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**RICHARD ABNER SHEPPARD**  
(1930 - )

NOTES, CORRESPONDENCE, PAPERS

1955 - 2001

(5.3 linear ft. and 4 map folders)

Richard A. Sheppard was born in Lancaster, Pennsylvania, in 1930. He received a B.S. in geology from Franklin and Marshall College in 1956 and a Ph.D. from Johns Hopkins University in 1960. Sheppard joined the staff of the USGS in 1960 and remained with the agency until his retirement in 1997. His areas of research included the genesis of zeolites, chert, and fluorite in sedimentary rocks, the petrology of Cenozoic volcanic rocks, and the geology of the Cascade Range. Sheppard is a fellow of the Geological Society of America, the Mineralogical Society of America, and the Society of Economic Geologists. Among his professional honors is the Meritorious Service Award from the U.S. Department of the Interior.

INVENTORY

By

Carol A. Edwards  
U.S. Geological Survey Field Records Collection  
MS 914, Box 25046, Federal Center  
Denver, CO 80225-0046  
June 2003

Location of Field Notebooks: [CS 13-11, 12](#)

## ZEOLITES IN SEDIMENTARY DEPOSITS OF THE WESTERN UNITED STATES. 1955-2001.

<u>Item Number</u>	<u>Description</u>
NO-09235	<p>21 document boxes with 117 folders:</p> <ul style="list-style-type: none"> <li>- Folder 1. Iddingsite and olivine. 1960-1962. Draft of article published in American Journal of Science (1962); requests for reprints; correspondence with the publisher.</li> <li>- Folder 2. Field notes. 1984. Yucca Mountain, Nevada; Nevada Test Site. Lists of samples taken from drill cores USW-G1, USW-G2, UE25B-1H, USW-G4. Also, notes on various mineral deposits – Amargosa sepiolite, hectorite, whiting, Ewing pits.</li> <li>- Folder 3. Durkee, Baker County, Oregon. 1970-1974. Field notes; all pages have fire and/or water damage. Localities DO-1 through DO-29, D1-30 through D1-90, D2-91 through D2-104, D4-105, D4-106. Geologic and stratigraphic notes, notes on samples, measured sections, lists of photos taken.</li> <li>- Folder 4. Durkee, Baker County, Oregon. 72 black and white vertical aerial photographs, all dated September 1954. BBB-6N: 74-76, 104-109. BBN-7N: 62-70, 119-128. BBN-8N: 25-29, 62-73. BBN-12N: 141-148, 150-158. BBN –13N: 40-49.</li> <li>- Folder 5. Harney Lake area, Harney County, Oregon. 52 black and white vertical aerial photographs, several with annotations on the front, plus sheet with outline showing location and direction of flight lines. GS-VDBC-2:66-70. 8-23-72. GS-VDBC-1: 273-278, 293-301. 8-5-72. GS-VBNY 2: 26-34, 38-45, 60-68. 8-12-66. High altitude photographs: VVHU M23 AMS 109: 1837-1839, 2497-2499 all dated 1953.</li> <li>- Folder 6. Husum quadrangle, Washington. 1961-1963. Correspondence; analytical data; itinerary for trip to Oregon; data on samples. Correspondents include: Howard A. Powers, Donald C. Ross, Parke D. Snively, Jr., and Aaron C. Waters.</li> <li>- Folder 7. Reconnaissance of zeolite deposits, Mojave, California. 1964, 1983. Requests for reprints of article; correspondence with George Phair and George I. Smith; 2 maps.</li> <li>- Folder 8. Zeolite authigenesis of tuffs in Ricardo Formation, Kern County, California. 1964-1965. Requests for reprints; correspondence; comments by reviewers; list of samples; notes by A.J. Gude, 3d, the coauthor. Correspondents include George Phair and George I Smith.</li> <li>- Folder 9. Potash feldspar, Barstow Formation, San Bernardino County,</li> </ul>

- California. 1965-1966. Requests for reprints; correspondence with James J. Norton regarding this paper including review comments; press release.
- Folder 10. Chemical composition of diagenetic zeolites from tuffaceous rocks of the Mojave Desert and vicinity, California. 1964-1966. Requests for reprints; 2 typed drafts of article (1964); review comments by B.J. Skinner.
  - Folder 11. Silica-rich chabazite from the Barstow Formation, San Bernardino County, California. 1964-1970. Requests for reprints and samples; list of chabazite localities; x-ray defraction data – draft compilations; notes from miscellaneous publications.
  - Folder 12. Measured sections, Barstow Formation, San Bernardino County, California. 1967. Press release; draft copy with editing, of “Measured sections of the Barstow Formation, Mud Hills, San Bernardino County, California.”
  - Folder 13. Petrology of... andesite flow from Mount Adams, Washington 1955-1959, 1966-1968. Requests for reprints; correspondence; review comments by Lou Pavlides; analytical data for samples; bibliographic citations. Correspondents include Kenneth D. Hopkins and Aaron C. Waters.
  - Folder 14. Geology of the Simcoe Mountains Volcanic Area, Washington. 1961-1968. Correspondence pertaining mainly to the publication of this map by the State of Washington Department of Conservation, Division of Mines and Geology. The map is derived from Sheppard’s Ph.D. thesis. Correspondents include: Ronald K. Buder, Stanley E. Church, Clifford A. Hopson, Marshall T. Huntting,, and Aaron C. Waters.
  - Folder 15. Composition and genesis of analcime in the Barstow Formation, San Bernardino County, California. 1963-1969. Requests for reprints; analytical data pertaining to samples; information to use for presentation at Third Annual Conference, Clay Minerals Society, Pittsburgh, 1966; notes and diagrams; notes from publications; draft of article with comments and editing.
  - Folder 16. Provenance of igneous rocks in Cretaceous conglomerates in northwestern Montana. 1967-1968. Abstract for article by Sheppard and Melville R. Mudge; data on samples; analytical charts; correspondence.
  - Folder 17. Authigenic silicate minerals in tuffs of Pleistocene Lake Tecopa, Inyo County, California. 1965-1966. Draft text of presentation, list of slides with text; related correspondence.
  - Folder 18. Lake Tecopa, California. 1965-1970. Requests for reprints; abstract; comments from technical reviewers on “Distribution and genesis of authigenic silicate minerals in tuffs of Pleistocene Lake Tecopa, Inyo County, California” by Sheppard and A.J. Gude, 3d. Also, table showing “Mineralogy of Lake Tecopa Tuffs”; another table labeled “Mineralogy of Lake Tecopa Tuffs” but giving stratigraphic positions; list “Tecopa” with analytical data listed by Field Number; laboratory analysis results for water(?) samples; 2 postcards for Tecopa Hot springs; additional analytical data.
  - Folder 19. Lake Tecopa, California. 1964-1965. Handwritten analytical report on clays from Pleistocene Lake Tecopa; Lake Tecopa optical data; typed “Observations on Lake Tecopa” (2 sheet); lists of samples for 1964 and 1965; published articles with annotations; copy of sheet with measured sections.
  - Folder 20. Lake Tecopa, California. Pieces of 8 black and white vertical aerial

