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**U.S. GEOLOGICAL SURVEY LIBRARY  
FIELD RECORDS COLLECTION  
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**MELVILLE RHODES MUDGE**  
(1921 - 2009)

NOTES, CORRESPONDENCE, PAPERS

1947 - 1971

(4.1 linear ft. and 25 map folders)

Melville R. Mudge was born in Eskridge, Kansas, in 1921. He received B.A. and M.S. degrees from Kansas State University. After serving in World War II, he joined the staff of the USGS, where he remained until his retirement in 1980. He was involved in many geologic projects for the agency, with a primary focus on the geology of northern Montana.

INVENTORY

By

Carol A. Edwards and Clay M. Martin  
U.S. Geological Survey Field Records Collection  
MS 914, Box 25046, Federal Center  
Denver, CO 80225-0046  
October 2004/June 2010

Location of Field Notebooks: CS-9: 11, 12

**STRATIGRAPHY AND PALEONTOLOGY OF THE UPPERMOST  
PENNSYLVANIAN AND LOWER MOST PERMIAN ROCKS IN KANSAS.  
1947-1954.**

<u>Item Number</u>	<u>Description</u>
NO-01611	M.R. Mudge. Field notebook 1 with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 48-74, sample numbers 1-9, and fossil numbers F 1-6, 100. Locations include Brown, Chautauqua, Cowley, Elk, Greenwood, Jackson, Lynn, Pottawatomie, and Wabaunsee Counties, Kansas, and Nemaha County, Nebraska. 1951.
NO-01612	M.R. Mudge. Field notebook 2 with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections 1-5, P 115, and 138-163 (1-47), and fossil numbers F 7-52, and 101-102. Locations include Morris and Wabaunsee Counties, Kansas. No date.
NO-01613	M.R. Mudge. Field notebook 3 with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 164-204 (48-103), fossil numbers F 53-75, 94-99, and sample numbers 44-50. All locations in Wabaunsee County, Kansas. No date.
NO-01614	M.R. Mudge. Field notebook 4 with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 1-47, 228 (104-126, 159), fossil numbers 76, 89-90, and sample numbers 30-43. Locations include Brown, Geary, Jackson, Lyon, Riley, Shawnee, and Wabaunsee Counties, Kansas. No date.
NO-01615	M.R. Mudge. Field notebook 5 with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 205-210 (137-152) and fossil numbers F 77-85, 91-93, and 104-106. All locations in Wabaunsee County, Kansas. No date.
NO-01616	M.R. Mudge. Field notebook 6 with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including notes on channel sands, measured sections P 92-114, and sample numbers 1, 4, and 6-29. Locations include Pottawatomie, Shawnee, and Wabaunsee Counties, Kansas. No date.
NO-01617	M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 75-91 (153-183) and fossil number F 151. All locations in Wabaunsee County, Kansas. No date.
NO-01618	M.R. Mudge. Field notebook with geologic notes and sketches related to Upper

Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 116-123 (184-194), fossil number 152, and pebble count data. All locations in Wabaunsee County, Kansas. No date.

- NO-01619 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured section 195. All locations in Wabaunsee County, Kansas. 1948.
- NO-01620 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 242-243, 261-263, 265-274, 276-281, and 283-291 (196-205, 209-210). Locations include Brown, Chase, Chautauqua, Cowley, Elk, Jackson, Lyon, Morris, Pottawatomie, Shawnee, and Wabaunsee Counties, Kansas. No date.
- NO-01621 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 275 (205-208). Locations include Lyon and Wabaunsee Counties, Kansas. No date.
- NO-01622 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas. Locations include Lyon, Pottawatomie, Riley, Shawnee, and Wabaunsee Counties, Kansas. No date.
- NO-01623 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas. Locations include Brown, Pottawatomie, Riley, Shawnee, and Wabaunsee Counties, Kansas. No date.
- No-01624 M.R. Mudge and R.H. Burton. Field notebook pages with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including materials data sample numbers 1-92 and 94-194. All locations in Wabaunsee County, Kansas. 1948.
- NO-01625 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured section data. All locations in Morris County, Kansas. No date.
- NO-01626 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured section data. All locations in Morris County, Kansas. No date.
- NO-01627 M.R. Mudge, H.V. Beck, C.W. Matthews, C.P. Walters, and J.D. Wells. Field notebook pages with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including materials data and sample numbers 1-73. All locations in Morris County, Kansas. 1947-1949.
- NO-01628 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper

- Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 124-127. All locations in Nemaha County, Kansas. No date.
- NO-01629 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 122, 129-137, 264, and 307. All locations in Jackson, Nemaha, and Pottawatomie Counties, Kansas. No date.
- NO-01630 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 128, 229-233, and 244-260. Locations include Pottawatomie and Shawnee Counties, Kansas. No date.
- NO-01631 M.R. Mudge. Field notebook 1 with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 227 and 234-241. All locations in Riley County, Kansas. No date.
- NO-01632 M.R. Mudge. Field notebook 2 with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 211-226. All locations in Riley County, Kansas. No date.
- NO-01633 M.R. Mudge. Field notebook 3 with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections. Locations include Marshall and Riley Counties, Kansas. No date.
- NO-01634 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections. All locations in Riley County, Kansas. No date.
- NO-01635 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 309-310. All locations in Riley County, Kansas. No date.
- NO-01636 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 288k, 318-325, 327-3532, and 356. Locations include Brown, Chautauqua, Cowley, Elk, Greenwood, Lyon, and Pottawatomie Counties, Kansas. 1953-1954.
- NO-01637 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 292-304. Locations include Elk, Greenwood, and Lyons Counties, Kansas. No date.
- NO-01638. M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 236 and 357. Locations include Elk and Jackson Counties, Kansas. 1954.

- NO-01639 M.R. Mudge. Field notebook with geologic notes and sketches related to Upper Pennsylvanian and Lower Permian studies in Kansas, including measured sections P 305-306 and 353-355. Locations include Brown County, Kansas, and Nemaha and Richardson Counties, Nebraska. No date.
- NO-01640 Expandable envelope with materials related to Upper Pennsylvanian and Lower Permian studies in Kansas, including materials performance record sheets, sample report sheets and logs, and pebble count sheets and logs. Locations include Nemaha, Riley, and Wabaunsee Counties, Kansas. Information collected by M.R. Mudge, R.H. Burton, R.E. Skoog, C.P. Walters, and others. No date.
- NO-01641 Expandable envelope with materials related to Upper Pennsylvanian and Lower Permian studies in Kansas, including reports on materials tests, road material and structural stone service records, and sample data sheets. All locations in Morris County, Kansas. Information collected by M.R. Mudge, C.W. Matthews, C.P. Walters, and J.D. Wells. No date.
- NO-05652 Expandable envelope with four folders of materials related to Upper Pennsylvanian and Lower Permian studies in Kansas:
- Folder 1. Field notebook entitled "Notes on Pleistocene, Kansas".
  - Folder 2. Miscellaneous measured sections, geologic sketch maps, index maps, diagrams, and aerial photos related to the study.
  - Folder 3. Miscellaneous sample analysis forms and data, measured sections, and other materials related to the study.
  - Folder 4. Four groups of measured stratigraphic sections.
- NO-05653 Expandable envelope with nine groups of stratigraphic sections related to Upper Pennsylvanian and Lower Permian studies in Kansas.
- MA-02973 Map folder with 70 items:
- Six versions of an index map of Kansas, showing studies of geology and construction materials by county.
  - Linen-mounted map of Morris County, Kansas, with geologic annotations.
  - Eight sheets of diagrams and draft text for an explanation of a geologic map of Morris County, Kansas.
  - Five versions of a stratigraphic section diagram for Morris County, Kansas.
  - Linen-mounted map of Riley County, Kansas, with geologic annotations.
  - Two copies of a map showing limestone outcrops in Riley County, Kansas.
  - Eighteen versions of a stratigraphic section diagram for Riley County, Kansas.
  - Two versions of a diagram showing temperature ranges at Manhattan, Kansas.
  - Two versions of a diagram showing temperature ranges at Eskridge, Kansas.
  - Diagram entitled "Table 1. Summary of Material Tests".
  - Diagram showing estimated depth of depositional environments for Upper Pennsylvanian and Permian rocks in Kansas, based on fossil assemblages.
  - Map of Wabaunsee County, Kansas, with geologic annotations.

