PURPOSE AND SCOPE OF COMMITTEE "SURVEYING, MAPPING AND CLASSIFICATION OF SOILS"

Scope

In general all phases of the soil survey work such as: Interpretation of airphotos, geologic maps or agronomic soil maps for soils information, the preparation of engineering soil maps, or the preparation of material inventories on an area basis, the methods of subsurface exploration — seismic or resistivity, the evaluation of soil survey data for the design, construction or maintenance of highways and the methods of correlation of soil data with pavement performance are considered within the scope of this project committee activity.

Purpose

(a) To assist in the development of a program of engineering papers and publications to emphasize the need for soil survey information in highway planning and construction, and to point out practical applications of the use of soil surveys in highway engineering work.

(b) To assist in the development of new methods for making soil surveys or for the identification and classification of soils from laboratory or field data.

(c) To review and recommend for approval any technical papers on soils under the jurisdiction of this committee which may be submitted for presentation and publication by the Highway Research Board. Also to furnish the Highway Research Board with recommendations on engineering soil problems that may be assigned for review and comment.

Geologic Survey Mapping in the United States

● THE committee indicated in previous bulletins 28, 46 and 65 the status and usefulness of geological maps for highway engineering purposes. The following information was furnished by the U. S. Geological Survey at the request of the committee to supplement information previously published on this subject. A new 1953 edition of a geologic map showing the status of geological mapping at scales of 1-in. to the mile or greater has just been released by the U. S. Geological Survey and copies can be obtained upon application to the U. S. Geological Survey, Washington 25, D. C. This map is similar to the one shown in Figure 1 of HRB Bulletin 65. It was received too late for inclusion in this bulletin.

Current Investigations of the U. S. G. S. Involving Geologic Mapping

The Geological Survey prepares geologic maps for several purposes in more than one of its divisions. The Geologic Division conducts systematic surveys and research and investigations related to mineral resources and to engineering geologic problems. Many of the geologic maps prepared by this division are highly detailed and restricted to mineralized areas. The Water Resources Division, through its Ground Water Branch, makes systematic and special geologic investigations in connection with the occurrence of ground water. Many of the studies have special application to highway construction and planning. Geologic maps, cross-sections, and texts are published.

The following list of investigations include only areal geologic mapping which it is felt may be useful to engineers engaged in construction work in the areas concerned.

Any inquiries about geologists in charge of the Geologic Division projects (listed in Table 1) should be addressed to the Director, U. S. Geological Survey, Washington 25, D. C., since these men are in the field for only a part of the year and

investigations frequently involve considerable laboratory and office research not generally performed in the field area. Water Resources Division projects, Table 2, are directed from permanent offices in the states where both original and published records are available. Inquiry may be made through the field offices or through the Director, as indicated above.

Index to Geological Mapping in the United States

The map indexes, which are available for 43 states (see list below), show the areas of published geological maps in each state and give the source of publication of each map. The available state index maps and the price of each are listed in the following table. Most indexes are on a scale of 1: 750,000, others are 1: 500,000 or 1: 1,000,000. Each index shows the outline of each area mapped and the approximate scales are shown by patterns in four colors. Bibliographies are printed with the indexes giving the sources and the dates of publication and the names of the geologists responsible for the work.

Copies of these index maps may be obtained from the Chief of Distribution, U. S. Geological Survey, Washington 25, D. C. or for the convenience of persons living west of the Mississippi River, indexes for states in that part of the country may be ordered from the Distribution Section, U. S. Geological Survey, Denver Federal Center, Denver, Colorado. Copies may be consulted in many libraries.

Available Geologic Map Indexes

Alabama	$ .40	Nebraska	$ .35
Arizona	.35	Nevada	.30
Arkansas	.65	N. H. — Vt.	.50
California	1.00	New Jersey	.40
Colorado	.70	New Mexico	.70
Florida	.60	New York	.60
Georgia	.35	North Carolina	.50
Idaho	.25	North Dakota	.40
*Illinois		Ohio	.25
Indiana	.45	Oklahoma	.60
Iowa	.35	Oregon	.25
Kansas	.30	Pennsylvania	.60
Kentucky	.50	South Carolina	.25
Louisiana	.50	South Dakota	.30
Maine	.25	Tennessee	.40
Md. — Del.	.40	Texas	.60
Mass. — R. I. — Conn.	.40	Utah	.25
Michigan	.60	Virginia	.40
Minnesota	.60	Washington	.35
Mississippi	.25	West Virginia	.25
Missouri	.30	Wisconsin	.60
Montana	.35	Wyoming	.50

*not yet published

Most of the states have geological surveys or similar state agencies that can furnish information on the availability of geological maps and work in progress within their states. The names of state geologists and the location of their offices are shown in Table 3.

