

COLORADO GEOLOGICAL SURVEY

DEPARTMENT OF NATURAL RESOURCES

BULLETIN 33

**BIBLIOGRAPHY OF HYDROGEOLOGIC
REPORTS IN COLORADO**



by

RICHARD HOWARD PEARL

**COLORADO GEOLOGICAL SURVEY
DEPARTMENT OF NATURAL RESOURCES
STATE OF COLORADO**

Denver, Colorado
1971

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STATE OF COLORADO

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DEPARTMENT OF NATURAL RESOURCES

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COLORADO GEOLOGICAL SURVEY

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MISSION OF THE COLORADO GEOLOGICAL SURVEY

The Colorado Geological Survey was legislatively re-established in February 1969 to meet the geologic needs of the citizens, governmental agencies and mineral industries of Colorado. This modern legislation is aimed at applying geologic knowledge toward the solution of today's and tomorrow's problems of an expanding population, mounting environmental concern and the growing demand for mineral resources.

SPECIFIC LEGISLATIVE CHARGES ARE:

"Assist, consult with and advise state and local governmental agencies on geologic problems."

"Promote economic development of mineral resources."

"Evaluate the physical features of Colorado with reference to present and potential human and animal use."

"Conduct studies to develop geological information."

"Inventory the state's mineral resources."

"Collect, preserve and distribute geologic information."

"Determine areas of geologic hazard that could affect the safety of or economic loss to the citizens of Colorado."

"Prepare, publish and distribute geologic reports, maps and bulletins."

COLORADO GEOLOGICAL SURVEY BULLETIN 33

**BIBLIOGRAPHY OF HYDROGEOLOGIC REPORTS
IN COLORADO**

by Richard Howard Pearl

PREFACE

The following bibliography comprises all known published and unpublished public reports on ground-water conditions in Colorado through 1970. The report is in three alphabetical sections, BIBLIOGRAPHY, SUBJECT INDEX and MISCELLANEOUS PAPERS. The Bibliography section is a listing of the various authors, while the Subject Index lists the different counties and subjects with the respective authors. The Miscellaneous Paper section lists those papers pertaining to subjects not otherwise listed under the counties.

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Predicted water-level decline map: Emery, 1970.

Resources, ground water

Cenozoic Era: Emery and others, 1969.

Precambrian System: Emery and others, 1969.

Springs: Waring, 1965.

CRAWFORD DAM AREA: Broom, 1962.

County, see also: Delta

CROWLEY COUNTY

Area

Arkansas River Valley: Hurr and Moore, 1966; Major and others, 1970; Moore and Hurr, 1966.

Availability of ground water: Tieje, 1921; Toepelman, 1924.

Artesian ground-water conditions: Weist, 1965a.
Basic data: Major and others, 1970; McConaghy and Colburn, 1964; Weist, 1962.

Depth to water

Map: Brookman, 1968, 1969; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.

Table: Weist, 1962.

Hydrologic properties of aquifers

Tables: Weist, 1962.

Cretaceous and Quaternary Systems: Tiejc, 1921; Toepelman, 1924; Weist, 1965a.

Large capacity well development rate: Major and others, 1970.

Location of selected wells and test holes: Major and others, 1970; Weist, 1962.

Logs of selected wells and test holes: Major and others, 1970; Weist, 1962.

Piezometric surface map; Weist, 1963, 1965a.

Quality of water

Graph: Weist, 1965a.

Quaternary System: Major and others, 1970; Weist, 1962, 1965a.

Tertiary System: Weist, 1962, 1965a.

Cretaceous System: Major and others, 1970; Weist, 1962, 1963, 1965a.

Jurassic System: Weist, 1962, 1965a.

Resources ground water

Quaternary System: Major and others, 1970; Weist, 1962, 1965a.

Tertiary System: Weist, 1962, 1965a.

Cretaceous System: Major and others, 1970; Weist, 1962, 1963, 1965a.

Jurassic System: Weist, 1962, 1965a.

Saturated thickness, isopach map: Weist, 1965a.

Springs: Weist, 1962, 1965a.

Water-table elevation, contour map: Moore and Hurr, 1966; Weist, 1965a.

CUSTER COUNTY

Basic data: McConaghy and Colburn, 1964.

Deep wells: Darton, 1902, 1905b.

Depth to water: McConaghy and Colburn, 1964.

DELTA COUNTY

Area

Crawford Dam: Broom, 1962.

Availability of ground water: Broom, 1962.

Basic data: Iorns and others, 1964; McConaghy and Colburn, 1964.

Cross sections, Cretaceous System: Broom, 1962.

Deep wells: Darton, 1902, 1905b.

Depth to water, table: McConaghy and Colburn, 1964.

Hydrologic properties of aquifers, aquifer tests: Broom, 1962.

Quality of water

Map: Iorns and others, 1965.

Quaternary Systems: Iorns and others, 1964.

Cretaceous System: Broom, 1962; Iorns and others, 1964.

Springs: George and others, 1920; Iorns and others, 1964; Stearns and others, 1937.

DENVER BASIN

Artesian ground-water conditions: Emmons and others, 1896.

Availability of ground water

General: Darton, 1905a; McConaghy and Colburn, 1964; McGuiness, 1963; Odell and others, 1964.

Map: LaRocque, 1966.

Basic data: Emmons and others, 1896; Fuller and others, 1905; Fuller and Sanford, 1906; McConaghy and others, 1964.

Deep wells: Darton, 1902, 1905b.

Depth to water

Map: LaRocque, 1966.

Table: McConaghy and others, 1964.

Hydrodynamic study: Hoeger, 1968.

Hydrologic properties of aquifers

Aquifer tests: Lohman, 1967.

Tertiary and Cretaceous Systems: Emmons and others, 1896.

Irrigation and other large capacity wells: Emmons and others, 1896.

Liquid waste disposal potential: Garbarini and Veal, 1968.

Location of selected wells and test holes: McConaghy and others, 1964.

Logs of selected wells and test holes: Emmons and others, 1896.

Quality of water

Quaternary System: McConaghy and others, 1964.

Tertiary System: Emmons and others, 1896; McConaghy and others, 1964.

Cretaceous System: Emmons and others, 1896; McConaghy and others, 1964.

Radiochemical analyses: McConaghy and others, 1964.

Resources, ground water

Quaternary System: McConaghy and Colburn, 1964; McConaghy and others, 1964.

Tertiary System: Emmons and others, 1896; McConaghy and others, 1964; Voegeli, 1963a.

Cretaceous System: Emmons and others, 1896; McConaghy and others, 1964; Voegeli, 1963a.

Springs, quality of water: Clarke, 1914.

DOLORES COUNTY

Basic data: McConaghy and Colburn, 1964.

Depth to water: McConaghy and Colburn, 1964.

Springs: Clarke, 1914; Colo. State Planning Office, 1962; George and others, 1920; Stearns and others, 1937; Waring, 1965.

DOUGLAS COUNTY

Availability of ground water

General: Darton, 1905a.

Map: LaRocque, 1966.

Basic data: McConaghy and Colburn, 1964; McConaghy and others, 1964.

Deep wells: Darton, 1902, 1905b.
 Depth to water
 Map: LaRocque, 1966.
 Table: McConaghy and Colburn, 1964; McConaghy and others, 1964.
 Quality of water
 Cenozoic Era: McConaghy and others, 1964.
 Cretaceous System: McConaghy and others, 1964.
 Springs: George and others, 1920.
 Wells: Colo. State Planning Office, 1970a.

EAGLE COUNTY

Basic data: Iorns and others, 1964; McConaghy and Colburn, 1964.
 Cross sections: Newton, 1964.
 Depth to water, table: McConaghy and Colburn, 1964.
 Ground-water use: Colo. State Planning Office, 1970b.
 Municipal supplies: Colo. State Planning Office, 1970b.
 Quality of water
 Map: Iorns and others, 1965.
 Quaternary and Tertiary Systems: Iorns and others, 1964.
 Cretaceous System: Iorns and others, 1964.
 Pennsylvanian System: Iorns and others, 1964.
 Mississippian System: Iorns and others, 1964.
 Reudi dam and reservoir: Newton, 1964.
 Springs: Colo. State Planning Office, 1962; George and others, 1920; Iorns and others, 1964; Peale, 1886; Stearns and others, 1937; Waring, 1965.

ELBERT COUNTY

Area
 Big Sandy Creek Valley: Erwin, 1953; McLaughlin, 1946.
 Kiowa-Bijou Creek basins: Duke and Longenbaugh, 1966; Kuhn, 1968.
 Availability of ground water:
 General: Coffin, R. C., 1921; Darton, 1905a.
 Map: LaRocque, 1966.
 Basic data: McConaghy and Colburn, 1964; McConaghy and others, 1964; McLaughlin, 1946.
 Cross sections
 Quaternary and Tertiary Systems: Duke and Longenbaugh, 1966; McLaughlin, 1946.
 Cretaceous System: Duke and Longenbaugh, 1966; McLaughlin, 1946.
 Depth to water
 Map: LaRocque, 1966; McLaughlin, 1946.
 Table: McConaghy and Colburn, 1964; McLaughlin, 1946.
 Electrical resistivity prospecting: Erwin, 1953.
 Hydrologic properties of aquifers, Quaternary System: McLaughlin, 1946.
 Irrigation wells: Duke and Longenbaugh, 1966.
 Location of selected wells and tests holes: McLaughlin, 1946.

Logs of selected wells and test holes: McLaughlin, 1946.
 Quality of water
 Cenozoic Era: McConaghy and others, 1964; McLaughlin, 1946.
 Cretaceous System: McConaghy and others, 1964; McLaughlin, 1946.
 Recharge
 Artificial: Duke and Longenbaugh, 1966.
 Natural: McLaughlin, 1946.
 Resources, ground water
 Cenozoic Era: Duke and Longenbaugh, 1966; McConaghy and others, 1964; McLaughlin, 1946.
 Cretaceous System: Duke and Longenbaugh, 1966; Kuhn, 1968; McConaghy and others, 1964; McLaughlin, 1946.
 Underflow: McLaughlin, 1946.

EL PASO COUNTY

Area
 Big Sandy Creek Valley: McLaughlin, 1946.
 Black Squirrel Creek Valley: Goeke, 1970; Jenkins, E. D., 1961a; McGovern and Jenkins, 1966.
 Fountain and Jimmy Camp Creek Valleys: Jenkins, E. D., 1964.
 Fountain Creek: Griswold, 1948.
 Kiowa-Bijou Creek basins: Duke and Longenbaugh, 1966.
 Upper Black Squirrel Creek basin: Erker and Romero, 1967.
 U.S. Air Force Academy: Cardwell and Jenkins, 1967.
 Availability of ground water
 General: Coffin, R. C., 1921; Darton, 1905a.
 Table: Jenkins, E. D., 1961a.
 Basic data: Erker and Romero, 1967; Jenkins, E. D., 1961a; McConaghy and Colburn, 1964; McLaughlin, 1946.
 Computer model: Goeke, 1970.
 Cross sections
 Quaternary System: Duke and Longenbaugh, 1966; Erker and Romero, 1967; Jenkins, E. D., 1964; McGovern and Jenkins, 1966; McLaughlin, 1946.
 Tertiary System: Duke and Longenbaugh, 1966; Erker and Romero, 1967; Goeke, 1970; Jenkins, E. D., 1964; McGovern and Jenkins, 1966; McLaughlin, 1946.
 Cretaceous System: Duke and Longenbaugh, 1966; Erker and Romero, 1967; Goeke, 1970; Jenkins, E. D., 1964; McGovern and Jenkins, 1966; McLaughlin, 1946.
 Deep wells: Darton, 1902, 1905b.
 Depth to bedrock, table: Jenkins, E. D., 1961a.
 Depth to water
 Map: Brookman, 1968, 1969; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; McLaughlin, 1946; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964;
 Table: Erker and Romero, 1967; Goeke, 1970; McConaghy and Colburn, 1964; McLaughlin, 1946.

