

515. Salisbury and Dietz, 1980, Geology of the Wenatchee quadrangle: U.S. Department of Energy, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

516. Salisbury and Dietz, 1980, Geology of the Yakima quadrangle: U.S. Department of Energy, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

517. Saunders, E. J., 1914, The coal fields of Kittitas County: Washington Geological Survey Bulletin 9, 204 p., 2 plates.

Geologic map: Plate 1, Geological map of Kittitas County, showing relations of the coal fields, scale 1:125,000.

518. Sceva, J. E., 1950, Preliminary report on the ground-water resources of southwestern Skagit County, Washington: U.S. Geological Survey Ground-Water Report 1, 40 p., 2 plates.

Geologic map: Plate 2, Geologic map of southwestern Skagit County, Washington, scale 1:100,000.

519. Sceva, J. E., 1953, Ground water in the vicinity of Geiger Field, Spokane County, Washington: U.S. Geological Survey Open-File Report, 25 p., 4 plates.

Geologic map: Plate 1, Geologic map of the area about Geiger Field, Spokane County, Washington, scale 1:63,360.

520. Sceva, J. E., 1957, Geology and ground-water resources of Kitsap County, Washington: U.S. Geological Survey Water-Supply Paper 1413, 178 p., 3 plates.

Geologic map: Plate 1, Geologic map of Kitsap County, Washington, scale 1:48,000.

521. Sceva, J. E.; Watkins, F. A., Jr.; Schlax, W. N., Jr., 1949, Geology and ground-water resources of the Wenas Creek Valley, Yakima County, Washington: U.S. Geological Survey Open-File Report, 80 p., 2 plates.

Geologic map: Plate 2, Geologic map of the Wenas Creek Valley, Washington, scale 1:63,360.

522. Schasse, H. W., compiler, 1987, Geologic map of the Centralia quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 87-11, 28 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

523. Schasse, H. W., compiler, 1987, Geologic map of the Mount Rainier quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 87-16, 46 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

524. Schasse, H. W.; Logan, R. L., 1998, Geologic map of the Sequim 7.5-minute quadrangle, Clallam County, Washington: Washington Division of Geology and Earth Resources Open File Report 98-7, 22 p., 2 plates.

Geologic map: Plate 1, scale 1:24,000.

525. Schmidt, R.G., 1961, Aeroradioactivity of the Hanford Plant area, Washington and Oregon: U.S. Geological Survey Geophysical Investigations Map GP-307, 1 sheet, scale 1:250,000.

Geophysical map (radioactivity): scale 1:250,000.

526. Schroeder, M. C., 1952, Geology of the Bead Lake district, Pend Oreille County, Washington: Washington Division of Mines and Geology Bulletin 40, 57 p., 1 plate.

Geologic map: Plate 1, Geologic map of the Bead Lake district, Pend Oreille County, Washington, scale 1:63,360.

527. Schuster, J. E., 1973, A learning guide on the geology of the Cispus Environmental Center area, Lewis County, Washington: Washington Division of Geology and Earth Resources Open File Report 73-4, 53 p.

Geologic map: Figure 5, Geologic map and cross sections of the Cispus Environmental Center area, Lewis County, Washington, scale 1:42,000.

528. Schuster, J. E., 1976, Geology of the Clugston Creek area, Stevens County, Washington: Washington Division of Geology and Earth Resources Open File Report 76-8, 26 p.

Geologic map: Figure 1, Geologic map of the Clugston area, Stevens County, Washington, scale 1:37,500.

529. Schuster, J. E., compiler, 1993, Geologic map of the Clarkston 1:100,000 quadrangle, Washington–Idaho, and the Washington portion of the Orofino 1:100,000 quadrangle: Washington Division of Geology and Earth Resources Open File Report 93-4, 43 p., 1 plate.

Geologic map: Plate 1, scale 1:100,000.

530. Schuster, J. E., compiler, 1994, Geologic map of the east half of the Toppenish 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 94-10, 15 p., 1 plate.

Geologic map: Plate 1, scale 1:100,000.

531. Schuster, J. E., compiler, 1994, Geologic maps of the east half of the Washington portion of the Goldendale 1:100,000 quadrangle and the Washington portion of the Hermiston 1:100,000 quadrangle: Washington Division of Geology and Earth Resources Open File Report 94-9, 17 p., 1 plate.

Geologic map: Plate 1, scale 1:100,000.

532. Schuster, J. E., compiler, 1994, Geologic map of the east half of the Yakima 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 94-12, 19 p., 1 plate.

Geologic map: Plate 1, scale 1:100,000.

533. Schuster, J. E., compiler, 1994, Geologic map of the Walla Walla 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 94-3, 18 p., 1 plate.

Geologic map: Plate 1, scale 1:100,000.

534. Schuster, J. E.; Blackwell, D. D.; Hammond, P. E.; Huntting, M. T., 1978, Heat flow studies in the Steamboat Mountain-Lemei Rock area, Skamania County, Washington: Washington Division of Geology and Earth Resources Information Circular 62, 56 p.

Geologic maps:

534a Figure 1, Generalized geologic map and cross sections of part of the southern Cascade Range, Washington, scale 1:340,000.

534b Figure 2, Geologic map of the Indian Heaven area, southern Cascade Range, Washington, scale 1:200,000.

535. Schuster, J. E.; Gulick, C. W.; Reidel, S. P.; Fecht, K. R.; Zurenko, Stephanie, 1997, Geologic map of Washington—Southeast quadrant: Washington Division of Geology and Earth Resources Geologic Map GM-45, 2 plates, scale 1:250,000, with 20 p. text.

Geologic map: Sheet 1, scale 1:250,000.

536. Shannon & Wilson, 1973, Geologic studies of Columbia River basalt structures and age of deformation—The Dalles–Umatilla region, Washington and Oregon; Boardman nuclear project: Portland General Electric Company, 1 v., 2 plates.

Geologic maps:

536a Figure 3, Geologic map, Warwick fault system, scale 1:63,360.

536b Figure 6, Geologic map, Arlington–Shutler Butte lineament, scale 1:63,360.

536c Figure 7, Geologic map, Service anticline, scale 1:63,360.

536d Figure 8, Geologic map, Hite fault area, scale 1:250,000.

537. Shannon & Wilson, Inc., 1977, Geologic and hydrologic reconnaissance, Domerie Creek watershed above Roslyn, Washington water supply intake reservoir: Shannon & Wilson, Inc. [under contract to] Stevens, Thompson & Runyan, Inc., 15 p., 2 plates.

Geologic map: Fig. 2, scale 1:11,200.

538. Shannon & Wilson, Inc., 1993, Evaluation of liquefaction potential Tacoma, Washington; Final technical report: Shannon & Wilson, Inc. [under contract to] U.S. Geological Survey, 1 v.

Geologic map: Plate 1, Geologic map of study area, Tacoma, Washington, scale 1:100,000.

539. Shedd, Solon, 1925, Geology and resources of the Pasco and Prosser quadrangles: Washington Division of Geology Open File Report 23-1, 125 p., 1 plate.

Geologic map: Plate, Geology of the Pasco and Prosser quadrangles, Washington, scale 1:125,000.

540. Sheppard, R. A., 1964, Geologic map of the Husum quadrangle, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-280, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

541. Sheppard, R. A., 1967, Geology of the Simcoe Mountains volcanic area, Washington: Washington Division of Mines and Geology Geologic Map GM-3, 1 sheet, scale 1:125,000.

Geologic map: scale 1:125,000.

542. Sherrard, M. S.; Flanigan, V. J., 1983, Bouguer gravity anomaly map of the Glacier Peak Wilderness and vicinity, Chelan, Skagit, and Snohomish Counties, Washington: U.S. Geological Survey Open-File Report 83-595, 26 p., 1 plate.

Geophysical map (gravity): Plate 1, Complete Bouguer gravity anomaly map, scale 1:100,000.

543. Sherrard, M. S.; Flanigan, V. J.; Webring, Michael, 1986, Gravity survey of the Colville Indian Reservation, northeastern Washington: U.S. Geological Survey Open-File Report 86-326, 58 p., 1 plate.

Geophysical map (gravity): Plate 1, Complete Bouguer gravity map of the Colville Indian Reservation, northeastern Washington, scale 1:125,000.

544. Simmons, G. C.; Van Noy, R. M.; Zilka, N. T., 1983, Mineral resources of the Cougar Lakes–Mount Aix study area, Yakima and Lewis Counties, Washington; with a section on Interpretation of aeromagnetic data, by W. E. Davis: U.S. Geological Survey Bulletin 1504, 81 p., 3 plates.

Geologic and geophysical (magnetic) map: Plate 1, Reconnaissance geologic and aeromagnetic map, scale 1:62,500.

545. Sinclair, K. A.; Garrigues, R. S., 1994, Geology, water resources, and seawater intrusion assessment of Marrowstone Island, Jefferson County, Washington: Washington Department of Ecology Water Supply Bulletin 59, 1 v., 7 plates.

Geologic map: Plate 2, scale 1:24,000.

546. Smith, G. O., 1903, Geologic atlas of the United States—Ellensburg folio, Washington: U.S. Geological Survey Geologic Folio 86, 7 p.

Geologic maps:

Plate, Areal geology sheet, scale 1:125,000.
Plate, Structure-section sheet, scale 1:125,000.

547. Smith, G. O., 1904, Geologic atlas of the United States—Mount Stuart folio, Washington: U.S. Geological Survey Geologic Folio 106, 10 p.

Geologic maps:

Plate, Areal geology, scale 1:125,000.
Plate, Economic geology, scale 1:125,000.
Plate, Structure sections, scale 1:125,000.

548. Smith, G. O.; Calkins, F. C., 1906, Geologic atlas of the United States—Snoqualmie folio, Washington: U.S. Geological Survey Geologic Folio 139, 14 p.

Geologic maps:

Plate, Areal geology, scale 1:125,000.
Plate, Structure sections, scale 1:125,000.

549. Smith, J. G., 1993, Geologic map of upper Eocene to Holocene volcanic and related rocks in the Cascade Range, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-2005, 2 sheets, with 19 p. text.

Geologic map: scale 1:500,000 (mapped areas separated).

550. Smith, M. T., 1991, Geologic map of the Old Copper Hill–Butcher Mountain area, Stevens County, Washington: Washington Division of Geology and Earth Resources Open File Report 91-6, 9 p., 1 plate.

Geologic map: Plate 1, scale 1:12,000.

551. Smith, M. T., 1991, Geologic strip map of the Ninemile Creek–Wilmont Creek–Hunters area, Ferry and Stevens Counties, Washington: Washington Division of Geology and Earth Resources Open File Report 91-4, 9 p., 1 plate.

Geologic map: Plate, scale 1:24,000.

552. Smith, Mackey, 1975, Preliminary surficial geologic map of the Edmonds East and Edmonds West quadrangles, Snohomish and King Counties, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-14, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

553. Smith, Mackey, 1976, Preliminary surficial geologic map of the Mukilteo and Everett quadrangles, Snohomish County, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-20, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

554. Smith, Mackey, 1976, Surficial geology of northeast Tacoma, Pierce County, Washington: Washington Division of Geology and Earth Resources Open File Report 76-9, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

555. Smith, Mackey, 1977, Geologic map of the city of Tacoma, Pierce County, Washington: Washington Division of Geology and Earth Resources Open File Report 77-9, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

556. Snavely, P. D., Jr.; Brown, R. D., Jr.; Roberts, A. E.; Rau, W. W., 1958, Geology and coal resources of the Centralia–Chehalis district, Washington, with a section on Microscopical character of Centralia–Chehalis coal, by J. M. Schopf: U.S. Geological Survey Bulletin 1053, 159 p., 6 plates.

Geologic map: Plate 1, Geologic map of the Centralia–Chehalis district, Washington, scale 1:48,000.

557. Snavely, P. D., Jr.; Kvenvolden, K. A., 1989, Geology and hydrocarbon potential. Chapter A *in* Preliminary evaluation of the petroleum potential of the Tertiary accretionary terrane, west side of the Olympic Peninsula, Washington: U.S. Geological Survey Bulletin 1892, p. 1-17, 1 plate.

Geologic map: Plate 1, Generalized geologic map of the west side of the Olympic Peninsula, Washington, showing localities of analyzed samples, scale 1:250,000.

558. Snavely, P. D., Jr.; MacLeod, N. S.; Niem, A. R.; and others, 1993, Geologic map of the Cape Flattery, Clallam Bay, Ozette Lake, and Lake Pleasant quadrangles, northwestern Olympic Peninsula, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-1946, 1 sheet.

Geologic map: scale 1:48,000.

559. Snavely, P. D., Jr.; Niem, A. R.; MacLeod, N. S., 1989, Geology of the coastal area between Cape Flattery and Cape Alava, northwest Washington: U.S. Geological Survey Open-File Report 89-141, 1 sheet.

Geologic map: Plate, scale 1:24,000.

560. Snavely, P. D., Jr.; Niem, A. R.; MacLeod, N. S.; Pearl, J. E.; Rau, W. W., 1979, Makah Formation—A deep marginal basin sedimentary sequence of late Eocene and Oligocene age in the northwestern Olympic Peninsula, Washington: U.S. Geological Survey Open-File Report 79-581, 75 p.

Geologic map: Figure 2, Generalized bedrock geology of northwest Olympic Peninsula showing the relation of the Makah Formation to other Tertiary units, scale 1:200,000.

561. Snavely, P. D., Jr.; Tiffin, D. L.; MacLeod, N. S.; Currie, R. G., 1974, Preliminary gravity and magnetic maps of the Strait of Juan de Fuca, British Columbia, Canada and Washington, United States: U.S. Geological Survey Open-File Report 74-96, 10 p., 2 plates.

Geophysical maps (gravity):

Preliminary simple Bouguer gravity map of the Strait of Juan de Fuca, scale 1:250,000.

Preliminary magnetic anomaly map, scale 1:250,000.

562. Snook, J. R.; Campbell, A. B.; Lucas, H. E.; Abrams, M. J.; Janzen, John; Smith, Bruce, 1990, Geologic map of the Inchelium quadrangle, Stevens and Ferry Counties, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1752, 1 sheet.

Geologic map: Plate, scale 1:48,000.

563. Snyder, S. L.; Felger, T. J.; Blakely, R. J.; Wells, R. E., 1993, Aeromagnetic map of the Portland–Vancouver metropolitan area, Oregon and Washington: U.S. Geological Survey Open-File Report 93-211, 1 sheet.

Geophysical map (magnetic): scale 1:100,000.

564. Staatz, M. H., 1964, Geology of the Bald Knob quadrangle, Ferry and Okanogan Counties, Washington: U.S. Geological Survey Bulletin 1161-F, 79 p., 1 plate.

Geologic map: Plate 1, Geologic map and sections of the Bald Knob quadrangle, Ferry and Okanogan Counties, Washington, scale 1:62,500.

565. Staatz, M. H.; Tabor, R. W.; Weis, P. L.; Robertson, J. F.; Van Noy, R. M.; Pattee, E. C., 1972, Geology and mineral resources of the northern part of the North Cascades National Park, Washington: U.S. Geological Survey Bulletin 1359, 132 p., 2 plates.

Geologic map: Plate 1, Geologic map of the northern part of the North Cascades National Park, Washington, scale 1:200,000.

566. Staatz, M. H.; Weis, P. L.; Tabor, R. W.; Robertson, J. F.; Van Noy, R. M.; Pattee, E. C.; Holt, D. C., 1971, Mineral resources of the Pasayten Wilderness area, Washington: U.S. Geological Survey Bulletin 1325, 255 p., 3 plates.

Geologic map: Plate 1, Geologic map of the Pasayten Wilderness area, Washington, scale 1:200,000.

567. Stacey, R. A.; Steele, J. P., 1970, Geophysical measurements in British Columbia with maps—120, Strait of Georgia; 121, Juan de Fuca Strait: Canada Department of Energy, Mines and Resources Gravity Map Series, 17 p., 2 plates.

Geophysical maps (gravity, magnetic): Plate 2, Strait of Juan de Fuca, Bouguer anomaly field; total intensity magnetic map, scale 1:250,000.

568. Stoffel, K. L., 1984, Geology of the Grande Ronde lignite field, Asotin County, Washington: Washington Division of Geology and Earth Resources Report of Investigations 27, 79 p., 1 plate.

Geologic map: Plate 1, Geologic map of the Grande Ronde lignite field, Asotin County, Washington, scale 1:48,000.

569. Stoffel, K. L., compiler, 1990, Geologic map of the Republic 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open-File Report 90-10, 62 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

570. Stoffel, K. L., compiler, 1990, Geologic map of the Oroville 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 90-11, 58 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

571. Stoffel, K. L.; Joseph, N. L.; Waggoner, S. Z.; Gulick, C. W.; Korosec, M. A.; Bunning, B. B., 1991, Geologic map of Washington—Northeast quadrant: Washington Division of Geology and Earth Resources Geologic Map GM-39, 3 sheets, with 36 p. text.

Geologic map: Sheet 1, scale 1:250,000.

572. Stoffel, K. L.; McGroder, M. F., compilers, 1990, Geologic map of the Robinson Mtn. 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 90-5, 39 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

573. Stout, M. L., 1964, Geology of a part of the south-central Cascade mountains, Washington: Geological Society of America Bulletin, v. 75, no. 4, p. 317-334, 1 plate.

Geologic map: Plate, Geologic map and structure sections of a part of the south-central Cascade Mountains of Washington, scale 1:63,360.

574. Stuart, D. J., 1965, Gravity data and Bouguer-gravity map for western Washington: U.S. Geological Survey Open-File Report 65-154, 50 p., 1 plate.

Geophysical map (gravity): Figure 1, Bouguer-gravity map of western Washington, scale 1:500,000.

575. Swanson, D. A., 1966, Tieton volcano, a Miocene eruptive center in the southern Cascade mountains, Washington: Geological Society of America Bulletin, v. 77, no. 11, p. 1293-1314, 2 plates.

Geologic map: Plate 1, Geologic map of Tieton volcano and its apron, Yakima County, Washington, scale 1:56,000.

576. Swanson, D. A., 1978, Geologic map of the Tieton River area, Yakima County, south-central Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-968, 1 sheet, scale 1:48,000.

Geologic map: scale 1:48,000.

577. Swanson, D. A., 1989, Geologic maps of the French Butte and Greenhorn Buttes quadrangles, Washington: U.S. Geological Survey Open File Report 89-309, 25 p., 3 plates.

Geologic maps:

577a Sheet 1, French Butte quadrangle, scale 1:24,000.

577b Sheet 2, Greenhorn Buttes quadrangle, scale 1:24,000.

578. Swanson, D. A., 1991, Geologic map of the Tower Rock quadrangle, southern Cascade Range, Washington: U.S. Geological Survey Open-File Report 91-314, 26 p., 2 plates.

Geologic map: Plate 1, scale 1:24,000.

579. Swanson, D. A., 1992, Geologic map of the McCoy Peak quadrangle, southern Cascade Range, Washington: U.S. Geological Survey Open-File Report 92-336, 36 p., 2 plates.

Geologic map: Plate 1, scale 1:24,000.

580. Swanson, D. A., 1993, Geologic map of the Blue Lake quadrangle, southern Cascade Range, Washington: U.S. Geological Survey Open-File Report 93-297, 34 p., 2 plates.

Geologic map: Sheet 1, scale 1:24,000.

581. Swanson, D. A., 1994, Geologic map of the East Canyon Ridge quadrangle, southern Cascade Range, Washington: U.S. Geological Survey Open-File Report 94-591, 31 p., 2 plates.

Geologic map: Plate 1, scale 1:24,000.

582. Swanson, D. A., 1996, Geologic map of the Packwood Lake quadrangle, southern Cascade Range, Washington: U.S. Geological Survey Open-File Report 96-704, 25 p., 2 plates.

Geologic map: Plate 1, scale 1:24,000.

583. Swanson, D. A.; Anderson, J. L.; Bentley, R. D.; Byerly, G. R.; Camp, V. E.; Gardner, J. N.; Wright, T. L., 1979, Reconnaissance geologic map of the Columbia River Basalt Group in eastern Washington and northern Idaho: U.S. Geological Survey Open-File Report 79-1363, 26 p., 12 plates.

Geologic maps:

Sheet 1, [Okanogan 1 degree by 2 degree quadrangle], scale 1:250,000.

Sheet 2, [Sandpoint 1 degree by 2 degree quadrangle], scale 1:250,000.

Sheet 3, [Wenatchee 1 degree by 2 degree quadrangle], scale 1:250,000.

Sheet 4, [Ritzville 1 degree by 2 degree quadrangle], scale 1:250,000.

Sheet 5, [Spokane 1 degree by 2 degree quadrangle], scale 1:250,000.

Sheet 6, [Yakima 1 degree by 2 degree quadrangle], scale 1:250,000.

Sheet 7, [Walla Walla 1 degree by 2 degree quadrangle], scale 1:250,000.

Sheet 8, [Pullman 1 degree by 2 degree quadrangle], scale 1:250,000.

Sheet 10, [Vancouver 1 degree by 2 degree quadrangle], scale 1:250,000.

Sheet 11, [The Dalles 1 degree by 2 degree quadrangle], scale 1:250,000.

Sheet 12, [Pendleton 1 degree by 2 degree quadrangle], scale 1:250,000.

584. Swanson, D. A.; Brown, J. C.; Anderson, J. L.; Bentley, R. D.; Byerly, G. R.; Gardner, J. N.; Wright, T. L., 1979, Preliminary structure contour maps on the top of the Grande Ronde and Wanapum basalts, eastern Washington and northern Idaho: U.S. Geological Survey Open-File Report 79-1364, 3 sheets, scale 1:250,000.

Geologic maps:

Sheet 1, scale 1:250,000.
Sheet 2, scale 1:250,000.
Sheet 3, scale 1:250,000.

585. Swanson, D. A.; Clayton, G. A., 1983, Generalized geologic map of the Goat Rocks Wilderness and Roadless areas (6036, Parts A, C, and D), Lewis and Yakima Counties, Washington: U.S. Geological Survey Open-File Report 83-357, 10 p., 1 plate.

Geologic map: Plate, scale 1:48,000.

586. Swanson, D. A.; Helz, R. T., 1979, Bedrock geologic map of the vent system for the Ice Harbor Member of the Saddle Mountains Basalt, Ice Harbor Dam–Basin City area, southeast Washington: U.S. Geological Survey Open-File Report 79-292, 8 sheets.

Geologic maps:

586a Sheet 2, [part of the Mesa quadrangle], scale 1:62,500; Sheet 3, [part of the Eltopia quadrangle], scale 1:62,500.