- photographs, with annotations; two topographic map pieces with annotations.
- Folder 21. Rhodesite from Trinity County, California. 1967-1969. Requests for reprints and samples, and related correspondence; draft text; comments by technical reviewers; x-ray defraction data; other analytical data; spectrographic charts.
  - Folder 22. Offretite and erionite. 1967-1972. Requests for reprints; draft text; comments by technical reviewers; analytical data; correspondence with colleagues on offretite and erionite. Correspondents include: J. Alan Gard, Claude Guillemin, Kazuo Harada, Richard L. Hay, Michael Fleischer, and Lloyd W. Staples.
  - Folder 23. Arizona zeolites. 1967-1968. The USGS was asked to prepare a report on the mineral and water resources of Arizona. Sheppard contributed a chapter, "Bedded Zeolites." Material includes correspondence, plus an outline and author assignments for geology and mineral resources chapters of the report. Correspondents include Lowell S. Hilpert and Stanton B. Keith.
  - Folder 24. Authigenic fluorite... Oregon. 1967-1970, 1978. Requests for reprints; analytical data; report on referred fossils; correspondence; spectrographic charts. Correspondents include George I. Smith and Ralph E. Van Alstine.
  - Folder 25. Diagenesis of tuffs in the Barstow Formation, Mud Hills, San Bernardino County, California. 1968-1969, 1973, 1981, 1992. Requests for reprints; small group of correspondence; analytical data; geologic sketch map of Mud Hills; part of Opal Mountain 15' quadrangle, California with annotations; seven pieces of black and white vertical aerial photographs with geologic annotations.
  - Folder 26. CIRCUS – Communications about Interest Research in other Centers of the USGS. 1969. Materials relating to presentations by scientists of the Branch of Light Metals and Industrial Minerals in Washington, D.C. Includes text of Sheppard's presentation, "Zeolitic Diagenesis of Tuffs in Lacustrine Deposits – with Examples from Southeastern California."
  - Folder 27. Oregon – Zeolites and Feldspar. 1967. Material regarding manuscripts on bedded potassium feldspar, and bedded zeolite, both by Sheppard and George W. Walker, prepared for the report, "Mineral and water resources of Oregon" published in 1969. Includes correspondence, and Walker's draft on authigenic feldspar and zeolites in Oregon. Correspondents include A.E. Weissenborn and George W. Walker.
  - Folder 28. Hydrous Sodium Silicate Minerals... California. 1969. Correspondence and abstract for this presentation at Geological Society of America meeting.
  - Folder 29. Phillipsite from the Pacific and Indian Oceans. 1968-1970. Requests for reprints of "Chemical composition and physical properties of phillipsite from the Pacific and Indian Oceans" by Sheppard et al. Also, correspondence; comments by technical reviewers; analytical data; text on "Sample Preparation." Correspondents include Edward D. Goldberg and John J. Griffin.
  - Folder 30. Chabazite from the John Day Formation, Grant County, Oregon.

- 1962, 1970. Materials include correspondence; notes and map from Richard V. Fisher; analytical data.
- Folder 31. Makatite, a new hydrous sodium silicate mineral from Lake Magadi, Kenya. 1967-1970. Requests for reprints; correspondence; comments of technical reviewers; analytical data. Correspondents include: Hans P. Eugster, Michael Fleischer, Richard L. Hay, Akira Kato, and James L. McAtee, Jr.
  - Folder 32. U.S. - Japan Cooperative Science Program – Zeolites. 1970-1971. Materials relating to the U.S. – Japan seminar on the Origin and Mineralogy of Sedimentary Zeolites in the Circum-Pacific Region, held July 19-21, 1971, in Japan. Materials include: correspondence; texts for 2 presentations by Sheppard; summary of presentation given by James R. Boles; itinerary and information on post-seminar field trip; proposal to the National Science Foundation for the Seminar; and, draft of report on the seminar by Frederick A. Mumpton.
  - Folder 33. Second International Conference on Molecular Sieve Zeolites, Sept. 8-11, 1970, Worcester, Massachusetts. 1965, 1969-1971. Includes: conference brochure; requests for reprints of Sheppard's presentation, "Zeolites in Sedimentary Deposits of the United States – A Review"; text of that presentation; correspondence concerning Sheppard's attendance at the Conference, and the publication of his paper; comments of technical reviewers; analytical data and maps.
  - Folder 34. Sodic harmotome in lacustrine Pliocene tuffs near Wikieup, Mohave County, Arizona. 1969-1971, 1990. Materials include: requests for reprints; correspondence; analytical data; photocopies from publications with annotations by Sheppard. Correspondents include: Petr Černý, Charles Milton, Maury Morgenstein, and John S. White, Jr.
  - Folder 35. Clinoptilolite of possible economic value in sedimentary deposits of the conterminous United States. 1970. Includes: request for copy of publication; correspondence concerning publications; information from Jim Vine (1970) and notes on conversation with Don Wyant, Elmer Santos, and Dave Lindsey; listing of occurrences including geographic location, brief description, and source of information.
  - Folder 36. Boron-bearing potassium feldspar of authigenic origin in closed-basin deposits. 1972-1976. Includes: requests for reprints; drafts of tables; analytical data.
  - Folder 37. Zeolites in sedimentary rocks. 1972-1974. Requests for reprints; correspondence; guidelines. Sheppard wrote the chapter "Zeolites in Sedimentary Rocks" for the Mineral Resource Appraisal Program, for the Phase I volume – Potential Mineral Resources (USGS, Professional Paper 820, 1973).
  - Folder 38. Zeolites – North Dakota. 1972-1973. The U.S. Geological Survey was asked to help prepare a report on the mineral and water resources of North Dakota. Sheppard contributed a chapter on "Zeolites in sedimentary rocks." Materials include: correspondence; copy of Sheppard's chapter;