Ground-water discharge: Erker and Romero, 1967; Jenkins, E. D., 1964; McLaughlin, 1946.

Hydrologic properties of aquifers

Tables: Cardwell and Jenkins, 1967; McGovern and Jenkins, 1966.

Quaternary System: Cardwell and Jenkins, 1967; Goeke, 1970; Griswold, 1948; Jenkins, E. D., 1964; McLaughlin, 1946.

Tertiary System: Cardwell and Jenkins, 1967; Goeke, 1970.

Cretaceous System: Cardwell and Jenkins, 1967; Goeke, 1970.

Aquifer tests: Cardwell, 1956.

Irrigation wells

Development rate: Erker and Romero, 1967.

General: Duke and Longenbaugh, 1966.

Location of selected wells and test holes: Jenkins, E. D., 1961a; McGovern and Jenkins, 1966; McLaughlin, 1946.

Logs of selected wells and test holes: Darton, 1905b; Jenkins, E. D., 1961a; McLaughlin, 1946.

Municipal supplies: Jenkins, E. D., 1964.

Occurrence of ground water: Erker and Romero, 1967; Soister, 1968.

Quality of water

Quaternary System: Cardwell and Jenkins, 1967; Jenkins, E. D., 1961a; McGovern and Jenkins, 1966; McLaughlin, 1946.

Tertiary System: Cardwell and Jenkins, 1967; McLaughlin, 1946.

Cretaceous System: Cardwell and Jenkins, 1967; McLaughlin, 1946.

Recharge

Artificial: Duke and Longenbaugh, 1966; Jenkins, 1964.

Natural: Erker and Romero, 1967; Jenkins, E. D., 1964; McLaughlin, 1946.

Resources, ground water

Quaternary System: Cardwell and Jenkins, 1967; Duke and Longenbaugh, 1966; Erker and Romero, 1967; Goeke, 1970; Griswold, 1948; Jenkins, E. D., 1961a, 1964; McGovern and Jenkins, 1966; McLaughlin, 1946.

Tertiary System: Cardwell and Jenkins, 1967; Duke and Longenbaugh, 1966; Erker and Romero, 1967; Goeke, 1970; Jenkins, E. D., 1961a, 1964; McGovern and Jenkins, 1966; McLaughlin, 1946.

Cretaceous System: Cardwell and Jenkins, 1967; Duke and Longenbaugh, 1966; Erker and Romero, 1967; Goeke, 1970; Jenkins, E. D., 1961a, 1964; McGovern and Jenkins, 1966; McLaughlin, 1946.

Saturated thickness, isopach map: Erker and Romero, 1967; McGovern and Jenkins, 1966.

Springs: George and others, 1920; Peale, 1886.

Underflow: Erker and Romero, 1967; Jenkins, E. D., 1964; McGovern and Jenkins, 1966; McLaughlin, 1946.

Water-table elevation, contour map: Erker and Romero, 1967; McGovern and Jenkins, 1966.

FOUNTAIN CREEK VALLEY: Jenkins, E. D., 1961a, 1964.

County, see also: El Paso.

FREMONT COUNTY

Area

Arkansas River Valley: McGovern and others, 1964.

Availability of ground water: Darton, 1905a.

Basic data: Fuller and Sanford, 1906; McGovern and others, 1964.

Deep wells: Darton, 1902, 1905b.

Depth to water

Table: McConaghy and Colburn, 1964.

Location of selected wells and test holes: Fuller and Sanford, 1906; McGovern and others, 1964.

Logs of selected wells and test holes: Darton, 1905b; McGovern and others, 1964.

Quality of water

Quaternary System: McGovern and others, 1964.

Springs: George and others, 1920; Peale, 1886; Stearns and others, 1937; Waring, 1965.

FRENCHMAN CREEK BASIN: Cardwell and Jenkins, 1963.

Counties, see also: Logan, Phillips, Sedgwick, Washington and Yuma.

FRONT RANGE

Availability of ground water

Map: LaRocque, 1966.

General: Odell and others, 1964.

Depth to water

General: Snow, 1968a.

Map: LaRocque, 1966.

Fractures: Snow, 1968a.

Hydrologic properties of aquifers, Precambrian Era: Snow, 1968a.

Well, yields: Snow, 1968a.

GARFIELD COUNTY

Area

Piceance Creek Basin: Coffin, D. L. and others, 1968, 1969.

Basic data: Hurr and others, 1969; Larson and Beetem, 1970; Iorns and others, 1964; McConaghy and Colburn, 1964; Voegeli and West, 1970.

Cross section

Cenozoic Era: Coffin, D. L. and others, 1968, 1969.

Depth to water, table: McConaghy and Colburn, 1964.

Hydrologic properties of aquifers

Cenozoic Era: Coffin, D. L. and others, 1968, 1969.

Location of selected wells, springs and test holes: Coffin, D. L. and others, 1970.

Potentiometric surface map: Coffin, D. L., 1969.

Project Rulison: Hurr and others, 1969; Larson and Beetem, 1970; Voegeli, 1969; Voegeli and West, 1970.

Quality of water

General: Hurr and others, 1969; Larson and Beetem, 1970; Voegeli and West, 1970.

Map: Iorns and others, 1965.

Cenozoic Era: Iorns and others, 1964; Coffin, D. L. and others, 1968, 1969.

Pennsylvanian System: Iorns and others, 1964; Scott and Barker, 1962.

Springs: Coffin, D. L. and others, 1969; Colo. State Planning Office, 1962; George and others, 1920; Hurr and others, 1920; Iorns and others, 1964; Larson and Beetem, 1970; Stearns and others, 1937; Voegeli and West, 1970; Waring, 1965.

GLOSSARY OF GROUND-WATER TERMS:

Cornish, 1967; Southeastern Colo. Water Conserv. Dist., 1969a,b.

GRAND COUNTY

Basic data: Iorns and others, 1964; McConaghy and Colburn, 1964; Voegeli, 1965.

Depth to bedrock, table: Voegeli, 1965.

Depth to water, table: McConaghy and Colburn, 1964; Voegeli, 1965

Location of selected wells, springs and test holes: Voegeli, 1965.

Logs of selected wells and test holes: Voegeli, 1965.

Occurrence of ground water: Voegeli, 1965.

Quality of water

Maps: Iorns and others, 1965.

Tertiary and Quaternary Systems: Iorns and others, 1964; Voegeli, 1965.

Cretaceous System: Iorns and others, 1964; Voegeli, 1965.

Precambrian System: Voegeli, 1965.

Resources, ground water: Voegeli, 1965.

Springs: Colo. State Planning Office, 1962; George and others, 1920; Iorns and others, 1964; Peale, 1886; Stearns and others, 1937; Waring, 1965.

GROUND-WATER LAW

Development of ground-water law in Colorado: Bittinger and Moses, 1970.

General: Bittinger and Assoc., 1969; Cornish, 1967; Hutchins, 1960; McConaghy, 1966.

Interstate compact: Bittinger and Moses, 1970.

Problems related to development of an artesian ground-water reservoir: Moulder, 1962.

Ground-water mound, development and dissipation: Bittinger and Trelease, 1965.

Ground-water problems—Ground water in Colorado: Bittinger, 1969.

Ground-water technology to solve litigation problems: Jenkins, E. D. and Moulder, 1962.

GUNNISON COUNTY

Availability of ground water: Crawford, 1913.

Basic data: Iorns and others, 1964; McConaghy and Colburn, 1964.

Depth to water, table: McConaghy and Colburn, 1964.

Quality of water

Map: Iorns and others, 1965.

Pennsylvanian-Quaternary Systems: Iorns and others, 1964.

Springs: Colo. State Planning Office, 1962; George and others, 1920; Iorns and others, 1964; Peale, 1886; Stearns and others, 1937; Waring, 1965.

HIGH PLAINS

Artesian ground-water conditions: Hay, 1895; Johnson, 1901, 1902.

Availability of ground water

General: Boettcher, 1966; Colo. Water Conserv. Board, 1957; Darton, 1905a; Duke, 1967b; Hay, 1895; Johnson, 1901, 1902; McGuiness, 1963; Moulder, 1960b; Odell and others, 1964.

Map: LaRocque, 1966; McLaughlin, 1956a.

Basic data: Cardwell, 1953; Owens, 1966.

Bedrock elevation contour map: Cardwell, 1953; Owens, 1966; Reddell, 1967a,b.

Cross sections

Quaternary System: Hay, 1895; Owens, 1966.

Tertiary System: Hay, 1895; Owens, 1966; Reddell, 1967a,b.

Cretaceous System: Hay, 1895; Reddell, 1967a,b.

Deep wells: Darton, 1902, 1905b.

Depth to bedrock, map: Reddell, 1967a,b.

Depth to water

Map: Boettcher, 1966; Brookman, 1968, 1969; Code, 1958; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; LaRocque, 1966; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.

Table: Boettcher and others, 1969; Owens, 1966.

Ground-water development potential: McGovern and Coffin, 1963.

Ground-water withdrawal: Boettcher and others, 1969; Plains Ground-water Mgmt. Dist., 1970.

Hydrologic properties of aquifers

Aquifer tests: Wilson, 1965.

Summary: Glover, 1968.

Tables: Owens, 1966; Reddell, 1967a,b.

Quaternary System: Reddell, 1967a,b.

Tertiary System: Boettcher, 1966; Reddell, 1967a,b.

Cretaceous System: Reddell, 1967a,b.

Interstate compact: Bittinger and Moses, 1970.

Irrigation wells

Development: Boettcher, 1966; Cardwell, 1953.

Efficiency: Longenbaugh and Miles, 1966; Miles and Longenbaugh, 1968.

General: Owens, 1966; Rohdy and others, 1970.

Logs of selected wells and test holes: Cardwell, 1953; Darton, 1905b; Hay, 1895.

Management, ground-water supplies: Jones, 1964.
Municipal supplies: Cardwell, 1953.

Projected ground-water development: Owens, 1966.

Quality of water, Tertiary System: Boettcher, 1966.

Recharge

General: Jenkins, C. T. and Hofstra, 1970a,b; Miles, 1969; Owens, 1966; Reddell, 1967a,b, 1970.

Maps and tables: Boettcher, 1966.

Mathematical model of: Reddell, 1967a,b, 1970.

Resources, ground water

Quaternary System: Cardwell, 1953; Darton, 1905a; Hay, 1895; Owens, 1966; Reddell, 1967a,b, 1970.

Tertiary System: Cardwell, 1953; Darton, 1905a; Duke, 1967b; Hay, 1895; Owens, 1966; Reddell, 1967a,b, 1970; Voegeli, 1963.

Cretaceous System: Cardwell, 1953; Darton, 1905a; Duke, 1967b; Reddell, 1967a,b, 1970; Voegeli, 1963.