586b Sheet 4, [part of the Rye Grass Coulee quadrangle], scale 1:24,000; Sheet 5, [part of the Levey SW quadrangle], scale 1:24,000; Sheet 6, [part of the Humorist quadrangle], scale 1:24,000; Sheet 7, [part of the Levey SE quadrangle], scale 1:24,000; Sheet 8, [part of the Slater quadrangle], scale 1:24,000.

587. Swanson, D. A.; Moore, R. B.; Banks, N. G., 1997, Geologic map of the Packwood quadrangle, southern Cascade Range, Washington: U.S. Geological Survey Open-File Report 97-157, 18 p., 2 plates.

Geologic map: Sheet 1, scale 1:24,000.

588. Swanson, D. A.; Wright, T. L., 1983, Geologic map of the Wenaha Tucannon wilderness, Washington and Oregon: U.S. Geological Survey Miscellaneous Field Studies Map MF-1536, 1 sheet.

Geologic map: scale 1:48,000.

589. Swanson, D. A.; Wright, T. L.; Camp, V. E.; Gardner, J. N.; Helz, R. T.; Price, S. M.; Reidel, S. P.; Ross, M. E., 1980, Reconnaissance geologic map of the Columbia River Basalt Group, Pullman and Walla Walla quadrangles, southeast Washington and adjacent Idaho: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-1139, 2 sheets, scale 1:250,000.

Geologic map: Sheet 1, scale 1:250,000.

590. Swanson, D. A.; Wright, T. L.; Zietz, Isidore, 1979, Aeromagnetic map and geologic interpretation of the west-central Columbia Plateau, Washington and adjacent Oregon: U.S. Geological Survey Geophysical Investigations Map GP-917, 1 sheet, scale 1:250,000.

Geophysical map (magnetic): scale 1:250,000.

591. Tabor, R. W., 1963, Large quartz diorite dike and associated explosion breccia, northern Cascade mountains, Washington: Geological Society of America Bulletin, v. 74, no. 9, p. 1203-1208.

Geologic map: Figure 1, Geologic map of the Cascade dike, northern Cascade Mountains, Washington, scale 1:92,000.

592. Tabor, R. W., 1982, Geologic map of the Wonder Mountain roadless area, Mason County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1418-A, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

593. Tabor, R. W., 1994, Late Mesozoic and possible early Tertiary accretion in western Washington State—The Helena–Haystack melange and the Darrington–Devils Mountain fault zone: Geological Society of America Bulletin, v. 106, no. 2, p. 217-232, 1 plate.

Geologic maps:

593a Fig. 4, Geologic map of Deer Creek–Haystack area, scale 1:86,900.

593b Fig. 5, Geologic map of Helena Ridge area just south of Darrington, scale 1:104,870.

593c Fig. 6, Geologic map of Manastash Ridge area, scale 1:126,720.

594. Tabor, R. W.; Booth, D. B.; Vance, J. A.; Ford, A. B., 2002, Geologic map of the Sauk River 30- by 60-minute quadrangle, Washington: U.S. Geological Survey Geologic Investigations Series Map I-2592, 2 sheets, scale 1:100,000, with 67 p. text.

Geologic map: Plate, scale 1:100,000.

595. Tabor, R. W.; Cady, W. M., 1978, Geologic map of the Olympic Peninsula, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-994, 2 sheets, scale 1:125,000.

Geologic map: scale 1:125,000.

596. Tabor, R. W.; Crowder, D. F., 1969, On batholiths and volcanoes—Intrusion and eruption of late Cenozoic magmas in the Glacier Peak area, North Cascades, Washington: U.S. Geological Survey Professional Paper 604, 67 p., 1 plate.

Geologic map: Plate 1, Geologic map of late Cenozoic igneous rocks of the Glacier Peak area, Washington, scale 1:62,500.

597. Tabor, R. W.; Engels, J. C.; Staatz, M. H., 1968, Quartz diorite-quartz monzonite and granite plutons of the Pasayten River area, Washington—Petrology, age, and emplacement: U.S. Geological Survey Professional Paper 600-C, p. C45-52.

Geologic map: Figure 2, Generalized geologic map of the Pasayten River area, scale 1:250,000.

598. Tabor, R. W.; Frizzell, V. A., Jr.; Booth, D. B.; Waitt, R. B.; Whetten, J. T.; Zartman, R. E., 1993, Geologic map of the Skykomish River 30- by 60-minute quadrangle, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-1963, 1 sheet, with 42 p. text.

Geologic map: scale 1:100,000.

599. Tabor, R. W.; Frizzell, V. A., Jr.; Vance, J. A.; Naeser, C. W., 1984, Ages and stratigraphy of lower and middle Tertiary sedimentary and volcanic rocks of the central Cascades, Washington—Application to the tectonic history of the Straight Creek fault: Geological Society of America Bulletin, v. 95, no. 1, p. 26-44.

Geologic maps:

599a Fig. 3, scale 1:250,000.
599b Fig. 4, scale 1:100,000.
599c Fig. 5, scale 1:100,000.

600. Tabor, R. W.; Frizzell, V. A., Jr.; Whetten, J. T.; Waitt, R. B.; Swanson, D. A.; Byerly, G. R.; Booth, D. B.; Hetherington, M. J.; Zartman, R. E., 1987, Geologic map of the Chelan 30-minute by 60-minute quadrangle, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-1661, 1 sheet, with 29 p. text.

Geologic map: scale 1:100,000.

601. Tabor, R. W.; Frizzell, V. A., Jr.; Yeats, R. S.; Whetten, J. T., 1982, Geologic map of the Eagle Rock and Glacier Peak roadless areas, Snohomish and King Counties, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1380-A, 1 sheet, scale 1:100,000.

Geologic map: scale 1:100,000.

602. Tabor, R. W.; Haugerud, R. A.; Booth, D. B.; Brown, E. H., 1994, Preliminary geologic map of the Mount Baker 30- by 60-minute quadrangle, Washington: U.S. Geological Survey Open-File Report 94-403, 55 p., 2 plates.

Geologic map: Plate 1, scale 1:100,000.

603. Tabor, R. W.; Haugerud, R. A.; Brown, E. H.; Babcock, R. S.; Miller, R. B., 1989, Accreted terranes of the North Cascades Range, Washington—Spokane to Seattle, Washington July 21–29, 1989: International Geological Congress, 28th, Field Trip Guidebook T307, 62 p.

Geologic maps: Fig. 9, Geologic sketch map of North Cascades and field guide stops [on 7 maps].

603a Map 1, scale 1:230,000.
603b Map 2, scale 1:230,000.
603c Map 3, scale 1:230,000.
603d Map 4, scale 1:230,000.
603e Map 5, scale 1:230,000.
603f Map 6, scale 1:230,000.
603g Map 7, scale 1:230,000.

604. Tabor, R. W.; Waitt, R. B., Jr.; Frizzell, V. A., Jr.; Swanson, D. A.; Byerly, G. R.; Bentley, R. D., 1982, Geologic map of the Wenatchee 1:100,000 quadrangle, central Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-1311, 1 sheet, scale 1:100,000, with 26 p. text.

Geologic map: scale 1:100,000.

605. Tabor, R. W.; Yeats, R. S.; Sorensen, M. L., 1972, Geologic map of the Mount Angeles quadrangle, Clallam and Jefferson Counties, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-958, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

606. Tengesdal, J. L.; Magleby, D. N.; Lockhart, A. C.; Burk, J. D., 1976, Preconstruction geologic report—Main Canal, stations 1+13.5 to 216+00; Bacon Siphon and Tunnel no. 2, Columbia Basin Project, Washington: U.S. Bureau of Reclamation [Boise], 2 v.

Geologic maps:

Drawing 222-100-301, Bacon Siphon and tunnel no. 2, Main Canal Station 55+00 to Station 69+00, scale 1:600.

Drawing 222-100-302, Bacon Siphon and tunnel no. 2, Main Canal Station 69+00 to Station 92+50, scale 1:600.

Drawing 222-100-298, Bacon Siphon no. 2, Geology, plan and profile F–F', scale 1:600.

Drawing 222-100-305, Main Canal Bacon tunnel no. 2, Geologic plan and profile G–G', scale 1:4,800.

Drawing 222-100-314, Bacon Tunnel no. 1 and 2, (outlet area), surface geology, scale 1:600.

607. Thomas, B. E.; Wilkinson, J. M.; Embrey, S. S., 1997, The ground-water system and ground-water quality in western Snohomish County, Washington: U.S. Geological Survey Water-Resources Investigations Report 96-4312, 218 p., 9 plates.

Geologic map: Plate 2, Generalized surficial geohydrology, scale 1:100,000.

608. Thompson, G. A., 1973, Aeromagnetic and Bouguer gravity map of Twin Sisters dunite, northwestern Washington: U.S. Geological Survey Geophysical Investigations Map GP-901, 1 sheet, scale 1:125,000, with 3 p. text.

Geophysical map (magnetic, gravity): scale 1:125,000.

609. Thorsen, G. W.; Othberg, K. L., 1979, Slope stability pilot project: Washington Division of Geology and Earth Resources Open File Report 79-16, 30 p., 4 plates.

Geologic maps:

Map 2, Bedrock outcrop, scale 1:62,500.
Map 3, Geomorphic terrain map, scale 1:62,500.

610. Tillson, D. D., 1977, Field trip 4—Geology and foundation excavation at the Satsop Nuclear Power Plant. *In* Association of Engineering Geologists, Guidebook to field trips; 1977 National Meeting, Seattle, Washington: Association of Engineering Geologists, p. 102-114.

Geologic map: Fig. 2, Site locality geology and structure map, scale 1:250,000.

611. Todd, V. R., 1995, Geologic map of the Doe Mountain 15' quadrangle, Okanogan County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map 2306, 1 sheet, scale 1:62,500, with 17 p. text.

Geologic map: Plate 1, scale 1:62,500.

612. Todd, V. R., 1995, Geology of part of the Mazama quadrangle, Okanogan County, Washington: U.S. Geological Survey Open-File Report 95-523, 36 p., 1 plate.

Geologic map: Plate, scale 1:62,500.

613. Tolan, T. L., 1986, Structure and tectonic maps of the Columbia Plateau and adjacent areas: Rockwell Hanford Operations SD-BWI-TI-320, 2 p., 2 plates.

Geologic maps: Plates 1 and 2, scale 1:500,000.

614. Tolan, T. L.; Reidel, S. P., compilers, 1989, Structure map of a portion of the Columbia River flood-basalt province. *In* Reidel, S. P.; Hooper, P. R., editors, Volcanism and tectonism in the Columbia River flood-basalt province: Geological Society of America Special Paper 239, Plate, scale 1:580,000.

Geologic map: Plate, scale 1:580,000.

615. Trimble, D. E., 1954, Geology of the Haas quadrangle, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-43, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

616. Trimble, D. E., 1957, Geology of the Portland quadrangle, Oregon-Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-104, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

617. Trimble, D. E., 1963, Geology of Portland, Oregon, and adjacent areas: U.S. Geological Survey Bulletin 1119, 119 p., 1 plate.

Geologic map: Plate 1, Geologic map and diagrammatic section of Portland, Oregon and adjacent areas, scale 1:62,500.

618. Turney, G. L.; Kahle, S. C.; Dion, N. P., 1995, Geohydrology and ground-water quality of east King County, Washington: U.S. Geological Survey Water-Resources Investigations Report 94-4082, 123 p., 5 plates.

Geologic map: Plate 1, scale 1:100,000

619. Umpleby, J. B., 1910, Geology and ore deposits of Republic mining district: Washington Geological Survey Bulletin 1, 65 p.

Geologic map: Plate III, Geologic map of Republic district, scale 1:63,360.

620. Umpleby, J. B., 1911, Part I—Geology and ore deposits of the Myers Creek mining district; Part II—Geology and ore deposits of the Oroville–Nighthawk mining district: Washington Geological Survey Bulletin 5, 111 p.

Geologic maps:

620a Plate I, Geologic map of Myers Creek district, scale 1:63,360.

620b Plate II, Geologic map of Oroville–Nighthawk district, scale 1:125,000.

621. U.S. Army Corps of Engineers, 1978, Yakima Valley regional water management study—Volume I, Summary; Volume II, Water quality; Volume III, Water budget; Volume IV, Geology and ground water: U.S. Army Corps of Engineers [Seattle], 4 v.

Geologic maps:

Plate 3, Roslyn basin surficial geology, scale 1:250,000.

Plate 4, Roslyn basin structural geology, scale 1:250,000.

Plate 7, Kittitas basin surficial geology, scale 1:250,000.

Plate 8, Kittitas basin structural geology and isopachs, scale 1:250,000.

Plate 11, Upper Naches basin surficial geology, scale 1:250,000.

Plate 13, Upper Naches basin structural geology, scale 1:250,000.

Plate 14, Upper Yakima basin surficial geology, scale 1:250,000.

Plate 15, Upper Yakima basin structural geology and isopachs, scale 1:250,000.

Plate 18, Lower Yakima basin surficial geology, scale 1:250,000.

Plate 19, Lower Yakima basin structural geology and isopachs, scale 1:250,000.

622. U.S. Army Corps of Engineers, 1982, Earthquake analysis of Chittenden lock and dam: U.S. Army Corps of Engineers Design Memorandum 8, 1 v.

Geologic map: Fig. 2-2, Site geology, scale 1:50,688.

623. U.S. Bureau of Indian Affairs; U.S. Geological Survey, 1980, Draft environmental impact statement—Mount Tolman project, Ferry County, Washington: U.S. Bureau of Indian Affairs [Portland], 350 p.

Geologic map: Figure 3.5-1, Generalized geology, scale 1:63,360.

624. U.S. Geological Survey, 1973, Aeromagnetic map of parts of the Okanogan and Sandpoint 1 degree by 2 degree quadrangles, Washington–Idaho–Montana: U.S. Geological Survey Open-File Report 73-294, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

625. U.S. Geological Survey, 1974, Aeromagnetic map of part of the Puget Sound area, Washington: U.S. Geological Survey Open-File Report 74-1106, 17 sheets (1 sheet, scale 1:125,000; 16 sheets, scale 1:62,500).

Geophysical maps (magnetic): scales 1:62,500 and 1:125,000.

626. U.S. Geological Survey, 1974, Aeromagnetic map of parts of the Okanogan, Sandpoint, Ritzville, and Spokane 1 degree by 2 degree quadrangles, northeastern Washington: U.S. Geological Survey Open-File Report 74-1105, 24 sheets (1 sheet, scale 1:250,000; 23 sheets, scale 1:62,500).

Geophysical maps (magnetic):

626 Plate, Aeromagnetic map of parts of the Okanogan, Sandpoint, Ritzville, and Spokane 1 degree by 2 degree quadrangles, northeastern Washington, scale 1:250,000.

626a Sheet 1, Bald Knob quadrangle, scale 1:62,500.

626b Sheet 2, Seventeen Mile Mountain quadrangle, scale 1:62,500.

626c Sheet 3, Twin Lakes quadrangle, scale 1:62,500.

626d Sheet 4, Nespelem quadrangle, scale 1:62,500.

626e Sheet 5, Keller quadrangle, scale 1:62,500.

626f Sheet 6, Wilmont Creek quadrangle, scale 1:62,500.

626g Sheet 7, Hunters quadrangle, scale 1:62,500.

626h Sheet 8, [unnamed 15-minute quadrangle, SE corner 48 degrees 00’ 00" by 117 degrees, 45’00"], scale 1:62,500.

626i Sheet 9, [unnamed 15-minute quadrangle, SE corner 48 degrees 00’ 00" by 117 degrees, 30’00"], scale 1:62,500.

626j Sheet 10, [unnamed 15-minute quadrangle, SE corner 48 degrees 00’ 00" by 117 degrees, 15’00"], scale 1:62,500.

626k Sheet 11, [unnamed 15-minute quadrangle, SE corner 48 degrees 00’ 00" by 117 degrees, 00’00"], scale 1:62,500.

626l Sheet 12, Grand Coulee Dam quadrangle, scale 1:62,500.

626m Sheet 13, Wilbur quadrangle, scale 1:62,500.

626n Sheet 14, Lincoln quadrangle, scale 1:62,500.

626o Sheet 15, Turtle Lake quadrangle, scale 1:62,500.

626p Sheet 16, Wellpinit quadrangle, scale 1:62,500.

626q Sheet 17, Clayton quadrangle, scale 1:62,500.

626r Sheet 18, Deer Park quadrangle, scale 1:62,500.

626s Sheet 19, Mount Spokane quadrangle, scale 1:62,500.

626t Sheet 20, Reardan quadrangle, scale 1:62,500.

626u Sheet 21, Medical Lake quadrangle, scale 1:62,500.

626v Sheet 22, Spokane quadrangle, scale 1:62,500.

626w Sheet 23, Greenacres quadrangle, scale 1:62,500.

627. U.S. Geological Survey, 1975, Aeromagnetic maps for part of southwestern Washington: U.S. Geological Survey Open-File Report 75-648, 4 sheets, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

628. U.S. Geological Survey, 1976, Aeromagnetic map of the Horseshoe Basin quadrangle, Okanogan County, Washington: U.S. Geological Survey Open-File Report 76-359, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

629. U.S. Geological Survey, 1977, Aeromagnetic map of northern and eastern parts of the Puget Sound area, Washington: U.S. Geological Survey Open-File Report 77-34, 1 sheet, scale 1:125,000.

Geophysical map (magnetic): scale 1:125,000.

630. U.S. Geological Survey, 1977, Aeromagnetic map of part of northern Washington: U.S. Geological Survey Open-File Report 77-254, 2 sheets, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

631. U.S. Geological Survey, 1978, Aeromagnetic map of the Bellingham area, Washington: U.S. Geological Survey Open-File Report 78-354, 1 sheet, scale 1:250,000.

Geophysical map (magnetic): scale 1:250,000.

632. U.S. Geological Survey, 1979, Aeromagnetic map of Pendleton and vicinity, Oregon and Washington: U.S. Geological Survey Open-File Report 79-278, 1 plate, scale 1:125,000.

Geophysical map (magnetic): scale 1:125,000.

633. U.S. Geological Survey, 1979, Aeromagnetic map of the Cascade Pass area, Washington: U.S. Geological Survey Open-File Report 79-1645, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

634. U.S. Geological Survey, 1980, Aeromagnetic map of offshore northwest Washington: U.S. Geological Survey Open-File Report 80-976, 1 sheet, scale 1:125,000.

Geophysical map (magnetic): scale 1:125,000.

635. U.S. Geological Survey, 1980, Aeromagnetic map of the central Grays Harbor County area, Washington: U.S. Geological Survey Open-File Report 80-948, 1 sheet, scale 1:125,000.

Geophysical map (magnetic): scale 1:125,000.

636. U.S. Geological Survey, 1980, Aeromagnetic map of the north-central Washington coast: U.S. Geological Survey Open-File Report 80-977, 1 sheet, scale 1:125,000.

Geophysical map (magnetic): scale 1:125,000.

637. U.S. Geological Survey, 1980, Aeromagnetic map of the northwest part of the Olympic National Forest, Washington: U.S. Geological Survey Open-File Report 80-950, 1 sheet, scale 1:125,000.

Geophysical map (magnetic): scale 1:125,000.

638. U.S. Geological Survey, 1981, Aeromagnetic map of the Indian Heaven area, Washington: U.S. Geological Survey Open-File Report 81-928, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

639. U.S. Geological Survey, 1981, Aeromagnetic map of the Mt. Margaret area, Washington: U.S. Geological Survey Open-File Report 81-926, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

640. U.S. Geological Survey, 1981, Aeromagnetic map of the Mt. Adams area, Washington: U.S. Geological Survey Open-File Report 81-929, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

641. U.S. Geological Survey, 1981, Aeromagnetic map of the Mt. St. Helens area, Washington: U.S. Geological Survey Open-File Report 81-932, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

642. U.S. Geological Survey, 1982, Aeromagnetic map of Glacier Peak, Washington: U.S. Geological Survey Open-File Report 82-541, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

643. U.S. Geological Survey, 1982, Aeromagnetic map of Mt. Baker, Washington: U.S. Geological Survey Open-File Report 82-540, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

644. U.S. Geological Survey, 1982, Aeromagnetic map of Mt. Rainier and vicinity, Washington: U.S. Geological Survey Open-File Report 82-547, 2 sheets, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500 (on 2 sheets).

645. U.S. Geological Survey, 1982, Aeromagnetic map of Mt. St. Helens, Washington—Post May, 1980 eruption: U.S. Geological Survey Open-File Report 82-659, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

646. U.S. Geological Survey, 1982, Aeromagnetic map of part of the Cascade Range, southwestern Washington and northern Oregon: U.S. Geological Survey Open-File Report 82-663, 1 sheet, scale 1:250,000.

Geophysical map (magnetic): scale 1:250,000.

647. U.S. Geological Survey, 1982, Aeromagnetic map of parts of the Okanogan and Ritzville 1 degree by 2 degree quadrangles, Washington: U.S. Geological Survey Open-File Report 82-661, 1 sheet, scale 1:125,000.

Geophysical map (magnetic): scale 1:125,000.

648. U.S. Geological Survey, 1982, Aeromagnetic map of the Dome Peak area, Washington: U.S. Geological Survey Open-File Report 82-548, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

649. U.S. Geological Survey, 1982, Aeromagnetic map of the Goat Rocks area, Washington: U.S. Geological Survey Open-File Report 82-662, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

650. U.S. Geological Survey, 1982, Aeromagnetic map of the Inchelium 15 minute quadrangle: U.S. Geological Survey Open-File Report 82-660, 1 sheet, scale 1:62,500.

Geophysical map (magnetic): scale 1:62,500.

651. U.S. Geological Survey, 1984, Aeromagnetic map of part of the North Cascades National Park, Washington: U.S. Geological Survey Open-File Report 84-511, 1 sheet.

Geophysical map (magnetic): scale 1:250,000.

652. U.S. Geological Survey, 1984, Aeromagnetic map of southwest Washington and northwest Oregon: U.S. Geological Survey Open-File Report 84-205, 1 sheet.

Geophysical map (magnetic): scale 1:250,000.

653. U.S. Geological Survey, 1984, Aeromagnetic map of the Olympic Mountains area, Washington: U.S. Geological Survey Open-File Report 84-510, 2 sheets.

Geophysical maps (magnetic):

653a Sheet 1, scale 1:62,500.
653b Sheet 2, scale 1:62,500.

654. U.S. Geological Survey; U.S. Bureau of Mines, 1989, Mineral resources of the Alpine Lakes study area and additions, Chelan, King, and Kittitas Counties, Washington: U.S. Geological Survey Bulletin 1542, 317 p., 2 plates.

Geologic map: Plate 1, Geologic map of the Alpine Lakes study area and additions, scale 1:62,500.

655. University of British Columbia Department of Geology, 1968, Guidebook for geological field trips in southwestern British Columbia: University of British Columbia Department of Geology Report 6, 62 p., 1 plate.

