## APPENDIX T REFERENCES TO APPENDICES

.

.

.

.



•

. .

THIS I

.

· · · .

## THIS PAGE INTENTIONALLY LEFT BLANK

.

.

## **REFERENCES TO APPENDICES**

3 4 Bear, J., 1972, Dynamics of Fluids in Porous Media, Dover Publications, New York, New York, 5 764 pp. 6 7 Brookins, 1988, "Eh-pH Diagrams for Geochemistry," Springer-Verlag, New York, New York. 8 9 Bruno, J., and Sandino, A., 1989, "The Solubility of Amorphous and Crystalline Schoepite in 10 Neutral to Alkaline Aqueous Solutions, Material Research Society Symposia Proceedings, v. 127, 11 p. 871. 12 Brush, L. H., 1995, "Position Paper on Gas Generation in the Waste Isolation Pilot Plant," Sandia 13 National Laboratories, Albuquerque, New Mexico. 14 15 16 Bjotvedt, L., MACTEC, 1995, Personal Communication. 17 18 Butcher, B. M., 1989, "Waste Isolation Pilot Plant Simulated Waste Compositions and Mechanical 19 Properties," SAND89-0372, Sandia National Laboratories, Albuquerque, New Mexico. 20 Butcher, B. M., T. W. Thompson, R. G. VanBuskirk, and N. C. Patti, 1991, Mechanical 21 22 Compaction of Waste Isolation Pilot Plant Simulated Waste," SAND90-1206, Sandia National 23 Laboratories, Albuquerque, New Mexico. 24 ~25 Case, J. B., and P. C. Kelsall, 1987, "Laboratory Investigation of Crushed Salt Consolidation," Rock Mechanics: Proceedings of the 28th U.S. Symposium, University of Arizona, Tucson, 6 27 Arizona. 28 29 Chabannes, C. R., 1982, "An Evaluation of the Time-Dependent Behavior of Solution Mined Caverns in Salt for the Storage of Natural Gas," Master's Thesis, Pennsylvania State University, 30 University Park, Pennsylvania. 31 32 33 D'Appolonia Consulting Engineers, Inc., 1976, "Preliminary State-of-the-Art Survey: Mining 34 Techniques for Salt and Other Rock Types," Report to Office of Waste Isolation, Nuclear Division, 35 D'Appolonia Consulting Engineers, Denver, Colorado. 36 37 Davies, P. P., 1989, "Preliminary Threshold Pressure Estimates and Status of Two-Phase 38 Simulation of Waste-Generated Gas," presented at the National Academy of Sciences WIPP 39 Review Panel, December 13, 1989, Half Moon Bay, California. 40 41 Deal, D.E., R.J. Abitz, D.S. Belski, J.B. Case, M.E. Crawley, C.A. Givens, P.P. James Lipponer, 42 D.J. Milligan, J. Myers, D.W. Powers, M.A. Valdivia, 1995, "Brine Sampling and Evaluation 43 Program 1992-1993 Report and Summary of BSEP Data Since 1982, DOE-WIPP 94-011," report prepared for U.S Department of Energy, WIPP Project Office, Carlsbad, New Mexico. 44 45 46 DOE, see U.S. Department of Energy. 47 48 EPA, see U.S. Environmental Protection Agency. γg