Saturated thickness, isopach map: Boettcher, 1966; Owens, 1966; Reddell, 1967a,b.

Springs: Hay, 1895.

Uranium content of ground water: Landis, 1960.

Water-level change map: Boettcher and others, 1969.

Water-table elevation, contour map: Boettcher, 1966; Owens, 1966; Reddell, 1967a,b.

HINSDALE COUNTY

Springs: Peale, 1886.

HUERFANO COUNTY

Availability of ground water: Darton, 1905a; McLaughlin, 1966.

Basic data: McConaghy and Colburn, 1964, McLaughlin and others, 1961.

Deep wells: Darton, 1902, 1905b.

Depth to water

Map: Brookman, 1968, 1969; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.

Table: McConaghy and Colburn, 1964; McLaughlin, 1966.

Development of ground-water resources: McLaughlin, 1966.

Irrigation supplies: McLaughlin, 1966.

Location of selected wells and test holes: McLaughlin, 1966; McLaughlin and others, 1961.

Logs of selected wells and test holes: Darton, 1905b; McLaughlin and others, 1961.

Mine water: McLaughlin, 1966.

Quality of water

Tertiary and Quaternary Systems: McLaughlin and others, 1961.

Cretaceous System: McLaughlin and others, 1961; Scott and Barker, 1962.

Jurassic System: McLaughlin and others, 1961.

Pennsylvanian-Permian Systems: McLaughlin and others, 1961.

Precambrian System: McLaughlin and others, 1961.

Resources, ground water: McLaughlin, 1966; McLaughlin and others, 1961.

Springs: George and others, 1920; Peale, 1886.

IRRIGATION WELLS

Construction: Code, 1929.

Cost of pumping: Code, 1932.

Drilling trends: Meyer and Wyrick, 1966.

Efficiency: Longenbaugh and Miles, 1966; Miles and Longenbaugh, 1968.

Hydraulics: McLaughlin, 1956b.

History of irrigation well pumping in Colorado: Rohwer, 1953.

Volume of water pumped, determined from power records: Longenbaugh, 1970.

JACKSON COUNTY

Availability of ground water: LaRocque, 1966.

Basic data: McConaghy and Colburn, 1964; Voegeli, 1965.

Depth to bedrock, table: Voegeli, 1965.

Depth of water

Map: LaRocque, 1966.

Table: McConaghy and Colburn, 1964; Voegeli, 1965.

Location of selected wells, springs and test holes: Voegeli, 1965.

Logs of selected wells and test holes: Voegeli, 1965.

Quality of water: Voegeli, 1965.

Resources, ground water: Voegeli, 1965.

Springs: George and others, 1920.

JEFFERSON COUNTY

Availability of ground water

General: Darton, 1905a; McConaghy and others, 1965; McLaughlin, 1955.

Map: LaRocque, 1966.

Basic data: McConaghy and Colburn, 1964; McConaghy and others, 1964.

Deep wells: Darton, 1902, 1905b.

Depth to water

Map: LaRocque, 1966.

Table: McConaghy and Colburn, 1964; McConaghy and others, 1964.

Location of selected wells and test holes: McConaghy and others, 1964.

Quality of water

Cenozoic Era: McConaghy and others, 1964.

Cretaceous System: Scott and Barker, 1962.

Resources, ground water

Cretaceous-Quaternary Systems: McConaghy and others, 1964

Springs: George and others, 1920; Peale, 1886.

JIMMY CAMP CREEK VALLEY: Jenkins, E. O., 1961a, 1964.

County, see also: El Paso

KIOWA COUNTY

Area

Big Sandy Creek Valley: Coffin, D. L., 1962, 1967.

- Availability of ground water: Darton, 1905a.
- Basic data: Boettcher, 1962; Coffin, D. L., 1962; Fuller and others, 1905; Irish and Pyle, 1967; McConaghy and Colburn, 1964; Owens, 1966.
- Bedrock elevation contour map: Reddell, 1967a,b.
- Cross sections
Tertiary and Cretaceous Systems: Irish and Pyle, 1967.
- Deep wells: Darton, 1902, 1905b.
- Depth to water
Map: Boettcher, 1964, 1966; Brookman, 1968, 1969; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.
- Table: Boettcher, 1962; Boettcher and others, 1969; Coffin, D. L., 1962; Irish and Pyle, 1967; McConaghy and Colburn, 1964.
- Ground-water withdrawals: Irish and Pyle, 1967.
- Hydrologic properties of aquifers
Tables: Boettcher, 1963, 1964; Coffin, D. L., 1967; Reddell, 1967a,b.
Cenozoic Era: Irish and Pyle, 1967; Reddell, 1967a,b.
Cretaceous System: Irish and Pyle, 1967.
- Irrigation prospects: Boettcher, 1963.
- Location of selected wells and test holes: Boettcher, 1962, 1964; Coffin, D. L., 1962; Irish and Pyle, 1967.
- Logs of selected wells and test holes: Boettcher, 1962; Coffin, D. L., 1962.
- Mathematical model: Reddell, 1967a,b.
- Projected ground-water use: Irish and Pyle, 1967.
- Quality of water
Quaternary System: Coffin, D. L., 1962, 1967.
Tertiary System: Boettcher, 1962, 1964.
Cretaceous System: Coffin, D. L., 1962, 1967.
- Recharge: Coffin, D. L., 1967; Reddell, 1967a,b.
- Resources, ground water
Quaternary System: Boettcher, 1962, 1964; Coffin, D. L., 1962, 1967; Irish and Pyle, 1967; Reddell, 1967a,b.
Tertiary System: Boettcher, 1962, 1964; Irish and Pyle, 1967; Reddell, 1967a,b.
Cretaceous System: Boettcher, 1962, 1964; Coffin, D. L., 1962, 1967; Irish and Pyle, 1967; Reddell, 1967a,b.
- Saturated thickness, isopach map: Boettcher, 1964, 1966; Irish and Pyle, 1967; Owens, 1966; Reddell, 1967a,b.
- Water-level change map: Boettcher and others, 1969.
- Water-table elevation, contour map: Boettcher, 1964; Coffin, D. L., 1967; Irish and Pyle, 1967; Owens, 1966; Reddell, 1967a,b.
- KIOWA AND BIJOU CREEK BASIN**, Bibby, 1969;
Duke and Longenbaugh, 1966; Kuhn, 1968.
Counties, see also: Adams, Arapahoe, Elbert, El Paso, Morgan and Weld.
- KIOWA CREEK**: Romero, 1965.
County, see also: Adams.
- KIT CARSON COUNTY**
Availability of ground water
General: Darton, 1905a.
Map: LaRocque, 1966.
- Basic data: Chase and others, 1962; McConaghy and Colburn, 1964; Newell, 1895; Owens, 1966.
- Bedrock elevation contour map: Cardwell, 1953; Chase, 1956; Owens, 1966; Reddell, 1967a,b.
- Cross sections
Cretaceous and Tertiary Systems: Reddell, 1967a,b.
- Deep wells: Darton, 1902, 1905b.
- Depth to bedrock, map: Chase, 1956; Owens, 1966; Reddell, 1967a,b.
- Depth to water
Map: Boettcher, 1966; Brookman, 1968, 1969; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; LaRocque, 1966; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.
Table: Boettcher and others, 1969; Chase and others, 1962; McConaghy and Colburn, 1964, Newell, 1895.
- Ground-water withdrawals by years: Boettcher and others, 1969.
- Hydrologic properties of aquifers
Tables: Reddell, 1967a,b.
Cenozoic Era: Reddell, 1967a,b.
Cretaceous System: Reddell, 1967a,b.
- Irrigation wells
Development rate: Bittinger and Moses, 1970.
Efficiency: Miles and Longenbaugh, 1968.
- Location of selected wells and test holes: Bittinger and Moses, 1970; Cardwell, 1953; Chase, 1956; Chase and others, 1962.
- Logs of selected wells and test holes: Cardwell, 1953; Chase and others, 1962.
- Mathematical model: Bittinger and Moses, 1970; Reddell, 1967a,b.
- Predicted water-level change map: Bittinger and Moses, 1970.
- Quality of water
Quaternary System: Chase and others, 1962.
Tertiary System: Chase and others, 1962; Scott and Barker, 1962.
Cretaceous System: Chase and others, 1962.
- Recharge: Reddell, 1967a,b.
- Resources, ground water
Tertiary and Quaternary Systems: Chase and others, 1962; Owens, 1966; Reddell, 1967a,b.
Cretaceous System: Chase and others, 1962; Reddell, 1967a,b.
- Saturated thickness, isopach map: Bittinger and Moses, 1970; Boettcher, 1966; Chase, 1956; Owens, 1966; Reddell, 1967a,b.
- Water-level change map: Bittinger and Moses, 1970; Boettcher and others, 1969.
- Water-table elevation contour map: Bittinger and Moses, 1970; Boettcher, 1966; Chase, 1956; Owens, 1966; Reddell, 1967a,b.
- LAKE COUNTY**
Basic data: McConaghy and Colburn, 1964.
Deep wells: Darton, 1902, 1905b.

Depth to water, table: McConaghy and Colburn, 1964.

Springs: George and others, 1920; Peale, 1886.

LA PLATA COUNTY

Basic data: Fuller and Sanford, 1906; Iorns and others, 1964; McConaghy and Colburn, 1964.

Deep wells: Darton, 1902, 1905b.

Depth to water, table: McConaghy and Colburn, 1964.

Quality of water

Map: Iorns and others, 1965.

Quaternary System: Iorns and others, 1964.

Paleozoic Era age aquifers: Iorns and others, 1964.

Springs: Colo. State Planning Office, 1962; George and others, 1920; Iorns and others, 1964; Peale, 1886; Stearns and others, 1937; Waring, 1965.

LARIMER COUNTY

Area

Beaver Creek basin: Cerrillo, 1967.

Cache la Poudre River Valley: Hershey and Schneider, 1964; Schneider and Hershey, 1961.

Boxelder Creek Valley: Stollar, 1969; White, D. E., 1964.

Little South Fork Cache la Poudre River watershed: Mercer, 1966.

Upper Boxelder Creek Valley: Stockton, 1965.

Red Feathers Lake area: Millon, 1970.

Availability of ground water

General: Darton, 1905a.

Map: Hershey and Schneider, 1964; LaRocque, 1966.

Basic data: McConaghy and Colburn, 1964; Schneider and Hershey, 1961; Weist, 1964b.

Cross sections

Quaternary System: Cerrillo, 1967; Stollar, 1969; White, D. E., 1964.

Cretaceous System: White, D. E., 1964.

Precambrian System: Millon, 1970.

Deep wells: Darton, 1902, 1905b.

Depth to water

Map: Brookman, 1968, 1969; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; LaRocque, 1966; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.

Table: Akhavi, 1967; Weist, 1964b.

Electrical conductance map: White, D. E., 1964.

Geophysics, seismic and electrical resistivity: Stollar, 1969.

Ground-water flow map: Millon, 1970.

Hydrologic properties of aquifers

Tables: Weist, 1965b.

Quaternary System: Hershey and Schneider, 1964; Weist, 1964b, 1965b.

Tertiary System: Weist, 1964b, 1965b.

Cretaceous System: Hershey and Schneider, 1964; Weist, 1964b, 1965b.

Irrigation well, development rate: Hershey and Schneider, 1964.

Location of selected wells and test holes: Hershey and Schneider, 1964; Schneider and Hershey, 1961; Weist, 1964b, 1965b.