- Five versions of a diagram entitled "Correlated sections of Wreford Limestone, Wabaunsee County, Kansas", and one accompanying index map of Wabaunsee County.
- Two versions of a block diagram entitled "Plate 18A. Pre-Kansan drainage and topography of Wabaunsee and southern Pottawatomie Counties, Kansas".
- Block diagram entitled "Wabaunsee County drainage and topography during the maximum advance of the Kansan ice sheet".
- Two versions of a map entitled "State and county road network showing road metal and its source as of June 1949, Wabaunsee County, Kansas".
- Three versions of a map entitled "Map showing limestone outcrop of use in engineering construction, Wabaunsee County, Kansas".
- Two versions of a diagram entitled "Subdivision of the Aspinwall limestone member of the Onaga shale in Wabaunsee County, Kansas".
- Six sheets of draft text, layout information, and notes related to the explanation for a geologic map of Wabaunsee County, Kansas.

- MA-00386 Map folder with five copies of a geologic map of Wabaunsee County, Kansas, each in six parts, for a total of 30 items.
- MA-00387 Map folder with 25 correlation and structure diagrams used as bases for plates and figures in USGS publications related to stratigraphy and paleontology of Pennsylvanian and Permian rocks in Kansas.
- MA-00388 Map folder with 14 draft copies of a geologic map (with explanation) of Morris County, Kansas.
- MA-00389 Map folder with 10 items:
- Map of Brown, Chase, Chautauqua, Cowley, Elk, Greenwood, Jackson, Lyon, Morris, Nemaha, Pottawatomie, Riley, Shawnee, and Wabaunsee Counties, Kansas, showing locations of measured stratigraphic sections.
  - Nine draft copies of geologic maps covering north, central, and southern Riley County, Kansas.
- MA-02974 Map folder with 31 items:
- Index map of eastern Kansas (Fig. 1).
  - Sheet of sketches of landforms.
  - Two diagrams entitled "Geologic units studied, including data on cyclic sedimentation" (Fig. 2).
  - Two correlation diagrams for the Falls City Limestone (Fig. 9) and the Hughes Creek Shale Member (Fig. 17).
  - Diagram showing the Red Eagle cyclothem, with zoning of fossils (Fig. 31).
  - Diagram showing the placement of Carboniferous-Permian boundary in the northern mid-continent (Fig. 36).
  - Correlation diagram showing the Foraker Limestone-Beattie Limestone sequence in Kansas (Plate 5).
  - Three versions of a map showing pre-Kansan and recent drainage systems in

Wabaunsee, Riley, and Pottawatomie Counties, Kansas (Fig. 2).

- Index map of Kansas (Fig. 1).
- Two diagrams showing stratigraphic units in Kansas, with channel cutting superimposed (Fig. 2).
- Three versions of a map showing locations of Upper Pennsylvanian and Lower Permian channels in Kansas (Fig. 3).
- Table entitled "Composition of some of the sandstones in the Upper Pennsylvanian and Lower Permian rocks in Kansas" (Table I).
- Explanation diagram for a geologic map of Morris County, Kansas.
- Diagram showing occurrences of economic minerals in various formations and channel fills in Kansas.
- Diagram showing stream bank exposures in Pottawatomie County, Kansas.
- Diagram showing a Kansan ice lobe in the vicinity of Manhattan, Kansas.
- Diagram entitled "Plan view superimposed on long profiles of 5 stages in the development of the Smoky Hill and Kansas Rivers from early Pleistocene time to the present".
- Two versions of a diagram entitled "Composition of channel fill typical of Pony Creek channel in Pottawatomie County, and Pony Creek, Towle, and Caneyville channels in Wabaunsee County".
- Four versions of a diagram showing reclassification of strata in the northern mid-continent.
- Map showing pre-Kansan and recent drainage systems for the Kansas River west of Wabaunsee County, Kansas.