Ewart, F.T., R.M. Howse, H.P. Thomason, and J.E. Cross, 1985, "The Solubility of Actinides in 1 the Near Field," Material Research Society Symposia Proceedings, v. 50, p. 701. 2 3 Feizollahi, F., and Shropshire, D., 1994, "Interim Report: Waste Management Facilities Cost 4 5 Information for Transuranic Waste," EGG-WM-11274, Idaho Falls, Idaho. 6 7 Felmy, A.R., D. Rai, and M.J. Mason, 1991, "The Solubility of Hydrous Thorium(IV) Oxide in 8 Chloride Media: Development of An Aqueous Ion-Interaction Model," Radiochimica Acta, v. 55, 9 p. 177. 10 Felmy, A.R., D. Rai, and R.W. Fulton, 1990, "The Solubility of AmOHCO3(c) and the Aqueous 11 Thermodynamics of the System Na<sup>+</sup>-Am<sup>3+</sup> -HCO<sub>3</sub><sup>-</sup> -CO<sub>3</sub><sup>2-</sup> -OH<sup>-</sup> -H<sub>2</sub>O," Radiochimica Acta, p193. 12 13 14 Felmy, A.R., D. Rai, J.A. Schramke, and J.L. Ryan, 1989, "The Solubility of Plutonium Hydroxide in Dilute Solution and in High-Ionic-Strength Chloride Brines." Radiochimica Acta. v. 48, p. 29. 15 16 17 Flambard, A.R., G. Marx, H.U. Esser, and C. Keiling, 1986, "Americium and Plutonium in Concentrated Salt Solutions and their Interactions With Geological Material Specific to a Waste 18 19 Repository, Journal of the Less-Common Metals, v. 122, p. 525. 20 21 Freeze, R. A., and J. A. Cherry, 1979, Groundwater, Prentice Hall, Englewood Cliffs, New Jersey. 22 23 George, D., The S. M. Stoller Corporation, 1995, Personal Communication. 24 25 Gray, W.J., 1986, "Comparison of Uranium Release from Spent Fuel and Unirradiated UO2 in Salt 26 Brine, Pacific Northwest Laboratory, PNL-SA-14054. 27 28 Gulick, C. W., and L. D. Wakeley, 1989, "Reference Properties of Cement-Based Plugging and Sealing Materials for the Waste Isolation Pilot Plant (WIPP)," Technical Report SL-89-17, 29 Department of the Army, Waterways Experiment Station, Corps of Engineers, Vicksburg, 30 31 Mississippi. 32 33 Hartman, Howard L., 1992, Society of Mining Engineers, Mining Engineering Handbook, 2nd ed., 34 Society of Mining Engineers. 35 36 ICRP, see International Commission on Radiological Protection. 37 38 International Commission on Radiological Protection, 1990, 1990 Recommendations of the 39 International Commission on Radiological Protection, Pergamon Press, New York, New York. 40 41 Kim, J.I., W. Treiber, C. Lierse, and P. Offerman, 1985a, "Solubility and Colloid Generation of 42 Plutonium from Leaching of a HLW Glass in Salt Solutions," Material Research Society Symposia 43 Proceedings, v. 44, p. 359. 44 45 Kim, J.I., Ch. Apostolidis, G. Buckau, K. Buppelman, B. Kanellakopulos, Ch. Lierse, S. Magirius, R. Stumpe, I. Hedler, Ch. Rahner, and W. Stower, 1985b, "Chemisches Verhalten Von Np, Pu 46 47 und Am in Vershiedenen Konzentrierten Salzosungen," Institut fur Radiochemie, Technische 48 Universitat Munchen, RCM 01085. 49