TABLE 1

CURRENT INVESTIGATIONS INVOLVING GEOLOGIC MAPPING, GEOLOGIC DIVISION, 1:62,500 OR LARGER SCALES

Project	Project Chief
ALABAMA	
Survey of the belt of Cretaceous rocks in Central Alabama	L. C. Conant
ARIZONA	
Jerome Copper District, Yavapai County	M. H. Krieger
Globe-Miami Copper District, Gila County	N. P. Peterson
Little Dragoons Copper District, Cochise County	J. R. Cooper
Carrizo Mountains, Northeastern Arizona	J. D. Strobell, Jr.
Investigations of uranium in pre-Morrison formations	J. F. Smith, Jr.
Upper Gila River Basin	R. B. Morrison
San Carlos Indian Reservation	A. F. Shride
Asbestos Studies, Gila County	A. F. Shride
Fort McDowell Quadrangle	R. C. Townsend
ARKANSAS	
North Arkansas Oil and Gas, Geologic Mapping and Studies of Resources, Newton-Searcy Counties	J. C. Maher
Waldron Quadrangle	J. A. Reinemund
Magnet Cove columbium	R. L. Erickson
South Arkansas oil and gas studies	B. R. Haley
CALIFORNIA	
San Andreas Rift Zone, Los Angeles and San Bernardino Counties	Levi F. Noble
Areas in Mojave Desert Region, San Bernardino and Kern Counties	W. C. Smith
San Francisco Area	M. G. Bonilla
Bishop Tungsten District, Inyo County	P. C. Bateman
Shasta Copper District, Shasta County	J. P. Albers
Cerro Gordo Quadrangle, Inyo County	W. C. Smith
Papa Pegmatite district, San Diego and Riverside Counties	R. H. Jahns
Ubehebe Peak Quadrangle, Inyo County	J. F. McAllister
Darwin Area, Inyo County	W. E. Hall
Northwest Santa Ana Mountains, Orange County	J. E. Schoellhammer
Study of Miocene and Pliocene deposits of the Santa Clara Valley, Ventura and Los Angeles Counties	E. L. Winterer
Los Angeles and vicinity	John McGill
Eastern Sierra tungsten belt, Mono and Alpine Counties	P. C. Bateman
Sierra Foothills mineral belt	L. D. Clark
COLORADO	
Detailed Geologic mapping along Upper South Platte (North fork), Park, Jefferson and Douglas Counties	D. J. Varnes
Kokomo (Tenmile) mining District, Summit, Lake and Eagle Co.	A. H. Koschmann
Central San Juan Mountains	W. S. Burbank
Holy Cross Quadrangle, Eagle, Lake, Summit, and Pitkin Counties	O. L. Tweto
Trinidad Coal Field, Southeastern Colorado	G. H. Wood, Jr.
Glenwood Springs Quadrangle, Garfield County	N. W. Bass
Animas River Coal Field, LaPlate, Archuleta and Montezuma Co.	H. Barnes
Uinta Basin Oil Shale-White River Area, Garfield and Rio Blanco Co.	C. R. Lewis
City geology, Denver	M. R. Mudge

Table 1 (continued)

Project	Project Chief
COLORADO	
Northwest extension, Animas River area	A. A. Wanek
Northern coal field of the Denver Basin	F. D. Spencer
Clay deposits in the foothills of the Front Range	K. M. Waage
Areas in the Colorado Plateau, uranium inves.	R. P. Fischer
Central City-Georgetown area	P. K. Sims
Carbondale coal field	J. R. Donnell
Wet Mountains thorium district	Q. D. Singewald
Northgate fluorspar studies	T. A. Steven
IDAHO	
Blackbird-Noble No. 3 Quadrangle, Lemhi County	J. S. Vhay
Phosphate districts in Bear Lake, Caribou, Bannock, and Brigham Counties	V. E. McKelvey
Coeur d'Alene mining district, Shoshone County	S. W. Hobbs
Orofino Area, Clearwater County	A. Hietanen-Makela
Central Idaho monazite	J. H. Mackin
IOWA	
City geology, Omaha and vicinity	R. D. Miller
Lead-zinc investigations	A. F. Agnew
KANSAS	
County by county survey of construction materials in northern and central Kansas	F. E. Byrne
Geologic mapping of Pennsylvanian rocks in Kansas beginning in Wilson County	H. C. Wagner
Tri-state lead-zinc investigations	E. T. McKnight
KENTUCKY	
Geology of the coal-bearing region in eastern Kentucky	J. W. Huddle
MAINE	
Poland Quadrangle, Androscoggin, Cumberland, and Oxford Co.	J. B. Hanley
MASSACHUSETTS	
Mapping of Quadrangles in Massachusetts in cooperation with Massachusetts Department of Public Works	L. W. Currier
MICHIGAN	
Michigan Copper District, Houghton, Keweenaw, and Ontonagon Co,	W. S. White
Iron Deposits, Iron and Dickinson Counties	H. L. James
MINNESOTA	
Cuyuna Range, Crow Wing County	R. G. Schmidt
MISSOURI	
Tri-state lead-zinc investigations	E. T. McKnight