Geologic map: Plate 1, Geologic map of a part of southwestern British Columbia and adjacent Washington, scale 1:500,000.

656. University of Washington Department of Geological Sciences, 1972, The Alpine lakes—Environmental geology: University of Washington Department of Geological Sciences Publications in Geological Sciences 2, 161 p., 1 plate, scale 1:250,000.

Geologic map: Plate 1, Generalized geologic map of the Alpine Lakes area, scale 1:250,000.

657. Verhoogen, Jean, 1937, Mount St. Helens—A recent Cascade volcano: University of California Department of Geological Sciences Bulletin, v. 24, no. 9, p. 263-302.

Geologic map: Fig. 2, Geologic sketch map of Mount St. Helens, scale 1:121,561.

658. Vine, J. D., 1962, Preliminary geologic map of the Hobart and Maple Valley quadrangles, King County, Washington: Washington Division of Mines and Geology Geologic Map GM-1, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

659. Vine, J. D., 1969, Geology and coal resources of the Cumberland, Hobart, and Maple Valley quadrangles, King County, Washington: U.S. Geological Survey Professional Paper 624, 67 p., 4 plates.

Geologic map: Plate 1, Geologic map of the Cumberland, Hobart, and Maple Valley quadrangles, King County, Washington, scale 1:24,000.

660. Vonheeder, E. R., 1975, Coal reserves of Whatcom County, Washington: Washington Division of Geology and Earth Resources Open File Report 75-9, 90 p., 2 plates.

Geologic map: Plate 2, Geologic map of coal-bearing rocks, Whatcom County, Washington, scale 1:62,500.

661. Waggoner, S. Z., compiler, 1990, Geologic map of the Chewelah 1:100,000 quadrangle, Washington–Idaho: Washington Division of Geology and Earth Resources Open File Report 90-14, 63 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

662. Waggoner, S. Z., compiler, 1990, Geologic map of the Rosalia 1:100,000 quadrangle, Washington–Idaho: Washington Division of Geology and Earth Resources Open File Report 90-7, 20 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

663. Waggoner, S. Z., compiler, 1990, Geologic map of the Coulee Dam 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 90-15, 40 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

664. Wagner, H. C., 1967, Preliminary geologic map of the Raymond quadrangle, Pacific County, Washington: U.S. Geological Survey Open-File Report 67-265, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

665. Wagner, H. C., 1967, Preliminary geologic map of the Sound Bend quadrangle, Pacific County, Washington: U.S. Geological Survey Open-File Report 67-266, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

666. Wagner, H. C.; Batatian, L. D.; Lambert, T. M.; Tomson, J. H., 1986, Preliminary geologic framework studies showing bathymetry, locations of geophysical tracklines and exploratory wells, sea floor geology and deeper geologic structures, magnetic contours, and inferred thickness of Tertiary rocks on the continental shelf and upper continental slope off south-western Washington between latitudes 48° N and 48° 30 N and from the Washington coast to 125° 20 W: Washington Division of Geology and Earth Resources Open File Report 86-1, 8 p., 6 plates.

Geologic map:

666a Plate 5, Preliminary map of the sea-floor geology and deeper structures of the continental shelf and upper continental slope off Washington, scale 1:250,000.

Geophysical map (magnetic):

666b Plate 4, Preliminary magnetic map of the continental shelf and upper continental slope off western Washington, scale 1:250,000.

667. Wagner, H. C.; Tomson, J. H., 1987, Offshore geology of the Strait of Juan de Fuca, State of Washington and British Columbia, Canada: Washington Division of Geology and Earth Resources Open File Report 87-1, 16 p., 7 plates.

Geologic map:

667a Plate 3, Map showing seafloor geology in the Strait of Juan de Fuca area, Washington, U.S.A. and British Columbia, Canada, scale 1:250,000.

Geophysical maps:

667b *(magnetic)* Plate 6, Map showing magnetic features in the Strait of Juan de Fuca area, Washington, U.S.A. and British Columbia, Canada, scale 1:250,000.

667c *(gravity)* Plate 7, Map showing gravity features in the Strait of Juan de Fuca area, Washington, U.S.A. and British Columbia, Canada, scale 1:250,000.

668. Wagner, H. C.; Wiley, M. C., 1980, Preliminary map of offshore geology in the Protection Island–Point Partridge area, northern Puget Sound, Washington: U.S. Geological Survey Open-File Report 80-548, 4 p., 2 plates.

Geologic map:

668a Figure 2, Preliminary map of offshore geologic structures in the Protection Island–Point Partridge area, northern Puget Sound, Washington, scale 1:100,000.

Geophysical map (seismic):

668b Figure 1, Map showing seismic reflection profile lines in the Protection Island–Point Partridge area, northern Puget Sound, Washington, scale 1:100,000.

669. Waitt, R. B., Jr., 1979, Late Cenozoic deposits, landforms, stratigraphy, and tectonism in Kittitas Valley, Washington: U.S. Geological Survey Professional Paper 1127, 18 p.

Geologic map: Figure 2, Geologic map of Kittitas Valley area, scale 1:126,720.

670. Waldron, H. H., 1961, Geology of the Poverty Bay quadrangle, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-158, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

671. Waldron, H. H., 1962, Geology of the Des Moines quadrangle, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-159, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

672. Waldron, H. H., 1967, Geologic map of the Duwamish Head quadrangle, King and Kitsap Counties, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-706, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

673. Waldron, H. H.; Gard, L. M., Jr., 1954, Geology of the Hay quadrangle, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-48, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

674. Waldron, H. H.; Gard, L. M., Jr., 1955, Geology of the Penawawa quadrangle, Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-56, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

675. Waldron, H. H.; Leisch, B. A.; Mullineaux, D. R.; Crandell, D. R., 1962, Preliminary geologic map of Seattle and vicinity, Washington: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-354, 1 sheet, scale 1:31,680.

Geologic map: scale 1:31,680.

676. Walker, C. W., 1980, Geology and energy resources of the Roslyn-Cle Elum area, Washington: Washington Division of Geology and Earth Resources Open File Report 80-1, 59 p., 25 plates.

Geologic map: Map 1A, Geologic map with accompanying cross sections, scale 1:24,000.

677. Walker, G. W., 1973, Reconnaissance geologic map of the Pendleton quadrangle, Oregon and Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-727, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

678. Walsh, T. J., 1984, Geology and coal resources of central King County, Washington: Washington Division of Geology and Earth Resources Open File Report 84-3, 24 p., 3 plates.

Geologic map:

678a Plate 1, [Geologic map], scale 1:24,000.

Geophysical map (gravity):

678b Plate 3, Complete Bouguer anomaly map of central King County, Washington, scale 1:100,000.

679. Walsh, T. J., compiler, 1986, Geologic map of the west half of the Yakima quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 86-4, 1 sheet, with 9 p. text.

Geologic map: Plate, scale 1:100,000.

680 . Walsh, T. J., compiler, 1986, Geologic map of the west half of the Toppenish quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 86-3, 1 sheet, with 7 p. text.

Geologic map: Plate, scale 1:100,000.

681. Walsh, T. J., compiler, 1987, Geologic map of the south half of the Tacoma quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 87-3, 10 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

682. Walsh, T. J., compiler, 1987, Geologic map of the Astoria and Ilwaco quadrangles, Washington and Oregon: Washington Division of Geology and Earth Resources Open File Report 87-2, 28 p., 1 plate.

Geologic map: Plate, scale 1:100,000.

683. Walsh, T. J.; Korosec, M. A.; Phillips, W. M.; Logan, R. L.; Schasse, H. W., 1987, Geologic map of Washington—Southwest quadrant: Washington Division of Geology and Earth Resources Geologic Map 34, 2 sheets, with 28 p. text.

Geologic map: Sheet 1, scale 1:250,000.

684. Walters, K. L., 1960, Availability of ground water at the border stations at Laurier and Ferry, Washington: U.S. Geological Survey Circular 422, 8 p.

Geologic maps:

684a Figure 3, Geological features and location of selected wells in the Kettle River valley at Laurier, Washington, scale 1:22,000.

684b Figure 4, Geological features and location of selected wells in the Kettle River valley at Ferry, Washington, scale 1:20,000.

685. Walters, K. L., 1974, Water in the Okanogan River basin, Washington: Washington Department of Ecology Water-Supply Bulletin 34, 136 p., 1 plate.

Geologic map: Plate B1, Generalized geology of Okanogan River basin and locations of selected wells, scale 1:125,000.

686. Walters, K. L.; Glancy, P. A., 1969, Reconnaissance of geology and of ground-water occurrence in Whitman County, Washington: Washington Department of Water Resources Water-Supply Bulletin 26, 169 p., 4 plates.

Geologic maps:

Plate 3, Reconnaissance geologic map (western half) and section of Whitman County, Washington, scale 1:84,480.

Plate 4, Reconnaissance geologic map (eastern half) of Whitman County, Washington, scale 1:84,480.

687. Walters, K. L.; Kimmel, G. E., 1968, Ground-water occurrence and stratigraphy of unconsolidated deposits, central Pierce County, Washington: Washington Department of Water Resources Water-Supply Bulletin 22, 428 p., 3 plates.

Geologic map: Plate 1, Areal geology of central Pierce County, Washington (in two halves), scale 1:50,000.

688. Warren, W. C.; Norbisrath, Hans; Grivetti, R. M.; Brown, S. P., 1945, Preliminary geologic map and brief description of the coal fields of King County, Washington: U.S. Geological Survey Open-File Report 45-17, 1 plate, scale 1:32,500.

Geologic map: scale 1:32,500.

Note: Map is also available at scale 1:62,500.

689. Washington Department of Ecology, 1977, Coastal zone atlas of Washington; volume 1, Whatcom County: Washington Department of Ecology, 1 v., maps, scale 1:24,000.

Geologic maps: scale 1:24,000.

Note: Each section of coastline has maps showing geology; slope stability; coastal flooding; sand and gravel/critical biological areas; coastal drift; land cover/land use. The slope stability maps are available online at http://www.ecy.wa.gov/programs/sea/landslides/maps/maps.html.

690. Washington Department of Ecology, 1978, Coastal zone atlas of Washington; volume 11, Jefferson County: Washington Department of Ecology, 1 v., maps, scale 1:24,000.

Geologic maps: scale 1:24,000.

Note: Each section of coastline has maps showing geology; slope stability; coastal flooding; sand and gravel/critical biological areas; coastal drift; land cover/land use. The slope stability maps are available online at http://www.ecy.wa.gov/programs/sea/landslides/maps/maps.html.

691. Washington Department of Ecology, 1978, Coastal zone atlas of Washington; volume 3, San Juan County: Washington Department of Ecology, 1 v., maps, scale 1:24,000.

Geologic maps: scale 1:24,000.

Note: Each section of coastline has maps showing geology; slope stability; coastal flooding; sand and gravel/critical biological areas; coastal drift; land cover/land use. The slope stability maps are available online at http://www.ecy.wa.gov/programs/sea/landslides/maps/maps.html.

692. Washington Department of Ecology, 1978, Coastal zone atlas of Washington; volume 12, Clallam County: Washington Department of Ecology, 1 v., maps, scale 1:24,000.

Geologic maps: scale 1:24,000.

Note: Each section of coastline has maps showing geology; slope stability; coastal flooding; sand and gravel/critical biological areas; coastal drift; land cover/land use. The slope stability maps are available online at http://www.ecy.wa.gov/programs/sea/landslides/maps/maps.html.

693. Washington Department of Ecology, 1978, Coastal zone atlas of Washington; volume 2, Skagit County: Washington Department of Ecology, 1 v., maps, scale 1:24,000.

Geologic maps: scale 1:24,000.

Note: Each section of coastline has maps showing geology; slope stability; coastal flooding; sand and gravel/critical biological areas; coastal drift; land cover/land use. The slope stability maps are available online at http://www.ecy.wa.gov/programs/sea/landslides/maps/maps.html.

694. Washington Department of Ecology, 1979, Coastal zone atlas of Washington; volume 10, Kitsap County: Washington Department of Ecology, 1 v., maps, scale 1:24,000.

Geologic maps: scale 1:24,000.

Note: Each section of coastline has maps showing geology; slope stability; coastal flooding; sand and gravel/critical biological areas; coastal drift; land cover/land use. The slope stability maps are available online at http://www.ecy.wa.gov/programs/sea/landslides/maps/maps.html.

695. Washington Department of Ecology, 1979, Coastal zone atlas of Washington; volume 6, King County: Washington Department of Ecology, 1 v., maps, scale 1:24,000.

Geologic maps: scale 1:24,000.

Note: Each section of coastline has maps showing geology; slope stability; coastal flooding; sand and gravel/critical biological areas; coastal drift; land cover/land use. The slope stability maps are available online at http://www.ecy.wa.gov/programs/sea/landslides/maps/maps.html.

696. Washington Department of Ecology, 1979, Coastal zone atlas of Washington; volume 4, Island County: Washington Department of Ecology, 1 v., maps, scale 1:24,000.

Geologic maps: scale 1:24,000.

Note: Each section of coastline has maps showing geology; slope stability; coastal flooding; sand and gravel/critical biological areas; coastal drift; land cover/land use. The slope stability maps are available online at http://www.ecy.wa.gov/programs/sea/landslides/maps/maps.html.

697. Washington Department of Ecology, 1979, Coastal zone atlas of Washington; volume 5, Snohomish County: Washington Department of Ecology, 1 v., maps, scale 1:24,000.

Geologic maps: scale 1:24,000.

Note: Each section of coastline has maps showing geology; slope stability; coastal flooding; sand and gravel/critical biological areas; coastal drift; land cover/land use. The slope stability maps are available online at http://www.ecy.wa.gov/programs/sea/landslides/maps/maps.html.

698. Washington Department of Ecology, 1979, Coastal zone atlas of Washington; volume 7, Pierce County: Washington Department of Ecology, 1 v., maps, scale 1:24,000.

Geologic maps: scale 1:24,000.

Note: Each section of coastline has maps showing geology; slope stability; coastal flooding; sand and gravel/critical biological areas; coastal drift; land cover/land use. The slope stability maps are available online at http://www.ecy.wa.gov/programs/sea/landslides/maps/maps.html.

699. Washington Department of Ecology, 1980, Coastal zone atlas of Washington; volume 8, Thurston County: Washington Department of Ecology, 1 v., maps, scale 1:24,000.

Geologic maps: scale 1:24,000.

Note: Each section of coastline has maps showing geology; slope stability; coastal flooding; sand and gravel/critical biological areas; coastal drift; land cover/land use. The slope stability maps are available online at http://www.ecy.wa.gov/programs/sea/landslides/maps/maps.html.

700. Washington Department of Ecology, 1980, Coastal zone atlas of Washington; volume 9, Mason County: Washington Department of Ecology, 1 v., maps, scale 1:24,000.

Geologic maps: scale 1:24,000.

Note: Each section of coastline has maps showing geology; slope stability; coastal flooding; sand and gravel/critical biological areas; coastal drift; land cover/land use. The slope stability maps are available online at http://www.ecy.wa.gov/programs/sea/landslides/maps/maps.html.

701. Washington Division of Water Resources, 1960, Water resources of the Nooksack River basin and certain adjacent streams: Washington Division of Water Resources Water Supply Bulletin 12, 187 p., 9 plates.

Geologic map: Plate 1, Geologic map of the Nooksack River basin, and certain adjacent streams, scale 1:135,000.

702. Washington Public Power Supply System, 1981, WPPSS nuclear project no. 2—Final safety analysis report, Amendment 18: Washington Public Power Supply System Docket no. 50-397, Final Safety Analysis Report, Amendment 18, 3 v.

Geologic maps:

702a Fig. 2.5-11, scale 1:62,500.
702b Fig. 2.5-12, scale 1:62,500.
702c Fig. 2.5-13, scale 1:62,500.
702d Fig. 2.5-14, scale 1:62,500.
702e Fig. 2.5-15, scale 1:62,500.
702f Fig. 2.5-16, scale 1:62,500.
702g Fig. 2.5-17, scale 1:62,500.
702h Fig. 2.5-18, scale 1:62,500.
702i Fig. 2.5-19, scale 1:45,562.
702j Fig. 2.5-20, scale 1:62,500.
702k Fig. 2.5-21, scale 1:62,500.

703. Waters, A. C., 1938, Petrology of the contact breccias of the Chelan batholith: Geological Society of America Bulletin, v. 49, p. 763-794.

Geologic map: Plate 1, scale 1:187,000.

704. Waters, A. C., 1939, Resurrected erosion surface in central Washington: Geological Society of America Bulletin, v. 50, p. 635-660.

Geologic map: Plate 1, scale 1:125,000.

705. Waters, A. C., 1955, Geomorphology of south-central Washington, illustrated by the Yakima East quadrangle: Geological Society of America Bulletin, v. 66, no. 6, p. 663-684, 1 plate.

Geologic map: Plate 1, Geologic map and section of Yakima East quadrangle, Washington, scale 1:62,500.

706. Waters, A. C., 1973, The Columbia River Gorge—Basalt stratigraphy, ancient lava dams, and landslide dams. *In* Beaulieu, J. D., Geologic field trips in northern Oregon and southern Washington: Oregon Department of Geology and Mineral Industries Bulletin 77, p. 133-162.

Geologic map: Figure 9, Geologic map of Bonneville landslide area, scale 1:63,360.

707. Waters, A. C.; Krauskopf, K. B., 1941, Protoclastic border of the Colville Batholith: Geological Society of America Bulletin, v. 52, no. 9, p. 1355-1418, 1 plate.

Geologic map: Plate 1, Geologic map of part of border of Colville batholith, scale 1:125,000.

708. Weaver, C. E., 1911, Geology and ore deposits of the Blewett mining district: Washington Geological Survey Bulletin 6, 104 p.

Geologic map: Plate 1, Geologic map of the Blewett mining district, scale 1:21,000.

709. Weaver, C. E., 1912, Geology and ore deposits of the Index mining district: Washington Geological Survey Bulletin 7, 96 p.

Geologic map: Plate II, Geologic map of Index mining district, scale 1:62,500.

710. Weaver, C. E., 1913, Geology and ore deposits of the Covada mining district: Washington Geological Survey Bulletin 16, 87 p.

Geologic map: Plate 1, Geologic map of the Covada mining district, scale 1:63,360.

711. Weaver, C. E., 1920, The mineral resources of Stevens County: Washington Geological Survey Bulletin 20, 350 p., 1 plate.

Geologic map: Plate 1, Areal and structural geologic map of Stevens County, scale 1:125,000.

712. Webster, G. D., 1979, Surficial geologic map of the Pullman quad, Washington: Washington Division of Geology and Earth Resources Open File Report 79-9, 1 sheet, scale 1:250,000.

Geologic map: scale 1:250,000.

713. Wegner, D. E., 1969, Glacial geology of Seattle freeway: Washington State Highway Commission–Washington Department of Highways, 35 p.

Geologic maps:

Plate 1, Geologic map, Station 2030+00 to Station 2190+00, scale 1:2,400.

Plate 2, Geologic map, Station 2190+00 to Station 2375+00, scale 1:2,400.

714. Weigle, J. M.; Foxworthy, B. L., 1962, Geology and ground-water resources of west-central Lewis County, Washington: Washington Division of Water Resources Water Supply Bulletin 17, 248 p., 5 plates.

Geologic maps:

Plate 2, Geologic map of central part of area investigated in Lewis County, scale 1:63,360.

Plate 3, Map of western part of area investigated in Lewis County, showing generalized geology and locations of wells and springs, scale 1:63,360.

Plate 5, Map of eastern part of area investigated in Lewis County, showing generalized geology and locations of wells and springs, scale 1:63,360.

715. Weis, P. L., 1968, Geologic map of the Greenacres quadrangle, Washington and Idaho: U.S. Geological Survey Geologic Quadrangle Map GQ-734, 1 sheet, scale 1:62,500, with 4 p. text.

Geologic map: scale 1:62,500.

716. Weissenborn, A. E.; Weis, P. L., 1976, Geologic map of the Mount Spokane quadrangle, Spokane County, Washington, and Kootenai and Bonner Counties, Idaho: U.S. Geological Survey Geologic Quadrangle Map GQ-1336, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

717. Wells, R. E., 1981, Geologic map of the eastern Willapa Hills, Cowlitz, Lewis, Pacific, and Wahkiakum Counties, Washington: U.S. Geological Survey Open-File Report 81-674, 1 sheet, scale 1:62,500.

Geologic map: scale 1:62,500.

718. Wells, R. E., 1989, Geologic map of the Cape Disappointment–Naselle River area, Pacific and Wahkiakum Counties, Washington: U.S. Geological Survey Miscellaneous Investigations Series Map I-1832, 1 sheet.

Geologic map: scale 1:62,500.

719. Weston Geophysical Research, 1978, Qualitative aeromagnetic evaluation of structures in the Columbia Plateau and adjacent Cascade mountain area: Weston Geophysical Research [under contract to] Washington Public Power Supply System, 32 p., 2 plates.

Geophysical map (magnetic): Plate 1, Composite aeromagnetic map, scale 1:250,000.

720. Whetten, J. T., 1980, Preliminary bedrock geologic map of the Chiwaukum 4 SE quadrangle, Chiwaukum graben, Washington: U.S. Geological Survey Open-File Report 80-723, 5 p., 1 plate.

Geologic map: Plate, scale 1:24,000.

721. Whetten, J. T., 1980, Preliminary bedrock geologic map of the Chiwaukum 4 NW quadrangle, Chiwaukum graben, Washington: U.S. Geological Survey Open-File Report 80-456, 7 p., 1 plate.

Geologic map: Plate, scale 1:24,000.

722. Whetten, J. T., 1980, Preliminary bedrock geologic map of the east half of the Chiwaukum 4 SW quadrangle, Chiwaukum graben, Washington: U.S. Geological Survey Open-File Report 80-616, 6 p., 1 plate.

Geologic map: Plate, scale 1:24,000.

723. Whetten, J. T.; Carroll, P. I.; Gower, H. D.; Brown, E. H.; Pessl, Fred, Jr., 1988, Bedrock geologic map of the Port Townsend 30- by 60-minute quadrangle, Puget Sound region, Washington: U.S. Geological Survey Miscellaneous Investigations Series map I-1198-G, 1 sheets.

Geologic map: scale 1:100,000.

724. Whetten, J. T.; Dethier, D. P.; Carroll, P. R., 1979, Preliminary geologic map of the Clear Lake NE quadrangle, Skagit County, Washington: U.S. Geological Survey Open-File Report 79-1468, 10 p., 2 plates.

Geologic map: scale 1:24,000.