outline and author assignments for geology and mineral resources section of the report.

- Folder 39. Inorganic chert in a Pliocene lacustrine deposit near Rome, Malheur County, Oregon. 1972-1973. Text by Sheppard and Arthur J. Gude, 3d of presentation given at Geological Society of America Cordilleran Section, Portland, Oregon, March 1973; abstract; related correspondence.
- Folder 40. Techniques for Evaluating Resources. 1972. Text of Sheppard's presentation, "Zeolite Resources in Vitroclastic Rocks" given at this workshop conference; notes; correspondents including details of the workshop conference held in March 1972.
- Folder 41. Metamorphic assemblages and the direction of flow of metamorphic fluids in four instances of serpentization. 1971-1974. Requests for reprints; correspondence; comments of technical reviewer.
- Folder 42. Silhydrite – a new mineral from Trinity County, California. 1970-1976. Requests for article reprints; correspondence; notes; analytical data. Correspondents include Michael Fleischer and Akira Kato.
- Folder 43. Boron in authigenic silicate minerals of closed-basin deposits. 1972. Abstract and text by Sheppard and Arthur J. Gude, 3d, presented at Rocky Mountain Section, Geological Society of America, Laramie, Wyoming, May 1971; related correspondence; one sheet of analytical data.
- Folder 44. Bedded zeolites in the United States – potential industrial minerals. 1971-1972. Draft texts and related correspondence for presentation by Sheppard at the American Association of Petroleum Geologists Annual Meeting, Denver, Colorado, April 1972.
- Folder 45. Big Sandy Formation near Wikieup, Mohave County, Arizona. 1968, 1971. Correspondence; report on referred fossils; draft stratigraphic column; material from publications related to this chapter by Sheppard and Gude published in USGS Bulletin 1354-C.
- Folder 46. Zeolites. 1971-1972. Correspondence related to the publication of a report on the seminar on "Occurrence and Mineralogy of Sedimentary Zeolites in the Circum-Pacific Region" held in July 1971 in Japan. The report was published in *Geotimes*.
- Folder 47. Zeolites and associated authigenic silicate minerals in tuffaceous rocks of the Big Sandy Formation, Mohave County, Arizona. 1 of 3. 1970-1971, 1973, 1975. Requests for copies of USGS Professional paper 830; correspondence related to the publication; analytical data for samples; data on measured sections; notes and printouts on heating experiment of clinoptilolite; notes on analytical data.
- Folder 48. Zeolites and associated authigenic silicate minerals.... 2 of 3. 1967-1970. Wikieup optical data; notes and analytical data; charts; analytical laboratory reports; report on referred fossils; correspondence regarding fossils in the Wikieup, Arizona deposits; page from *The Condor*, v. 45 (1943) with a notice of remains of a swan from the Miocene of Arizona.
- Folder 49. Zeolites and associated authigenic silicate minerals.... 3 of 3. no

- dates. Text from field trip guide for Stops 1, 2 and 3 and piece of map from Prescott 1:250,000 map showing locations; portions of 10 black and white vertical aerial photographs with annotations.
- Folder 50. Zeolites and zeolite ore from Union Carbide Corporation's EZ No. 225 placer mining claim, Graham County, Arizona. 1973-1974. 1 of 2. Materials relate to a report prepared at the request of the USGS Conservation Division for a mining contest hearing to be held in Denver on July 17-18, 1973, involving the issue of whether the zeolite deposit is leasable or locatable. Includes: correspondence; memoranda; analytical data; notes.
  - Folder 51. Zeolites and zeolite ore from Union Carbide Corporation's EZ No. 225 placer mining claim.... 2 of 2. 1970, 1972-1973. Correspondence; memoranda; analytical data; notes.
  - Folder 52. Zeolites – Big Sandy Formation, Arizona – Third International Conference on Molecular Sieves, 1973. 1972-1973. Includes: published text of Sheppard's presentation including questions asked; Conference Program and List of Participants; text of presentation; correspondence regarding Sheppard's attendance at and participation in this Conference.
  - Folder 53. Chert derived from magadiite in a lacustrine deposit near Rome, Malheur County, Oregon. 1971-1976. Requests for reprints; small group of correspondence; analytical data and charts; one black and white vertical aerial photographs (1971).
  - Folder 54. Natural zeolites: their properties, occurrences, and uses. 1971-1978, 1983. Requests for article reprints; comments of technical reviewer; correspondence with co-author Ronald A. Munson (US Bureau of Mines); one photographic print.
  - Folder 55. Zeolites article for Encyclopedia Britannica. 1969, 1972-1974. Galley proof of article, plus correspondence.
  - Folder 56. U.S. – Japan Cooperative Science Program – Zeolites. 1973-1974. Materials relating to the U.S. – Japan Seminar on the Origin and Mineralogy of Sedimentary Zeolites in the Circum-Pacific Region, held July 1-7, 1974, in California and Nevada. Includes: text of Sheppard's presentation, "Zeolites in Tuffaceous Rocks of Alkaline, Saline-Lake Deposits of the United States"; road logs for field trips at Lake Tecopa, California, and at Rainbow Basin, Mud Hills, California; report on Seminar to National Science Foundation by F.A. Mumpton; summary of papers presented; correspondence regarding Seminar arrangements and program; proposal to the National Science Foundation for the 1974 Seminar.
  - Folder 57. Levyne – Offretite intergrowth from basalt near Beech Creek, Grant County, Oregon. 1967, 1972-1976. Requests for article reprints; correspondence regarding the publication and regarding the minerals; photos of electron diffraction patterns; comments of technical reviewers; locality maps; analytical data and charts.
  - Folder 58. Geology and Food. 1974-1975. Geology and Food Program proposal for geologic studies in support of agricultural needs (1975); program for Geology and Food Conference held at USGS, Denver, January 22-24,