Table 1 (continued)

Project	Project Chief
MONTANA	
Medicine Lake Area, Sheridan, Roosevelt, and Daniel Counties	I. J. Witkind
Stratigraphy of Belt Series in and near western Montana	C. P. Ross
Big Sandy Creek, South half Chouteau and Blaine Counties	R. M. Lindvall
Cat Creek region	W. D. Johnson, Jr.
Three Forks quadrangle	G. D. Robinson
Great Falls-Sun River Area	R. W. Lemke
Stillwater Chromite Deposits, Stillwater and Sweetgrass Counties	E. D. Jackson
Phosphate deposits of Southwest Montana, Beaverhead and Madison Counties	V. E. McKelvey
Boulder Batholith, Broadwater and Jefferson Counties	R. A. Weeks
Mission Canyon Project, Park County	P. W. Richards
Girard Coal Field, Richland County	G. E. Prichard
Bearpaw Mountains, Hill, Choteau, and Blaine Counties	W. T. Pecora
Wolf Point area, Sheridan and Roosevelt Counties	R. B. Colton
Little Rocky Mountains	M. M. Knechtel
Browning area, western Montana	G. M. Richmond
NEBRASKA	
Yankton Area, Cedar and Knox Counties	H. E. Simpson
Geology and Construction Materials of Quadrangles in the Republican River Valley	E. Dobrovolny
Quadrangles along the Lower Platte River, Valley and Howard Counties	E. Dobrovolny
City geology, Omaha and vicinity	R. D. Miller
NEVADA	
Carson Sink Basin, Churchill County	R. B. Morrison
Mojave Desert Region, Clark County, (Scale 1:120,000)	W. C. Smith
Geology along Colorado River, Clarke County	C. R. Longwell
Hilltop and Crescent Valley Quadrangles, Lander County	James Gilluly
Gabbs Magnesite District, Nye County	C. J. Vitaliano
Antler Peak Quadrangle, Lander and Humboldt Counties	R. J. Roberts
Steamboat Springs District, Washoe County	D. E. White
Eureka Mining District, Eureka County	T. B. Nolan
Osgood Mountains Quadrangle	P. E. Hotz
NEW JERSEY	
Study of Magnetite Deposits, New Jersey Highlands	A. F. Buddington
NEW MEXICO	
Potash resources in Eddy and Lea Counties	C. L. Jones
Silver City Mining Region Grant County	W. R. Jones
Sangre de Cristo Mountain area, Santa Fe, San Miguel, Taos, Mora, and Colfax Counties	C. B. Read
Chaco River Coal Field, San Juan County	E. C. Beaumont
Carrizo Mountains, Northwestern New Mexico	J. D. Strobell, Jr.
Tohatchi Area, McKinley County	J. D. Sears
Animas River Coal Field, San Juan County	H. Barnes
Valles Mountains Region, Sandoval County	C. S. Ross
Investigations of uranium in pre-Morrison formations	J. F. Smith, Jr.
Upper Gila River Basin	R. B. Morrison
Southeastern New Mexico stratigraphy	P. T. Hayes
Guadalupita area, Mora County	C. M. Tschanz

Table 1 (continued)

Project	Project Chief
NEW YORK	
Gouverneur Talc district, St. Lawrence County	A. E. J. Engel
Magnetite Deposits, St. Lawrence and Clinton Counties	A. F. Buddington
NORTH CAROLINA	
Great Smoky Mountains National Park, Swain, Haywood and Jackson Counties	P. B. King
Spruce Pine Pegmatite District, Avery, Mitchell, and Yancey Counties	J. L. Kulp
Hamme Tungsten District	J. M. Parker, 3d
NORTH DAKOTA	
Pleistocene Geology, Western North Dakota	A. D. Howard
Missouri-Souris Project, Northwest N. D.	R. W. Lemke
Knife River Area, Mercer County	W. E. Benson
OHIO	
Geology and coal resources of Belmont County	H. L. Berryhill, Jr.
OKLAHOMA	
Tri-state lead-zinc district	E. T. McKnight
OREGON	
Portland Industrial Area	D. E. Trimble
John Day Chromite District, Grant County	T. P. Thayer
Galico Quadrangle, Josephine County	F. G. Wells
Coast Range	E. M. Baldwin
PENNSYLVANIA	
Magnetite Deposits, York and Lancaster Counties	A. F. Buddington
Selected coal mining areas in Pennsylvania Anthracite Region	G. H. Wood
Southern Anthracite field	G. H. Wood
RHODE ISLAND	
Northeastern Rhode Island	A. W. Quinn
SOUTH DAKOTA	
Pleistocene Geology, Eastern half of S. D.	R. F. Flint
Pierre Area, Stanley and Hughes Counties	D. R. Crandell
Yankton Area, Yankton and Bonhomme Counties	H. E. Simpson
Southern Black Hille Pegmatite District, Custer and Pennington Counties	L. R. Page
TENNESSEE	
Great Smoky Mountains National Park, Sevier and Cocke Counties	P. B. King
Knoxville and vicinity	J. M. Cattermole
TEXAS	
Areas in Hudspeth County	J. F. Smith, Jr.
Oil and Gas Investigations, North central Texas	D. H. Eargle