Logs of selected wells and test holes: Cerrillo, 1967; Schneider and Hershey, 1961; Weist, 1964b.

Pollution: Millon, 1970.

Quality of water

Map: Hershey and Schneider, 1964; Schneider and Hershey, 1961.

Quaternary System: Schneider and Hershey, 1961; Weist, 1964b, 1965b; White, D. E., 1964.

Tertiary System: Weist, 1964b, 1965b.

Cretaceous System: Schneider and Hershey, 1961; Weist, 1964b, 1965b.

Precambrian System: Mercer, 1966.

Resources, ground water

Quaternary System: Cerrillo, 1967; Hershey and Schneider, 1964; Schneider and Hershey, 1961; Stockton, 1965; Weist, 1964b, 1965b; White, D. E., 1964.

Tertiary System: Lowry, 1966; Weist, 1964b, 1965b.

Cretaceous System: Hershey and Schneider, 1964; Schneider and Hershey, 1961; Weist, 1964b, 1965b; White, D. E., 1964.

Pennsylvanian-Jurassic Systems: Hershey and Schneider, 1964; Schneider and Hershey, 1961.

Precambrian System: Hershey and Schneider, 1964; Schneider and Hershey, 1961.

Springs: George and others, 1920; Peale, 1886.

Water-table elevation, contour map: Akhavi, 1967; Stollar, 1969.

LAS ANIMAS COUNTY

Availability of ground water: Darton, 1950a.

Basic data: Fuller and Sanford, 1906; McConaghy and Colburn, 1964; Stanson and Cunningham, 1967.

Bedrock elevation, contour map: Stanson and Cunningham, 1967.

Deep wells: Darton, 1902, 1905b.

Depth of water: McConaghy and Colburn, 1964.

Ground-water withdrawals: Stanson and Cunningham, 1967.

Logs of selected wells and test holes: Darton, 1905b.

Recharge: Stanson and Cunningham, 1967.

Resources, ground water

Triassic thru Tertiary Systems: Powell, 1952; Stanson and Cunningham, 1967.

Springs: George and others, 1920; Peale, 1886.

LINCOLN COUNTY

Area

Big Sandy Creek Valley: Coffin, D. L., 1962, 1967; McLaughlin, 1946.

Availability of ground water: Coffin, R. C., 1921; Darton, 1905a; Tieje, 1921.

Basic data: Coffin, D. L., 1962; McConaghy and Colburn, 1964; McLaughlin, 1946; Owens, 1966.

- Bedrock elevation contour map: Cardwell, 1953; Owens, 1966; Reddell, 1967a,b.
- Cross sections
Cretaceous thru Quaternary Systems: McLaughlin, 1946.
- Depth to water
Map: Brookman, 1968, 1969; Cardwell, 1953; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; McLaughlin, 1946; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.
Table: Boettcher and others, 1969; Chase and others, 1962; Coffin, D. L., 1962; McConaghy and Colburn, 1964; McLaughlin, 1946.
- Ground-water withdrawals: Boettcher and others, 1969.
- Hydrologic properties of aquifers
Tables: Coffin, D. L., 1967.
Quaternary System: McLaughlin, 1946; Tiejé, 1921.
Cretaceous System: Tiejé, 1921.
- Location of selected wells and test holes: Cardwell, 1953; Coffin, D. L., 1962; McLaughlin, 1946.
- Logs of selected wells and test holes: Cardwell, 1953; Coffin, D. L., 1964; McLaughlin, 1946.
- Quality of water
Quaternary System: Coffin, D. L., 1962, 1967; McLaughlin, 1946.
Tertiary System: McLaughlin, 1946.
Cretaceous System: Coffin, D. L., 1962, 1967; McLaughlin, 1946.
- Recharge: Coffin, D. L., 1962; McLaughlin, 1946.
- Resources, ground water
Quaternary System: Coffin, D. L., 1962, 1967; McLaughlin, 1946; Reddell, 1967a,b.
Tertiary System: McLaughlin, 1946; Reddell, 1967a,b.
Cretaceous System: Coffin, D. L., 1962, 1967; McLaughlin, 1946; Reddell, 1967a,b.
- Saturated thickness, isopach map: Boettcher, 1966; Owens, 1966; Reddell, 1967a,b.
- Underflow: McLaughlin, 1946.
- Water-level change map: Boettcher and others, 1969.
- Water-table elevation, contour map: Coffin, D. L., 1967; Owens, 1966; Reddell, 1967a,b.
- LITTLE SOUTH FORK CACHE LA POUFRE RIVER:** Mercer, 1966.
County, see also: Larimer
- LOGAN COUNTY**
- Area
Frenchman Creek basin: Cardwell and Jenkins, 1963.
South Platte River Valley: Bjorklund and Brown, 1957; Schneider and Albin, 1969a,b; Schneider and others, 1969.
- Availability of ground water
General: Bjorklund, 1957; Darton, 1905a.
- Basic data: Bjorklund, 1957; Bjorklund and Brown, 1957; McConaghy and Colburn, 1964; Owens, 1966; Weist, 1964b.
- Bedrock elevation contour map: Owens, 1966; Reddell, 1967a,b; Schneider and others, 1969.
- Cross sections
Quaternary System: Cardwell and Jenkins, 1963.
Tertiary System: Cardwell and Jenkins, 1963; Reddell, 1967a,b.
Cretaceous System: Reddell, 1967a,b.
- Deep wells: Darton, 1902, 1905b.
- Depth to bedrock: Owens, 1966; Reddell, 1967a,b.
- Depth to water
Map: Boettcher, 1966; Brookman, 1968, 1969; Cardwell and Jenkins, 1963; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; LaRocque, 1966; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.
Table: Bjorklund, 1957; Bjorklund and Brown, 1957; Boettcher and others, 1969; Cardwell and Jenkins, 1963; McConaghy and Colburn, 1964; Weist, 1964b.
- Ground-water withdrawals: Boettcher and others, 1969; Cardwell and Jenkins, 1963.
- Hydrologic properties of aquifers
Aquifer tests: Wilson, 1965; Cardwell and Jenkins, 1963.
Map: Cardwell and Jenkins, 1963.
Tables: Bjorklund and Brown, 1957; Cardwell and Jenkins, 1963; Reddell, 1967a,b; Weist, 1965b.
Tertiary and Quaternary Systems: Reddell, 1967a,b; Weist, 1964b, 1965b.
Cretaceous System: Reddell, 1967a,b; Weist, 1964b, 1965b.
- Irrigation well
Development rate: Cardwell and Jenkins, 1963.
Efficiency: Miles and Longenbaugh, 1968.
- Location of selected wells and test holes: Bjorklund, 1957; Bjorklund and Brown, 1957; Cardwell and Jenkins, 1963; Weist, 1964b, 1965b.
- Logs of selected wells and test holes: Bjorklund and Brown, 1957; Cardwell and Jenkins, 1963; Darton, 1905b; Weist, 1964b.
- Mathematical model: Reddell, 1967a,b.
- Quality of water
Quaternary System: Bjorklund, 1957; Cardwell and Jenkins, 1963; Weist, 1964b, 1965b.
Tertiary System: Bjorklund, 1957; Cardwell and Jenkins, 1963; Scott and Barker, 1962; Weist, 1964b, 1965b.
Cretaceous System: Bjorklund, 1957; Weist, 1964b, 1965b.
- Recharge: Cardwell and Jenkins, 1963; Reddell, 1967a,b.
- Resources, ground water
Quaternary System: Bjorklund, 1957; Cardwell and Jenkins, 1963; Owens, 1966, 1968b; Reddell, 1967a,b; Weist, 1964b, 1965b.

Tertiary System: Bjorklund, 1957; Cardwell and Jenkins, 1963; Lowry, 1966; Owens, 1966, 1968b; Reddell, 1967a,b; Weist, 1964b, 1965b.

Cretaceous System: Bjorklund, 1957; Cardwell and Jenkins, 1963; Reddell, 1967a,b; Weist, 1964b, 1965b.

Saturated thickness, isopach map: Boettcher, 1966; Cardwell and Jenkins, 1963; Owens, 1966, 1968b; Reddell, 1967a,b; Schneider and Albin, 1969a.

Springs: Bjorklund, 1957; Cardwell and Jenkins, 1963.

Stream-flow depletion by irrigation wells: Cardwell and Jenkins, 1963.

Water-level change map: Boettcher and others, 1969.

Water-table elevation contour map: Boettcher, 1966; Cardwell and Jenkins, 1963; Owens, 1966, 1968b; Reddell, 1967a,b; Schneider and Albin, 1969b.

LOST CREEK BASIN: Owens, 1967.

Counties, see also: Adams, Arapahoe and Weld.

MESA COUNTY

Area

Grand Junction area: Lohman, 1965
Project Rulison: Hurr and others, 1969; Larson and Beetem, 1970.

Artesian ground-water conditions: Lohman, 1965.

Basic data: Iorns and others, 1964; Hurr and others, 1969; McConaghy and Colburn, 1964.

Cross sections

Mesozoic Era: Lohman, 1965.

Deep wells: Darton, 1902, 1905b.

Depth to water

Table: McConaghy and Colburn, 1964.

Hydrologic properties of aquifers

Aquifer tests: Lohman, 1967.

Jurassic and Triassic Systems: Lohman, 1965.

Location of selected wells, springs and test holes: Lohman, 1965.

Logs of selected wells and test holes: Lohman, 1965.

Municipal supplies: Lohman, 1965.

Quality of water

Map: Iorns and others, 1965.

Cenozoic Era: Iorns and others, 1964.

Jurassic System: Iorns and others, 1964; Lohman, 1965; Scott and Barker, 1962.

Triassic System: Lohman, 1965.

Chemical and radiochemical analyses: Hurr and others, 1969; Larson and Beetem, 1970.

Resources, ground water

Mesozoic Era: Lohman, 1965.

Precambrian System: Lohman, 1965.

Springs: George and others, 1920; Iorns and others, 1964.

MIDDLE PARK

Availability of ground water: McGuinness, 1963; Odell and others, 1964; Voegeli, 1965.

MINES

Guidelines for control of pollution: Colo. Water Pollution Control Comm., 1970.

MINERAL COUNTY

Basic data: McConaghy and Colburn, 1964.

Depth to water, table: McConaghy and Colburn, 1964.

Springs: Colo. State Planning Office, 1962; George and others, 1920; Stearns and others, 1937; Waring, 1965.

MOFFAT COUNTY

Availability of ground water: Dyni, 1968.

Basic data: Iorns and others, 1964; McConaghy and Colburn, 1964.

Depth to water

Table: McConaghy and Colburn, 1964.

Quality of water

Map: Iorns and others, 1965.

Cenozoic and Mesozoic age aquifers: Iorns and others, 1964.

Springs: George and others, 1920; Iorns and others, 1964; Stearns and others, 1937; Waring, 1965.

MONTEZUMA COUNTY

Availability of ground water: Coffin, R. C., and others, 1924.

Basic data: Iorns and others, 1964; McConaghy and Colburn, 1964.

Deep wells: Darton, 1902, 1905b.

Depth to water, table: McConaghy and Colburn, 1964.

Quality of water

Map: Iorns and others, 1965.

Cenozoic Era: Iorns and others, 1964.

Cretaceous System: Iorns and others, 1964; Scott and Barker, 1962.

Resources, ground water

Cretaceous System: Coffin, R. C., and others, 1924.