- 1975 and related material; text of presentation by Sheppard, “Potential role of natural zeolites in agriculture and animal husbandry.”
- Folder 59. Distribution of zeolites in Pliocene lacustrine rocks, Durkee Basin, Baker County, Oregon. 1974-1975. Abstract for presentation at Cordilleran Section, Geological Society of America meeting in March 1975, and miscellaneous related correspondence.
  - Folder 60. Zeolites in sedimentary deposits of the northwestern United States – potential industrial minerals. 1975-1985. Abstract and text of presentation at the Eleventh Forum on the Geology of Industrial Minerals, 1975, Kalispell, Montana, and related correspondence; notes; requests for reprints; Final Announcement and Program for the Forum.
  - Folder 61. Mineralogical Society of America – Short Course on Zeolites. No date. Includes: list of participants; course announcement; field trip guide; outline for petrographic microscope workshop; course outline; draft text of “Zeolites in Open Hydrologic Systems” by R.L. Hay and Sheppard, plus draft by Hay; text for “Occurrence of zeolites in sedimentary rocks” by Richard L. Hay; related correspondence.
  - Folder 62. Chabazite in siliceous tuffs of a Pliocene lacustrine deposit near Durkee, Baker County, Oregon. 1977. Draft texts of article by Arthur J. Gude, 3d and Sheppard; comments by technical reviewers.
  - Folder 63. Zeolites in saline, alkaline-lake deposits. 1976-1980. Draft text of article published in the Proceedings Volume for Zeolite '76 – An International Conference on Natural Zeolites, Tucson, Arizona, June 6-14, 1976. Authors are Ronald C. Surdham and Sheppard. Also, comments by technical reviewers, and requests for reprints.
  - Folder 64. Hydrothermal synthesis of clinoptilolite. 1976-1977. Draft text of paper by Sheppard, A.J. Gude, 3d and D.B. Hawkins, presented at the Zeolite '76 Conference in Tucson. There is also related correspondence, and a request for a reprint.
  - Folder 65. Bowie zeolite deposit, Cochise and Graham Counties, Arizona. 1976-1982. Text of article by Sheppard, Arthur J. Gude, 3d, and Gary M. Edson; list of slides of Bowie zeolite deposit; requests for reprints; 1-page report on fossil tracks at Union Carbide zeolite mine north of Bowie, Arizona.
  - Folder 66. Woolly erionite from the Reese River zeolite deposit, Lander County, Nevada. Abstract for presentation at the Fall Meeting of the Society of Mining Engineers of AIME, Tucson, 1979. Also, related correspondence, and analytical data.
  - Folder 67. Diagenetic fluorite in the Eastgate zeolite deposit, Churchill County, Nevada. 1967, 1974-1975, 1980. Correspondence relating to publication of USGS Open-file Report 80-506; original locality map for report; analytical data; charts; photocopies of field notes dated 1974, on Eastgate Erionite including sections; 3 pages from publications; report on referred fossils; parts of 2 vertical aerial photographs, with annotations.
  - Folder 68. Chemistry of zeolites and zeolitic tuffs from a Pliocene lacustrine

- deposit near Durkee, Baker County, Oregon. 1980. Correspondence; draft text of this USGS Open-file Report 80-1260; locality map; table of analytical data; other brief notes; diagrams. Arthur J. Gude, 3d was coauthor of the report.
- Folder 69. Woolly erionite from the Reese River zeolite deposit, Lander County, Nevada and its relationship to other erionites. 1975-1980. Correspondence; draft text; analytical data; photocopies of field notes (1975 and 1979); notes on photos taken. Arthur J. Gude, 3d was coauthor of the published article in *Clays and Clay Minerals*, v. 29, no. 5 (1981).
  - Folder 70. Zeolites from sedimentary rocks. 1981-1982. Requests for reprints of this introduction to a special issue of *Clays and Clay Minerals* (v. 29, no. 5, 1981); draft text; correspondence.
  - Folder 71. Pelletel and oolitic fluorite in a lacustrine zeolitic tuff near Buckhorn, Grant County, New Mexico. 1980-1981. Materials relate to a presentation given at Rocky Mountain Section, Geological Society of America, 34th Annual Meeting, Rapid City, South Dakota, April 16-17, 1981. Includes: draft and final copies of abstract; draft texts by Sheppard and Frederick A. Mumpton; correspondence.
  - Folder 72. Characterization of natural zeolite materials in agricultural research. 1982. Materials relate to a presentation given at Zeo-Agriculture '82: A Conference on the Use of Natural Zeolites in Agriculture and Aquaculture, held in Rochester, New York, June 1-4, 1982. Includes: conference materials; correspondence; draft and final text of abstract and presentation.
  - Folder 73. Magadi-type chert: a distinctive diagenetic variety from lacustrine deposits. 1981-1982. Materials relate to a presentation given at the USGS Workshop on Diagenesis, Golden, Colorado, March 16-18, 1982. Includes: Workshop program; draft and final copies of abstract and presentation; related correspondence. Arthur J. Gude, 3d was coauthor.
  - Folder 74. Harmotome in a basaltic, volcanoclastic sandstone from a lacustrine deposit near Kirkland Junction, Yavapai County, Arizona. 1981-1985. Includes: requests for reprints of article by Sheppard and Arthur J. Gude, 3d, published in *Clays and Clay Minerals*, v. 31, no. 1 (1983); draft and revised text; analytical data; photocopy of field notes (1981); notes by technical reviewer; correspondence.
  - Folder 75. Mineralogy, chemistry, gas adsorption and NH<sub>4</sub><sup>+</sup>-exchange capacity for selected zeolitic tuffs from the Western United States, 1980-1983. Materials relate to USGS Open-file Report, 82-969; Arthur J. Gude, 3d, was coauthor. Includes: requests for reprints; draft text for report; locality data for samples; analytical data; correspondence.
  - Folder 76. Zeolites in Tertiary tuffs along the Little Humboldt River, Humboldt and Elko Counties, Nevada. 1981-1983. Materials relate to this Open-file Report 83-458; Arthur J. Gude, 3d was coauthor. Includes: comments by technical reviewers; draft texts; 2 reports on referred fossils; photos of locality LHO-10; analytical data for samples; correspondence.
  - Folder 77. Zeo-Trip '83. Materials related to the guide for a field trip to zeolite deposits in Idaho, Nevada, and Oregon, in connection with the Sixth International Zeolite Conference held in Reno, Nevada in July 1983. 1981-