Table 1 (continued)

Project	Project Chief
UTAH	
LaSal Mountains, San Juan County	C. B. Hunt
Southern half Utah Valley, Utah County	H. J. Bissell
Marysvale Alunite District	E. Callaghan
East Tintic Mining District, Juab County	T. S. Lovering
Iron Springs District, Iron County	J. H. Mackin
Bear River Phosphate District, Rich County	V. E. McKelvey
Alta Quadrangle, Salt Lake, Wasatch, and Uintah County	M. D. Crittenden
Strawberry Quadrangle	A. A. Baker
Uinta Basin Oil Shale Region, White River Area, Uintah County	W. B. Cashion
Cedar City SE Quadrangle	P. Averitt
Areas in the Colorado Plateau, uranium invest.	R. P. Fischer
Investigations of uranium in pre-Morrison formations	J. F. Smith, Jr.
Upper Green River Valley	W. R. Hansen
Red House Cliffs, San Juan County	T. E. Mullens
Southern Colob Plateau coal field	W. B. Cashion
Elk Ridge area, San Juan County	R. Q. Lewis
San Rafael Swell, Emery County	I. J. Witkind
Capital Reef area, Wayne and Garfield Counties	J. F. Smith, Jr.
White Canyon area, San Juan County	A. F. Trites
VERMONT	
Vermont Talc	W. M. Cady
VIRGINIA	
Hamme Tungsten District	J. M. Parker, 3d
Fairfax Quadrangle, Fairfax and Loudoun Counties	C. Milton
Richmond coal basin	E. I. Rich
Potomac Basin erosion studies	J. T. Hack
NE Lee County and Western Scott County	R. L. Miller
WASHINGTON	
Portland Industrial Area, Clark County	D. E. Trimble
Landslide Studies, Franklin D. Roosevelt Lake	F. O. Jones
Lower Snake River Canyon, Franklin, Walla Walla, Columbia, Whitman, and Garfield Counties	H. H. Waldron
Pysht, Lake Crescent, Port Crescent and Port Angeles Quadrangle, Callam County	P. D. Snavely, Jr.
Toledo-Castle Rock Coal District, Cowlitz County	A. E. Roberts
Holden-Glacier Peak Quadrangle	F. W. Cater, Jr.
Puget Sound Basin	H. H. Waldron
Metaline district, Pend Orielle and Stevens Counties	M. G. Dings
Grays Harbor area, Grays Harbor and Pacific Counties	L. Hoover
WEST VIRGINIA	
Potomac Basin erosion studies	J. T. Hack
WISCONSIN	
Lead-Zinc Deposits in Grant, Lafayette, and Iowa Counties	A. F. Agnew
WYOMING	
Cokeville Area, Lincoln and Sublette County	W. W. Rubey

Table 1 (continued)

Project	Project Chief
WYOMING	
Iron Deposits in Laramie Range, Albany County	W. H. Newhouse
Bear River Phosphate Deposits, Lincoln and Uinta Counties	V. E. McKelvey
Clark Fork Area, Park County	W. G. Pierce
Crazy Women Creek Area, Johnson County	R. K. Hose
Beaver Divide area, Fremont County	F. B. Van Houten
Lenore area, Wind River Basin	J. F. Murphy
DuNoir area, Wind River Basin	W. R. Keefer
Muskrat-Dutton Basin, Wind River Basin	J. L. Weitz
Miller Hill area	J. D. Vine
Grand Teton National Park	J. D. Love
Western Red Desert	G. N. Pipiringos
Powder River Basin uranium	D. F. Davidson
Shotgun Butte area, Wind River Basin	M. L. Troyer