MA-00681 Map folder with 18 items:

- Negative-image copy of a map in 6 parts showing construction materials and geology of Wabaunsee County, Kansas, labeled Plate 1.
- Map showing limestone outcrops in Riley County, Kansas, labeled Figure 6.
- Three copies, each, of a set of maps of northern, central, and southern Riley County, Kansas, labeled Plate 1.
- Diagram showing correlated sections of Upper Pennsylvanian and Lower Permian rocks, labeled Figure 1.
- Diagram showing generalized geologic section of units studied, labeled Figure 2.

MA-00682 Map folder with 19 items:

- Table showing distribution of invertebrate fossils, labeled Table 1.
- Table showing range of brachiopods, pelecypods, and gastropods, labeled Table 6.
- Two diagrams correlating the Dover Limestone and the Wamego Shale, labeled Plate 1.
- Three diagrams showing the Wabaunsee Group, labeled Plate 2.
- Diagram showing the Admire Group, labeled Plate 4.
- Three diagrams correlating the Foraker and the Beattie Limestone, labeled Plate 5.
- Index map for the eastern half of Kansas, labeled Figure 1.

- Two geologic section diagrams showing the Wabaunsee and Admire Groups.
- Chart showing USGS policy on geologic names.
- Chart showing occurrence of fossils in the Council Grove and Chase Groups.
- Highway and transportation map for Wabaunsee County, Kansas.
- Illustration depicting a Towle channel.
- Geologic section diagram with Americus base.

Published as: Kansas Academy of Science. Transactions, Vol. 58. 1955.

Published as: American Association of Petroleum Geologists Bulletin, Vol. 40, No. 4. 1956.

Published as: Kansas Geological Society. Guidebook, 21st field conference. 1957.

Published as: U.S. Geological Survey. Open-file report 80. 1949.

Published as: U.S. Geological Survey. Open-file report 1079. 1951.

Published as: U.S. Geological Survey. Bulletin 1060-A. 1958.

Published as: U.S. Geological Survey. Bulletin 1060-D. 1959.

Published as: U.S. Geological Survey. Bulletin 1068. 1959.

Published as: U.S. Geological Survey. Professional paper 323. 1962.

## **GEOLOGY AND CONSTRUCTION MATERIAL RESOURCES OF NEMAHA COUNTY, KANSAS. 1949-1951.**

- NO-00715 M.R. Mudge. Field notebook with geologic notes, sample data, and miscellaneous notes related to field investigations in Nemaha County, Kansas. No date.
- NO-00716 M.R. Mudge. Field notebook with geologic notes, sample data, and miscellaneous notes related to field investigations in Nemaha County, Kansas. Most of the notebook is subdivided by geologic formation. No date.
- NO-00717 Expandable envelope with 56 aerial photographs of Nemaha County, Kansas, some with geologic annotations.
- NO-00718 Expandable envelope with 76 aerial photographs of Nemaha County, Kansas, some with geologic annotations.
- NO-00719 Expandable envelope with 85 aerial photographs of Nemaha County, Kansas, some with geologic annotations.
- NO-00720 Expandable envelope with 83 aerial photographs of Nemaha County, Kansas,

some with geologic annotations.

NO-00721 Expandable envelope with 81 aerial photographs of Nemaha County, Kansas, some with geologic annotations.

NO-00722 Expandable envelope with 22 aerial photographs of Nemaha County, Kansas, some with geologic annotations.

MA-02975 Map folder with 31 items:

- Two versions of a diagram showing construction material resources in Nemaha County, Kansas.
- Six versions of a diagram showing temperature ranges at Centralia, Kansas.
- Index map of Kansas.
- Six sheets of formation descriptions used in the explanation for a geologic map of Nemaha County, Kansas.
- Six stratigraphic section diagrams for Nemaha County, Kansas.
- Six draft sections of a geologic map of Nemaha County, Kansas, labeled Panels 1 through 6.
- Four pages of miscellaneous notes related to the publication of illustrations in USGS Bulletin 1060-D.

MA-00145 Map folder with 21 items:

- Eighteen stratigraphic section diagrams (including five reverse-image prints) for Nemaha County, Kansas.
- Two explanation diagrams (one right-reading print, one reverse-image print) for a geologic map of Nemaha County, Kansas.
- One reverse-image print of a table entitled "Summary of Material Tests".