1985. Includes: correspondence; list of participants; notes of conversations with colleague; meeting information; maps; field trip itinerary.
- Folder 78. Fundamentals of Zeolite Science – Zeo-Agriculture – 1983. Letter requesting Sheppard write an introduction to a publication of papers, *Zeo-Agriculture: Use of Natural Zeolites in Agriculture and Aquaculture*, edited by Wilson G. Pond and Frederick A. Mumpton (Boulder: Westview Press, 1984); draft and final text.
  - Folder 79. Characterization of zeolitic materials in agricultural research. 1982-1995. Materials relate to Sheppard's article that was published in *Zeo-Agriculture: Use of Natural Zeolites in Agriculture and Aquaculture*. Includes: requests for reprints; correspondence; comments from technical reviewers; draft text; reprint of published article.
  - Folder 80. Sedimentary fluorite in a lacustrine zeolitic tuff of the Gila Conglomerate near Buckhorn, Grant County, New Mexico. 1975-1989. Materials relate to Sheppard's article in the *Journal of Sedimentary Petrology*, v. 54, no. 3 (1984). Includes: requests for reprints; comments by technical reviewers; draft text; analytical data; report on referred fossils; notes.
  - Folder 81. Zeolitic tuff in a lacustrine facies of the Gila Conglomerate near Buckhorn, Grant County, New Mexico. 1983. Correspondence; draft and final text of abstract for presentation at meeting of the Rocky Mountain Section, Geological Society of America, Durango, Colorado, May 1984. Arthur J. Gude, 3d was coauthor.
  - Folder 82. Diagenetic reaction of clinoptilolite to form mordenite in silicic vitric tuff from Yucca Mountain, Nevada Test Site. 1984-1985. Materials relate to Sheppard's presentation at the International Conference on the Occurrence, Properties, and Utilization of Natural Zeolites, Budapest, Hungary, August 1985. Arthur J. Gude, 3d was coauthor. Includes: correspondence; draft and/or final texts for abstract and presentation.
  - Folder 83. Magadi-type chert – a distinctive diagenetic variety from lacustrine deposits – Diagenesis Workshop (1982) paper. 1981-1989. Materials relate to paper by Sheppard and Arthur J. Gude, 3d, published in *USGS Bulletin 1578 (1986), Studies in Diagenesis*. Includes: requests for reprints; correspondence regarding publication of the workshop papers; materials concerning the Workshop; notes on samples and on photos of samples; 8 photomicrographs; analytical data.
  - Folder 84. Diagenetic magadi-type chert from lacustrine deposits of the United States. 1986. Abstract and text of presentation given at the Society of Economic Paleontologists and Mineralogists Third Annual Midyear Meeting, September 1986, Raleigh, North Carolina. Also, correspondence, and Call for Papers for the meeting.
  - Folder 85. Zeolitic diagenesis of tuffs in an Upper Miocene lacustrine deposit near Durkee, Baker County, Oregon. 1970-1972. Materials relate to paper by Sheppard and Gude published in *USGS Bulletin 1578*. Includes: photocopies of field notes by Gude?, 1970-1972; 2 maps; report on referred fossils; analytical data.
  - Folder 86. Mineralogy and genesis of the Buckhorn zeolite deposit, Grant