725. Whetten, J. T.; Dethier, D. P.; Carroll, P. R., 1980, Preliminary geologic map of the Clear Lake NW quadrangle, Skagit County, Washington: U.S. Geological Survey Open-File Report 80-247, 13 p., 2 plates.

Geologic map: scale 1:24,000.

726. Whetten, J. T.; Laravie, J. A., 1976, Preliminary geologic map of the Chiwaukum 4 NE quadrangle, Chiwaukum graben, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-794, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

727. Whetten, J. T.; Waitt, R. B., Jr., 1978, Preliminary geologic map of the Cashmere quadrangle, Chiwaukum lowland, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-908, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

728. Whitwell, G. E.; Patty, E. N., 1921, The magnesite deposits of Washington, their occurrence and technology: Washington Geological Survey Bulletin 25, 194 p.

Geologic map: Plate II, Geologic map of the Stevens County magnesite area, scale 1:125,000.

729. Wildrick, L. L., 1982, repr. 1991, Decreasing streamflow and possible ground water depletion in the Sinking Creek watershed, Lincoln County, Washington: Washington Department of Ecology Open-File Technical Report 82-6, 41 p., 5 plates.

Geologic map: Plate 1, scale 1:62,500.

730. Wilkinson, W. D.; Lowry, W. D.; Baldwin, E. M., 1946, Geology of the St. Helens quadrangle, Oregon: Oregon Department of Geology and Mineral Industries Bulletin 31, 39 p., 1 plate.

Geologic map: Plate, Geologic map of the St. Helens quadrangle, Oregon-Washington, scale 1:62,500.

731. Williams, D. L.; Abrams, G. A.; Finn, Carol; Dzurisin, Daniel; Johnson, D. J.; Denlinger, R. P., 1987, Evidence from gravity data for an intrusive complex beneath Mount St. Helens: Journal of Geophysical Research, v. 92, no. B10, p. 10,207-10,222.

Geophysical map (gravity): Fig. 2, Bouguer anomaly map of Mount St. Helens area at 2-mGal contour interval, scale 1:225,000.

732. Williams, D. L.; Finn, Carol, 1987, Evidence for a shallow pluton beneath the Goat Rocks Wilderness, Washington, from gravity and magnetic data: Journal of Geophysical Research, v. 92, no. B6, p. 4867-4880.

Geophysical maps:

732a *(gravity)* Plate 1, Residual Bouguer gravity anomaly map of the Goat Rocks area at a 2-mGal contour interval, scale 1:330,000.

732b *(magnetic)* Plate 2, Aeromagnetic map of the Goat Rocks Wilderness area, scale 1:330,000.

733. Williams, D. L.; Finn, Carol; Couch, R. W.; Danes, Z. F.; Pitts, G. S.; Phillips, W. M.; Riddihough, R. P., 1988, Residual Bouguer gravity anomaly map of the Cascade Range, California, Oregon, Washington, and British Columbia: U.S. Geological Survey Geophysical Investigations Map GP-973, 2 sheets.

Geophysical map (gravity): Sheet 2, scale 1:500,000.

734. Williams, D. L.; Finn, Carol; Spydell, D. R.; Danes, Z. F., 1984, Gravity and aeromagnetic maps of the Goat Rocks Wilderness and adjacent roadless areas, Lewis and Yakima Counties, Washington: U.S. Geological Survey Miscellaneous Field Studies map MF-1653-C, 2 sheets.

Geophysical maps:

734a *(gravity)* Map A, Bouguer gravity map, scale 1:48,000.

734b *(magnetic)* Map B, Aeromagnetic map, scale 1:48,000.

735. Williams, I. A., 1930, Report on geologic conditions at Ariel dam site, north fork of Lewis River, Washington: Northwestern Electric Company [Portland], 3 v., 2 plates.

Geologic maps:

Plate 1, Surface geologic map, scale 1:1,200.
Plate 2, Bedrock geologic map, scale 1:1,200.

736. Willis, Bailey; Smith, G. O., 1899, Geologic atlas of the United States—Tacoma folio, Washington: U.S. Geological Survey Geologic Folio 54, 10 p.

Geologic map: Plate, Historical geology sheet, scale 1:125,000.

737. Wilson, J. R., 1980, Preliminary geologic map of the Boyds quadrangle, Ferry and Stevens Counties, Washington: U.S. Geological Survey Open-File Report 80-983, 2 sheets, scale 1:24,000.

Geologic map: scale 1:24,000.

738. Wilson, J. R., 1981, Geologic map of the Bangs Mountain quadrangle, Ferry and Stevens Counties, Washington: U.S. Geological Survey Open-File Report 81-581, 2 sheets, scale 1:24,000.

Geologic map: scale 1:24,000.

739. Wilson, J. R., 1983, Relationships between late Quaternary faults and earthquakes in the Puget Sound, Washington area. *In* Yount, J. C.; Crosson, R. S., editors, Proceedings of workshop XIV, Earthquake hazards of the Puget Sound region, Washington: U.S. Geological Survey Open-File Report 83-19, p. 165-177.

Geologic map: Figure 1, Geologic map of area of late Quaternary faulting, scale 1:93,000.

740. Wise, W. S., 1970, Cenozoic volcanism in the Cascade mountains of southern Washington: Washington Division of Mines and Geology Bulletin 60, 45 p., 1 plate.

Geologic map: Plate 1, Geologic map and sections of the Wind River area, Skamania County, Washington, scale 1:125,000.

741. Wolf, S. C.; Hamer, M. R.; McCrory, P. A., 1997, Quaternary geologic investigations of the continental shelf offshore southern Washington and northern Oregon: U.S. Geological Survey Open-File Report 97-677, 4 sheets, scale 1:500,000.

Geologic maps:

Sheet 2, Quaternary erosional surface, scale 1:500,000.

Sheet 3, Isopach map of unconsolidated sediments, scale 1:500,000.

Sheet 4, Geologic structures, scale 1:500,000.

742. Wolfe, E. W.; McKee, E. H., 1968, Geology of the Grays River quadrangle, Wahkiakum and Pacific Counties, Washington: Washington Division of Mines and Geology Geologic Map GM-4, 1 sheet, scale 1:62,500, with 6 p. text.

Geologic map: scale 1:62,500.

743. Wolfe, E. W.; McKee, E. H., 1972, Sedimentary and igneous rocks of the Grays River quadrangle, Washington: U.S. Geological Survey Bulletin 1335, 70 p.

Geologic map: Figure 4, Generalized geologic map of the Grays River quadrangle showing location of samples collected for fossils, for chemical analysis, or for heavy minerals, scale 1:200,000.

744. Wong, Ivan; Sparks, Andrew; Metcalfe, Bob; Wright, Douglas; Stokoe, Ken; Young, James, 1999, Probabilistic seismic hazard analysis and ground shaking microzonation maps for the Seattle, Washington, metropolitan area—Characterization of the near-surface geology (year 1); Final technical report, program element II evaluate urban hazard and risk: URS Greiner Woodward-Clyde Federal Services, 129 p., 2 plates.

Geologic maps:

Plate 1, Surficial geology of the Seattle metropolitan area including locations of geotechnical borehole, water well, geologic cross section, and shear-wave velocity data, scale 1:83,000.

Plate 2, Surficial geology and depth to bedrock in the Seattle metropolitan area, scale1:82,000.

745. Woodward-Clyde Consultants, 1979, Geologic mapping for category I excavations, Washington Public Power Supply System nuclear projects no. 3 and 5; Volume 1, Summary report: Woodward-Clyde Consultants [under contract to] Ebasco Services, 67 p.

Geologic map: Figure 2, Geologic map of the site area, scale 1:19,000.

746. Woodward, D. G.; Packard, F. A.; Dion, N. P.; Sumioka, S. S., 1995, Occurrence and quality of ground water in southwestern King County, Washington: U.S. Geological Survey Water-Resources Investigations Report 92-4098, 69 p., in folder with 4 plates.

Geologic map: Plate 1, scale 1:100,000

747. Wunder, J. M., 1976, Preliminary geologic map of the Utsalady quadrangle, Skagit and Snohomish Counties, Washington: Washington Division of Geology and Earth Resources Open File Report 76-10, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

748. Yates, R. G., 1964, Geologic map and sections of the Deep Creek area, Stevens and Pend Oreille Counties, Washington: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-412, 1 sheet, scale 1:31,680.

Geologic map: scale 1:31,680.

749. Yates, R. G., 1971, Geologic map of the Northport quadrangle, Washington: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-603, 1 sheet, scale 1:31,680.

Geologic map: scale 1:31,680.

750. Yeats, R. S., 1964, Crystalline klippen in the Index district, Cascade Range, Washington: Geological Society of America Bulletin, v. 75, no. 6, p. 549-561, 1 plate.

Geologic map: Plate 1, Geologic map of the Mount Baring-Gunn Peak area, Cascade Range, Washington, scale 1:81,000.

751. Yost, C. R.; Steele, W. K., 1978, Gravity survey of the Cheney quadrangle, Washington: Northwest Science, v. 52, no. 3, part 2, p. 250-260.

Geophysical map (gravity): Bouguer gravity map of the Cheney quadrangle, scale 1:169,000.

752. Yount, J. C.; Gower, H. D., 1991, Bedrock geologic map of the Seattle 30 by 60 quadrangle, Washington: U.S. Geological Survey Open-File Report 91-147, 37 p., 4 plates.

Geologic map:

752a Plate 1, Geologic, locality, and index maps, scale 1:100,000.

Geophysical maps:

752b *(gravity)* Plate 3, Bouguer gravity map, scale 1:100,000.

752c *(magnetic)* Plate 4, Aeromagnetic map, scale 1:100,000.

753. Yount, J. C.; Minard, J. P.; Dembroff, G. R., 1993, Geologic map of surficial deposits in the Seattle 30 x 60 quadrangle, Washington: U.S. Geological Survey Open-File Report 93-233, 2 sheets.

Geologic map: Sheet 1, scale 1:100,000.

754. Ziegler, C. B., 1985, The geology, structure and surficial features of the Barometer–Slate Mountain area, North Cascades, Washington: U.S. Forest Service, 21 p., 2 plates.

Geologic map: Plate 1, Geology of the Barometer–Slate Mountain area, scale 1:15,840.

755. Dragovich, J. D.; Troost, M. L.; Norman, D. K.; Anderson, Garth; Cass, Jason; Gilbertson, L. A.; McKay, D. T., Jr., 2000, Geologic map of the Anacortes South and La Conner 7.5-minute quadrangles, Skagit and Island Counties, Washington: Washington Division of Geology and Earth Resources Open File Report 2000-6, 4 sheets, scale 1:24,000.

Geologic map: Plate 1, scale 1:24,000.

756. Lapen, T. J., 2000, Geologic map of the Bellingham 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 2000-5, 36 p., 2 plates.

Geologic map: Plate 1, scale 1:100,000.

757. Miller, F. K., 2000, Geologic map of the Chewelah 30 x 60 quadrangle, Washington and Oregon: U.S. Geological Survey Miscellaneous Field Studies Map MF-2354, 56 p., 1 plate.

Geologic map: scale 1:100,000.

758. Schasse, H. W.; Wegmann, K. W., 2000, Geologic map of the Carlsborg 7.5-minute quadrangle, Clallam County, Washington: Washington Division of Geology and Earth Resources Open File Report 2000-7, 27 p., 2 plates.

Geologic map: Plate 1, scale 1:24,000.

759. Tabor, R. W.; Frizzell, V. A., Jr.; Booth, D. B.; Waitt, R. B., 2000, Geologic map of the Snoqualmie Pass 30 x 60 minute quadrangle, Washington: U.S. Geological Survey Geologic Investigations Series I-2538, 1 sheet, scale 1:100,000, with 57 p. text.

Geologic map: scale 1:100,000.

760. Evarts, R. C., 2001, Geologic map of the Silver Lake quadrangle, Cowlitz County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-2371, 1 sheet, scale 1:24,000, with 37 p. text.

Geologic map: Plate, scale 1:24,000.

761. Shannon & Wilson, Inc., 2001, Geology, soil, climate, and hydrology technical report. In U.S. Bonneville Power Administration, Kangley–Echo Lake tranmission line project; Draft environmental impact statement—Appendices: U.S. Bonneville Power Administration, Appendix 7.

Geologic map: Figure 3, scale 1:24,000.

762. Pacific Groundwater Group, 1999, 1999 hydrogeologic characterization, City of Auburn: Pacific Groundwater Group [under contract to] City of Auburn, 1 v., 1 plate.

Geologic map: Figure 4-1, scale 1:46,000.

763. Bush, J. H.; Provant, A. P., 1998, Bedrock geologic map of the Viola quadrangle, Latah County, Idaho and Whitman County, Washington: Idaho Geological Survey Geologic Map 25, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

764. Bush, J. H.; Provant, A. P.; Gill, S. W., 1998, Bedrock geologic map of the Moscow West quadrangle, Latah County, Idaho and Whitman County, Washington: Idaho Geological Survey Geologic Map 23, 1 sheet, scale 1:24,000.

Geologic map: scale 1:24,000.

765. Finn, C. A., 1995, Preliminary merged aeromagnetic map of northwest Washington: U.S. Geological Survey Open-File Report 95-212, 1 sheet, scale 1:250,000.

Geophysical map (magnetic): scale 1:250,000.

766. Finn, C. A., 1995, Preliminary merged aeromagnetic map of southwest Washington: U.S. Geological Survey Open-File Report 95-211, 1 sheet, scale 1:250,000.

Geophysical map (magnetic): scale 1:250,000.

767. Dragovich, J. D.; Norman, D. K.; Haugerud, R. A.; Pringle, P. T., 1997, Geologic map and interpreted geologic history of the Kendall and Deming 7.5-minute quadrangles, western Whatcom County, Washington: Washington Division of Geology and Earth Resources Open File Report 97-2, 39 p., 3 plates.

Geologic maps:

767a Plate 1, scale 1;24,000.

767b Plate 2, scale 1:24,000.

768. Swanson, D. A., 1996, Geologic map of the Hamilton Buttes quadrangle, southern Cascade Range, Washington: U.S. Geological Survey Open-File Report 96-16, 29 p., 2 plates.

Geologic map: scale 1:24,000.

769. Waldron, H. H.; Gard, L. M., Jr., 1951, Preliminary report on the geology of part of the Lower Snake River canyon, Washington: U.S. Geological Survey Open-File Report, 66 p., 8 plates.

Geologic maps: Plate 1, Sheets 1 through 7, scale 1:24,000.

770. Dragovich, J. D.; Logan, R. L.; Schasse, H. W.; Walsh, T. J.; Lingley, W. S., Jr.; Norman, D. K.; Gerstel, W.J.; Lapen, T. J.; Schuster, J. E.; Meyers, K. D., 2002, Geologic map of Washington—Northwest quadrant: Washington Division of Geology and Earth Resources Geologic Map GM-50, 3 sheets, scale 1:250,000, with 72 p. text.

Geologic map: Sheet 1, scale 1:250,000.

771. Evarts, R. C., 2002, Geologic map of the Deer Island quadrangle, Columbia County, Oregon and Cowlitz County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-2392, 45 p., 1 plate, scale 1:24,000.

Geologic map: scale 1:24,000.

772. Howard, K. A., 2002, Geologic map of the Battle Ground 7.5-minute quadrangle, Clark County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-2395, 18 p., 1 plate, scale 1:24,000.

Geologic map: scale 1:24,000.

773. Dragovich, J. D.; Gilbertson, L. A.; Norman, D. K.; Anderson, Garth; Petro, G. T., 2002, Geologic map of the Utsalady and Conway 7.5-minute quadrangles, Skagit, Snohomish, and Island Counties, Washington: Washington Division of Geology and Earth Resources Open File Report 2002-5, 34 p., 2 plates.

Geologic map: Plate 1, scale 1:24,000.

774. Dragovich, J. D.; Gilbertson, L. A.; Lingley, W. S., Jr.; Polenz, Michael; Glenn, Jennifer, 2002, Geologic map of the Darrington 7.5-minute quadrangle, Skagit and Snohomish Counties, Washington: Washington Division of Geology and Earth Resources Open File Report 2002-7, 1 sheet, scale 1:24,000.

Geologic map: Plate, scale 1:24,000.

775. Dragovich, J. D.; Gilbertson, L. A.; Lingley, W. S., Jr.; Polenz, Michael; Glenn, Jennifer, 2002, Geologic map of the Fortson 7.5-minute quadrangle, Skagit and Snohomish Counties, Washington: Washington Division of Geology and Earth Resources Open File Report 2002-6, 1 sheet, scale 1:24,000.

Geologic map: Plate, scale 1:24,000.

776. Pearson, H. E., 1985, Hydrology of the upper Yakima River basin, Washington: Washington Department of Ecology Water-Supply Bulletin 52, 220 p., 1 plate.

Geologic map: Plate 1, scale 1:250,000.

777. Schasse, H. W.; Polenz, Michael, 2002, Geologic map of the Morse Creek 7.5-minute quadrangle, Clallam County, Washington: Washington Division of Geology and Earth Resources Open File Report 2002-8, 18 p., 2 plates.

Geologic map: Plate 1, scale 1:24,000.

778. Plum Creek Timber Company, 1997, Keechelus Lake–Mosquito Creek watershed analysis; DNR review draft: Plum Creek Timber Company, 1 v.

Geologic map: Map 4b, Geology, scale 1:60,000.

779. Quinault Indian Nation Department of Natural Resources, 2002, Raft River watershed analysis: Quinault Indian Nation, 1 v.

Geologic map: Map 2.3C, Geology of the Raft River watershed, scale 1:63,360.

780. Quinault Indian Nation Department of Natural Resources, 2002, Salmon River watershed analysis: Quinault Indian Nation, 1 v.

Geologic map: Map 2.3C, Geology of the Salmon River watershed, scale 1:50,000.

781. Plum Creek Timber Company, 1996, Lester watershed analysis: Plum Creek Timber Company, 1 v.

Geologic map: Fig. 2-4, Geology, scale 1:56,320.

782. Plum Creek Timber Company, 1994, Quartz Mountain watershed analysis: Plum Creek Timber Company, 1 v.

Geologic map: Fig. 2-3, Geology of the Quartz Mountain WAU, scale 1:48,270.

783. Raines, M. A.; and others, 1997, Onion Creek watershed analysis: Boise Cascade Corporation, 1 v.

Geologic map: Fig. 4, Onion Creek WAU geology, scale 1:68,000.

784. Western Watershed Analysts, 1996, Panakanic watershed analysis: Champion Pacific Timberlands, Inc., 1 v.

Geologic map: Fig. 4.1, Geologic map, scale 1:75,650.

785. Gerstel, W. J.; Lingley, W. S., Jr., 2003, Geologic map of the Mount Olympus 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 2003-4, 1 sheet, scale 1:100,000.

Geologic map: scale 1:100,000.

786. Jones, M. A., 1999, Geologic framework for the Puget Sound aquifer system, Washington and British Columbia: U.S. Geological Survey Professional Paper 1424-C, 31 p., 18 plates.

Geologic maps: Maps showing surficial hydrogeologic units of the Puget Sound aquifer system, Washington and British Columbia, for:

786a The Roche Harbor quadrangle, scale 1:100,000;

786b The Bellingham quadrangle, scale 1:100,000;

786c The Mount Baker and Robinson Mountain quadrangles, scale 1:100,000;

786d The Port Angeles quadrangle, scale 1:100,000;

786e The Port Townsend quadrangle, scale 1:100,000;

786f The Sauk River and Twisp quadrangles, scale 1:100,000;

786g The Mount Olympus quadrangle, scale 1:100,000;

786h The Seattle quadrangle, scale 1:100,000;

786i The Skykomish River quadrangle, scale 1:100,000;

786j The Shelton quadrangle, scale 1:100,000;

786k The Tacoma quadrangle, scale 1:100,000;

786l The Snoqualmie Pass quadrangle, scale 1:100,000;

786m The Chehalis River quadrangle, scale 1:100,000;

786n The Centralia quadrangle, scale 1:100,000;

786o The Mount Rainier quadrangle, scale 1:100,000.

787. McCrory, P. A.; Foster, D. S.; Danforth, W. W.; Hamer, M. R., 2002, Crustal deformation at the leading edge of the Oregon Coast Range block, offshore Washington (Columbia River to Hoh River): U.S. Geological Survey Professional Paper 1661-A, 47 p., 2 plates.

Geologic map: Plate 1, Maps showing Quaternary structures in the southern Washington continental shelf and adjacent coastal areas, scale 1:250,000.

788. Schasse, H. W., 2003, Geologic map of the Washington portion of the Port Angeles 1:100,000 quadrangle: Washington Division of Geology and Earth Resources Open File Report 2003-6, 1 sheet, scale 1:100,000.