TABLE 2

CURRENT INVESTIGATIONS INVOLVING GEOLOGIC MAPPING,
WATER RESOURCES DIVISION, GROUND WATER BRANCH

Project	Project Chief
ALABAMA	
Baldwin, Choctaw, Madison, Montgomery, Monroe, Randolph, Tuscaloosa, Wilcox Counties Mapping Scale 1:31680, Pub. Scale 1:125,000	P. E. LaMoreaux
ALASKA	
Anchorage area, Knik and Anchorage Quadrangles Mapping Scale 1:48,000	D. J. Cederstrom
Matanuska Valley (Agricultural area) Mapping Scale 1:50,000	F. W. Trainer
Parts of Sutton, Matanuska, Eklutna, Houston Quadrangles and Knik County Mapping Scale 1:50,000	
ARIZONA	
Douglas Basin, Cochise County Mapping Scale 1:3168, Pub. Scale 1:125,000	
Papago Indian Reservation, Pinal County	
Papago Indian Reservation, Pima County	
Lower San Pedro Valley, Pinal County and parts of Pima, Cochise and Graham Cos.	
San Carlos Indian Reservation, Graham County	
Navajo County Irregation District Mapping Scale 1:30,000, Pub. Scale 1:62,500	
Mogollon Rim area, Coconino, Navajo and Apache Counties	L. C. Halpenny
Navajo Reservation - Coconino - Navajo - Apache Cos.; Includes areas in San Juan County Utah, and McKinley and San Juan Cos., New Mexico Mapping Scale 1:31680, Pub. Scale 1:125,000	J. W. Harshbarger
ARKANSAS	
Reconnaissance of Little River County and parts of Sevier, Howard, Pike, Clark, Hot Springs, Quachito Nevada, Hempstead and Miller Counties Scale 1-inch = 3-miles	Roger C. Baker
CALIFORNIA	
Eureka - Fortuna Area Mapping Scale 1:62,500	

Table 2 (Continued)

Project	Project Chief
CALIFORNIA	
Napa Valley - Napa County No Scale indicated	
Sacramento Valley Mapping Scale 1:62,500	
Coastal Area, Torrance - Santa Monica Mapping Scale 1:24,000	
Coastal Area, Orange County Mapping Scale 1:31,680	
San Rosa and Petalumn Valley Mapping Scale 1:31,600 Pub. Scale 1:62,500	J. F. Poland
Inyokern, Edwards and Twenty-Nine Palms Mapping Scale 1:50,000	G. F. Worts, Jr.
Camp Pendelton - San Diego County Scale 1:24,000	
San Bernadino Basin, San Bernadino County Scale 1:31,680	A. A. Garrett
Foothill and Valley - flow area of Solano and Southern Yolo Counties Mapping Scale 1:24,000	H. G. Thomasson
COLORADO	
Baca County, eastern Huerfano County, South Platte Valley, Grand Junction Area Mapping Scale - All over 2-inch = 1-mile, Pub. Scale 1-inch = 1-mile	T. G. McLaughlin
CONNECTICUT	
Hartford, Holland and Middlesex Counties	R. V. Cushman
FLORIDA	
Parts of Lee, Glades and Hendry Cos.	N. D. Hoy
GEORGIA	
Coastal Plain Area (Subsurface) Scale 1-inch = 10-miles	S. M. Herrick
Sumner, Dooly, Pulaski, Lee, Crisp and Wilcox Counties Scale 1-inch = 2-miles	G. H. Chase
HAWAII	
Island of Kavai Scale 1:62,500	Dan A. Davis
IDAHO	
Parts of Jefferson, Booneville, Bingham, Butte Counties. (Lost and Little Lost River Area) Scale 1:12,000	R. L. Nace
INDIANA	
Tippecanoe, Vermillion, Parke, Montgomery, Putman, Vigo, Clay, Owen, Sullivan, Greene, Adams, Wayne, Fayette, Union, Franklin, Ripley, Ohio Jefferson, Switzerland, Dearborn Counties No Scale indicated	Claude M. Roberts
IOWA	
Appanoose, Dallas, Guthrie, Lucas, Madison, Marion, Monroe, Polk, Story and Warren Counties. Pub. Scale 1:125,000	
Subsurface geologic mapping on a state-wide basis; current work in several different areas	H. Hershey
KANSAS	
Gove, Jewell, Pratt, Rawlins, Reno Counties Mapping Scale 1-inch = 1-mile. Pub. Scale 1-inch = 2-miles	
Douglas, Elk, Osage Counties Mapping Scale 2½ -inch = 1-mile. Pub. Scale 1-inch = 1-mile	V. C. Fishel

Table 2 (Continued)