- County, New Mexico. 1986-1987. Includes: drafts of this article that was published in *Zeo-Trip '87: A Field Excursion to Selected Zeolite and Clay Deposits in Southwestern New Mexico and Eastern Arizona*; correspondence; reviewer's comments; analytical data with charts for various samples; 2 photomicrograph prints and 1 negative.
- Folder 87. Geology and mineralogy of the Bowie zeolite deposits, Graham and Cochise Counties, Arizona. 1986-1987. Ted H. Eyde and C.S. Venable Barclay were coauthors with Sheppard on the article published in *Zeo-Trip '87*. Includes: draft text by each of the authors; reviewer's comments; correspondence; analytical charts; photocopy of 4 photographs on one sheet labeled "First carload of zeolites mined in the United States June 1961" – source and photographer unknown.
  - Folder 88. Zeolitic tuff in a lacustrine facies of the Gila Conglomerate near Buckhorn, Grant County, New Mexico. 1974-1988. Materials relate to this text by Sheppard and Gude, published as USGS Bulletin 1763. Includes: memorandum (July 13, 1988) concerning errata sheet for publication; analytical data for samples; reports on referred fossils; chart with lithologic descriptions for samples; sample locality map; photocopies of field notes from 1974 and 1980.
  - Folder 89. Distribution, Characterization and Genesis of Mordenite in Miocene Silicic Tuffs at Yucca Mountain, Nye County, Nevada. 1983-1993. Materials relate to studies by Sheppard, Arthur J. Gude, 3d, and Joan J. Fitzpatrick published as USGS Bulletin 1777, that are part of the Nevada Nuclear Waste Storage Investigations (NNWSI) Project, managed by the Nevada Operations Office of the U.S. Dept. of Energy. Includes: requests for copies of Bulletin; correspondence, forms, procedures concerning Yucca Mountain Project – USGS Records Transmittal, Quality Assurance Records Management System, Reporting Contacts Related to NNWSI Activities; transmittal and approval of the manuscript. Also: correspondence concerning review of the manuscript; comments by technical reviewers; draft text of report with editing; analytical notes and data; lists of core samples taken from NTS Core Library; project-related correspondence.
  - Folder 90. Zeolitic alteration of lacustrine tuffs, western Snake River Plain, Idaho. 1988-1989. Materials relate to presentation and paper by Sheppard, prepared for the 8th International Zeolite Conference, Amsterdam, July 1989. Includes: request for reprint; text of presentation; abstract and text of paper to be published; correspondence; 1 page of brief notes.
  - Folder 91. Phillipsite from silicic tuffs in saline, alkaline-lake deposits. 1986-1993. Joan J. Fitzpatrick was coauthor with Sheppard on this article published in *Clays and Clay Minerals*, v. 37, no 3 (1989). Includes: requests for reprints; correspondence; original and revised manuscripts; comments of technical reviewers; analytical data and diagrams; notes.
  - Folder 92. U.S. Geological Survey research on agricultural industrial minerals in the United States – implications for exploration. 1990-1991. The Seventh Annual V.E. McKelvey Forum on Mineral and Energy Resources, Reno, 1991, included this multi-author session. Sheppard contributed a presentation

- on zeolites. Includes: draft and final text of presentation; draft and final text of session summary; correspondence; 1 page of notes.
- Folder 93. Industrial Minerals Deposit Models. 1988-1991. Sheppard contributed “Descriptive model of sedimentary zeolites: Deposit subtype: zeolites in tuffs of open hydrologic systems (Model 25ob) to USGS Open-file Report 91-11A. Includes correspondence; and several draft texts.
  - Folder 94. Zeolitic diagenesis of tuff in the Miocene Chalk Hills Formation, Western Snake River Plain, Idaho. 1981-1993. This study was published as USGS Bulletin 1663. Includes: requests for publication; analytical data for samples; report on referred fossils; notes including notes of conversations with colleagues; research proposal description for FY1985 by Sheppard, related to Zeolites in the Snake River Plain of Southwestern Idaho; table of x-ray data; lists of samples from which thin sections were made; sample and thin section data cards.
  - Folder 95. Association of length-slow moganite with evaporates. 1992. Sheppard was a coauthor with Peter J. Heaney and Jeffrey E. Post on this abstract and paper presented at The Geological Society of America Meeting, 1992, Cincinnati, Ohio. Includes: miscellaneous correspondence; several versions of abstract.
  - Folder 96. Authigenic illite in silicic tuffs of Pleistocene Lake Tecopa, California – A cautionary note for clay-mineral geothermometry. Sheppard was coauthor with Neil S. Fishman and Christine E. Turner of this abstract for a poster session at the 28th Annual Meeting of the Clay Minerals Society. 1991, Houston, Texas. Includes: versions of the abstract, and Preliminary Program for the Meeting.
  - Folder 97. Deuterium fractionation as water diffuses into silicic volcanic ash. 1988-1992. Sheppard was coauthor with Irving Friedman, Jim Gleason, and Arthur J. Gude, 3d on this paper that was published in Geophysical Monograph 78, Climate Change in Continental Isotopic Records (American Geophysical Union, 1993). Includes: correspondence; comments by technical reviewers; various versions of the text. There is also a copy of “Ancient climate from deuterium content of water in volcanic glass” by Friedman, Jim Gleason, and Augusta Warden, which appeared in the same volume.
  - Folder 98. ZeoTrip '93. 1991-1993. Materials relate to the field trip to selected zeolite and clay deposits in southeastern Oregon and southwestern Idaho, held in conjunction with the Zeolite '93 International Conference. Includes: correspondence concerning arrangements for the field trip; notes; correspondence; reviewer's comments; and text for articles on the Harney Lake zeolite deposit, and the Castle Creek zeolite deposit and the Ben-Jel bentonite deposit of the Chalk Hills Formation, that were published in the field trip guide.
  - Folder 99. Zeolites '93. Fourth International Conference, Boise, Idaho, June 1993. 1991-1994. Includes: brochure for the Conference; Conference Report of Zeolite '93 (the USGS provided financial support for the '93 Conference); correspondence concerning arrangements for the Conference
  - Folder 100. Zeolitic diagenesis of tuffs in Miocene lacustrine rocks near