Geologic map: scale 1:100,000. ■

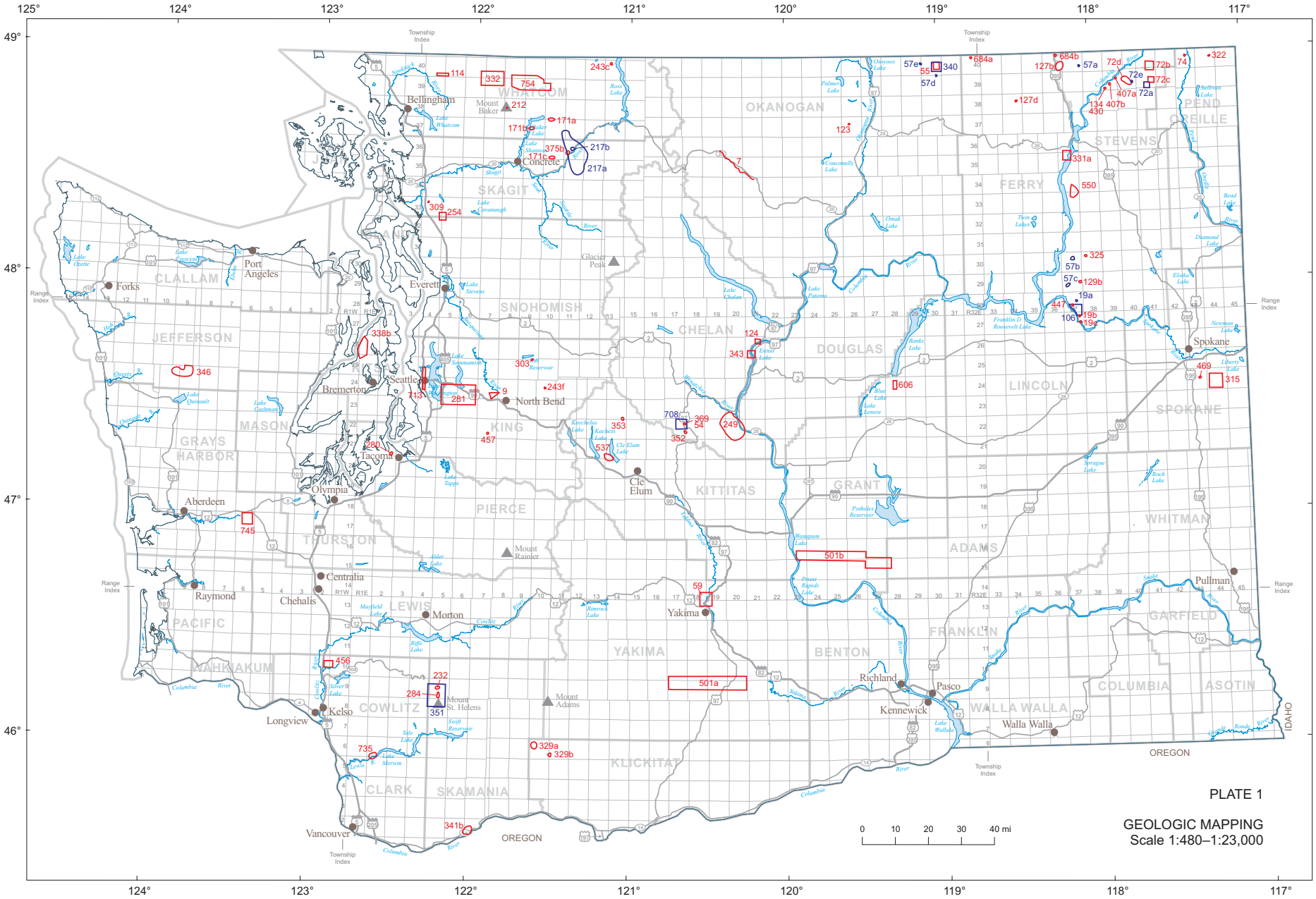
PLATE 1
GEOLOGIC MAPPING
Scale 1:480–1:23,000
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125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
Bellingham
Mount Baker
Concrete
Port Angeles
Forks
Everett
Seattle
Bremerton
North Bend
Tacoma
Olympia
Aberdeen
Centralia
Chehalis
Raymond
Morton
Longview
Kelso
Vancouver
Mount St. Helens
Mount Rainier
Mount Adams
Glacier Peak
Cle Elum
Yakima
Richland
Pasco
Kennewick
Walla Walla
Spokane
Pullman
WHATCOM
SKAGIT
OKANOGAN
STEVENS
PEND OREILLE
FERRY
CLALLAM
JEFFERSON
SNOHOMISH
CHELAN
DOUGLAS
LINCOLN
SPOKANE
KING
MASON
GRAYS HARBOR
PIERCE
KITTITAS
GRANT
ADAMS
WHITMAN
THURSTON
LEWIS
PACIFIC
YAKIMA
BENTON
FRANKLIN
GARFIELD
WAHKIAKUM
COWLITZ
COLUMBIA
ASOTIN
WALLA WALLA
KLICKITAT
CLARK
SKAMANIA
OREGON
IDAHO
Township Index
Range Index

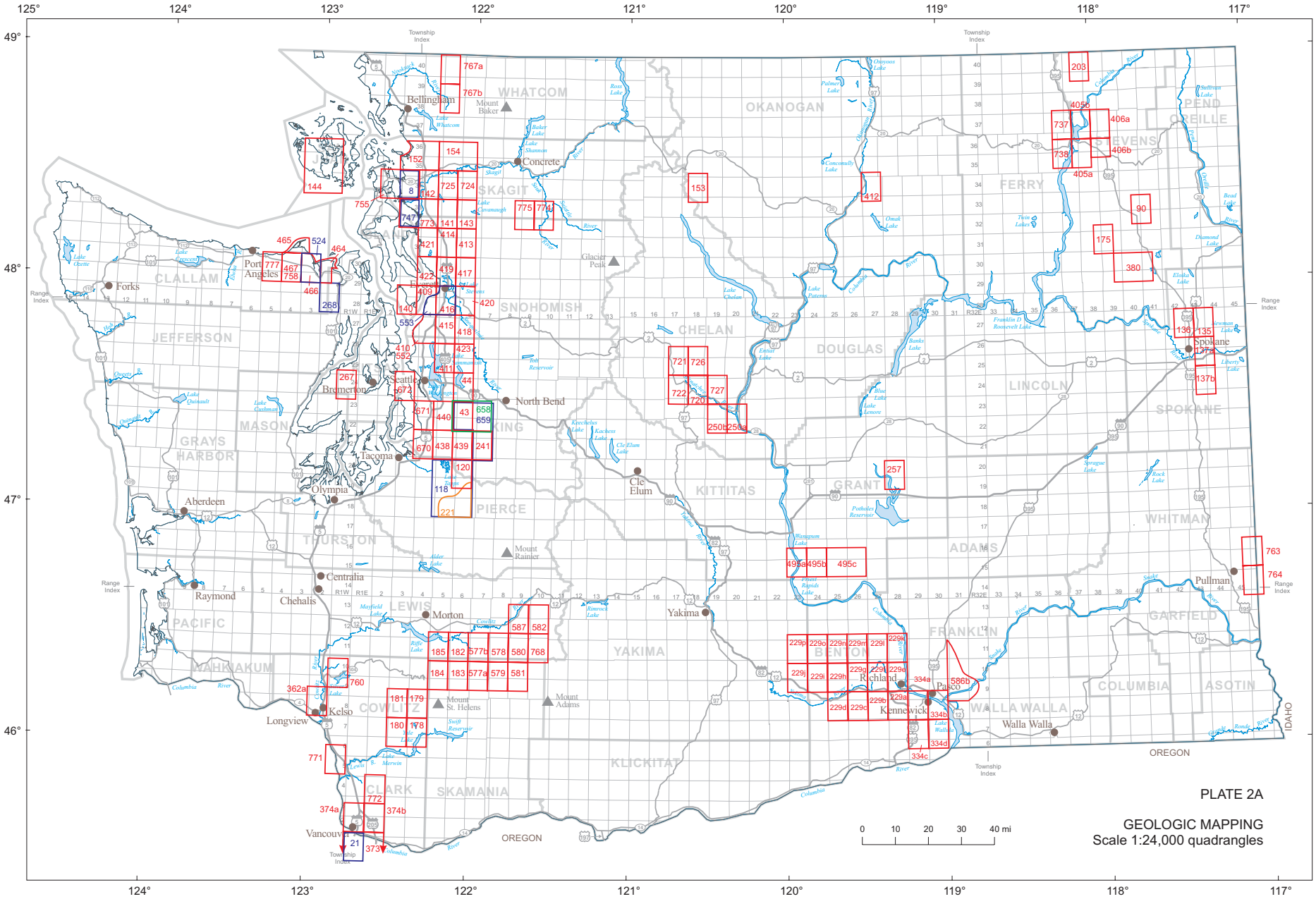
PLATE 2A
GEOLOGIC MAPPING
Scale 1:24,000 quadrangles
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
Township Index
Range Index
WHATCOM
SKAGIT
SNOHOMISH
CHELAN
OKANOGAN
DOUGLAS
FERRY
STEVENS
PEND OREILLE
LINCOLN
SPOKANE
CLALLAM
JEFFERSON
MASON
KING
GRAYS HARBOR
THURSTON
PIERCE
KITTITAS
GRANT
ADAMS
WHITMAN
LEWIS
PACIFIC
YAKIMA
FRANKLIN
BENTON
GARFIELD
COLUMBIA
ASOTIN
WALLA WALLA
WAHKIAKUM
COWLITZ
KLICKITAT
CLARK
SKAMANIA
OREGON
IDAHO
Bellingham
Mount Baker
Concrete
Glacier Peak
Port Angeles
Forks
Bremerton
Seattle
North Bend
Tacoma
Olympia
Aberdeen
Cle Elum
Mount Rainier
Centralia
Chehalis
Raymond
Morton
Yakima
Mount St. Helens
Mount Adams
Kelso
Longview
Vancouver
Pullman
Spokane
Richland
Pasco
Kennewick
Walla Walla

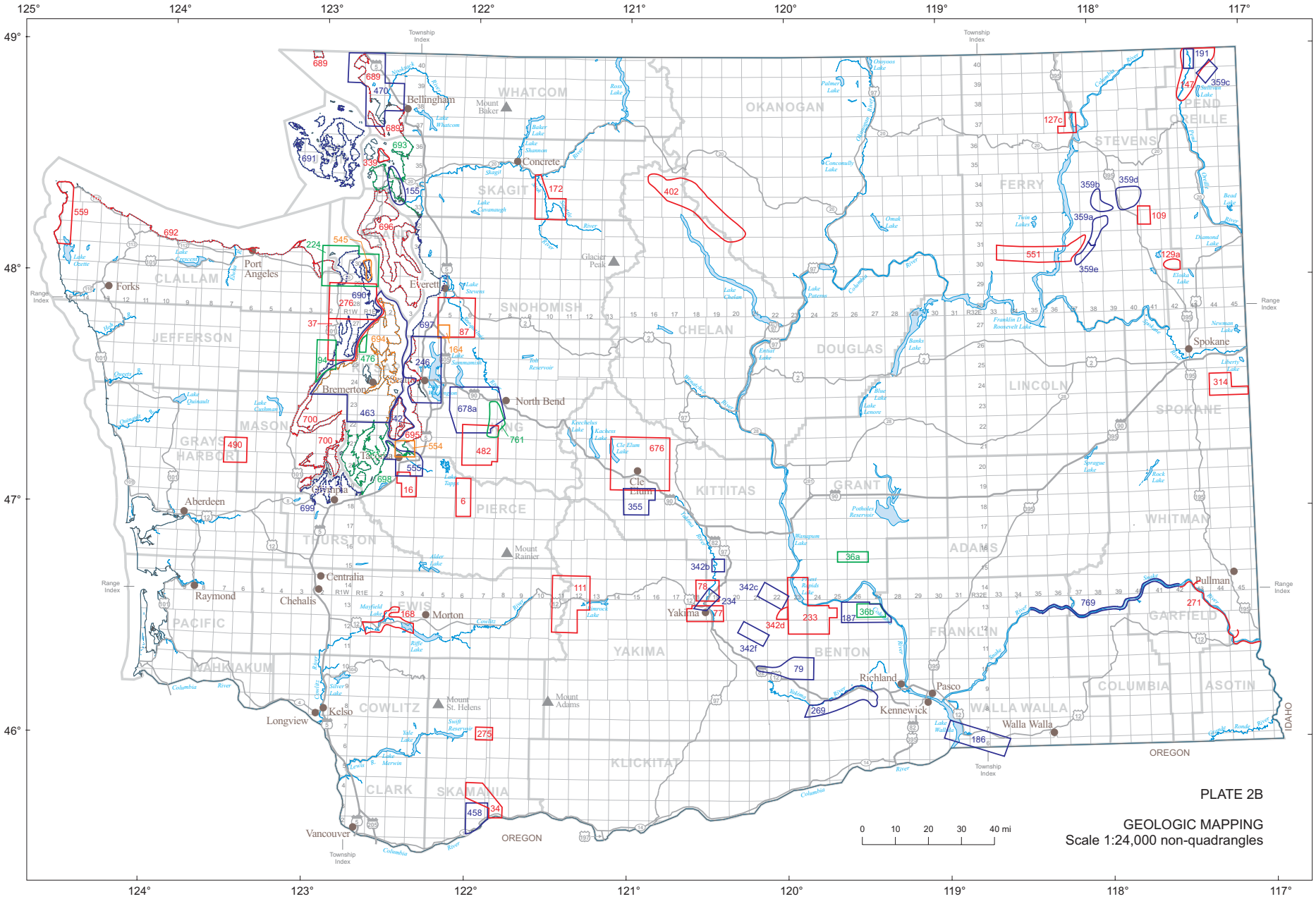
PLATE 2B
GEOLOGIC MAPPING
Scale 1:24,000 non-quadrangles
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
WHATCOM
SKAGIT
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CHELAN
OKANOGAN
DOUGLAS
FERRY
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PEND OREILLE
LINCOLN
SPOKANE
JEFFERSON
CLALLAM
MASON
GRAYS HARBOR
PIERCE
KITTITAS
GRANT
ADAMS
WHITMAN
THURSTON
LEWIS
PACIFIC
YAKIMA
BENTON
FRANKLIN
GARFIELD
COLUMBIA
ASOTIN
WALLA WALLA
MAHKIAKUM
COWLITZ
KLICKITAT
CLARK
SKAMANIA
Bellingham
Mount Baker
Concrete
Glacier Peak
Port Angeles
Forks
Everett
Seattle
Bremerton
North Bend
Tacoma
Olympia
Aberdeen
Cle Elum
Mount Rainier
Centralia
Chehalis
Raymond
Morton
Yakima
Mount St. Helens
Mount Adams
Kelso
Longview
Vancouver
Richland
Pasco
Kennewick
Walla Walla
Spokane
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Range Index
Township Index

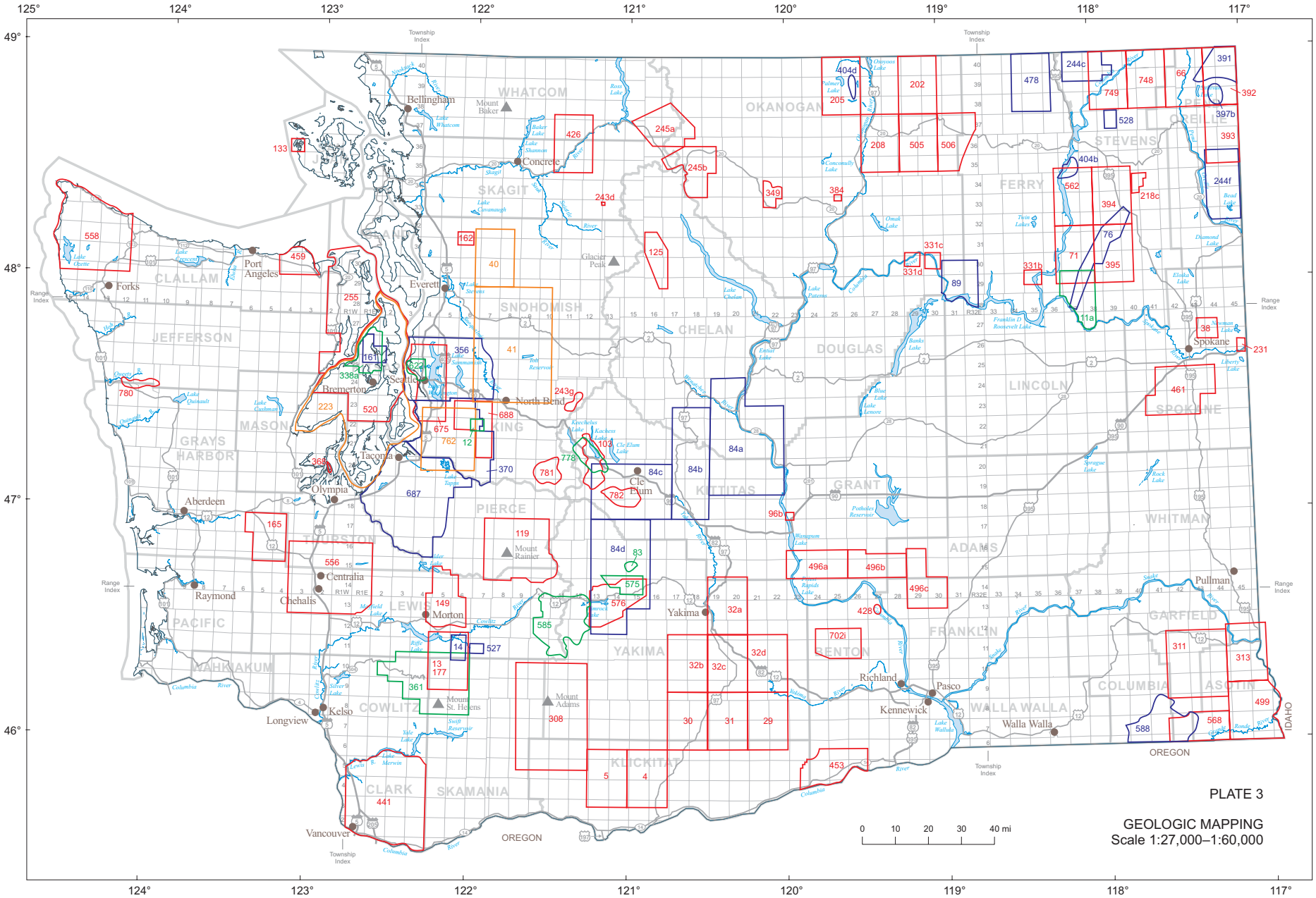
PLATE 3
GEOLOGIC MAPPING
Scale 1:27,000–1:60,000
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
Township Index
Range Index
WHATCOM
SKAGIT
SNOHOMISH
CHELAN
OKANOGAN
DOUGLAS
FERRY
STEVENS
PEND OREILLE
LINCOLN
SPOKANE
CLALLAM
JEFFERSON
GRAYS HARBOR
MASON
KING
KITTITAS
GRANT
ADAMS
WHITMAN
PIERCE
THURSTON
LEWIS
PACIFIC
WAHKIAKUM
COWLITZ
CLARK
SKAMANIA
YAKIMA
KLICKITAT
BENTON
FRANKLIN
GARFIELD
COLUMBIA
ASOTIN
WALLA WALLA
OREGON
IDAHO
Bellingham
Mount Baker
Concrete
Glacier Peak
Port Angeles
Forks
Everett
Seattle
Bremerton
Tacoma
Olympia
Aberdeen
North Bend
Cle Elum
Yakima
Mount Rainier
Centralia
Chehalis
Raymond
Morton
Longview
Kelso
Mount St. Helens
Mount Adams
Vancouver
Spokane
Pullman
Richland
Pasco
Kennewick
Walla Walla

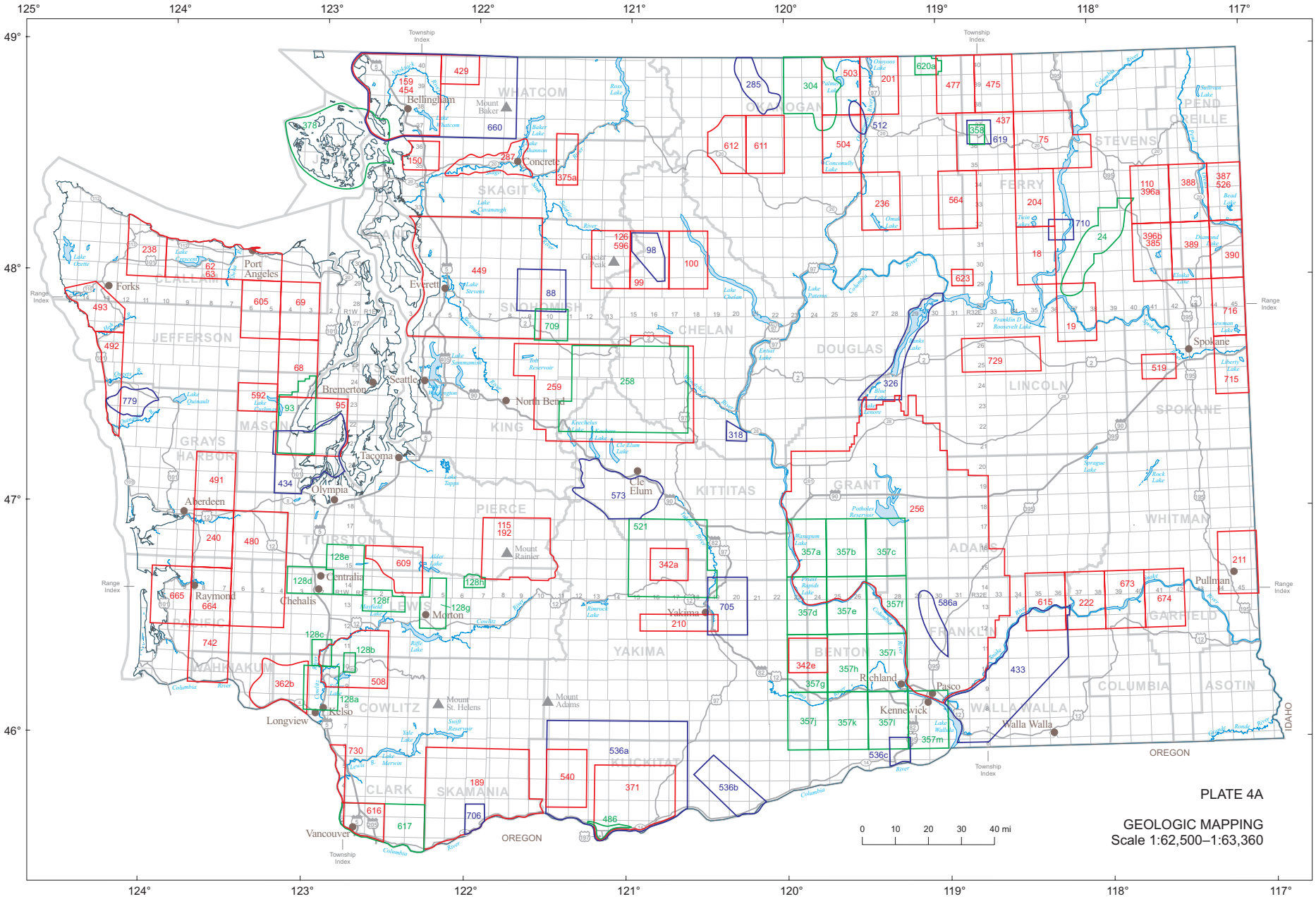
PLATE 4A
GEOLOGIC MAPPING
Scale 1:62,500–1:63,360
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
WHATCOM
SKAGIT
SNOHOMISH
CHELAN
DOUGLAS
OKANOGAN
STEVENS
FERRY
PEND OREILLE
LINCOLN
SPOKANE
WHITMAN
GARFIELD
ADAMS
GRANT
FRANKLIN
BENTON
COLUMBIA
ASOTIN
WALLA WALLA
KITTITAS
YAKIMA
KLICKITAT
SKAMANIA
CLARK
COWLITZ
LEWIS
THURSTON
PIERCE
KING
MASON
GRAYS HARBOR
PACIFIC
WAHKIAKUM
JEFFERSON
CLALLAM
Bellingham
Mount Baker
Concrete
Glacier Peak
Everett
Seattle
Bremerton
North Bend
Tacoma
Olympia
Aberdeen
Forks
Port Angeles
Mount Rainier
Cle Elum
Yakima
Centralia
Chehalis
Raymond
Morton
Kelso
Longview
Mount St. Helens
Mount Adams
Vancouver
Spokane
Pullman
Richland
Pasco
Kennewick
Walla Walla
OREGON
IDAHO
Range Index
Township Index