- 1 Kennedy, J. B., and A. M. Neville, 1986, "Basic Statistical Methods for Engineers and Scientists, 2 Harper and Row," Publishers, New York, New York.
  - Krupka, K.M., D. Rai, R.W. Fulton, and R.G. Strickert, 1985, "Solubility Data for U(IV) Hydroxide
    and Np(IV) Hydrous Oxide: Application of MCC-3 Methodology," Material Research Society
    Symposia Proceedings, v. 44, p. 753.
    - Langmuir, D., and J.S. Herman, 1980, "The Mobility of Thorium in Natural Waters at Low Temperatures, Geochimica et Cosmochimica Acta," v. 44, p. 1753
  - Lappin, A. R., R. L. Hunter, eds., D. P. Garber, P. B. Davies, assoc. eds., March 1989, "Systems
     Analysis, Long-Term Radionuclide Transport, and Dose Assessments, Waste Isolation Pilot Plant
     (WIPP), Southeastern New Mexico; March 1989," *SAND89-0462*, Sandia National Laboratories,
     Albuquerque, New Mexico.
  - 16 LESAT, see Lockheed Environmental Systems & Technologies Co.
  - Lockheed Environmental Systems & Technologies Co. (LESAT), 1995, "Pit 9 Comprehensive
     Demonstration Phase II Preliminary Safety Analysis Report draft", *LAE-0001* Draft, under
     Subcontract No. C91-133136 to the U.S. Department of Energy.
- Marietta, M. C., S. G. Bertram-Howery, D. R. Anderson, K. F. Brinster, R. V. Guzowski,
   H. Iussolino, and R. P. Rechard, 1989, "Performance Assessment Methodology Demonstration:
   Methodology Development for Evaluating Compliance with EPA 40 CFR 191, Subpart B, for the
   Waste Isolation Pilot Plant," SAND89-2027, Sandia National Laboratories, Albuquerque, New
   Mexico.
  - Moghissi, A. A., Godbee, H. W., and Hobart, S. A., 1986, *Radioactive Waste Technology*, American Society of Mechanical Engineer, New York, New York.
  - Neck, V., J.I. Kim, and B. Kanellakopulos, 1992, "Solubility and Hydrolysis Behaviou of Neptunium(V)," Radiochimica Acta, v. 56, p. 25.
  - Nielsen, T. J., Lockheed Martin Environmental Systems and Technologies Co., 1995, Personal
     Communications.
    - Owens, C. B., Scientific Ecology Group, Inc., 1995, Personal Communication.
  - Parks, G.A., and D.C. Pohl, 1988, "Hydrothermal Solubility of Uraninite, Geochimica et
     Cosmochimica Acta," v. 52, p. 863.
  - 42 Peters, M. S., and K. D. Timmerhaus, 1991, *Plant Design and Economics for Chemical Engineers*,
    43 4th ed., McGraw Hill, Inc., New York, New York.
- Peters, R. D., D. N. Berger, and W. A. Ross, 1991, "Design and Development of a Plasma
  Furnace to Treat Radioactive Wastes," Presented at the Spectrum '90 Nuclear and Hazardous
  Waste Management International Topical Meeting, Knoxville, Tennessee, September 30 to
  October 4, 1990.
- ົ ເ9