Springs: Iorns and others, 1964.

MONTRORSE COUNTY

Area

Uncompahgre Valley: Meeks, 1950.

Artesian ground-water conditions: Meeks, 1950.

Availability of ground water: Waring, 1935.

Basic data: Iorns and others, 1964; McConaghy and Colburn, 1964; Meeks, 1950.

Cross sections

Cenozoic and Mesozoic age aquifers: Meeks, 1950.

Deep wells: Darton, 1902, 1905b.

Depth to water, table: McConaghy and Colburn, 1964; Meeks, 1950.

Location of selected wells and test holes: Meeks, 1950.

Logs of selected wells and test holes: Meeks, 1950.

Recharge: Meeks, 1950.

Quality of water

Maps: Iorns and others, 1965.

Quaternary Era: Iorns and others, 1964.

Mesozoic Era: Iorns and others, 1964; Meeks, 1950.

Resources, ground water

Quaternary System: Meeks, 1950.

Jurassic and Cretaceous Systems: Meeks, 1950.

Springs: George and others, 1920.

MORGAN COUNTY

Area

Camp Creek Valley: Cardwell, 1956a.

Kiowa-Bijou Creek basin: Bibby, 1969; Duke and Longenbaugh, 1966; Kuhn, 1968.

South Platte River Valley: Bjorklund and Brown, 1957.

Availability of ground water

General: Bjorklund, 1957; Bjorklund and Brown, 1957; McConaghy and Colburn, 1964; Weist, 1964b.

Cross sections

Quaternary System: Bibby, 1969; Duke and Longenbaugh, 1966.

Tertiary System: Duke and Longenbaugh, 1966.

Cretaceous System: Bibby, 1969; Duke and Longenbaugh, 1966.

Depth to water

Map: Brookman, 1968, 1969; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; LaRocque, 1966; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.

Table: Bjorklund, 1957; Bjorklund and Brown, 1957; McConaghy and Colburn, 1964; Weist, 1964b.

Hydrologic properties of aquifers

Tables: Bjorklund and Brown, 1957; Weist, 1965b.

Quaternary System: Bibby, 1969; Weist, 1964b, 1965b.

Tertiary System: Weist, 1964b, 1965b.

Cretaceous System: Bibby, 1969; Weist, 1964b, 1965b.

Irrigation wells: Duke and Longenbaugh, 1966.

Location of selected wells, springs and test holes: Bjorklund, 1957; Bjorklund and Brown, 1957; Weist, 1964b, 1965b.

Logs of selected wells and test holes: Bjorklund and Brown, 1957; Weist, 1964b.

Mathematical model: Bibby, 1969.

Piezometric surface map: Bibby, 1969.

Quality of water

Relation to geologic source: Weist, 1965b.

Cenozoic Era: Bjorklund, 1957; Weist, 1964b, 1965b.

Cretaceous System: Bjorklund, 1957; Weist, 1964b, 1965b.

Recharge, artificial: Duke and Longenbaugh, 1966.

Resources, ground water

Quaternary System: Bibby, 1969; Bjorklund,

1957; Brown, 1950; Duke and Longenbaugh, 1966; Weist, 1964b, 1965b.

Tertiary System: Bjorklund, 1957; Duke and Longenbaugh, 1966; Weist, 1964b, 1965b.

Cretaceous System: Bibby, 1969; Bjorklund, 1957; Duke and Longenbaugh, 1966; Weist, 1964b, 1965b.

Springs: Bjorklund, 1957.

Water-table elevation contour map: Bibby, 1969.

MUNICIPAL SUPPLIES

Availability of ground water: Bjorklund, 1957.

Diversions: Gregg and others, 1961.

Pueblo, quality: Lohr and Love, 1954.

Quality of water: Collins and others, 1934; Durfor and Becker, 1964; Gregg and others, 1961.

Sources of supply, aquifers: Gregg and others, 1961.

Supply, Kansas River basin: Cardwell, 1953.

NORTH PARK

Availability of ground water

General: McGuinness, 1963; Odell and others, 1964; Voegeli, 1965.

OTERO COUNTY

Area

Arkansas River Valley: Major and others, 1970; Moulder and others, 1963a.

Artesian ground-water conditions: Weist, 1965a.

Availability of ground water: Darton, 1905a; Patton, 1923; Toepelman, 1924.

Basic data: Fuller, 1905; Major and others, 1970; McConaghy and Colburn, 1964; Weist, 1962.

Deep wells: Darton, 1902, 1905b.

Depth to water

Map: Brookman, 1968, 1969; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.

Table: Major and others, 1970; McConaghy and Colburn, 1964; Weist, 1962.

Ground-water withdrawal: Major and others, 1970.

Hydrologic properties of aquifers

Tables: Weist, 1962.

Cretaceous and Quaternary Systems: Toepelman, 1924; Weist, 1965a.

Large capacity well, development rate graph: Major and others, 1970.

Location of selected wells, springs and test holes: Major and others, 1970; Weist, 1962.

Logs of selected wells and test holes: Darton, 1905b; Major and others, 1970; Weist, 1962; Patton, 1923.

Piezometric surface map: Weist, 1963, 1965a.

Quality of water

Graph: Weist, 1965a.

Quaternary System: Major and others, 1970; Weist, 1962, 1965a.

Tertiary System: Weist, 1962, 1965a.

Cretaceous System: Weist, 1962, 1963, 1965a.

Jurassic System: Weist, 1962, 1965a.

Springs, Clarke, 1914.

Resources, ground water

Quaternary System: Major and others, 1970; Weist, 1962, 1965a; Patton, 1923.

Tertiary System: Weist, 1962, 1965a; Patton, 1923.

Cretaceous System: Major and others, 1970; Weist, 1962, 1963, 1965a; Patton, 1923.

Jurassic System: Weist, 1962, 1965a; Patton, 1923.

Saturated thickness, isopach map: Weist, 1965a.

Springs: Clarke, 1914; George and others, 1920; Weist, 1962, 1965a.

Water management: Chase and others, 1963; Moulder and others, 1963a.

Water-table elevation, contour map; Weist, 1965a.

OURAY COUNTY

Area

Uncompahgre Valley: Meeks, 1950.

Artesian ground-water conditions: Meeks, 1950.

Basic data: Iorns and others, 1964; Meeks, 1950; McConaghy and Colburn, 1964.

Cross sections

Quaternary System: Meeks, 1950.

Jurassic and Cretaceous Systems: Meeks, 1950.

Depth to water, table: McConaghy and Colburn, 1964; Meeks, 1950.

Location of selected wells, springs and test holes: Meeks, 1950.

Logs of selected wells and test holes: Meeks, 1950.

Quality of water

Map: Iorns and others, 1965.

Cenozoic Era: Iorns and others, 1964.

Jurassic and Cretaceous Systems: Iorns and others, 1964; Meeks, 1950.

Pennsylvania System: Iorns and others, 1964.

Recharge: Meeks, 1950.

Resources, ground water

Quaternary System: Meeks, 1950.

Jurassic and Cretaceous System: Meeks, 1950.

Springs: Colo. State Planning Office, 1962; George and others, 1920; Iorns and others, 1964; Peale, 1886; Stearns and others, 1937; Waring, 1965.

PARK COUNTY

Availability of ground water

Map: LaRocque, 1966.

Basic data: McConaghy and Colburn, 1964.

Depth to water

Map: LaRocque, 1966.

Table: McConaghy and Colburn, 1964.

Springs: Colo. State Planning Office, 1962; George and others, 1920; Peale, 1886; Stearns and others, 1937; Waring, 1965.

PHILLIPS COUNTY

Area

Frenchman Creek basin: Cardwell and Jenkins, 1963.

Availability of ground water

General: Darton, 1905a.

Map: LaRocque, 1966.

Basic data: Cardwell and Jenkins, 1963; McConaghy and Colburn, 1964; Newell, 1895; Owens, 1966.

Bedrock elevation contour map: Owens, 1966; Reddell, 1967a,b.

Cross sections

Quaternary System: Cardwell and Jenkins, 1963.

Tertiary System: Cardwell and Jenkins, 1963; Reddell, 1967a,b.

Cretaceous System: Reddell, 1967a,b.

Depth to bedrock, map: Owens, 1966; Reddell, 1967a,b.

Depth to water

Map: Boettcher, 1966; Brookman, 1968, 1969; Cardwell and Jenkins, 1963; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; LaRocque, 1966; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.

Table: Boettcher and others, 1969; Cardwell and Jenkins, 1963; McConaghy and Colburn, 1964; Newell, 1895.

Ground-water discharge: Cardwell and Jenkins, 1963.

Ground-water withdrawal: Boettcher and others, 1969; Cardwell and Jenkins, 1963.

Hydrologic properties of aquifers

Map: Cardwell and Jenkins, 1963.

Table: Cardwell and Jenkins, 1963; Reddell, 1967a,b.

Cenozoic Era: Reddell, 1967a,b.

Cretaceous System: Reddell, 1967a,b.

Irrigation wells

Efficiency: Miles and Longenbaugh, 1968.

Development rate: Cardwell and Jenkins, 1963.

Location of selected wells and test holes: Cardwell, 1953; Cardwell and Jenkins, 1963.

Logs of selected wells and test holes: Cardwell, 1953; Cardwell and Jenkins, 1963.

Municipal supplies: Cardwell and Jenkins, 1963.

Quality of water

Quaternary System: Cardwell and Jenkins, 1963.

Tertiary System: Cardwell and Jenkins, 1963; Scott and Barker, 1962.

Recharge

General: Cardwell and Jenkins, 1963; Reddell, 1967a,b.

Mathematical model: Reddell, 1967a,b.

Resources, ground water

Cenozoic Era: Cardwell and Jenkins, 1963; Owens, 1966, 1968b; Reddell, 1967a,b.

Cretaceous System: Cardwell and Jenkins, 1963; Reddell, 1967a,b.

Saturated thickness, isopach map: Boettcher, 1966; Cardwell and Jenkins, 1963; Owens, 1966, 1968b; Reddell, 1967a,b.

Springs: Cardwell and Jenkins, 1963.

Stream-flow depletion by irrigation wells: Cardwell and Jenkins, 1963.

Water-level change map: Boettcher and others, 1969.

Water-table elevation contour map: Boettcher, 1966; Cardwell and Jenkins, 1963; Owens, 1966, 1968b; Reddell, 1967a,b.

PICEANCE CREEK BASIN

Availability of ground water: Odell and others, 1963.

Basic data: Coffin, D. L. and others, 1968.

Computer model for mine drainage problems: Coffin, D. L. and Bredehoeft, 1969.

Core hole evaluation: Cordes, 1969; Ege and others, 1967, 1968.

Cross sections, electric log: Coffin, D. L. and others, 1969.

Hydrologic properties of aquifers

Aquifer tests: Coffin, D. L. and others, 1968.

Hydrology: Stead and others, 1967.

Location of selected wells and test holes: Coffin, D. L. and others, 1968, 1969.

Logs of selected wells and test holes: Coffin, D. L. and others, 1968.

Potentiometric surface map: Coffin, D. L. and others, 1969.

Quality of water

Tertiary and Quaternary Systems: Coffin, D. L. and others, 1968, 1969.

Radionuclides distribution: Stead, 1967.

Resources, ground water

Tertiary and Quaternary Systems: Coffin, D. L. and others, 1968, 1969.