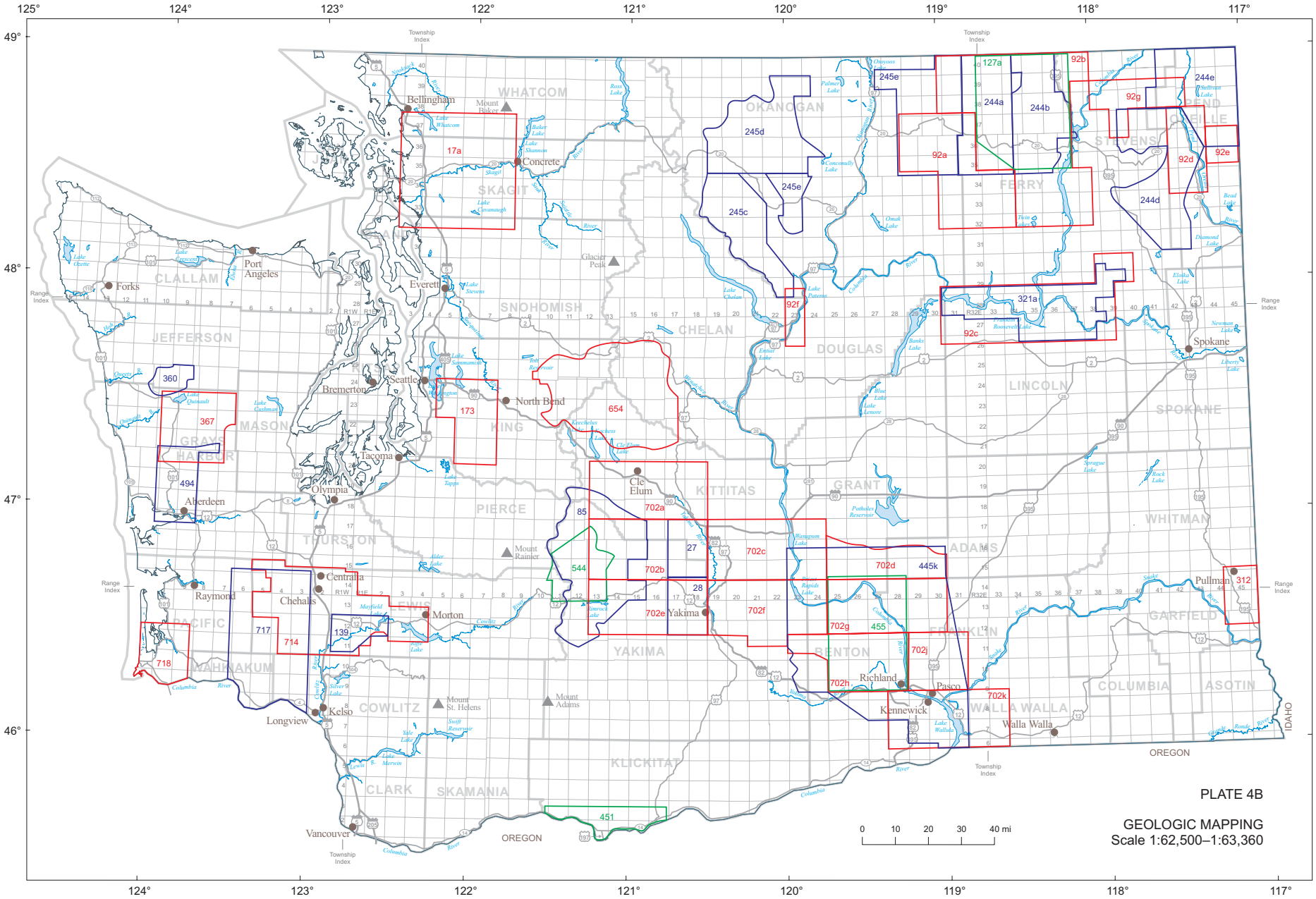
PLATE 4B
GEOLOGIC MAPPING
Scale 1:62,500–1:63,360
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
WHATCOM
SKAGIT
SNOHOMISH
CHELAN
OKANOGAN
DOUGLAS
FERRY
STEVENS
PEND OREILLE
LINCOLN
SPOKANE
CLALLAM
JEFFERSON
KING
KITTITAS
GRANT
ADAMS
WHITMAN
GARFIELD
COLUMBIA
ASOTIN
WALLA WALLA
FRANKLIN
BENTON
YAKIMA
PIERCE
THURSTON
MASON
GRAYS HARBOR
PACIFIC
LEWIS
WAHKIAKUM
COWLITZ
CLARK
SKAMANIA
KLICKITAT
Bellingham
Mount Baker
Concrete
Port Angeles
Forks
Everett
Glacier Peak
Seattle
Bremerton
North Bend
Tacoma
Olympia
Aberdeen
Cle Elum
Mount Rainier
Centralia
Chehalis
Raymond
Morton
Yakima
Richland
Pasco
Kennewick
Pullman
Spokane
Walla Walla
Kelso
Longview
Mount St. Helens
Mount Adams
Vancouver
OREGON
IDAHO
Range Index
Township Index
17a
173
360
367
494
654
702a
702b
702c
702d
702e
702f
702g
702h
702j
702k
718
714
717
139
85
544
27
28
445k
455
451
312
92a
92b
92c
92d
92e
92f
92g
127a
244a
244b
244d
244e
245c
245d
245e
321a

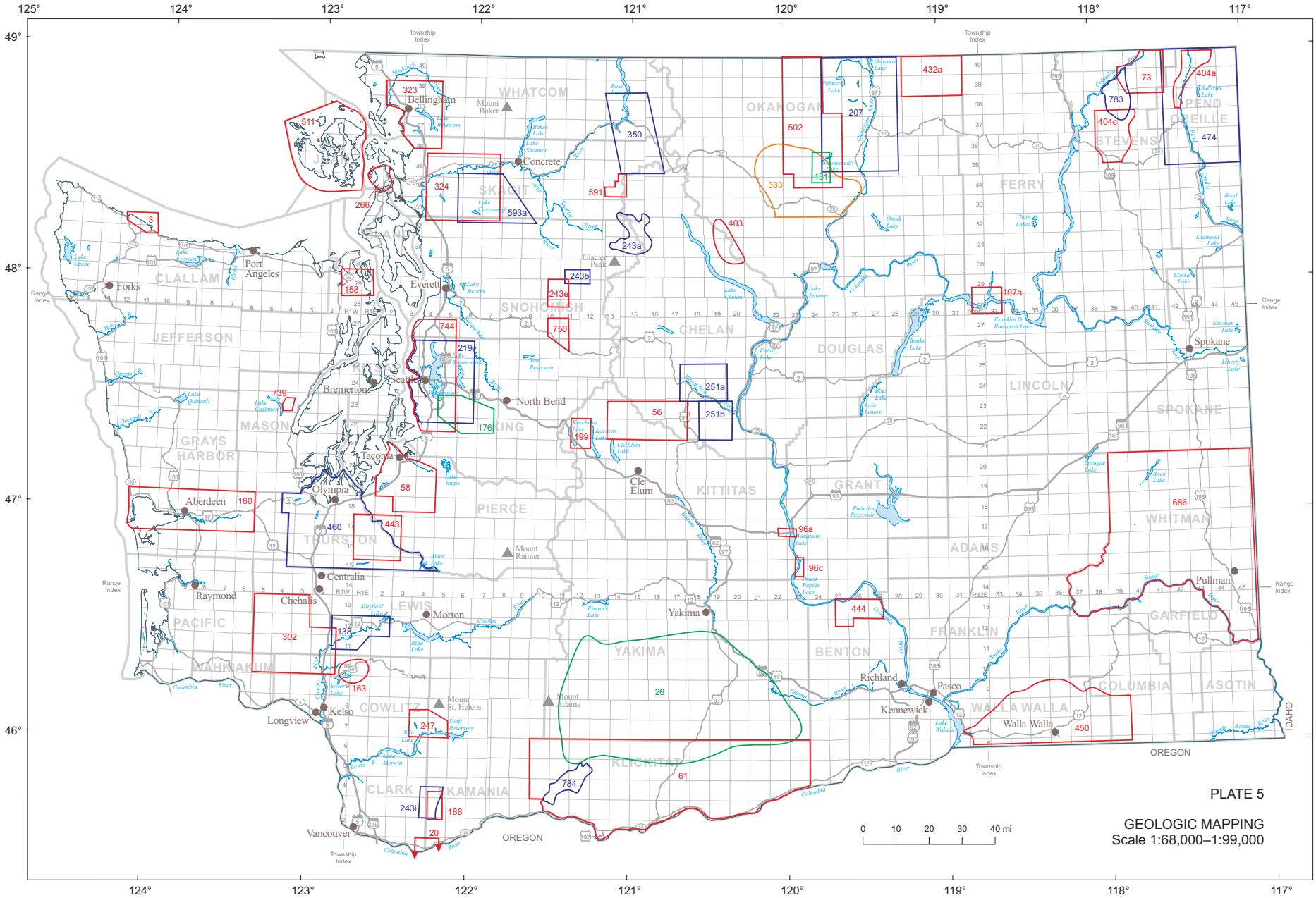
PLATE 5
GEOLOGIC MAPPING
Scale 1:68,000–1:99,000
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
Township Index
Range Index
WHATCOM
SKAGIT
SNOHOMISH
CHELAN
OKANOGAN
DOUGLAS
FERRY
STEVENS
PEND OREILLE
LINCOLN
SPOKANE
JEFFERSON
CLALLAM
GRAYS HARBOR
MASON
KING
KITTITAS
GRANT
ADAMS
WHITMAN
PIERCE
THURSTON
LEWIS
PACIFIC
WAHKIAKUM
COWLITZ
YAKIMA
BENTON
FRANKLIN
GARFIELD
COLUMBIA
ASOTIN
WALLA WALLA
KLICKITAT
CLARK
SKAMANIA
Bellingham
Mount Baker
Concrete
Port Angeles
Forks
Everett
Glacier Peak
Seattle
Bremerton
North Bend
Tacoma
Olympia
Aberdeen
Cle Elum
Mount Rainer
Centralia
Chehalis
Raymond
Morton
Yakima
Kelso
Longview
Mount St. Helens
Mount Adams
Richland
Pasco
Kennewick
Walla Walla
Spokane
Pullman
Vancouver
OREGON
IDAHO
323
511
266
324
593a
350
591
243a
243b
243e
750
744
219
158
739
176
56
251a
251b
199
403
383
502
431
207
432a
73
783
404a
404c
474
197a
3
160
460
443
58
138
302
163
247
188
20
784
61
26
96a
96c
444
686
450

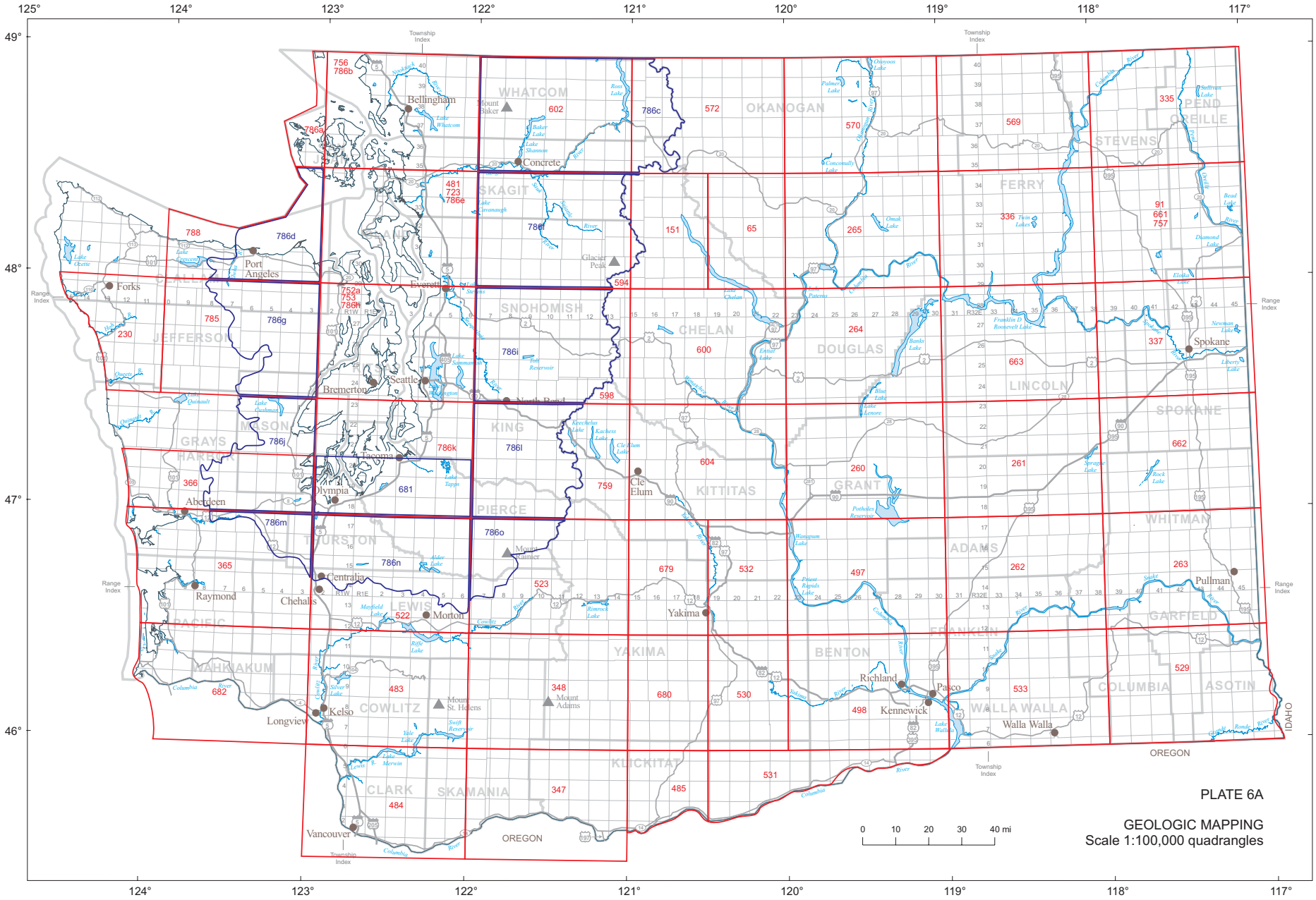
PLATE 6A
GEOLOGIC MAPPING
Scale 1:100,000 quadrangles
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
WHATCOM
SKAGIT
OKANOGAN
FERRY
STEVENS
PEND OREILLE
SNOHOMISH
CHELAN
DOUGLAS
LINCOLN
SPOKANE
KING
KITTITAS
GRANT
WHITMAN
PIERCE
ADAMS
THURSTON
LEWIS
YAKIMA
BENTON
FRANKLIN
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WALLA WALLA
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Yakima
Centralia
Chehalis
Raymond
Morton
Longview
Kelso
Vancouver
Richland
Pasco
Kennewick
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Pullman
Mount Baker
Glacier Peak
Mount Rainier
Mount St. Helens
Mount Adams
Range Index
Township Index

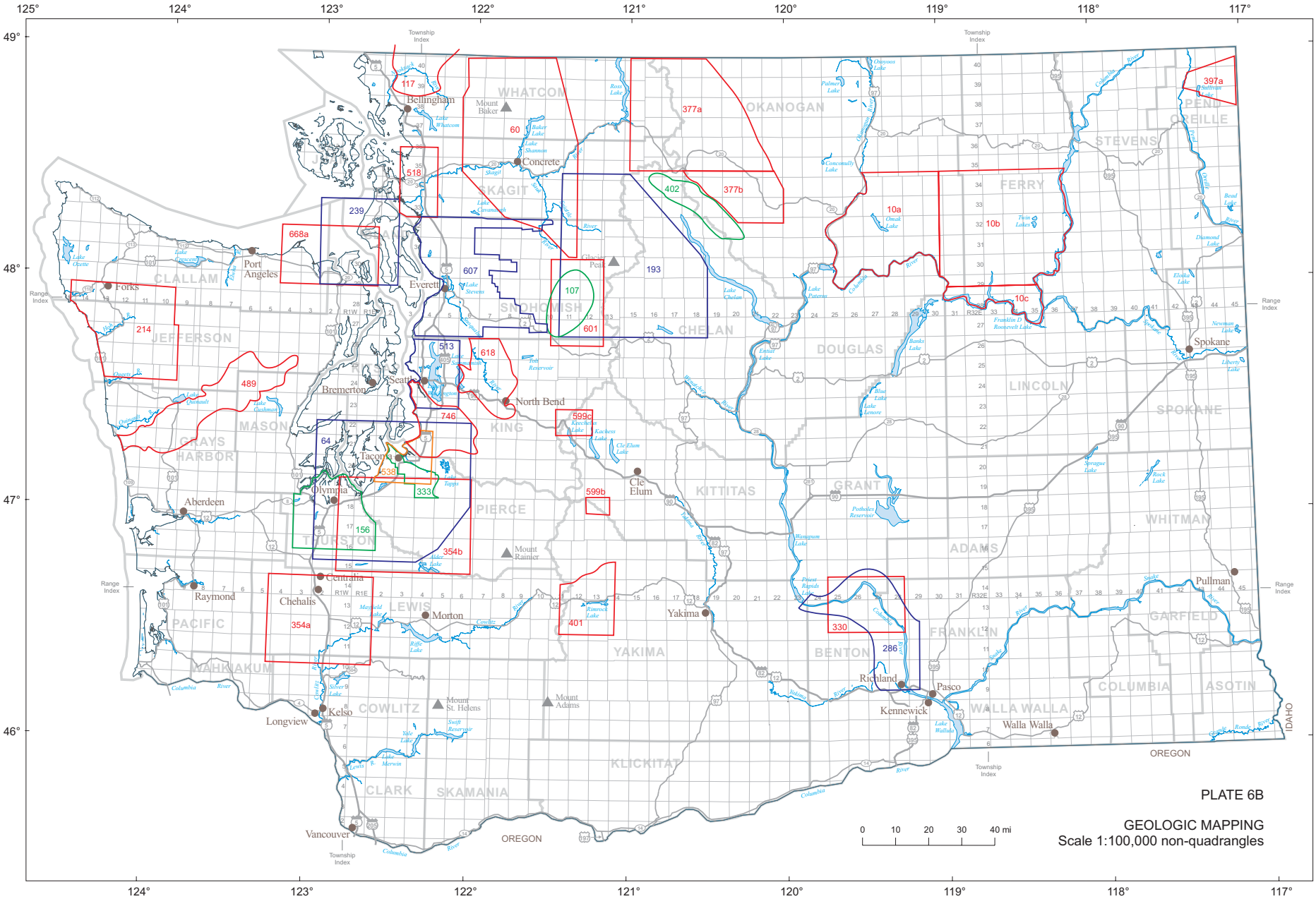
PLATE 6B
GEOLOGIC MAPPING
Scale 1:100,000 non-quadrangles
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
Bellingham
Mount Baker
Concrete
Port Angeles
Forks
Everett
Seattle
Bremerton
Tacoma
Olympia
Aberdeen
Raymond
Centralia
Chehalis
Longview
Kelso
Vancouver
Morton
North Bend
Cle Elum
Yakima
Richland
Pasco
Kennewick
Walla Walla
Spokane
Pullman
Mount Rainier
Mount St. Helens
Mount Adams
Glacier Peak
WHATCON
SKAGIT
SNOHOMISH
OKANOGAN
CHELAN
DOUGLAS
FERRY
STEVENS
PEND OREILLE
LINCOLN
SPOKANE
CLALLAM
JEFFERSON
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KITTITAS
GRANT
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GARFIELD
COLUMBIA
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WALLA WALLA
FRANKLIN
BENTON
YAKIMA
KLICKITAT
SKAMANIA
CLARK
COWLITZ
LEWIS
PACIFIC
WAHKIAKUM
GRAYS HARBOR
MASON
THURSTON
PIERCE
OREGON
IDAHO
Township Index
Range Index
117
518
668a
239
607
214
489
746
513
618
64
538
333
156
354b
354a
60
377a
402
377b
193
107
601
599c
599b
401
10a
10b
10c
397a
330
286

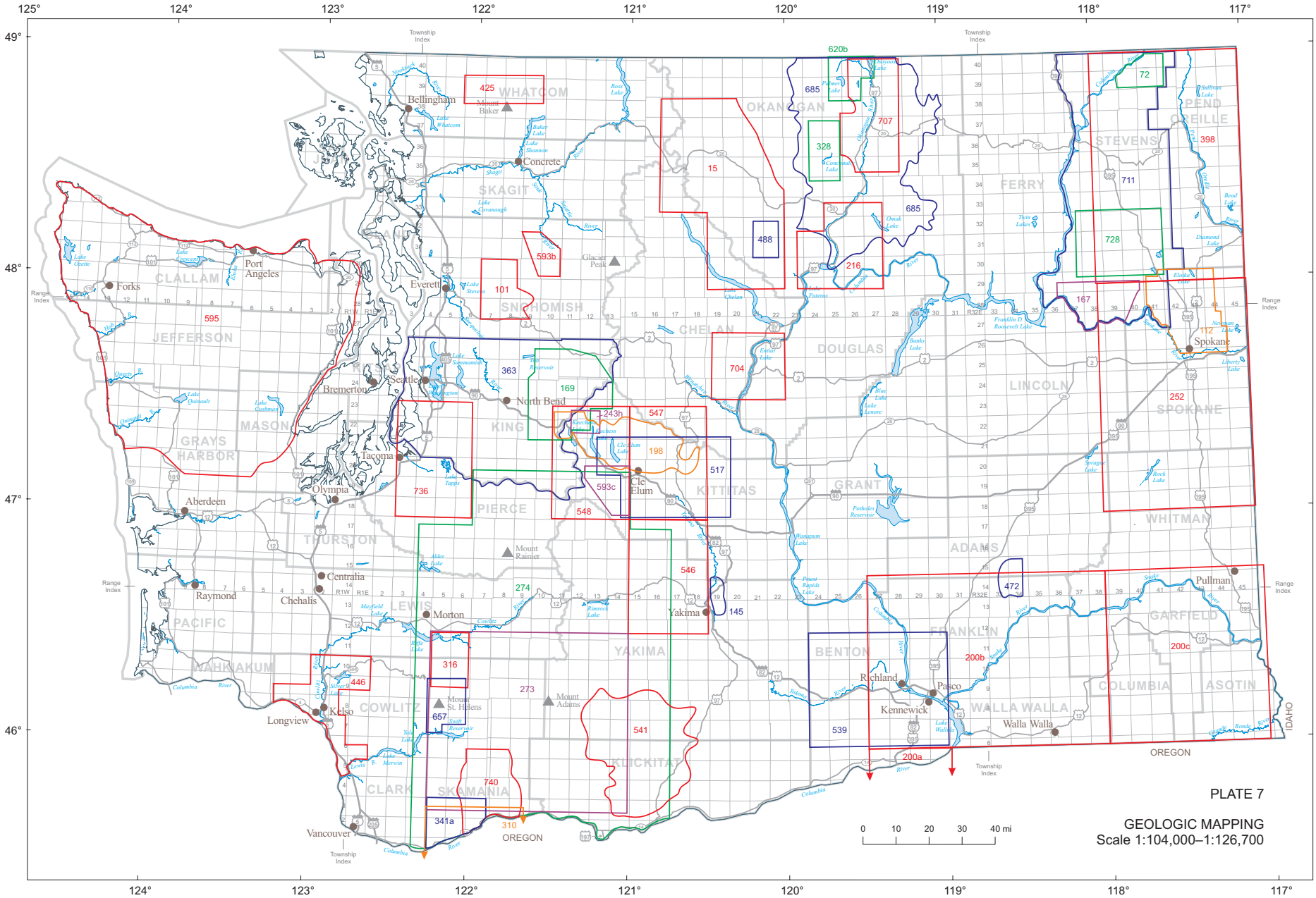
PLATE 7
GEOLOGIC MAPPING
Scale 1:104,000–1:126,700
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
Township Index
Range Index
WHATCOM
SKAGIT
SNOHOMISH
OKANOGAN
CHELAN
DOUGLAS
FERRY
STEVENS
PEND OREILLE
LINCOLN
SPOKANE
CLALLAM
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GARFIELD
MASON
GRAYS HARBOR
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Longview
Vancouver
Cle Elum
Yakima
Richland
Pasco
Kennewick
Walla Walla
Spokane
Pullman
Mount Baker
Glacier Peak
Mount Rainier
Mount St. Helens
Mount Adams
OREGON
IDAHO
425
620b
685
707
328
15
488
685
216
593b
101
595
72
711
398
728
167
112
252
363
169
704
243h
547
198
517
593c
548
736
546
274
145
472
200b
200c
316
446
273
657
541
539
200a
740
341a
310