- Harney Lake, Harney County, Oregon. 1990-1995. Materials relate to these studies published as USGS Bulletin 2108 (1994). Includes: correspondence; notes of conversations with colleagues; notes and analytical data and diagrams; outline for publication; text titled “Preliminary note on the zeolitic diagenesis of Upper Miocene tuffaceous rocks near Harney Lake, southeastern Oregon” (1990); lists of aerial photographs ordered; report on referred fossils; cards with data on samples/thin sections; list of thin sections; draft maps.
- Folder 101. Comparative study of water adsorption and air enrichment of selected sedimentary and synthetic zeolites. 1991-1993. Iliana Galabova was a coauthor with Sheppard. Includes: draft text; correspondence between Sheppard and Galabova; analytical data.
  - Folder 102. Diagenetic alteration of basaltic tephra in lacustrine deposits, southwestern Idaho and southeastern Oregon. 1994-1996. Materials related to studies published in USGS Open-file Report 96-697. Includes: comments by technical reviewers; first draft of text; analytical data, notes, charts, and diagrams; 5 enlarged photographs of thin sections (photocopies); notes.
  - Folder 103. Occurrences of erionite in sedimentary rocks of the western United States. 1996. Materials relate to studies published in USGS Open-file Report 96-018. Includes: correspondence; comments by technical reviewer; draft sections of report; data from Los Alamos National Laboratory on erionite at Yucca Mountain; notes of conversations; locality map.
  - Folder 104. Zeolites in Tertiary volcanoclastic rocks of the Mimbres Resource Area, southwestern New Mexico. 1993-1995. Materials related to Sheppard’s contribution to a mineral and energy resources study of BLM’s Mimbres Resource Area. Includes: correspondence; list of Mimbres Personnel; meeting agenda. The entire study was published as USGS Open-file Report 97-521.
  - Folder 105. British Columbia deposit models – Zeolites. 1993, 1999-2000. Correspondence; versions of text, “Zeolites in tuffs of saline, alkaline-lake deposits” by Sheppard and G.J. Simandl.
  - Folder 106. Formation of zeolites in open hydrologic systems. 1995-2001. Sheppard and R.L. Hay coauthored this chapter published in *Natural zeolites: Occurrence, Properties, Applications*, Bish and Ming, eds., *Reviews in Mineralogy and Geochemistry*, v. 45 (2001). Includes: review of this volume; copy of published chapter; drafts of text with editing; correspondence.
  - Folder 107. Occurrence of zeolites in sedimentary rocks: an overview. 1996, 1999-2000. R.L. Hay and Sheppard coauthored this chapter, also published in the *Natural Zeolites* volume (see file folder 106). Includes: versions of the text, some with editing; correspondence.
  - Folder 108. The crystal chemistry of zeolites. 1996-2000. E. Passaglia and Sheppard coauthored this chapter, also published in the *Natural Zeolites* volume (see file folder 106). Includes: correspondence; versions of text with editing; comments by technical reviewers.
  - Folder 109. Chemical data for zeolitic tuff from the western United States. 1982-1987. Requests for Analysis, and reports.
  - Folder 110. Western Snake River Plain, southwestern Idaho. 207 high altitude

black and white vertical aerial photographs, plus two sheets showing direction and layout of flight lines.

HAP-81-52: 20-25. 1981.

HAP-81-54: 2-5. 1981.

HAP-81-70: 53-57, 70-73, 84-91, 93-98, 103-107. 1981.

HAP-83-78: 1-4. 1983.

HAP-83-82: 188-191. 1983.

HAP-83-86: 44-52, 88-92. 1983.

HAP-83-92: 42-46, 59-62. 1983.

- Folder 111. Field notes, 1964-1975. Geologic and stratigraphic notes; notes on minerals; notes on samples; notes on photos taken. Topics/locales include: erionite at Eastgate, Nevada; Reese River erionite; Pine Valley; notes on talk with H.D. Curry in Salt Lake City; Jersey Valley; Manix; Kane Wash – Redman Mountains quadrangle; Hector No. 3 Test Hole; Caso Pumice Quarry; Ricardo Formation; Furnace Creek Formation; Cedro Hill; Fallon, Nevada ferrierite; Buckhorn Lake; Rome chert; zeolites; these quadrangles in New Mexico: Apache Peak, Winston, Las Cruces, Buckhorn, Bear Mountain; Little Humboldt chert; Lyle lithium project; East and West Texas.
- Folder 112. Field notes, 1966-1971. Geologic and stratigraphic notes; notes on minerals including zeolites; notes on samples; notes on photos taken. Topics/locales include: Snow Basin quadrangle; Boise sheet; Jordan Valley; Pine Valley, Nevada; Kingman, Arizona; Prescott sheet; Mesa, Arizona sheet; Bowie, Arizona sheet; Lovelock, Nevada; Watson mine; Agua de Ney Springs; Trinity Center magadiite deposit.
- Folder 113. Field notes. 1968, 1975. Geologic and stratigraphic notes; notes on minerals; notes on samples; notes on Zeolite '76 field trip; notes on photos taken. Locales include Rome, Oregon and Bowie deposit, Arizona.
- Folder 114. Field notes. 1981-1985. Miscellaneous zeolite deposits; Chalk Hills, Idaho. Geologic and stratigraphic notes; measured sections; notes on mineral deposits; notes on samples; notes on photos taken. Some notes seem to be “scouting” trip for a future field trip. Locales/topics include: Rome beds – Trapper’s Gulch; Lovelock ferrierite; Hanging Valley; Belmont West quadrangle, Nevada; Ash Meadows; Jump creek; Succor Creek; Fish Creek; Chalk Hills Formation.
- Folder 115. Field notes. 1986-1992. Chalk Hills, Idaho; Harney Lake, Oregon. Geologic and stratigraphic notes; measured sections; notes on mineral deposits; notes on samples; lists of photos taken. Locations CC-49 through CC-74; HL-1 through HL-115; others.
- Folder 116. Field notes. 1986, 1991-1995. Field trips; miscellaneous zeolite deposits; basaltic tuffs. Geologic and stratigraphic notes; notes on field trip routes and stops; lists of photos taken. Topics/locales include: Buckhorn zeolite deposit, New Mexico; Bowie trip stops; Succor Creek zeolite deposit; Trenton zeolite deposit; Wrangler Butte quadrangle – magadi-type chert; Mimbres Resource Area revisit; Harney Lake area; Chalk Hills locales revisited; and others.
- Folder 117. Field notes. 1979-1985. Miscellaneous zeolite deposits;

Buckhorn, New Mexico. Geologic and stratigraphic notes; measured sections; notes on samples; notes on photos taken. Locales/topics include: Reese River erionite; Buckhorn fluorite (BNM-10 through BNM-35); Little Humboldt, Nevada; Elko area, Nevada; Moonstone Formation, Lankin Dome, Wyoming quadrangle (MOO-1 through MOO-5); “Cat Pause”, Wickenburg Arizona; Bismarck Mesa; Bear Springs; and others.