Wells, plugging: U.S. Bureau of Rec., 1968.

PITKIN COUNTY

Basic data: Iorns and others, 1964; McConaghy and Colburn, 1964.

Depth to water, table: McConaghy and Colburn, 1964.

Quality of water

Map: Iorns and others, 1965.

Cenozoic Era: Iorns and others, 1964.

Mississippian and Pennsylvanian Systems: Iorns and others, 1964; Scott and Barker, 1962.

Precambrian System: Iorns and others, 1964.

Springs: Colo. State Planning office, 1962; George and others, 1920; Iorns and others, 1964; Peale, 1886; Waring, 1965.

POLLUTION

Denver area: Gahr, 1961; Torrey, 1948a,b.

Mines, guidelines for control of pollution: Colo. Water Pollution Control Comm., 1970.

Mountain home sites, potential: Freethey, 1969; Millon, 1970.

Septic tanks: Freethey, 1969.

South Platte River basin: U.S. Fed. Water Pol. Control Adm., 1967.

Statistical analysis: Freethey, 1969.

PROJECT RULISON

Basic data: Hurr and others, 1969.

Geohydrology: Voegeli, 1969; Voegeli and West, 1970.

Quality of water

Streams, reservoirs, wells and springs: Larson and Beetem, 1970; Voegeli and Claassen, 1971.

PROSPECT VALLEY

Management, water resources: Skinner, 1964.

Quality of ground water: Dirmeyer, 1968.

Recharge: Glover, 1969; Skinner, 1963a.

Resources, ground water: Code, 1945a.

PROWERS COUNTY

Area

Arkansas River Valley: Major and others, 1970.

Availability of ground water: Darton, 1905a.

Basic data: Irish and Pyle, 1967; Major and others, 1970; McConaghy and Colburn, 1964; Richards and others, 1968; Stanson and Cunningham, 1967; Voegeli and Hershey, 1960.

Bedrock elevation contour map: Irish and Pyle, 1967; Stanson and Cunningham, 1967.

Cross sections

Quaternary System: Voegeli and Hershey, 1965.

Tertiary and Cretaceous System: Irish and Pyle, 1967.

Deep wells: Darton, 1902, 1905b.

Depth to water

Map: Brookman, 1968, 1969; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964; Voegeli and Hershey, 1965.

Table: Irish and Pyle, 1967; Major and others, 1970; McConaghy and Colburn, 1964; Richards and others, 1968; Voegeli and Hershey, 1960.

Ground-water withdrawals: Irish and Pyle, 1967; Major and others, 1970; Stanson and Cunningham, 1967.

Hydrologic properties of aquifers

Tables: Voegeli and Hershey, 1965.

Tertiary and Quaternary Systems: Irish and Pyle, 1967.

Cretaceous System: Irish and Pyle, 1967.

Irrigation wells

Development rate, graph: Irish and Pyle, 1967.

Efficiency: Miles and Longenbaugh, 1968.

Location of selected wells and test holes: Irish and Pyle, 1967; Major and others, 1970; Richards and others, 1968; Voegeli and Hershey, 1960.

Logs of selected wells and test holes: Darton, 1905b; Major and others, 1970; Richards and others, 1968; Voegeli and Hershey, 1960.

Municipal supplies: Voegeli and Hershey, 1965.

Piezometric surface map: Voegeli and Hershey, 1965.

Projected ground-water use: Irish and Pyle, 1967.

Quality of water

Radiometric analysis: Voegeli and Hershey, 1960, 1965.

Quaternary System: Major and others, 1970; Richards and others, 1968; Voegeli and Hershey, 1960, 1965.

Tertiary System: Richards and others, 1968; Voegeli and Hershey, 1960, 1965.

Cretaceous System: Major and others, 1970; Richards and others, 1968; Scott and Barker, 1962; Voegeli and Hershey, 1960, 1965.

Jurassic System: Richards and others, 1968.

Triassic System: Richards and others, 1968.

Recharge: Stanson and Cunningham, 1967.

Resources, ground water

Quaternary System: Irish and Pyle, 1967; Major and others, 1970; Richards and others, 1968; Voegeli and Hershey, 1960, 1965.

Tertiary System: Irish and Pyle, 1967; Richards and others, 1968; Stanson and Cunningham, 1967; Voegeli and Hershey, 1960, 1965.

Cretaceous System: Irish and Pyle, 1967; Major and others, 1970; Richards and others, 1968; Stanson and Cunningham, 1967; Voegeli and Hershey, 1960, 1965.

Jurassic System: Richards and others, 1968; Stanson and Cunningham, 1967; Voegeli and Hershey, 1960, 1965.

Triassic System: Stanson and Cunningham, 1967; Voegeli and Hershey, 1960, 1965.

Permian System: Voegeli and Hershey, 1960, 1965.

Saturated thickness, isopach map: Irish and Pyle, 1967; Voegeli and Hershey, 1965.

Water-table elevation contour map: Irish and Pyle, 1967.

PUEBLO COUNTY

Area

Arkansas River Valley: Hurr and Moore, 1966; Hurr and others, 1966; Hurr and Richards, 1966; Major and others, 1970; McGovern and others, 1964; Moore and Hurr, 1966.

Availability of ground water: Darton, 1905a.

Basic data: Fuller and Sanford, 1906; Major and others, 1970; McConaghy and Colburn, 1964; McGovern and others, 1964.

Bedrock elevation contour map; Hurr and others, 1966.

Deep wells: Darton, 1902, 1905b.

Depth to water

Map: Brookman, 1968, 1969; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.

Table: Major and others, 1970; McConaghy and Colburn, 1964.

Ground-water withdrawals: Major and others, 1970.

Hydrologic properties of aquifers

Aquifer tests: Lohman, 1967.

Quaternary System: Hurr and Moore, 1966.

Large capacity wells, development rate: Major and others, 1970.

Location of selected wells and test holes; Major and others, 1970; McGovern and others, 1964.

Logs of selected wells and test holes: Darton, 1905b; Fuller and Sanford, 1906; Major and others, 1970; McGovern and others, 1964.

Quality of water

Quaternary System: Major and others, 1970; McGovern and others, 1964.

Cretaceous System: Major and others, 1970. Springs: Clarke, 1914.

Resources, ground water:

Cretaceous and Quaternary Systems: Major and others, 1970.

Springs: George and others, 1920; Peale, 1886; Stearns and others, 1937; Waring, 1965.

Water-table, elevation contour map; Moore and Hurr, 1966.

RECHARGE

Artificial

Areas

Arikaree River Valley: Longenbaugh, 1966.

High Plains: Jenkins, C. T., and Hofstra, 1970a,b.

Prospect Valley: Glover, 1959; Skinner, 1963a.

Rocky Mountain Arsenal: Walker, 1961.

Bibliography: Signor and others, 1970; Todd, 1959.

General: Bittinger, 1962; Bittinger and Trelease, 1965; Smith and Bittinger, 1964.

Natural: Reddell, 1967a,b, 1970.

RED FEATHERS LAKE AREA: Millon, 1970.

County, see also: Larimer.

RIO BLANCO COUNTY

Area

Piceance Creek Basin: Carroll and others, 1967; Coffin, D. L. and others, 1968, 1969; Cordes, 1969; Ege and others, 1967; Stead, 1967; Stead and others, 1967; U.S. Bureau of Rec., 1963.

Rangely Oil Dist.: Gale, 1908.

Basic data: Iorns and others, 1964; McConaghy and Colburn, 1964.

Deep wells: Darton, 1905b.

Depth to water

Table: McConaghy and Colburn, 1964.

Hydrologic properties of aquifers

Cenozoic Era: Carroll and others, 1967; Coffin, D. L. and others, 1968, 1969; Stead and others, 1967.

Location of selected wells, springs and test holes: Coffin, D. L. and others, 1968, 1969.

Plugging of wells: U.S. Bureau of Rec., 1963.

Potentiometric surface map: Coffin, D. L. and others, 1969.

Project Bronco: Corders, 1969; Stead, 1967; Stead and others, 1967.

Quality of water

Map: Iorns and others, 1965.

Quaternary System: Coffin, D. L. and others, 1968, 1969; Iorns and others, 1964; Stead and others, 1967.

Tertiary System: Coffin, D. L. and others, 1968, 1969; Stead and others, 1967.

Cretaceous System: Iorns and others, 1964.

Resources, ground water

Cenozoic Era: Coffin, D. L. and others, 1968, 1969.

Springs: Gale, 1908.

RIO GRANDE COUNTY

Basic data: McConaghy and Colburn, 1964; Powell, 1958.

Computer model, analog, water salvage: Emery, 1970.

Deep wells: Darton, 1902, 1905b.

Depth to water

Map: Brookman, 1968, 1969; Emery, 1970; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.

Table: McConaghy and Colburn, 1964; Powell, 1958.

Hydrologic properties of aquifers

Cenozoic Era: Emery, 1970; Powell, 1958.

Location of selected wells and test holes: Emery and others, 1969.

Logs of selected wells and test holes: Powell, 1958.

Piezometric surface map: Powell, 1958.

Predicted water-level decline map: Emery, 1970.

Quality of water

Cenozoic Era: Powell, 1958.

Resources, ground water

Cenozoic Era: Emery and others, 1969.

Precambrian Era: Emery and others, 1969.

Springs: Colo. State Planning Office, 1962; George and others, 1920; Peale, 1886; Stearns and others, 1937; Waring, 1965.

Water-table elevation contour map: Powell, 1958.

ROCKY MOUNTAIN ARSENAL DISPOSAL WELL

Cross sections, west side Denver Basin: Evans, 1966b.

Fracture deformation: Snow, 1968b.

Hydrologic properties of aquifers: Pickett, 1968; Snow, 1968a,b; van Poolen, 1969.

Microearthquakes: Healy and Hoover, 1967.

Pressure injection well drilling report: Polumbus and Assoc., 1961.

Injection rates: Bardell, 1966; Evans, 1966.

Pumping effects: Colburn, 1968; Evans, 1969; Harrison and Longely, 1970; Healy and others, 1968; Hoover and Dietrich, 1969.

Statistical analysis of relationship between injection rate and frequency of earthquakes: Bardwell, 1966; Endersbee, 1969; Evans, 1966b; Pickett, 1968.

Stratigraphy: Evans, 1966b; Healy and others, 1968; Pickett, 1968; Scopel, 1964; Wrucke and Sheridan, 1968.

ROCKY MOUNTAIN NATIONAL PARK

Fall River entrance area water supply: Coffin, D. L., 1966.

Moraine Park Campground site water supply: Voegeli, 1963b.

Westside campground site, proposed, water supply: Voegeli, 1963c.

ROUTT COUNTY

Availability of ground water: Coffin, R. C. and others, 1924.

Basic data: Iorns and others, 1964; McConaghy and Colburn, 1964.

Depth to water, table: McConaghy and Colburn, 1964.

Quality of water

Map: Iorns and others, 1965.

Cretaceous and Quaternary Systems: Iorns and others, 1964.

Precambrian Era: Iorns and others, 1964.

Resources, ground water

Cretaceous System: Crawford and others, 1920.

Springs: Blackmer, 1939; Colo. State Planning Office, 1962; George and others, 1920; Iorns and others, 1964; Peale, 1886; Stearns and others, 1937; Waring, 1965.

SAGUACHE COUNTY

Basic data: McConaghy and Colburn, 1964; Powell, 1958.