MA-00146 Map folder with seven items:

- Five draft versions of a map showing construction materials and geology in Nemaha County, Kansas.
- Stratigraphic section diagram for Nemaha County, Kansas.
- Road map of Nemaha County, Kansas, with geologic annotations.

MA-00147 Map folder with five draft versions of a map showing construction materials and geology in Nemaha County, Kansas.

Published as: U.S. Geological Survey. Bulletin 1060-D. 1959.

## **GROUNDWATER MAPPING AT ROCKY FLATS, JEFFERSON COUNTY, COLORADO. CIRCA 1952.**

NO-11622 Envelope with a carbon copy of a 13-page unpublished report entitled "Geology

and ground water of the Rocky Flats area, Jefferson County, Colorado", by Melville R. Mudge and Richmond F. Brown, prepared as a special report for the Atomic Energy Commission. 1952.

- MA-02976 Map folder with 5 items:
- Three versions (two right-reading prints, one reverse-image print), of a map entitled "Figure 5. Map showing direction of movement of ground water and location of seeps and springs".
  - Two copies of an illustration with two figures entitled "Figure 2. Section along line A-A" and "Figure 3. Section along line B-B".

### **GEOLOGY OF THE BOB MARSHALL WILDERNESS AREA, NORTHWESTERN MONTANA. 1954-1966.**

- NO-08331 Six expandable envelopes with 35 folders of aerial photographs (some with geologic annotations) of the Bob Marshall Wilderness, Flathead, Lewis and Clark, Missoula, Pondera, Powell, and Teton Counties, Montana:
- Folder 1. Copy of inventory of aerial photographs in NO-08331 made by Carol Edwards in 2004.
  - Folder 2. GS-VBOO 3:57-61. 1966.
  - Folder 3. GS-VBOO 3:99-112. 1966. Hart Lake west to Mount Shields.
  - Folder 4. GS-VAJ 3:05-18. 1954. North of VAJ 7:12-22.
  - Folder 5. GS-VAJ 8:56-76 (2 copies of 65-76, 3 copies of 69). GS-VBOO 3:172-178. Dupuyer Creek - Hungry Horse Reservoir (overlaps from N. Fork Dupuyer Creek to Cox Creek). 1955, 1966.
  - Folder 6. North Fork Birch Creek - Hungry Horse Reservoir. GS-VAJ 3:59-76 (2 copies each, 63-65). 1954, 1966. Includes GS-VBOO (overlap) 3:143-147. Swift Reservoir - South Tributary Badger Creek. T. 29 N.
  - Folder 7. Twin Creek - South Fork Dupuyer Creek. GS-VAJ 3:138-156. (139 - 3 copies; 143 - 2 copies; 147-152 - 2 copies). GS-VBOO 3:196-194. Overlaps South Fork Dupuyer Creek to Middle Fork Flathead River. T. 27 N. 1954, 1966.
  - Folder 8. Birch Creek. VBOO 3:116-127. North of 3:128-139. 1966.
  - Folder 9. GS-VBOO 3:128-139. 1966.
  - Folder 10. North Badger Creek - Hungry Horse Reservoir. GS-VAJ 7:12-26 (12-22 - 2 copies each). 1955.
  - Folder 11. Swift Reservoir East. GS-VBOO 3:148-150. 1966.
  - Folder 12. Sheep Creek - Hungry Horse Reservoir. GS-VAJ 3:89-110 (97-102 - 2 copies each). GS-VBOO 3:159-164 (overlaps from Walling Reef to Badger Pass). 1954, 1966.
  - Folder 13. GS-VBOO 3:85-97; above 3:112-99. 1966.
  - Folder 14. GS-VBOO 3:65-78. T. 30 N., R. 9-11 W. 1966.
  - Folder 15. S.W. Glacier Park - Hungry Horse Reservoir. GS-VAQT 1:119-122. 1963.
  - Folder 16. Stanton Lake - Hungry Horse Reservoir. GS-VAQT 1:48-52. 1963.