Project	Project Chief
KENTUCKY	
Parts of Allen, Campbell, Floyd, Grove, Johnston, Kenton and McCracken Cos. Mapping Scale 1:16,000 Pub. Scale 1:24,000	
Part of Henderson County Mapping Scale 1:16,000 Pub. Scale 1-inch = 1-mile	M. I. Rorabaugh
LOUISIANA	
Areas bordering the Calcasieu and Vermilion Rivers, and Boyou Cocodrie Mapping Scale 1 or 2-inches = 1-mile	R. R. Myers
MARYLAND	
Charles, Calvert, Montgomery, Anne Arundel, parts of Howard, Baltimore and Hartford (all coastal plains)	R. R. Bennett
Caroline, Dorchester, Kent, Somerset, Talbot, Wicomico and Worchester Cos. Mapping Scale 1:62,500 and 1:31,680	W. C. Rasmussen
MICHIGAN	
Small areas in Houghton and Marquette Counties Scale 5-inches = 4-miles	W. T. Stuart
Bay, Midland, Gratiot, Saginaw, Genesse, and Oakland Counties, Parts of Shiawassee and Tuscola Counties Scale 1-inch = 6-miles	John G. Ferris
MINNESOTA	
Small area in Redwood County Mapping Scale 1:20,000	R. Schneider
MONTANA	
Lower Marias Valley, Liberty, Hill, Chouteau Cos. Airphoto Scale 4-inches = 1-mile	
Lewis and Clark, Jefferson Counties Airphotos 1-inch = 4000 ft. Pub. Scale 2-inches = 1-mile	
Helena, Townsend, and Gallatin Valleys Scale 1-inch = 4,000 ft.	
Dillon Valley, Crow Agency area, (Yellowstone R.) Scale 1-inch = 1-mile	
Buffalo Rapids (Yellowstone R.) Scale 1-inch = 400 ft.	
Lower Yellowstone (Glendive - Sidney) Airphoto 2-inches = 1-mile	E. A. Swenson
NEBRASKA	
Dutch Flats area Mapping Scale 1-inch = 2-miles	
Lodgeporte Creek Mapping Scale 1-inch = 1-mile	
Pumpkin Creek area Mapping Scale 1-inch = 1-mile	H. M. Babcock
NEVADA	
Buena Vista Valley, Cresent Valley, Spring Valley, Dixie Valley, Antelope Valley, Warm Springs Valley, Truckee Meadows areas Scale not indicated	O. J. Loeltz
NEW JERSEY	
Newark Area Scale not indicated	
Subsurface of Coastal Plains Scale 1-inch = 8-miles	
Bedrock contours - Greater Philadelphia and parts of Burlington, Camden and Gloucester Counties Scale 2-inches = 1-mile	

Table 2 (Continued)

Project	Project Chief
Salem County (Subsurface) Scale 1-inch = 1-mile	H. C. Barksdale
NEW MEXICO	
Sante Fe County Scale 1:63360	
Los Alamos area Scale 1:63,360	
Pueblo Laguna Indian Res. (Velencia Co.) Scale 1:126,780	
Part of Torrance County Scale 1:63,360	
Boswell Basin Scale - - - - - - -	
El Paso area - parts of El Pasco Co. Texas, and Dona Ana and Otero Counties Scale not indicated	C. S. Conover
NEW YORK	
Dutchess - Putman - Bronx, Westchester - Nassau Counties Mapping Scale 1:62,500 Pub. Scale 1:125,000	
Rockland, Delaware Counties Scale not indicated	J. E. Upson
NORTH CAROLINA	
Alexander, Catawa, Davie, Iredell, Rowan, Davidson Counties Scale 1-inch = 2-miles	H. E. LeGrand
NORTH DAKOTA	
Oakes, Buxton, Aneta, Wimbledon, Zeeland Streeter, Minnewaukan, Michigan, Lakota, Devils Lake, Rolla - St. John - Mylo, Stanley Mapping Scale 1:20,000	P. D. Akin
Sargent County Scale 1-inch = 1-mile	G. A. LaRocque
OHIO	
Lucas, Licking, Fairfield, Trumbull, Portage, Ross, Columbiana Counties	S. E. Norris
OKLAHOMA	
Beaver, Beckham, Cleveland, Grady, McCurtain Counties Mapping Scale 3.2 inches = 1-mile Pub. Scale 1-inch = 1-mile	
Parts of Alfalfa, Major, Garfield and Kingfisher Counties Mapping Scale 1-inch = 1-mile	Stuart L. Schoff
OREGON	
Lake County and Walla Walla area Scale 1:125,000	
Yonna - Swan Lake Valleys, Rogue River Valley, Tualatin Valley Scale 1:62,500	R. C. Newcomb
PENNSYLVANIA	
Lawrence County Scale 1:62,500	Paul H. Jones
SOUTH CAROLINA	
Aiken, and Edgefield Counties Mapping Scale 1-inch = 1-mile	
Marlboro and Chesterfield Counties Mapping Scale 1-inch = 1-mile Pub. Scale ½-inch = 1-mile	George E. Siple
SOUTH DAKOTA	
Oahe unit - James R. Valley, James R. Basin, Brown and Marshall Counties Scale not indicated	G. A. LaRocque