Computer analog model, water salvage: Emery, 1970.

Deep wells: Darton, 1902, 1905b.

Depth to water

Map: Brookman, 1968, 1969; Emery, 1970; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.

Table: McConaghy and Colburn, 1964; Powell, 1958.

Hydrologic properties of aquifers

Cenozoic Era: Emery, 1970; Powell, 1958.

Location of selected wells and test holes: Emery and others, 1969.

Logs of selected wells and test holes: Powell, 1958.

Piezometric surface map: Powell, 1958.

Predicted water-level decline map: Emery, 1970.

Quality of water

Cenozoic Era: Powell, 1958.

Resources, ground water

Cenozoic Era: Emery and others, 1969.

Precambrian Era: Emery and others, 1969.

Springs: Colo. State Planning Office, 1962; George and others, 1920; Peale, 1886; Waring, 1965.

Water-table elevation contour map: Powell, 1958.

SAN JUAN BASIN

Potential for subsurface disposal of liquid wastes:
Peterson and others, 1968.

SAN JUAN COUNTY

Springs: Peale, 1886.

SAN LUIS VALLEY

Artesian wells: Powell, 1958; Siebenthal, 1910;
U.S. Bureau of Rec., 1963; White, W. N.,
1916.

Availability of Ground water: Bryan, 1938; Colo.
Water Conserv. Board, 1957; McGuiness,
1963; McLaughlin, 1953; Odell and others,
1964; Voegeli, 1963a; White, W. N., 1916.

Basic data: Hart, 1931; Powell, 1958; Wells and
Patterson, 1967.

Closed Basin project

General: U.S. Bureau of Rec., 1963; Wells
and Patterson, 1967.

Inflow-outflow: Powell, 1958; Tipton and
Hart, 1932; Wells and Patterson, 1967.

Quantity of water: Powell, 1958.

Cross sections

Cenozoic Era: Powell, 1958.

Depth to water

Map: Emery, 1970; Brookman, 1968, 1969;
Duke, 1967a; Duke and Skinner, 1965;
Duke and Sundaram, 1966; Schneider,
1962; Skinner, 1963b; Skinner and Thom-
as, 1964.

Table: Hart, 1931; Powell, 1958.

Hydrologic properties of aquifers

Aquifer tests: Wilson, 1965.

Tables: Powell, 1958.

Cenozoic Era: Emery, 1970; Powell, 1958.

Location of selected wells, springs and test holes:
Emery and others, 1969; Powell, 1958.

Logs of selected wells and test holes: Powell,
1958; Siebenthal, 1910.

Municipal supplies: Emery and others, 1969;
Powell, 1958.

Piezometric surface map: Powell, 1958; Wells and
Patterson, 1967.

Predicted water-level decline map: Emery, 1970;
Wells, and Patterson, 1967.

Quality of water

Cenozoic Era: Emery, 1970; Powell, 1958;
Siebenthal, 1910; U.S. Bureau of Rec.,
1963.

Resources, ground water

Cenozoic Era: Emery and others, 1969; White,
W. N., 1916.

Precambrian Era: Emery and others, 1969.

Saturated thickness, isopach map: Wells and Pat-
terson, 1967.

Springs: Powell, 1958; Siebenthal, 1910.

Water salvage: Emery, 1970; U.S. Bureau of
Rec., 1963; Wells and Patterson, 1967.

Water-table elevation contour map: Powell, 1958;
Wells and Patterson, 1967.

SAN MIGUEL COUNTY

Availability of ground water: Waring, 1935.

Basic data: Iorns and others, 1964; McConaghy
and Colburn, 1964.

Depth to water, table: McConaghy and Colburn,
1964.

Quality of water

Map: Iorns and others, 1965.

Quaternary System: Iorns and others, 1964.
Jurassic and Cretaceous Systems: Iorns and
others, 1964.

Springs: Colo. State Planning Office, 1962;
George and others, 1920; Iorns and others,
1964; Peale, 1886; Stearns and others, 1937;
Waring, 1965.

SEDGWICK COUNTY**Area**

Frenchman Creek basin: Cardwell and Jen-
kins, 1963.

South Platte River valley: Bjorklund and
Brown, 1957.

Availability of ground water

General: Darton, 1905a.

Map: LaRocque, 1966.

Basic data: Bjorklund and Brown, 1957; Card-
well and Jenkins, 1963; McConaghy and Col-
burn, 1964; Newell, 1895; Owens, 1966;
Weist, 1964b.

Bedrock elevation contour map: Owens, 1966;
Reddell, 1967a,b.

Cross sections

Quaternary System: Cardwell and Jenkins,
1963; McLaughlin, 1948.

Tertiary System: Cardwell and Jenkins, 1963;
Reddell, 1967a,b.

Cretaceous System: Reddell, 1967a,b.

Depth to bedrock

Map: Owens, 1966; Reddell, 1967a,b.

Depth to water

Map: Brookman, 1968, 1969; Cardwell and
Jenkins, 1963; Duke, 1967a; Duke and
Skinner, 1965; Duke and Sundaram, 1966;
LaRocque, 1966; Schneider, 1962; Skin-
ner, 1963b; Skinner and Thomas, 1964.

Table: Bjorklund and Brown, 1957; Boettcher
Boettcher and others, 1969; Cardwell and
Jenkins, 1963; McConaghy and Colburn,
1964; Newell, 1895; Weist, 1964b.

Ground-water withdrawals, by years: Boettcher
and others, 1969; Cardwell and Jenkins, 1963.

Hydrologic properties of aquifers

Map: Cardwell and Jenkins, 1963.

Tables: Bjorklund and Brown, 1957; Reddell,
1967a,b; Weist, 1965b.

Cenozoic Era: Reddell, 1967a,b; Weist, 1964b,
1965.

Cretaceous System: Reddell, 1967a,b; Weist,
1964b, 1965b.

Irrigation wells

Development rate: Cardwell and Jenkins,
1963.

Efficiency: Miles and Longenbaugh, 1968.

- Location of selected wells and test holes: Bjorklund and Brown, 1957; Cardwell and Jenkins, 1963; Weist, 1964b, 1965b.
- Logs of selected wells and test holes: Bjorklund and Brown, 1957; Cardwell and Jenkins, 1963; McLaughlin, 1948; Weist, 1964b.
- Mathematical model: Reddell, 1967a,b.
- Quality of water
Cenozoic Era: Cardwell and Jenkins, 1963; McLaughlin, 1948; Weist, 1964b, 1965b.
Cretaceous System: Weist, 1964b, 1965b.
- Recharge: Cardwell and Jenkins, 1963; Reddell, 1967a,b.
- Resources, ground water
Quaternary System: Cardwell and Jenkins, 1963; McLaughlin, 1948; Owens, 1966; Reddell, 1967a,b; Weist, 1964b, 1965b.
Tertiary System: Cardwell and Jenkins, 1963; Lowry, 1966; McLaughlin, 1948; Owens, 1966; Reddell, 1967a,b; Weist, 1964b, 1965b.
Cretaceous System: Cardwell and Jenkins, 1963; Reddell, 1967a,b; Weist, 1964b, 1965b.
- Saturated thickness, isopach map: Boettcher, 1966; Cardwell and Jenkins, 1963; Owens, 1966; Reddell, 1967a,b.
- Springs: Cardwell and Jenkins, 1963.
- Stream-flow depletion by irrigation wells: Cardwell and Jenkins, 1963.
- Water-level change map: Boettcher and others, 1969.
- Water-table elevation contour map: Boettcher, 1966; Cardwell and Jenkins, 1963; Owens, 1966; Reddell, 1967a,b.
- SEVERANCE BASIN:** McComas, 1966; White, N. F., and Sunada, 1966.
County, see also: Weld
- SOUTH PLATTE RIVER VALLEY**
Artesian ground-water conditions: Bjorklund and Brown, 1957.
- Availability of ground water
General: Bittinger and Assoc., 1968; Code, 1943; Colo. Water Conserv. Board, 1957; McGuiness, 1963; McLaughlin, 1948, 1956; Odell and others, 1964.
Map: LaRocque, 1966.
Table: Smith and others, 1964.
- Basic data: Bjorklund and Brown, 1957.
- Bedrock elevation contour map: Bjorklund and Brown, 1957; Schneider and others, 1969.
- Cross sections
Quaternary System: Bjorklund and Brown, 1957; Smith and others, 1964.
- Depth to water
Map: LaRocque, 1966.
Table: Smith and others, 1964.
- Hydrologic properties of aquifers
Aquifer tests: Wilson, 1965.
Tables: Bjorklund and Brown, 1957.
Summary: Glover, 1968.
Quaternary System: Smith and others, 1964.
- Irrigation wells
General: Bittinger, 1968; Code, 1943.
Development rate: Bjorklund and Brown, 1957.
- Location of selected wells and test holes: Bjorklund and Brown, 1957.
- Logs of selected wells and test holes: Bjorklund and Brown, 1957.
- Municipal supplies: Bjorklund and Brown, 1957.
- Pollution of ground water: Bonde and Urone, 1962; Code and Tobiska, 1952; Gahr, 1961; Middleton, 1957; Torrey, 1948a,b; U.S. Army, 1955, 1961, 1962; U.S. Dept. of Health, Ed., and Welfare, 1963, 1965; U.S. Fed. Water Pol. Control Adm., 1967; Walker, 1961; Walton, 1959, 1960, 1961.
- Quality of water
Map: Smith and others, 1964; U.S. Dept. of Health, Ed., and Welfare, 1965; U.S. Fed. Water Pol. Control Adm., 1967.
Relation to geology: Bjorklund and Brown, 1957.
Quaternary System: Bjorklund and Brown, 1957; Bonde and Urone, 1962; Code and Tobiska, 1952; Gahr, 1961; McKinney, 1963; McLaughlin, 1958; Middleton, 1957; Smith and others, 1964; Torrey, 1948a,b; U.S. Dept. of Health, Ed., and Welfare, 1963; U.S. Fed. Water Pol. Control Adm., 1967; Walton, 1959.
Tertiary System: Bjorklund and Brown, 1957; McLaughlin, 1948; Smith and others, 1964.
Cretaceous System: Bjorklund and Brown, 1957; Smith and others, 1964.
- Recharge: Bjorklund and Brown, 1957.
- Resources, ground water
Tertiary and Quaternary Systems: Bjorklund and Brown, 1957; McLaughlin, 1948; Smith and others, 1964.
Cretaceous System: Bjorklund and Brown, 1957; Smith and others, 1964.
- Saturated thickness, isopach maps: Schneider and Albin, 1969b; Smith and others, 1964.
- Springs: Bjorklund and Brown, 1957.
- Underflow: Slichter and Wolf, 1906.
- Water-table elevation, contour map: Schneider and Albin, 1969a; Smith and others, 1964.
- STATE OF COLORADO**
Aquifer types: Coffin, D. L., 1963; McGuiness, 1963; Water Information Center, 1970.
Areas of ground-water investigations: Boardman, 1954; Colo. State Planning Office, 1959, 1964; Colo. Water Conserv. Board, 1957; Lohman and Burtis, 1953.
Availability of ground water
General: Coffin, D. L., 1963; Colo. State Planning Office, 1964, 1969; Colo. Water