- Folder 17. Middle Fork Flathead - Hungry Horse Reservoir. GS-VAJ 3:19-23. 1954.
- Folder 18. East Glacier Park. VBOO 3:38-43. 1966.
- Folder 19. GS-VBOO 3:31-36. 1966.
- Folder 20. Park Creek - Hungry Horse Reservoir. GS-VAQT 1:5-9. 1963.
- Folder 21. Red Eagle - Emery Creek. GS-VAQT 1:23-25. 1963.
- Folder 22. GS-VAQ 3:03-08. 1955.
- Folder 23. GS-VAQ 3:47-63. 1955.
- Folder 24. GS-VAQ 6:126-135. 1955.
- Folder 25. GS-VAQ 6:97-114 (100-103, Gibson Reservoir). 1955.
- Folder 26. GS-VAQ 6:74-91 (86-88 - Gibson Reservoir). 1955.
- Folder 27. Fl. 2. GS-VAQ 9:01-06, 08-10. on Fl. 3. 1955. "Extends N. only no. of Sun River. East of and Stereo. with 9:11 to 9:35."
- Folder 28. Fl. 3. GS-VAQ 9:11-16, 18-35. Overlaps 9:36-60 and 6:148-173. 1955.
- Folder 29. Fl. 6. GS-VAQ 9:36 to 9:60 on Fl. 3. Sun River. South to Ford Creek. 1955.
- Folder 30. Fl. 7. GS-VAQ 6:26-50 on Fl. 4. Mouth of Blackleaf Creek and Muddy Creek. 1955.
- Folder 31. Fl. 8. GS-VAQ 2:120 to 2:143. Between Fl. 4 and Fl. 5. 1955.
- Folder 32. Fl. 9. GS-VAQ 6:51-68 on Fl. 5. 1955.
- Folder 33. Fl. 10. GS-VAQ 2:144-166 on Fl. 5. 1955.
- Folder 34. Fl. 11. GS-VAQ 1:74-95. Between Fl. 6 and Fl. 7. 1955.
- Folder 35. Fl. 12. GS-VAQ 3:24-43. Between Fl. 7 and Fl. 8. 1955.

Published as: U.S. Geological Survey. Miscellaneous investigations map I-2181. 1991.

Published as: U.S. Geological Survey. Open-file report 84-566. 1984.

Published as: U.S. Geological Survey. Open-file report 77-350. 1977.

## **GEOLOGY OF THE SUN RIVER CANYON AREA, NORTHWESTERN MONTANA. 1956-1964.**

- NO-05641 M.R. Mudge. Field notebook 1 with geologic notes and sketches related to field investigations for the Sun River Project, Saypo 30' quadrangle, Lewis and Clark and Teton Counties, Montana. 1956, 1961, 1964.
- NO-05642 M.R. Mudge. Field notebook 2 with geologic notes, sketches, and measured sections related to field investigations for the Sun River Project, Saypo 30' quadrangle, Lewis and Clark and Teton Counties, Montana. 1956.
- NO-05643 M.R. Mudge. Field notebook 3 with measured sections and geologic notes and

sketches related to field investigations for the Sun River Project, Saypo 30' quadrangle, Lewis and Clark and Teton Counties, Montana. 1956.