3

7

8

9 10

15

17

21

27

28 29

30

33

36 37

38

41



Pryke, D.C., and J.H. Rees, 1987, "Understanding the Behaviour of the Actinides Under Disposal 1 2 Conditions: A Comparison Between Calculated and Experimental Solubilities," Radiochimica 3 Acta, p.27. 4 5 Rai, D., J.A. Schramke, and J.L. Ryan, 1987. \*Salt Repository Project: Data Report on Solubility 6 of Pu(OH)3(am)," Pacific Northwest Laboratory, PNL/SRP-6215. 7 8 Rai, D., R.G. Strickert, R.G. Moore, and J.L. Ryan, 1983, "Am(III) Hydrolysis Constants and Solubility of Am(III) Hydroxide," Radiochimica Acta, v. 33, p. 201. 9 10 11 Rai, D., R.G. Strickert, and G.L. McVay, 1982, "Neptunium Concentrations in Solutions Contacting Actinide-Doped glass," Nuclear Technology, v. 58, p. 69. 12 13 14 Rai, D., R.J. Serne, and D.A. Moore, 1980, "Solubility of Plutonium Compounds and Their 15 Behavior in Soils," Soil Science Society of America Journal, v. 44, p. 490. 16 17 Rai, D., and R.G. Strickert, 1980, "Chemical Aspects of Medium and Long-Term Radioactive 18 Waste Disposal," Tranactions of the American Nuclear Society and the European Nuclear Society, 19 v. 35, p.185. 20 Rechard, R. P., W. Beyeler, R. D. McCurloy, D. K. Rudeen, J. E. Bean, and J. D. Schreiber, 21 22 1990, "Parameter Sensitivity Studies of Selected Components of the Waste Isolation Pilot Plant 23 Repository/Shaft System," SAND89-2030, Sandia National Laboratories, Albuquerque, New 24 Mexico. 25 26 Reeves, M., D. S. Ward, N. J. Johns, and R. M. Cranwell, 1986, "The Sandia Waste-Isolation Flow and Transport Model for Fractured Media; Release 4.84: Theory and Implementation," 27 NUREG/CR-3328, U.S. Nuclear Regulatory Commission, Washington, D.C. 28 29 30 Reid, R. C., J. M. Prausnitz, and B. E. Poling, 1987, The Properties of Gases and Liquids, 31 4th ed., McGraw-Hill Book Co., New York, New York, 741 pp. 32 33 Sandia National Laboratories/New Mexico, 1995, "Systems Prioritization Method-Iteration 2 Baseline Position Paper: Actinide Source Term," C. F. Novak, N. J. Dhooge, H. W. Papenguth, 34 35 and R. F. Weiner, Sandia National Laboratories, Albuquerque, New Mexico. 36 37 Sandia National Laboratories/New Mexico, 1993, "Preliminary Performance Assessment for the Waste Isolation Pilot Plant," December 1992, SAND92-0700, Sandia National Laboratories, 38 Albuquerque, New Mexico. 39 40 41 Sandia National Laboratories/New Mexico, December 1991, "Preliminary Comparison with 40 CFR Part 191, Subpart B for the Waste Isolation Pilot Plant, December 1991," Vol. 3: 42 Reference Data, WIPP Performance Assessment Division, SAND91-0893/3, Sandia National 43 44 Laboratories, New Mexico. 45 46 Scheidegger, A. E., 1974, Physics of Flow Through Porous Media, 3rd ed., University of Toronto 47 Press, Toronto, Ontario. 48 49 SNL/NM, see Sandia National Laboratories/New Mexico.

T-4

U.S. Department of Energy, 1995a, "Clay Information for Engineered Alternatives Cost/Benefit
 Study," Memorandum from James Maes, Regulatory Engineer, DOE/CAO, to Jonathan Myers,
 IT Corporation.

U.S. Department of Energy, 1995b, "Environmental Restoration and Waste Management Programmatic Environmental Impact Statement," Appendix D, March 7, 1995, draft.

U.S. Department of Energy, 1995c, "State RCRA Permit Modification Request #33 for the Supercompactor," *State RCRA Permit No. 91-02-30-01 CO 7890010526*, Rocky Flats Environmental Technology Site, Golden, Colorado.

- 12 U.S. Department of Energy, 1995d, "Waste Isolation Pilot Plant Transuranic Waste Baseline 13 Inventory Report," *CAO-94-1005*, Rev. 1, Carlsbad, New Mexico.
- 15 U.S. Department of Energy, 1994a, "Office of Environmental Management Programmatic 16 Environmental Impact Statement," *DOE/EIS-0200*, Vol 2, draft.
- U.S. Department of Energy, 1994b, "TRUPACT-II Content Codes (TRUCON)," *DOE/WIPP 89-004*,
   Rev. 8, U.S. Department of Energy, WIPP Project Office, Carlsbad, New Mexico.
  - U.S Department of Energy, 1994c, "Nuclear Safety Analysis Reports," DOE Order 5480.23, Change 1, U.S. Department of Energy, Washington, D.C.
- 24 U.S Department of Energy, 1993, "Startup and Restart of Nuclear Facilities," Order 5480.31, "25 Washington, D.C., September 1993.
  - U.S Department of Energy, 1992a, "Project Management System," DOE Order 4700.1A, U.S. Department of Energy, Washington, D.C.
- U.S Department of Energy, 1992b, "Conduct of Operations Requirements for DOE Facilities,"
   DOE Order 5480.19, Change 1, U.S. Department of Energy, Washington, D.C.
- U.S. Department of Energy, 1991, "Evaluation of the Effectiveness and Feasibility of the Waste
   Isolation Pilot Plant Engineered Alternatives: Final Report of the Engineered Alternatives Task
   Force," *DOE/WIPP 91-007*, Vol. 1, Rev. 0, Waste Isolation Pilot Plant, Carlsbad, New Mexico.
- U.S. Department of Energy, 1990a, "Environmental Assessment of Supercompactor and
   Repackaging Facility and TRU Waste Shredder," DOE/EA-0432, Golden, Colorado.
- U.S. Department of Energy, 1990b, "Final Supplement Environmental Impact Statement, Waste
  Isolation Pilot Plant," *DOE/EIS-0026-FS*, Office of Environmental Restoration and Waste
  Management, Washington, D.C.
- U.S. Department of Energy, 1983, "Quarterly Geotechnical Field Data Report Part III: Gas
  Testing Data Update," *WIPP-DOE-177*, U.S. Department of Energy, Waste Isolation Pilot Plant
  Project Office, Albuquerque, New Mexico.
- 48 U.S. Department of Labor, 1978–1993, "Injury Experience in Nonmetallic Mineral Mining (Except 9 Stone and Coal), 19[78–93]," Mine Safety and Health Administration, Division of Mining