Table 2 (Continued)

Project	Project Chief
TENNESSEE	
Mississippi Basin Tertiary and Cretaceous outcrop areas, also Summer, Macon, Jackson, Smith, Wilson, Davidson, Williamson, Rutherford, DeKalb, Cannon, Maury, Marshall, Bedford, Giles, Lincoln, Anderson, and Bradley Counties. Mapping Scales - contour maps when available 1:2400 and 1:62,500, otherwise aerial photographs 1:2000	E. M. Cushing
TEXAS	
Galveston, Harris, Bandera, Bexar, Medina, and Zavala counties, Wilbarger, Comal Counties. Mapping Scale 1-inch = 1-mile	
High Plains of Texas - Cross sections extending through Sherman, Randall, Moore, Potter, Swisher, Hale, Lubbock, Lynn and North Dawson counties. No Scale indicated	
Geologic cross-sections showing subsurface geology in Ector, Dimit, Lamb, Lynn, western Maverick counties. Mapping Scale 1-inch = 1-mile	
Kinney County - surface geology No Scale indicated.	
El Paso area - Parts of El Paso County Texas, and Donna Ana and Otero County New Mexico No Scale indicated	R. W. Sundstrom
UTAH	
Southern Juab Valley, Milford District and Ogden Valley Scale 2-inches = 1-mile	H. A. Waite
See Navajo Reservation Project, Arizona	
VIRGINIA	
Coastal Plain Counties North of James River	A. Sinnott
WASHINGTON	
Part of King County east of Lake Washington, Part of Lewis County	
Ahtanum Valley (Yakima County) Scale 1:20,000	
Kitsap and Clark Counties	
Tacoma area (Pierce County)	
Spokane Valley (Spokane County) Scale 1:62,500	
Yelm area (Thurston and Pierce Counties) Scale 1:34,600	M. S. Mundorff
WISCONSIN	
Portage County Scale 1-inch = 1-mile	A. H. Harder
WYOMING	
Cheyenne area - Scale 1-inch = 2-miles	
Egbert Pine Bluffs - Carpenter area Mapping Scale 1-inch = 1-mile	
Gillette, Glendo - Wendover, Horse Creek, La Prele, Laramic Plains, Pass Creek Flats, Wheatland Flat, New Castle areas Mapping Scale All over 1-inch = 1-mile	
Goshen, Platte counties Mapping Scale 1-inch = 1-mile	
Kaycee and Ranchester areas Highway Planning map base	
Barthel area (Soil Moisture demonstration study) Mapping Scale 1-inch = 400 ft.	
North Platte irrigation project - Goshen county Mapping Scale 1-inch = 1-mile	H. M. Babcock
Paintrock Project, Bighorn county Mapping Scale 1-inch = 1-mile	
Heart Mountain Unit, Park Co. Mapping Scale 2-inches = 1-mile	
Riverton Project, Freemont county. Mapping Scale 2-inches = 1-mile	F. A. Swenson

TABLE 3

TABULATION OF STATE GEOLOGISTS BY STATES

	State Geologist and Address
Alabama	Dr. Walter B. Jones, State Geologist, Geological Survey of Alabama, University
Arizona	Dr. T. G. Chapman, Director, Arizona Bureau of Mines, University of Arizona, Tucson
Arkansas	Mr. Norman F. Williams, Director, Division of Geology, Arkansas Resources and Development Commission, State Capitol, Little Rock
California	Dr. Olaf P. Jenkins, Chief, Division of Mines, Department of Natural Resources, Ferry Building, San Francisco 11
Colorado	Mr. Walter E. Scott, Jr., Vice Chairman, Geological Survey Board, State Museum Building, Denver
Connecticut	Dr. Edward L. Troxell, Director, Connecticut Geological and Natural History Survey, Trinity College, Hartford 6
Delaware	Mr. Johan J. Groot, State Geologist, Delaware Geological Survey, University of Delaware, Newark
Florida	Dr. Herman Gunter, Director, Florida Geological Survey, P. O. Drawer 631, Tallahassee
Georgia	Capt. Garland Peyton, Director, Department of Mines, Mining and Geology, State Division of Conservation, 425 State Capitol, Atlanta 3
Idaho	Mr. A. W. Fahrenwald, Director, Idaho Bureau of Mines and Geology, University of Idaho, Moscow
Illinois	Dr. M. M. Leighton, Chief, State Geological Survey Division, 121 Natural Resources Building, University of Illinois Campus, Urbana
Indiana	Dr. Charles F. Deiss, State Geologist, Indiana Department of Conservation, Indiana University, Bloomington
Iowa	Dr. H. Garland Hershey, Director and State Geologist, Iowa Geological Survey, Iowa City
Kansas	Dr. John C. Frye, Executive Director, State Geological Survey, The University of Kansas, Lawrence
	Dr. Raymond C. Moore, State Geologist and Director of Research, State Geological Survey, The University of Kansas, Lawrence
Kentucky	Mr. Daniel J. Jones, State Geologist, Department of Geology, Kentucky Geological Survey, University of Kentucky, Lexington
Louisiana	Mr. Leo W. Hough, State Geologist, Louisiana Geological Survey, Department of Conservation, Geology Bldg., University Station, Baton Rouge 3
Maine	Dr. Joseph M. Trefethen, State Geologist, Maine Geological Survey, University of Maine, Orono
Maryland	Dr. Joseph T. Singewald, Jr., Director, Department of Geology, Mines and Water Resources, Johns Hopkins University, Baltimore 18
Michigan	Mr. William L. Daoust, Acting State Geologist, Geological Survey Division, State Department of Conservation, Lansing 13
Minnesota	Dr. G. M. Schwartz, Director, Minnesota Geological Survey, University of Minnesota, Minneapolis 14