- NO-05644 M.R. Mudge. Field notebook 4 with geologic notes and sketches related to field investigations for the Sun River Project, Saypo 30' quadrangle, Lewis and Clark and Teton Counties, Montana. 1956-1957.
- NO-05645 M.R. Mudge. Field notebook 5 with measured sections and geologic notes and sketches related to field investigations for the Sun River Project, Saypo 30' quadrangle, Lewis and Clark and Teton Counties, Montana. 1957.
- NO-05646 M.R. Mudge. Field notebook 6 with geologic notes and sketches related to field investigations for the Sun River Project, Saypo 30' quadrangle, Lewis and Clark and Teton Counties, Montana. 1959.
- NO-05647 M.R. Mudge. Field notebook 7 with measured sections and geologic notes and sketches related to field investigations for the Sun River Project, Saypo 30' quadrangle, Lewis and Clark and Teton Counties, Montana. 1959.
- NO-05648 M.R. Mudge. Field notebook 8 with geologic notes and sketches related to field investigations for the Sun River Project, Saypo 30' quadrangle, Lewis and Clark and Teton Counties, Montana. 1959.
- NO-05649 M.R. Mudge. Field notebook 9 with measured sections and geologic notes and sketches related to field investigations for the Sun River Canyon Project, Saypo 30' quadrangle, Lewis and Clark and Teton Counties, Montana. 1959.
- NO-05650 M.R. Mudge. Field notebook 10 with geologic notes and sketches related to field investigations for the Sun River Canyon Project, Saypo 30' quadrangle, Lewis and Clark and Teton Counties, Montana. 1962.
- NO-05651 M.R. Mudge. Field notebook 11 with geologic notes and sketches related to field investigations for the Sun River Canyon Project, Saypo 30' quadrangle, Lewis and Clark and Teton Counties, Montana. 1962.
- NO-05654 Expandable envelope with miscellaneous draft text pages, sample collection and analysis forms, and measured sections related to field investigations for the Sun River Canyon Project. 1958-1959.
- MA-00843 Map folder with 87 items:
- Thirteen sheets of diagrams and draft text related to stratigraphic section illustrations for the Sun River Canyon area.
  - Six structural contour maps for the Sawtooth Mountain area.
  - Six sheets of tables with sample analysis, temperature, and overburden thickness data for the Sun River Canyon area.
  - Three sheets of diagrams illustrating geologic structures of the Sun River

- Canyon area.
- Nineteen sheets of draft text and other materials related to an explanatory table for a geologic map of the Sun River Canyon area.
  - Forty sheets of draft illustrations related to the surface geology, structure, and historical geology of the Sun River Canyon area.
- MA-00844 Map folder with two aerial photo mosaic indexes and 81 enlarged aerial photos, many with geologic annotations, of the Sun River Canyon area. Aerial photo numbers are:
- GS-VAQ 2: 51-60, 84-93
  - GS-VAQ 3: 2-11, 47-56
  - GS-VAQ 6: 82-88, 89-90 (2 each), 91
  - GS-VAQ 6: 97-106, 134-142
  - GS-VAQ 9: 15-19, 20-21 (2 each), 22
- MA-00845 Map folder with 30 items:
- Eleven draft copies of figures and plates used in a 1965 article by M.R. Mudge in the GSA Bulletin (Vol. 76, No. 9).
  - Sixteen draft copies of figures and plates in a 1970 article by M.R. Mudge in the GSA Bulletin (Vol. 81, No. 2).
  - Three draft copies of figures used in a 1962 article by M.R. Mudge, W.J. Sando, and J.T. Dutro, Jr. in the AAPG Bulletin (Vol. 46, No. 11).
- MA-00846 Map folder with 22 sheets of draft versions of figures and plates used in USGS Bulletin 1252-E.
- MA-00847 Map folder with 27 sheets of draft version of figures and plates used in USGS Professional paper 663-A.
- MA-00848 Map folder with 42 sheets of draft versions of figures and plates used in USGS Professional Paper 663-B.
- MA-00849 Map folder with 50 items:
- Three unidentified plane table sheets on a drafting film base.
  - Eight plane table sheets on a drafting film base with a reproduction of a portion of the Glenn Creek 7.5' quadrangle, Montana.
  - Five plane table sheets on a drafting film base with a reproduction of a portion of the Arsenic Peak 7.5' quadrangle, Montana.
  - Nine plane table sheets on a drafting film base with a reproduction of a portion of the Castle Reef 7.5' quadrangle, Montana.
  - Ten plane table sheets on a drafting film base with a reproduction of a portion of the Patricks Basin 7.5' quadrangle, Montana.
  - Seven plane table sheets on a drafting film base with a reproduction of a portion of the Pretty Prairie 7.5' quadrangle, Montana
  - Eight plane table sheets on a drafting film base with a reproduction of a portion of the Saypo 30' quadrangle, Montana.

- MA-00850 Map folder with 16 items:
- Two copies, on drafting film, of the Arsenic Peak 7.5' quadrangle, Montana, with geologic annotations.
  - Two versions of a figure entitled "Some physiographic features and faults in the Sawtooth Ridge area".
  - Eleven copies (on paper and drafting film) of the Sawtooth Ridge 7.5' quadrangle, Montana, with geologic annotations.
  - Map entitled "Photogeology reconnaissance of the Sun River Pinedale glaciation".