4 5

6

7

8

9 10

11

14

17

20 21

22 23

.6

27

28 29

32

39

43

Information Systems, Denver Safety and Health Technology Center Technical Support, Denver,
 Colorado.

U.S. Environmental Protection Agency, 1995, Proposed Rule, "Criteria for the Certification and
Determination of the Waste Isolation Pilot Plant's Compliance with Environmental Standards for
the Management and Disposal of Spent Nuclear Fuel, High-Level, and Transuranic Radioactive
Wastes," Title 40, Code of Federal Regulations, Part 194, (40 CFR 194), U.S. Environmental
Protection Agency, Washington, D.C.

U.S. Environmental Protection Agency, 1993, "Environmental Radiation Protection Standards for
 Management and Disposal of Spent Nuclear Fuel, High-Level, and Transuranic Radioactive
 Wastes," Title 40, Code of Federal Regulations, Part 191, (40 CFR 191), U.S. Environmental
 Protection Agency, Washington, D.C.

Wakefield, D. J., and K. N. Fleming, 1990, *STADIC Computer Code User Manual*, PLG-0689,
PLG, Inc.

Weiner, R., June 9, 1995, "Planned Activities for the Actinide Source Term and Chemical
 Retardation Pprograms," Enclosure to Letter for Proffessor Charles Fairhurst, University of
 Minnesota, Chairman, National Research Council Committee on the Waste Isolation Pilot Plant,
 letter from E. J. Nowak, Manager, Chemical and Disposal Room Processes Project Management
 Department, Sandia National Laboratories.

Westinghouse Electric Corporation, Waste Isolation Division, 1995a, "Engineered Alternatives
 Cost/Benefit Study Screening Report," *WID/WIPP 95-2093*, Westinghouse Electric Corporation,
 Waste Isolation Division, Carlsbad, New Mexico.

Westinghouse Electric Corporation, Waste Isolation Division, 1995b, "Engineered Alternatives
 Cost/Benefit Study Scoping Report," *WID/WIPP 95-2093*, Westinghouse Electric Corporation,
 Waste Isolation Division, Carlsbad, New Mexico.

32 WID, see Westinghouse Electric Corporation, Waste Isolation Division.

Wolery, T.J., 1992a, EQ3NR, A Computer Program for Geochemical Aqueous Speciation-Solubility Calculations: Theoretical Manual, User's Guide, and Related Documentation (Version 7.0), UCRL-MA-110662 PT III, Lawrence Livermore National Laboratory, Livermore, CA.

Wolery, T.J., 1992b, EQ6, A Computer Program for Reaction Path Modeling of Aqueous Geochemical Systems: Theoretical Manual, User's Guide, and Related Documentation (Version 7.0), UCRL-MA-110662 PT IV, Lawrence Livermore National Laboratory, Livermore, CA.

41 42

3

9

14

17

23

27

31