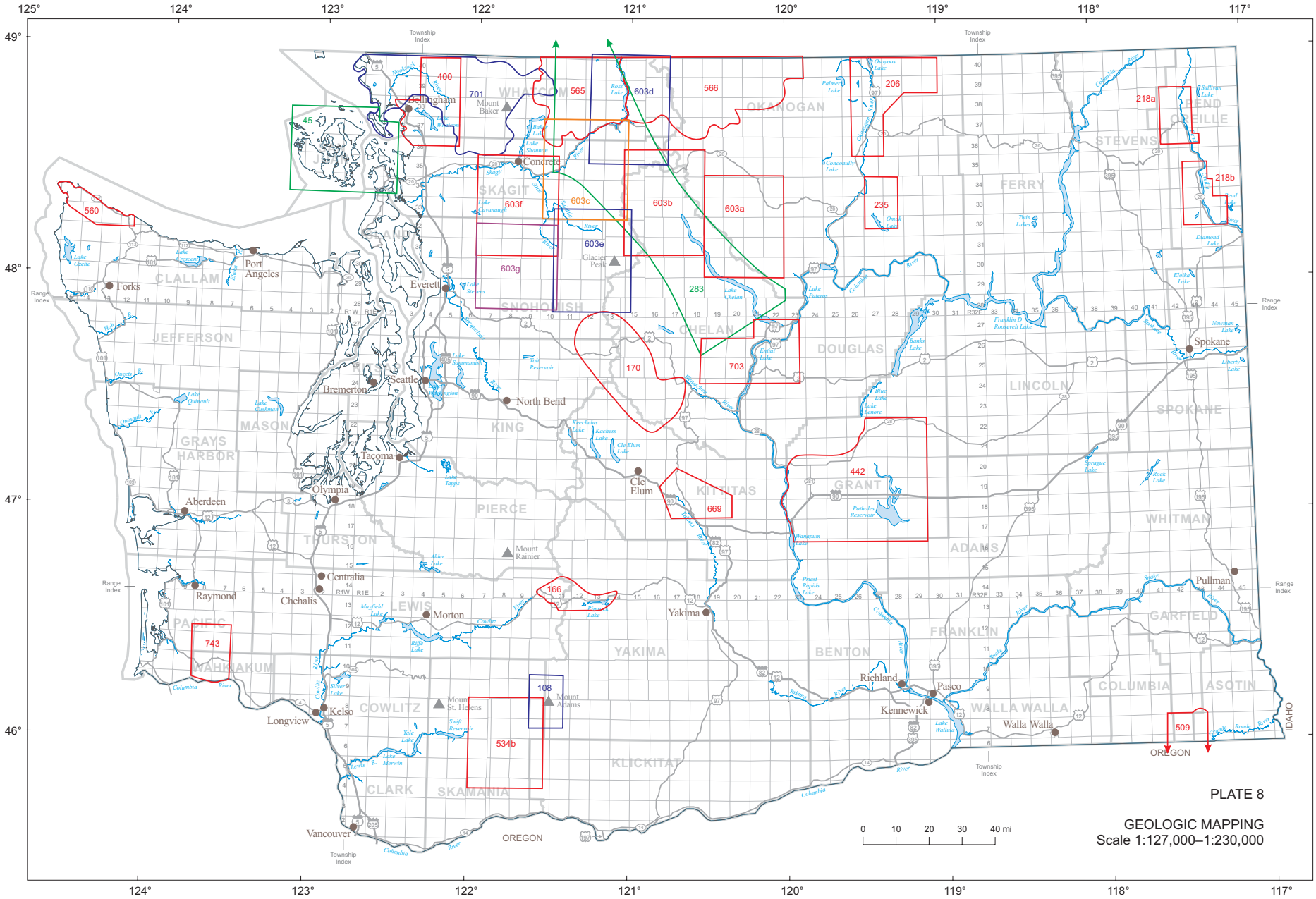
PLATE 8
GEOLOGIC MAPPING
Scale 1:127,000–1:230,000
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
Township Index
Range Index
WHATCOM
SKAGIT
SNOHOMISH
OKANOGAN
CHELAN
DOUGLAS
FERRY
STEVENS
PEND OREILLE
LINCOLN
SPOKANE
JEFFERSON
CLALLAM
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ADAMS
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THURSTON
MASON
GRAYS HARBOR
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PACIFIC
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COWLITZ
CLARK
SKAMANIA
YAKIMA
BENTON
FRANKLIN
KLICKITAT
COLUMBIA
ASOTIN
WALLA WALLA
Bellingham
Mount Baker
Concrete
Glacier Peak
Everett
Seattle
Bremerton
North Bend
Tacoma
Olympia
Aberdeen
Forks
Port Angeles
Cle Elum
Mount Rainier
Centralia
Chehalis
Raymond
Morton
Yakima
Mount St. Helens
Mount Adams
Kelso
Longview
Vancouver
Richland
Pasco
Kennewick
Walla Walla
Spokane
Pullman
OREGON
IDAHO
400
701
565
603d
566
206
218a
218b
45
560
603f
603c
603b
603a
235
603e
603g
283
170
703
442
669
166
743
108
534b
509

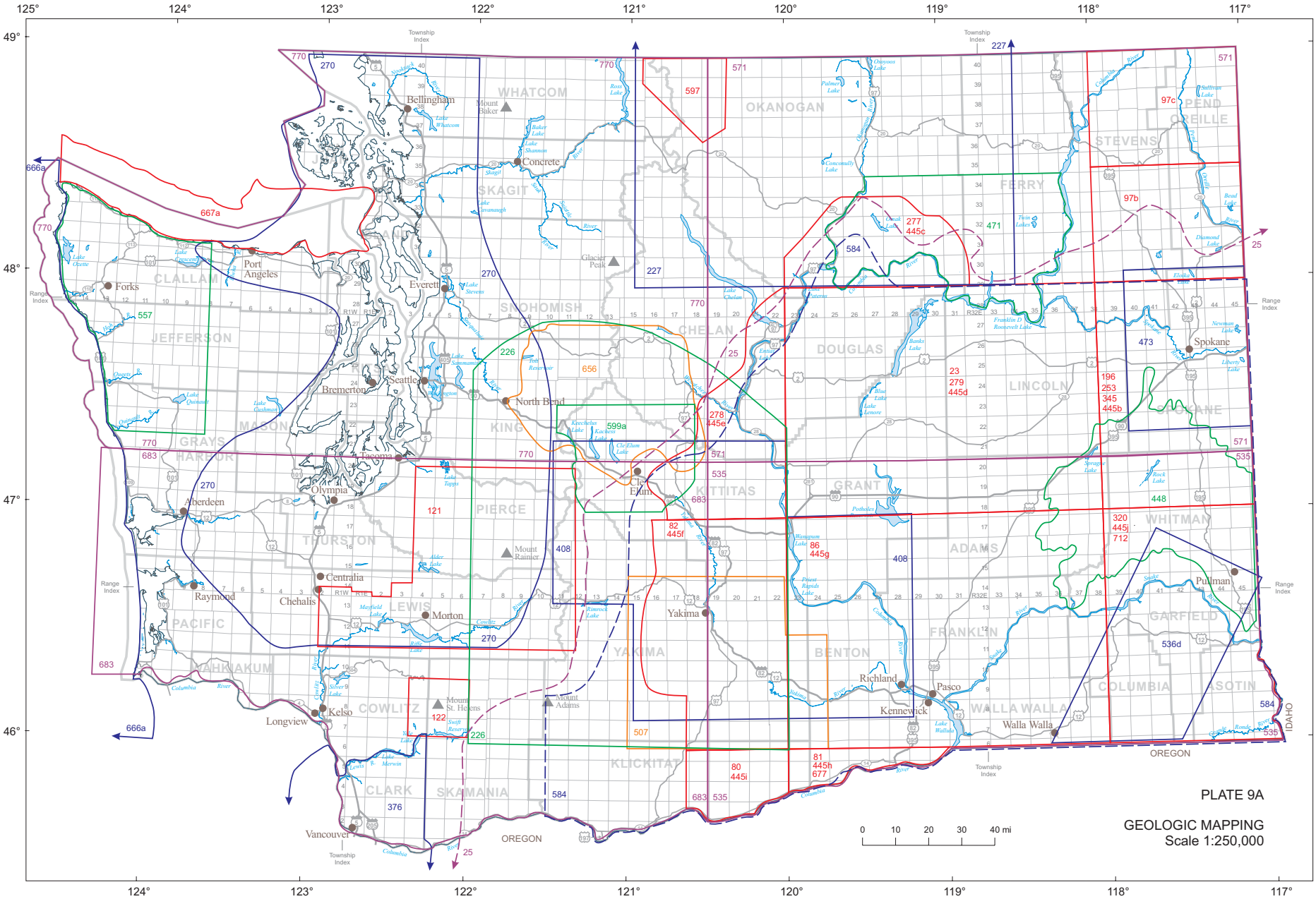
PLATE 9A
GEOLOGIC MAPPING
Scale 1:250,000
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
WHATCOM
SKAGIT
OKANOGAN
FERRY
STEVENS
PEND OREILLE
CLALLAM
JEFFERSON
SNOHOMISH
CHELAN
DOUGLAS
LINCOLN
SPOKANE
KING
KITTITAS
GRANT
ADAMS
WHITMAN
GRAYS HARBOR
MASON
PIERCE
THURSTON
LEWIS
PACIFIC
WAHKIAKUM
YAKIMA
BENTON
FRANKLIN
GARFIELD
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COWLITZ
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SKAMANIA
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North Bend
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Aberdeen
Cle Elum
Centralia
Chehalis
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Morton
Yakima
Richland
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Kennewick
Walla Walla
Pullman
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Kelso
Longview
Vancouver
Mount Baker
Glacier Peak
Mount Rainier
Mount St. Helens
Mount Adams
Township Index
Range Index

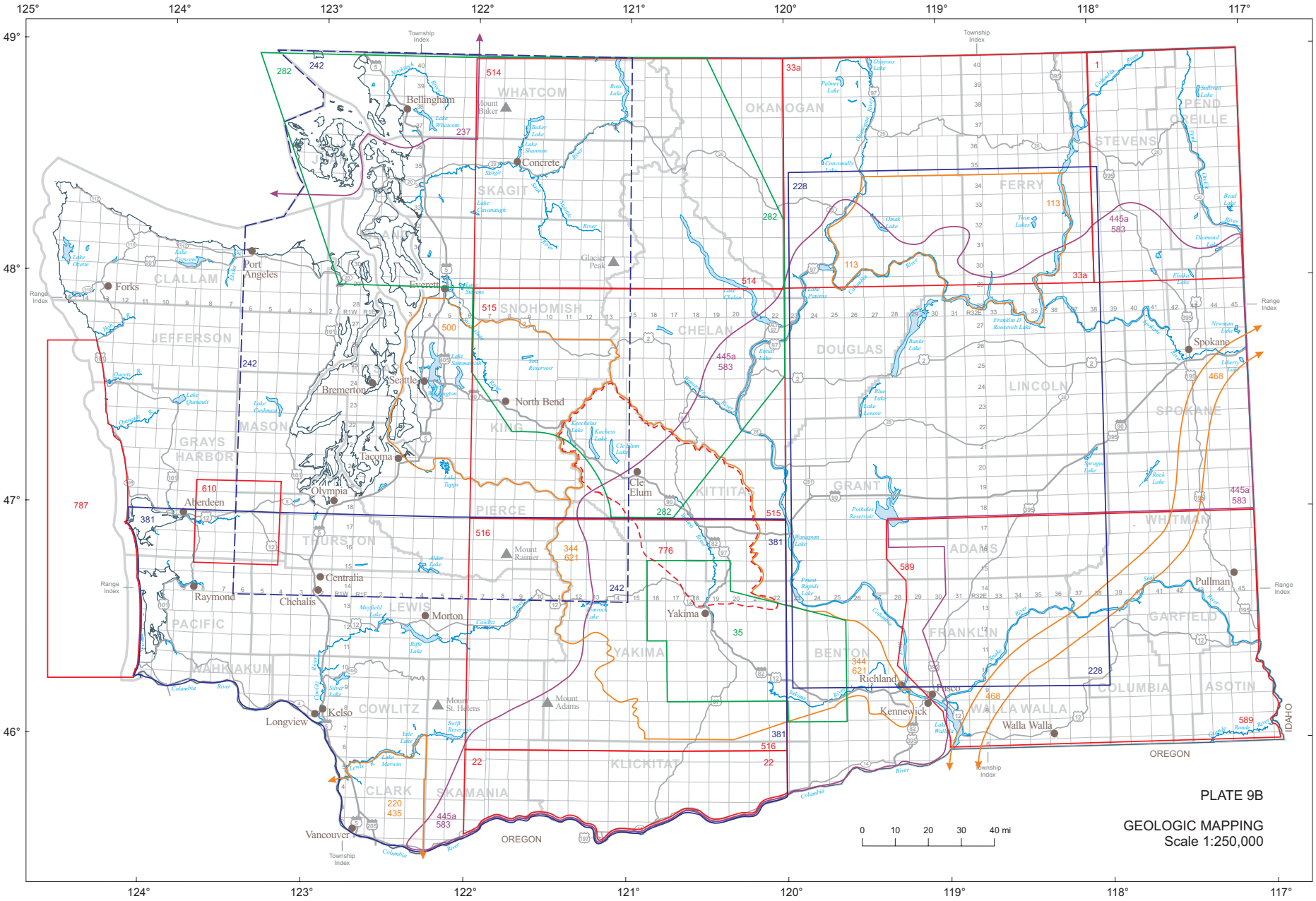
PLATE 9B
GEOLOGIC MAPPING
Scale 1:250,000
0 10 20 30 40 mi
WHATCOM
SKAGIT
SNOHOMISH
OKANOGAN
FERRY
STEVENS
PEND OREILLE
CLALLAM
JEFFERSON
KING
CHELAN
DOUGLAS
LINCOLN
SPOKANE
MASON
GRAYS HARBOR
PIERCE
KITTITAS
GRANT
WHITMAN
ADAMS
THURSTON
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YAKIMA
BENTON
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WAHKIAKUM
COWLITZ
KLICKITAT
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Centralia
Chehalis
Raymond
Morton
Yakima
Richland
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Kennewick
Walla Walla
Pullman
Spokane
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Vancouver
Mount Baker
Glacier Peak
Mount Rainier
Mount St. Helens
Mount Adams
OREGON
IDAHO
Range Index
Township Index

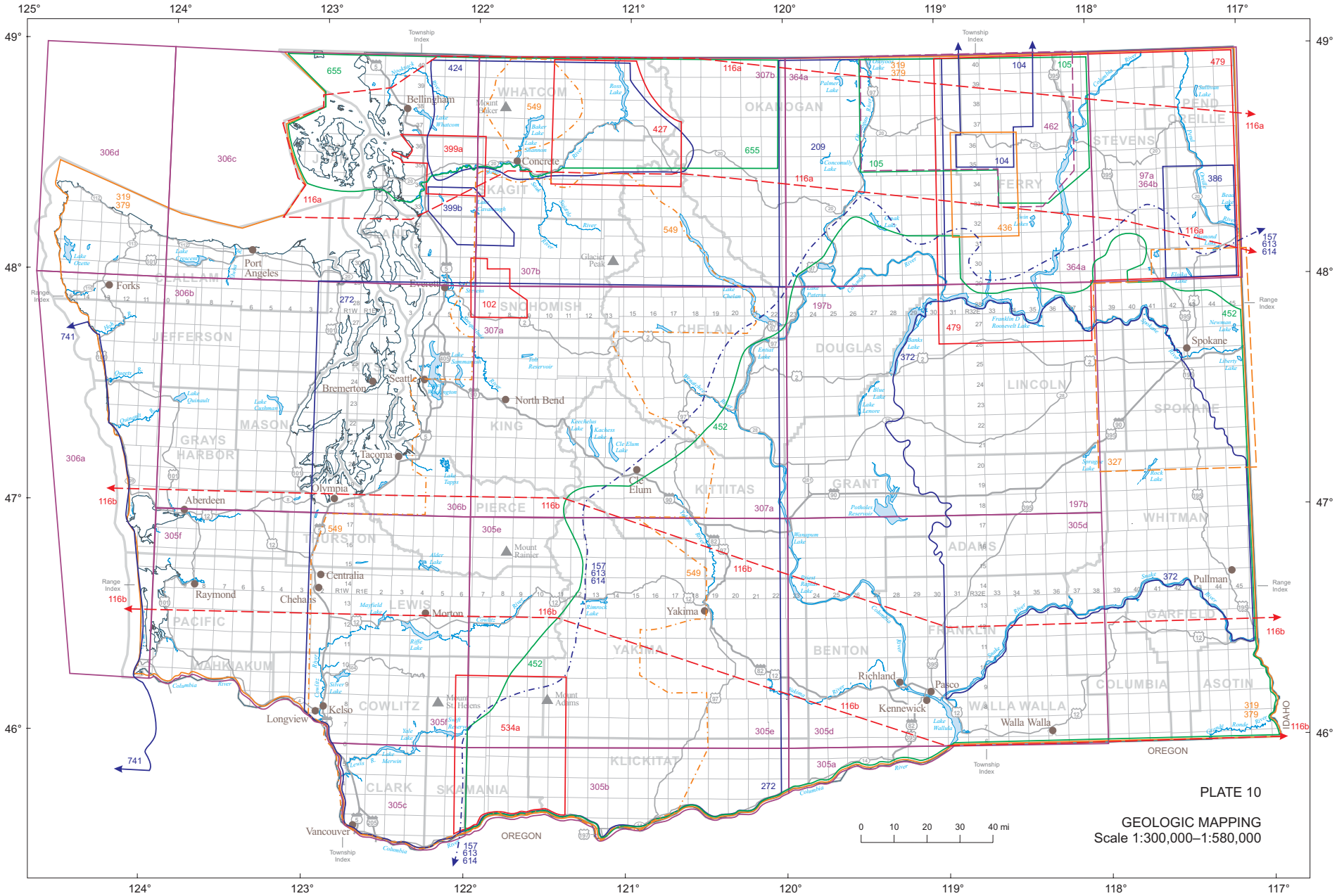
PLATE 10
GEOLOGIC MAPPING
Scale 1:300,000–1:580,000
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
WHATCOM
SKAGIT
OKANOGAN
FERRY
STEVENS
PEND OREILLE
SNOHOMISH
CHELAN
DOUGLAS
LINCOLN
SPOKANE
JEFFERSON
KING
KITTITAS
GRANT
WHITMAN
MASON
GRAYS HARBOR
PIERCE
THURSTON
ADAMS
GARFIELD
PACIFIC
LEWIS
YAKIMA
FRANKLIN
BENTON
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COWLITZ
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Seattle
North Bend
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Olympia
Aberdeen
Elum
Centralia
Chehalis
Raymond
Morton
Yakima
Pullman
Spokane
Richland
Pasco
Kennewick
Walla Walla
Kelso
Longview
Vancouver
Mount Baker
Glacier Peak
Mount Rainier
Mount St. Helens
Mount Adams
Township Index
Range Index