- MA-00851 Map folder with 21 items:
- Twenty sheets of draft versions of figures and plates used in USGS publications related to the Sun River Canyon area, Montana.
  - Nine pages of text for an explanation of a geologic map of the Sun River Canyon area.

Published as: U.S. Geological Survey. Bulletin 1252-E. 1968.

Published as: U.S. Geological Survey. Bulletin 1385-B. 1974.

Published as: U.S. Geological Survey. Bulletin 1395-H. 1975.

Published as: U.S. Geological Survey. Professional paper 550-B. 1966.

Published as: U.S. Geological Survey. Professional paper 726-A. 1972.

Published as: U.S. Geological Survey. Geologic quadrangle map GQ 381. 1965.

Published as: U.S. Geological Survey. Geologic quadrangle map GQ 453. 1966.

Published as: U.S. Geological Survey. Geologic quadrangle map GQ 454. 1966.

Published as: U.S. Geological Survey. Geologic quadrangle map GQ 499. 1966.

Published as: U.S. Geological Survey. Geologic quadrangle map GQ 597. 1967.

Published as: U.S. Geological Survey. Geologic quadrangle map GQ 610. 1967.

Published as: U.S. Geological Survey. Geologic quadrangle map GQ 711. 1968.

Published as: U.S. Geological Survey. Open-file report 77-25. 1977.

Published as: U.S. Geological Survey. Open-file report 77-350. 1977.

Published as: U.S. Geological Survey. Open-file report 77-773. 1977.

Published as: U.S. Geological Survey. Open-file report 78-524. 1978.

Published as: U.S. Geological Survey. Open-file report 78-972. 1978.

Published as: U.S. Geological Survey. Open-file report 79-280. 1979.

Published as: U.S. Geological Survey. Open-file report 79-863. 1979.

Published as: U.S. Geological Survey. Open-file report 79-943. 1979.

**MINERAL RESOURCES OF THE SCAPEGOAT WILDERNESS,  
POWELL AND LEWIS AND CLARK COUNTIES, MONTANA.  
CIRCA 1971.**

MA-00842 Map folder with 26 field maps and preliminary maps for text illustration showing the Scapegoat Wilderness (also known at the time as the Lincoln Backcountry) study area, Montana, with annotations indicating geology and locations of stratigraphic sections, geochemical, and rock samples.

MA-00852 Map folder with 25 items:

- Thirteen draft copies of maps of the Scapegoat Wilderness, showing geology, sample locations, and sample analysis data.
- Three diagrams with histograms indicating sample analysis results for the Scapegoat Wilderness.
- Two tables with spectrographic analysis results for pan concentrate samples from the Scapegoat Wilderness.
- Five geologic cross section diagrams for the Scapegoat Wilderness.
- Copy of the Ovando 30' quadrangle, Montana, with geologic annotations.
- Copy of the Choteau 1x2-degree quadrangle, Montana, with annotations.

Published as: U.S. Geological Survey. Bulletin 1385-B. 1974.

**ENGINEERING GEOLOGY OF THE DULLES INTERNATIONAL  
AIRPORT, FAIRFAX AND LOUDOUN COUNTIES, VIRGINIA. NO  
DATE.**

MA-02977 Map folder with 16 items:

- Three versions of a map entitled "Plate 1. Preliminary geologic map of the Herndon quadrangle, Virginia".
- Explanation sheet to accompany preliminary geologic map of the Herndon quadrangle, Virginia.
- Two copies of a diagram with two cross sections showing subsurface geology

in the vicinity of Dulles International Airport.

- Two copies of a map entitled "Plate 3a. Washington airport: Topography- vicinity of east-west runway ".
- Two copies of a map entitled "Plate 5a. Washington airport: Topography- vicinity of north-south runways ".
- Two copies of a diagram entitled "Washington airport: Preliminary profile of runways".
- Table showing soil test data in the Fairfax quadrangle, Virginia.
- Table showing analysis of borings made in the Chantilly airport site.
- Table showing test data on construction materials in the vicinity of the Chantilly airport site.
- Diagram entitled "Plate 6. East-west cross section of the proposed stream diversion of Horsepen Run".