Table 3 (Continued)

Mississippi	Dr. W. C. Morse, Director, Mississippi Geological Survey, University of Mississippi, University
Missouri	Dr. Edward L. Clark, State Geologist, Division of Geological Survey and Water Resources, Buehler Building, Rolla
Montana	Dr. J. R. Van Pelt, Director, State Bureau of Mines and Geology, Butte
Nebraska	Dr. G. E. Condra, State Geologist, Conservation and Survey Division, The University of Nebraska, Lincoln 8
Nevada	Mr. Vernon E. Scheid, Director, Nevada Bureau of Mines, University of Nevada, Reno
New Hampshire	Mr. T. R. Meyers, Geologist, New Hampshire State Planning and Development Commission, Mineral Resources Committee, Durham
New Jersey	Mr. Meredith E. Johnson, State Geologist, Bureau of Geology and Topography, Department of Conservation and Economic Development, 520 East State Street, Trenton 7
New Mexico	Dr. Eugene Callaghan, Director, New Mexico Bureau of Mines and Mineral Resources, Socorro
New York	Dr. John G. Groughton, State Geologist, State Geological and Natural History Surveys, State Education Building, University of the State of New York, Albany 1
North Carolina	Dr. Jasper L. Stuckey, State Geologist, Division of Mineral Resources, Department of Conservation and Development, State Office Building, Raleigh
North Dakota	Dr. Wilson M. Laird, State Geologist, North Dakota Geological Survey, University of North Dakota, Grand Forks
Ohio	Mr. John H. Melvin, State Geologist, Division of Geological Survey, Orton Hall, Ohio State University, Columbus 10
Oklahoma	Dr. W. E. Ham, Acting Director, Oklahoma Geological Survey, Norman
Oregon	Mr. F. W. Libbey, Director, State Department of Geology and Mineral Industries, 1069 State Office Building, Portland 5
Pennsylvania	Mr. Ralph W. Stone, Director, Bureau of Topographic and Geologic Survey, Department of Internal Affairs, Harrisburg
Rhode Island	Dr. Alonzo W. Quinn, Chairman, Mineral Resources Committee, Rhode Island Port and Industrial Development Commission, Providence 3
South Carolina	Dr. Laurence L. Smith, State Geologist, Department of Geology, Mineralogy and Geography, University of South Carolina, Columbia 19
South Dakota	Dr. E. P. Rothrock, State Geologist, State Geological Survey, State University, Lock Drawer 351, Vermilion
Tennessee	Mr. W. D. Hardeman, State Geologist, Division of Geology, Department of Conservation, State Office Building, Nashville 3
Texas	Dr. John T. Lonsdale, Director, Bureau of Economic Geology, The University of Texas, University Station, Box B, Austin 12
Utah	Mr. Arthur L. Crawford, Director, Utah Geological and Mineralogical Survey, College of Mines and Mineral Industries, University of Utah, Salt Lake City 2

Table 3 (Continued)

Vermont	Mr. Charles G. Doll, State Geologist, State of Vermont Development Commission, East Hall, University of Vermont, Burlington
Virginia	Mr. William M. McGill, State Geologist, Virginia Geological Survey, Box 1428, University Station, Charlottesville
Washington	Mr. Sheldon L. Glover, Supervisor, Division of Mines and Geology, Department of Conservation and Development, Room 406, Transportation Building, Olympia
West Virginia	Dr. Paul H. Price, State Geologist, West Virginia Geological and Economic Survey, P. O. Box 879, Morgantown
Wisconsin	Mr. George F. Hanson, State Geologist, Geological and Natural History Survey, Science Hall, The University of Wisconsin, Madison 6
Wyoming	Dr. H. D. Thomas, State Geologist, The Geological Survey of Wyoming, University of Wyoming, Laramie