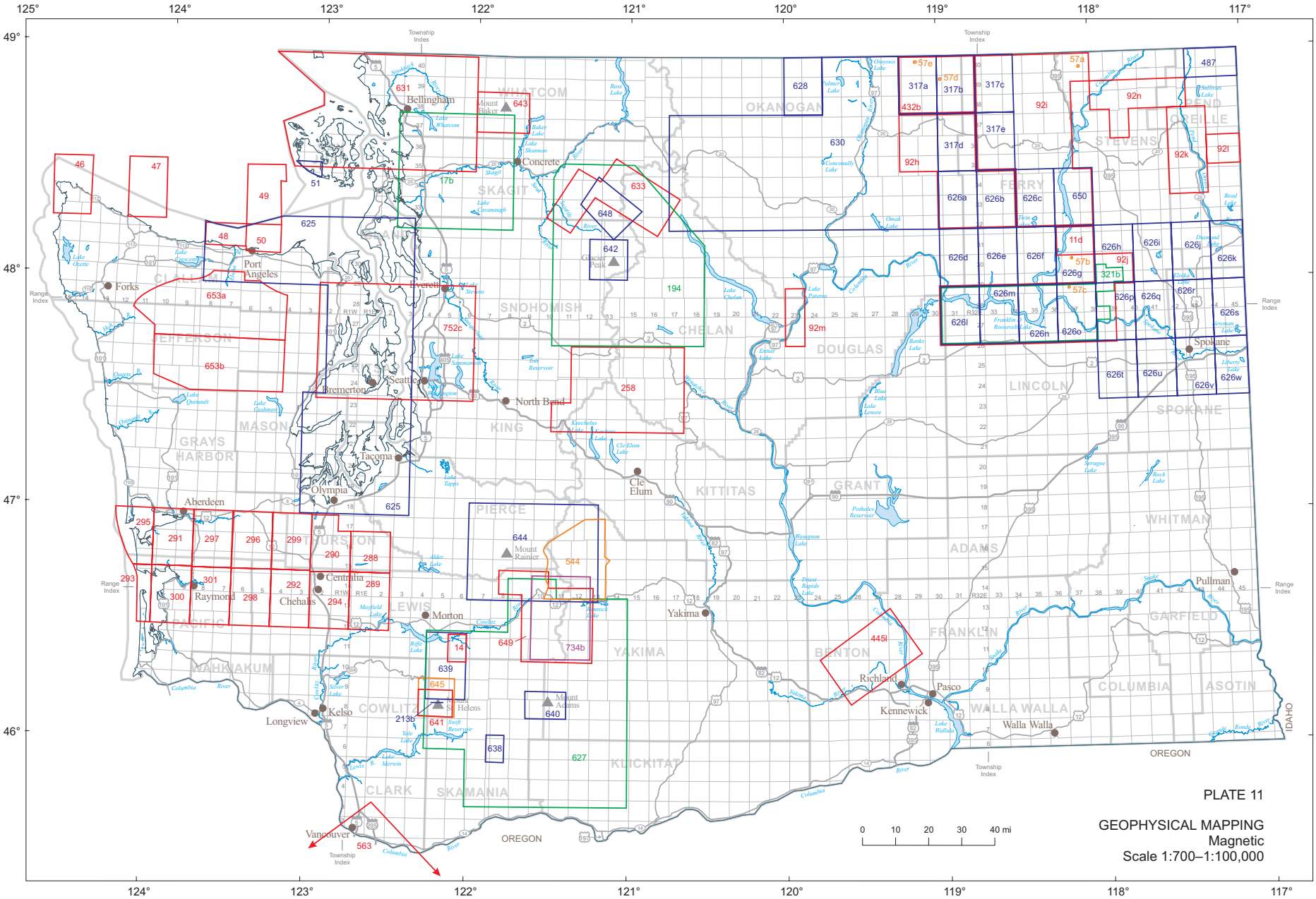
PLATE 11
GEOPHYSICAL MAPPING
Magnetic
Scale 1:700–1:100,000
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
WHATCOM
SKAGIT
SNOHOMISH
CHELAN
OKANOGAN
DOUGLAS
FERRY
STEVENS
PEND OREILLE
LINCOLN
SPOKANE
KING
KITTITAS
GRANT
ADAMS
WHITMAN
GARFIELD
PIERCE
THURSTON
MASON
GRAYS HARBOR
JEFFERSON
CLALLAM
PACIFIC
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YAKIMA
FRANKLIN
BENTON
COLUMBIA
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Everett
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Bremerton
North Bend
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Aberdeen
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Raymond
Morton
Yakima
Richland
Pasco
Kennewick
Walla Walla
Spokane
Pullman
Kelso
Longview
Vancouver
Mount Baker
Glacier Peak
Mount Rainier
Mount St. Helens
Mount Adams
OREGON
IDAHO
Range Index
Township Index

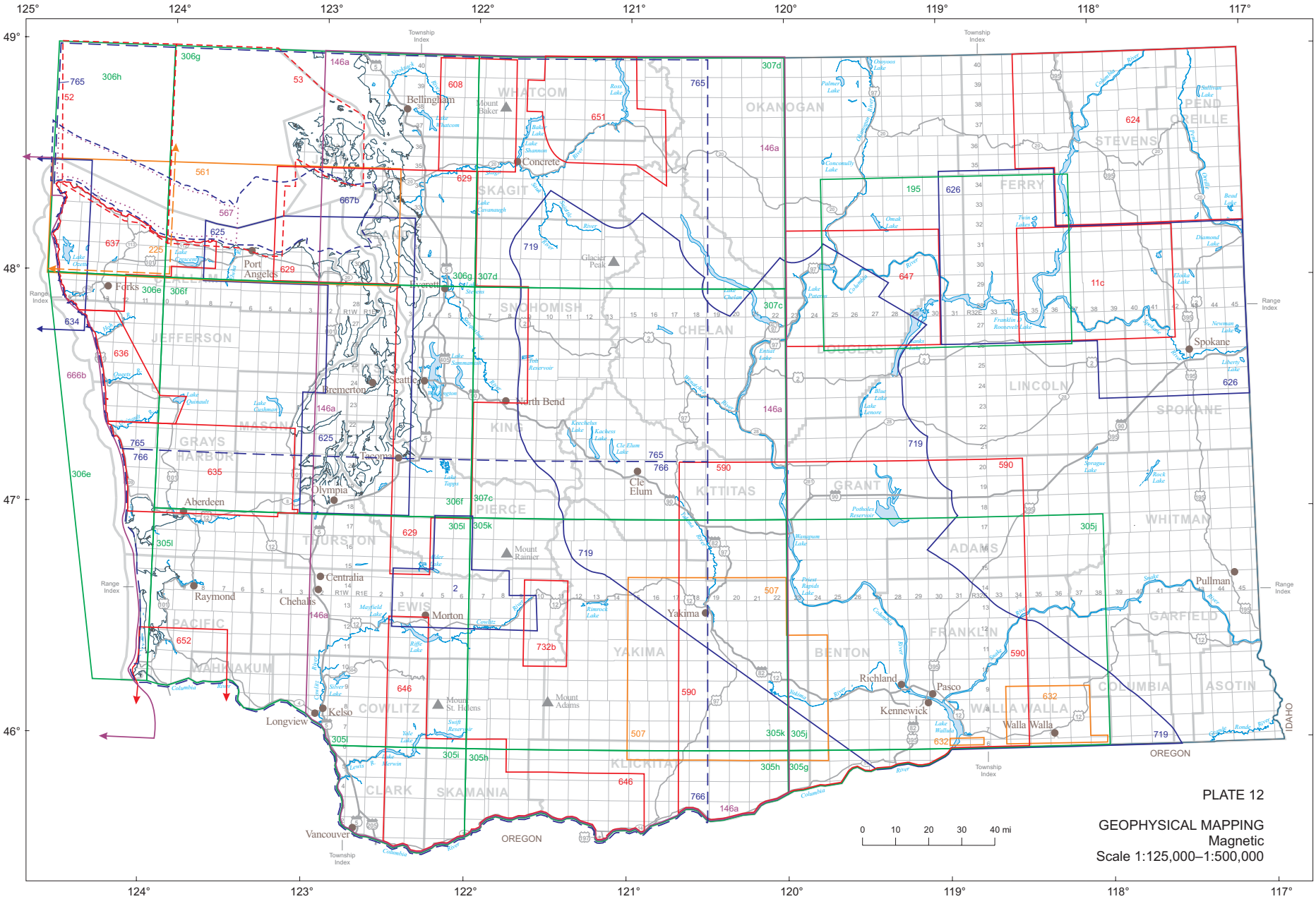
PLATE 12
GEOPHYSICAL MAPPING
Magnetic
Scale 1:125,000–1:500,000
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
Township Index
Range Index
WHATCOM
SKAGIT
OKANOGAN
PEND OREILLE
STEVENS
FERRY
SNOHOMISH
CHELAN
DOUGLAS
JEFFERSON
KING
KITTITAS
LINCOLN
SPOKANE
GRAYS HARBOR
MASON
PIERCE
GRANT
WHITMAN
THURSTON
ADAMS
GARFIELD
LEWIS
PACIFIC
YAKIMA
BENTON
FRANKLIN
PUYALLUP
COLUMBIA
ASOTIN
COWLITZ
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Port Angeles
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North Bend
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Yakima
Centralia
Chehalis
Raymond
Morton
Kelso
Longview
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Walla Walla
Spokane
Pullman
Mount Baker
Glacier Peak
Mount Rainier
Mount St. Helens
Mount Adams

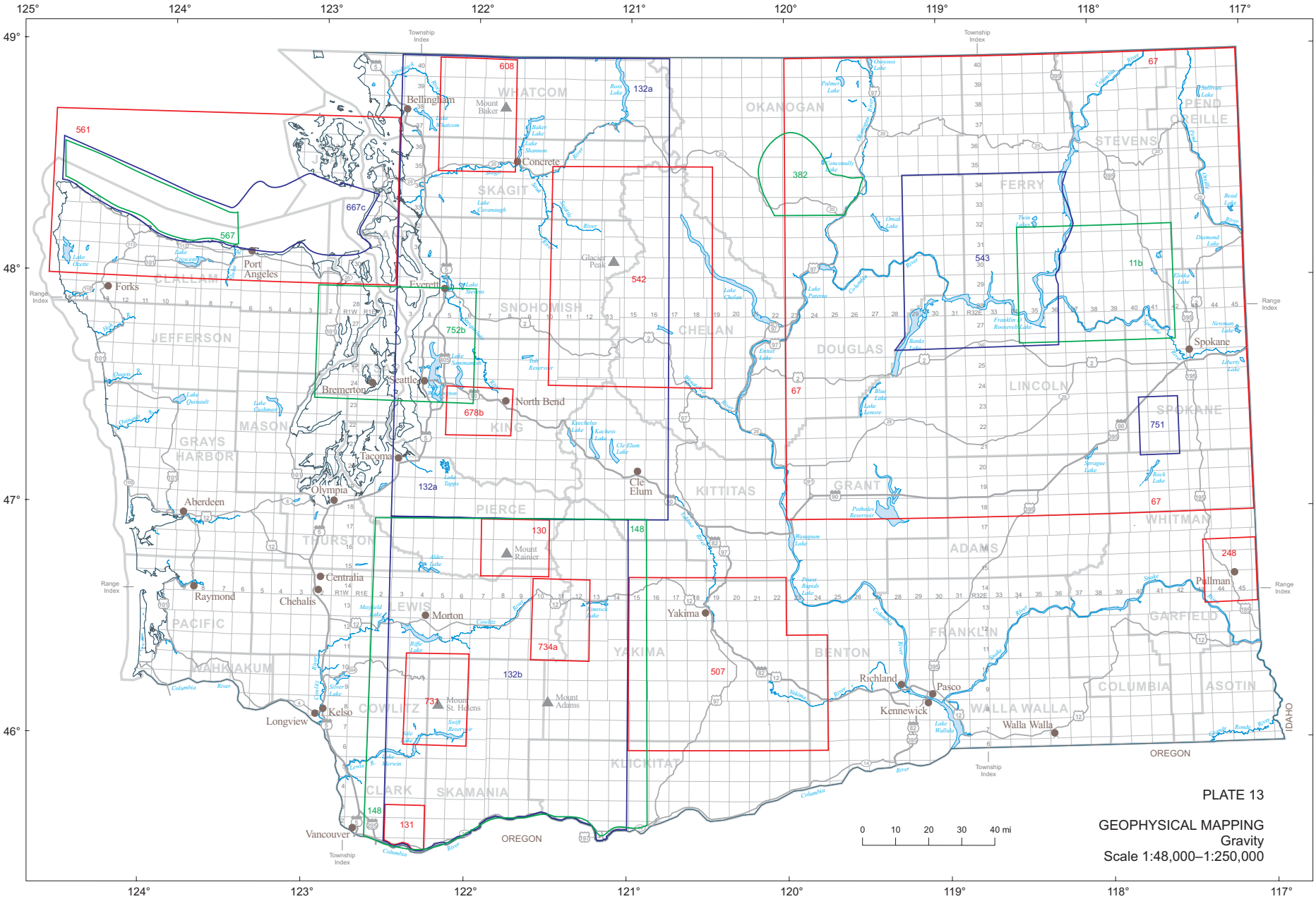
PLATE 13
GEOPHYSICAL MAPPING
Gravity
Scale 1:48,000–1:250,000
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
Township Index
Range Index
WHATCOM
SKAGIT
SNOHOMISH
KING
OKANOGAN
CHELAN
DOUGLAS
FERRY
STEVENS
PEND OREILLE
LINCOLN
SPOKANE
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ADAMS
KITTITAS
PIERCE
THURSTON
MASON
GRAYS HARBOR
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CLALLAM
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Bellingham
Mount Baker
Concrete
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Forks
Everett
Seattle
Bremerton
North Bend
Tacoma
Olympia
Aberdeen
Cle Elum
Mount Rainier
Centralia
Chehalis
Raymond
Morton
Yakima
Mount St. Helens
Mount Adams
Kelso
Longview
Vancouver
Richland
Pasco
Kennewick
Walla Walla
Spokane
Pullman
OREGON
IDAHO
561
608
132a
67
382
542
543
11b
667c
567
752b
678b
751
130
148
248
734a
132b
507
731
131

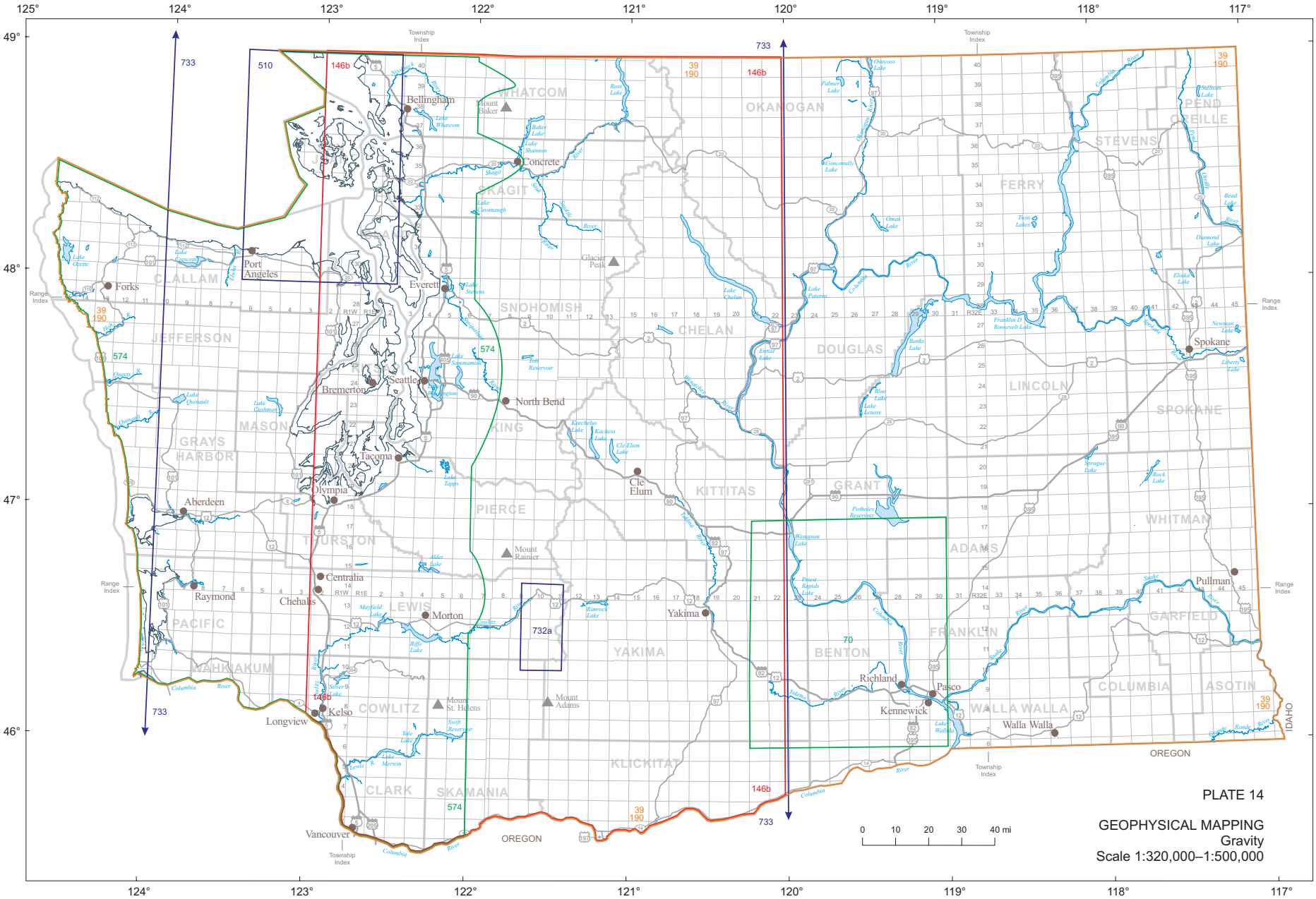
PLATE 14
GEOPHYSICAL MAPPING
Gravity
Scale 1:320,000–1:500,000
0 10 20 30 40 mi
125° 124° 123° 122° 121° 120° 119° 118° 117°
49° 48° 47° 46°
Bellingham
Mount Baker
Concrete
Port Angeles
Forks
Everett
Seattle
Bremerton
North Bend
Tacoma
Olympia
Aberdeen
Centralia
Chehalis
Raymond
Morton
Longview
Kelso
Vancouver
Cle Elum
Yakima
Richland
Pasco
Kennewick
Walla Walla
Spokane
Pullman
Glacier Peak
Mount Rainier
Mount St. Helens
Mount Adams
WHATCOM
SKAGIT
SNOHOMISH
CHELAN
OKANOGAN
DOUGLAS
FERRY
STEVENS
PEND OREILLE
LINCOLN
SPOKANE
WHITMAN
GARFIELD
COLUMBIA
ASOTIN
WALLA WALLA
FRANKLIN
ADAMS
GRANT
BENTON
KITTITAS
YAKIMA
KLICKITAT
SKAMANIA
CLARK
COWLITZ
WAHKIAKUM
PACIFIC
LEWIS
THURSTON
PIERCE
KING
MASON
GRAYS HARBOR
JEFFERSON
CLALLAM
OREGON
IDAHO
Township Index
Range Index
733
510
146b
39 190
574
70
732a

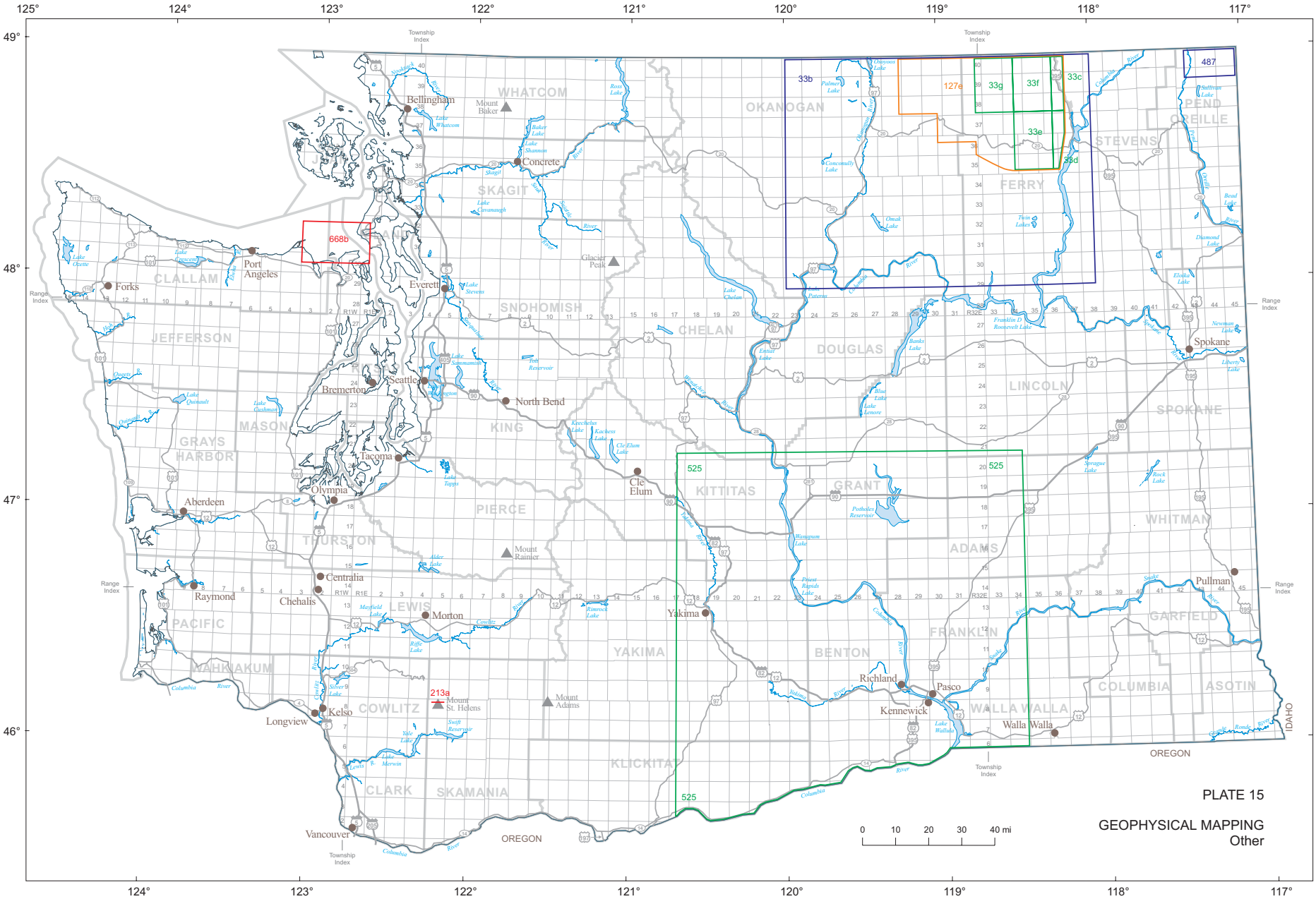
PLATE 15
GEOPHYSICAL MAPPING
Other
WHATCOM
SKAGIT
SNOHOMISH
OKANOGAN
FERRY
STEVENS
PEND OREILLE
CLALLAM
JEFFERSON
CHELAN
DOUGLAS
LINCOLN
SPOKANE
KING
MASON
GRAYS HARBOR
PIERCE
KITTITAS
GRANT
ADAMS
WHITMAN
THURSTON
LEWIS
YAKIMA
BENTON
FRANKLIN
GARFIELD
PACIFIC
MAHKIAKUM
COWLITZ
KLICKITAT
WALLA WALLA
COLUMBIA
ASOTIN
CLARK
SKAMANIA
Bellingham
Concrete
Port Angeles
Forks
Everett
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Bremerton
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Tacoma
Olympia
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Cle Elum
Spokane
Pullman
Centralia
Chehalis
Raymond
Morton
Yakima
Richland
Pasco
Kennewick
Walla Walla
Kelso
Longview
Vancouver
Mount Baker
Glacier Peak
Mount Rainier
Mount St. Helens
Mount Adams
OREGON
IDAHO
Township Index
Range Index
0 10 20 30 40 mi