- Conserv. Board, 1957; Fellows, 1902; McGuinness, 1951, 1963; McLaughlin, 1956a; Moulder, 1960b; Odell and others, 1964; Voegeli, 1963a; Waring, 1935.
- Basic data: McConaghy and Colburn, 1964.
- Cross sections
- Quaternary System: Longenbaugh and Bittinger, 1967.
- Deep wells: Darton, 1902, 1905b; Fuller and others, 1905; Fuller and Sanford, 1906.
- Depth to water
- Map: Brookman, 1968, 1969; Code, 1958; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; Feth and others, 1965; LaRocque, 1966; Lohman and others, 1953; Schneider, 1962; Skinner, 1963b; Skinner and Thomas, 1964.
- Table: U.S. Geol. Survey 1935-present.
- Drought effects
- Colorado River basin: Thomas and others, 1963a.
- Rio Grande River basin: Thomas and others, 1963b.
- Southwest United States: Gatewood and others, 1964.
- Geologic map index: Boardman, 1954.
- Ground-water areas
- General: Coffin, D. L., 1963; Colo. State Planning Office, 1969; Odell and others, 1964; Thomas, 1952.
- Map: Longenbaugh and Bittinger, 1967.
- Ground-water law: Colo. State Engineers Office, 1967; Cornish, 1967; McConaghy, 1966; McConaghy and Colburn, 1964.
- Ground-water investigation publications: McLaughlin, 1953; U.S. Geol. Survey, 1965b, 1968; Voegeli, 1964.
- Ground-water problems: Bittinger, 1959.
- Ground-water stations: Rapp and others, 1968.
- Ground-water withdrawals: Colo. State Planning Office, 1964; MacKichan and Kammerer, 1961; McGuinness, 1951; Murray, 1968; Odell and others, 1964; Colo. Irrig. Centennial Comm., 1952.
- Hydrologic properties of aquifers
- Aquifer tests: Wilson, 1965.
- Municipal supplies: Gregg and others, 1961; MacKichan, 1957; Murray, 1968.
- Quality of water
- Map: Feth and others, 1965; Fleischer, 1962.
- Municipal supplies: Collins and others, 1934.
- Pollution, South Platte River basin: U.S. Fed. Water Pollution Control Adm., 1967.
- Radiochemical analyses: Scott and Voegeli, 1961.
- Records: U.S. Geol. Survey, 1965a.
- Selected wells: Clarke, 1914; Scott and Barker, 1962.
- Springs: George and others, 1920.
- Stations: Harris and others, 1968.
- Resources, ground water
- Cenozoic Era: Colo. State Planning Office, 1964; Cornish, 1967; Darton, 1905a; McLaughlin, 1956a.
- Jurassic and Cretaceous Systems: Cornish, 1967; Darton, 1905a; McLaughlin, 1956a.
- Triassic System: Darton, 1905a.
- Paleozoic Era: Darton, 1905a.
- Saline-water resources: Krieger and others, 1957.
- Springs
- General: Colo. State Planning Office, 1962, 1964; George and others, 1920; Meinzer, 1927; Peale, 1886; Stearns and others, 1937; Waring, 1965; Water Information Center, 1970.
- Map showing location: George and others, 1920.
- Quality: George and others, 1920; Stearns and others, 1937; Waring, 1965.
- Water utilization study, Water Dist. 2: Bittinger and Assoc., 1968.
- Water resources policy: Little, 1959.
- Well records: McConaghy and Colburn, 1964.
- STRAIGHT CREEK TUNNEL**
- Ground water engineering: Hurr and Richards, 1966.
- SUMMIT COUNTY**
- Basic data: Iorns and others, 1964; McConaghy and Colburn, 1965; Voegeli, 1965.
- Depth to bedrock, table: Voegeli, 1965.
- Depth to water, table: McConaghy and Colburn, 1964; Voegeli, 1965.
- Location of selected wells, springs and test holes: Voegeli, 1965.
- Logs of selected wells and test holes: Voegeli, 1965.
- Tertiary System: Voegeli, 1965.
- Cretaceous System: Iorns and others, 1964; Voegeli, 1965.
- Precambrian Era: Voegeli, 1965.
- Occurrence of ground water: Voegeli, 1965.
- Quality of water
- Map: Iorns and others, 1965.
- Quaternary System: Iorns and others, 1964; Voegeli, 1965.
- Springs: George and others, 1920; Peale, 1886.
- URANIUM AND RADIUM CONTENT OF GROUNDWATER**
- Central Great Plains: Landis, 1960.
- Colorado: Scott and Voegeli, 1961.
- Resources containing high concentrations: Scott and Barker, 1961.
- United States: Scott and Barker, 1962.
- UTE MOUNTAIN INDIAN RESERVATION**
- Availability of ground water: Powell, 1954.
- Basic data: Irwin, 1966.
- Depth to water, table: Irwin, 1966.
- Hydrologic properties of aquifers, table: Irwin, 1966.
- Location of selected wells, springs and test holes: Irwin, 1966.
- Logs of selected wells and test holes: Irwin, 1966.
- Quality of water
- Mesozoic and Cenozoic Eras: Irwin, 1966.

Resources, ground water
 Mesozoic and Cenozoic Eras: Irwin, 1966.
 Springs: Irwin, 1966.

UNCOMPAHGRE VALLEY: Meeks, 1950.
 Counties, see also: Montrose and Ouray.

WASHINGTON COUNTY

Area

Arikaree River Valley: Brookman and Sunada, 1966.
 Camp Creek Valley: Cardwell, 1956a.
 Frenchman Creek basin: Cardwell and Jenkins, 1963.
 South Platte River Valley: Bjorklund and Brown, 1957.

Availability of ground water

General: Cardwell, 1956a; Darton, 1905a.
 Map: LaRocque, 1966.

Basic data: Bjorklund and Brown, 1957; Cardwell and Jenkins, 1963; McConaghy and Colburn, 1964; McGovern, 1961; Owens, 1966.

Bedrock elevation contour map: Hofstra, 1970; Owens, 1966, 1967a; Reddell, 1967a,b.

Cross sections

Quaternary System: Cardwell and Jenkins, 1963; McGovern, 1964.
 Tertiary System: Cardwell and Jenkins, 1963; Hofstra, 1970; Reddell, 1967a,b.
 Cretaceous System: Reddell, 1967a,b.

Deep wells: Darton, 1902, 1905b.

Depth to bedrock, map: McGovern, 1964; Owens, 1966, 1967a; Reddell, 1967a,b.

Depth to water

Map: Boettcher, 1966; Brookman, 1968, 1969; Cardwell and Jenkins, 1963; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; LaRocque, 1966; Reddell, 1967a,b; Skinner, 1963b; Skinner and Thomas, 1964.

Table: Bjorklund and Brown, 1957; Boettcher, 1969; Cardwell and Jenkins, 1963; McConaghy and Colburn, 1964; McGovern, 1961.

Ground-water withdrawals, by years: Boettcher, 1969; Cardwell and Jenkins, 1963.

Hydrologic properties of aquifers

Aquifer tests: Cardwell, 1956a; Cardwell and Jenkins, 1963; Wilson, 1965.

Map: Cardwell and Jenkins, 1963.

Tables: Bjorklund and Brown, 1957; Cardwell and Jenkins, 1963; McGovern, 1961; Reddell, 1967a,b.

Tertiary and Quaternary Systems: Cardwell and Jenkins, 1963; Reddell, 1967a,b.

Cretaceous System: Reddell, 1967a,b.

Irrigation wells

Development rate: Cardwell and Jenkins, 1963.

Efficiency: Miles and Longenbaugh, 1968.

Location of selected wells and test holes: Bjorklund and Brown, 1957; Cardwell and Jenkins, 1963; McGovern, 1961.

Logs of selected wells and test holes: Bjorklund and Brown, 1957; Cardwell, 1956a; Cardwell and Jenkins, 1963; Darton, 1905b; McGovern, 1961.

Mathematical model: Reddell, 1967a,b.

Quality of water

Map: McGovern, 1964.

Tertiary and Quaternary Systems: Cardwell and Jenkins, 1963; McGovern, 1961, 1964.

Recharge

Artificial: Brookman and Sunada, 1958; Longenbaugh, 1966; McGovern, 1964.

General: Cardwell and Jenkins, 1963; McGovern, 1964; Reddell, 1967a,b.

Resources, ground water

Tertiary and Quaternary Systems: Cardwell and Jenkins, 1963; McGovern, 1961, 1964; Owens, 1966, 1967a; Reddell, 1967a,b.

Saturated thickness, isopach map: Boettcher, 1966; Cardwell and Jenkins, 1963; McGovern, 1964; Owens, 1966; Reddell, 1967a,b.

Springs: Cardwell and Jenkins, 1963.

Water-level change map: Boettcher and others, 1969.

Water-table elevation, contour map: Boettcher, 1966; Cardwell and Jenkins, 1963; McGovern, 1964; Owens, 1966, 1967a; Reddell, 1967a,b.

WATER DISTRICT 2

Water utilization study: Bittinger and Assoc., 1968.

WATER MANAGEMENT

Arkansas River Valley: Moulder and others, 1963a; Southeastern Colo. Water Conserv. Dist., 1969b.

Artesian ground-water reservoir: Moulder, 1962.

High Plains: Jones, 1964.

Alluvial valley plan: Moulder, 1960a.

WELD COUNTY

Areas

Cache la Poudre River Valley: Hershey and Schneider, 1964; Schneider and Hershey, 1961.

Kiowa-Bijou Creek Valley: Duke and Longenbaugh, 1966.

Lost Creek basin: Owens, 1967.

Prospect Valley: Code, 1945a; Dirmeyer, 1968; Glover, 1959; Skinner, 1963a, 1964.

Severance basin: McComas, 1966; White, N. F., and Sunada, 1966.

South Platte River Valley: Bjorklund and Brown, 1957; Schneider, 1962; Smith and others, 1964.

Availability of ground water

General: Bjorklund, 1957; Code, 1945a; Darton, 1905a.

Map: LaRocque, 1966; Hershey and Schneider, 1964.

Table: Smith and others, 1964.

Basic Data: Bjorklund and Brown, 1957; Babcock and Bjorklund, 1956; Bjorklund, 1957; Schneider, 1962; Schneider and Hershey,

- 1961; McConaghy and Colburn, 1965; Weist, 1964b.
- Bedrock elevation contour map: Owens, 1967b.
- Cross sections
- Quaternary System: Bibby, 1969; Duke and Longenbaugh, 1966; McComas, 1966; Smith and others, 1964.
- Tertiary System: Duke and Longenbaugh, 1966.
- Cretaceous System: Bibby, 1969; Duke and Longenbaugh, 1966.
- Consumptive use: McComas, 1966.
- Deep wells: Darton, 1902, 1905b.
- Depth to bedrock, table: Schneider, 1962.
- Depth to water
- Map: Brookman, 1968, 1969; Duke, 1967a; Duke and Skinner, 1965; Duke and Sundaram, 1966; LaRocque, 1966; Skinner, 1963b; Skinner and Thomas, 1964.
- Table: Babcock and Bjorklund, 1956; Bjorklund, 1957; Bjorklund and Brown, 1957; McConaghy and Colburn, 1964; Smith and others, 1964; Weist, 1964b.
- Electrical conductivity map: White, N. F., and Sunada, 1966.
- Hydrologic properties of aquifers
- Aquifer tests: Smith and others, 1964; Wilson, 1965.
- Tables: Bjorklund and Brown, 1957; Owens, 1967b; Smith and others, 1964; Weist, 1965b.
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