- MA- 02102 Map folder with 6 maps related to various projects, originally in file folders. All show fire and/or water damage:
- From Husum quadrangle, Washington file – file folder 5 above: Copy of Geologic Map and Section of Yakima East quadrangle, Washington (Geological Society of America Bulletin, v. 66, Waters, Plate 1) with annotations;
  - White Salmon, Oregon-Washington 15’ quadrangle with annotations;
  - Klickitat, Washington 15’ quadrangle with annotations in lower left;
  - Willard, Washington 15’ quadrangle with annotations;
  - Husum, Washington 15’ quadrangle with annotations;
  - Upper portion of Jordan Valley, Oregon-Idaho 1 x 2-degree sheet with annotations at left – from file folder #24 on Authigenic fluorite.

Published as: U.S. Geological Survey. Bulletin 1332-B. 1971

Published as: U.S. Geological Survey. Open-file report OFR 1877. 1973.

Published as: U.S. Geological Survey. Open-file report OFR 80-1260. 1980.

Published as: U.S. Geological Survey. Open-file report OFR 82-969. 1982.

Published as: U.S. Geological Survey. Open-file report OFR 83-458. 1983.

Published as: U.S. Geological Survey. Bulletin 1763. 1988.

Published as: U.S. Geological Survey. Bulletin 1963. 1991.

Published as: U.S. Geological Survey. Open-file report OFR 93-570. 1993.

Published as: U.S. Geological Survey. Open-file report OFR 94-294-A. 1994.

Published as: U.S. Geological Survey. Bulletin 2108. 1994.

Published as: U.S. Geological Survey. Open-file report OFR 96-18. 1996.

Published as: U.S. Geological Survey. Open-file report OFR 98-370. 1998.

Published as: U.S. Geological Survey. Open-file report OFR 03-074. 2003.

## **GEOLOGY OF THE ARGILLITE QUADRANGLE, BOYD, CARTER, AND GREENUP COUNTIES, KENTUCKY. 1957-1961.**

- NO-04994 Expandable envelope with three folders:
- Folder 1. Field notes, 1960-1961. R.A. Sheppard and J.C. Ferm. Geologic and stratigraphic notes, measured sections; several photos with annotations attached to notebook pages.
  - Folder 2. Field notes, 1957-1958. "J.W.H." and L.R. Ponsett. Notes on diamond drill holes in the Argillite quadrangle;
  - Folder 3. 1960-1962, 1976. Report on referred fossils; correspondence regarding map publication; request for sample analysis; data, tables, and diagrams concerning cross-bedding distribution and coal intervals; correspondence with John C. Ferm (1960).
- MA-01561 Map folder with 6 items:
- map of Henrietta Jenkins property, Greenup County, showing locations of drill holes.
  - three maps (one in three pieces) of Argillite quadrangle, with annotations.

Published as: U.S. Geological Survey. Geologic quadrangle map GQ-175. 1962.

## **THE MISSISSIPPIAN-PENNSYLVANIAN BOUNDARY IN NORTHEASTERN KENTUCKY. 1957-1963.**

- NO-09236 Draft of "Mississippian-Pennsylvanian Boundary in Northeastern Kentucky" by Ernest Dobrovolny and Sheppard; requests for reprints; drafts of "Pennington Formation in Northeastern Kentucky" by Dobrovolny and Sheppard; correspondence; report on referred fossils.

Published as: U.S. Geological Survey. Professional paper 450-E. 1963.

## **GEOLOGY OF THE PORTSMOUTH QUADRANGLE, KENTUCKY – OHIO, AND PARTS OF THE WHEELERSBURG AND NEW BOSTON QUADRANGLES, KENTUCKY. 1958-1962.**

- NO-04928 1962. Geologic and stratigraphic notes, measured sections.
- NO-04929 Expandable envelope with three folders:
- Folder 1. small group of field notes, 1958, 1960.
  - Folder 2. diamond drill hole records, 1958, 1960.
  - Folder 3. correspondence concerning geologic mapping in the Portsmouth

quadrangle. 1962-1963. Correspondents include: Ralph J. Bernhagen, Paul W. Richards, Joe Sharps, V.W. Thomson, and Don E. Wolcott.

MA-01500 Map folder with 2 copies of the Portsmouth 7.5' quadrangle, with annotations.

Published as: U.S. Geological Survey. Geologic quadrangle map GQ-312. 1964.

### **GEOLOGY OF THE TYGARTS VALLEY QUADRANGLE, CARTER AND GREENUP COUNTIES, KENTUCKY. 1958-1963.**

NO-04947 Field notes (in 2 envelopes). 1961-1962. Geologic and stratigraphic notes, measured sections. Station location numbers 1-972.

NO-04948 Expandable envelope with three folders:

- Folder 1. small group of field notes. 1958, 1960;
- Folder 2. drill hole records;
- Folder 3. 1961-1963. Correspondence; reports on referred fossils; data on cross-bedding; brief data on mapped units in certain quadrangles; stratigraphic logs; data on formation thickness; data on coal locations. Correspondents include John W. Hosterman.

MA-01559 Map folder with 3 annotated maps of the Tygarts Valley 7.5' quadrangle; 1 map of Tygarts Valley and Wesleyville quadrangles combined showing Harbison Walker Leases #2208 and 2216, and 1 map of Charlotte Furnace area.

Published as: U.S. Geological Survey. Geologic quadrangle map GQ-289. 1964.