

**APPENDIX I**  
**PREPARERS**

This page intentionally left blank.

**CONTENTS**

I.1.0	PREPARERS .....	I-1
I.1.1	OFFICE OF RIVER PROTECTION .....	I-1
I.1.2	CORE TEAM.....	I-1
I.1.3	PEER REVIEW TEAM.....	I-5
I.1.4	SUPPORT TEAM.....	I-5
I.1.4.1	Field Work .....	I-5
I.1.4.2	Laboratory Measurements and Analysis (all PNNL).....	I-5
I.1.4.3	Computer Modeling and Risk Calculations .....	I-6
I.1.4.4	Science and Technology Participants .....	I-6

This page intentionally left blank.

## I.1.0 PREPARERS

### I.1.1 OFFICE OF RIVER PROTECTION

**Robert M. Yasek**, Physical Scientist

B.S. Geophysics, New Mexico Institute of Mining and Technology 1984

Mr. Yasek has over 16 years of experience in leadership and management of government projects, both military and civilian. He currently serves as the DOE project manager for the Hanford Tank Farms Vadose Zone Project. Prior to working at Hanford, he was the DOE Lead for Thermal Testing for the DOE's Yucca Mountain Project (YMP). Additional duties at YMP included project management of borehole geophysics for the high-level waste repository program. Mr. Yasek's military experience includes project management for flight testing of advanced weapons systems for the U.S. Air Force and operations of radar and command, control and communications (C<sup>3</sup>) systems. Between military and civilian government service, Mr. Yasek worked as a field geophysicist for a privately-owned company, specializing in borehole geophysics.

### I.1.2 CORE TEAM

**Frank J. Anderson**, Scientist, CH2M HILL Hanford Group, Inc.

B.S. Geological Engineering, Colorado School of Mines 1964  
M.S. Geological Engineering, University of Arizona 1968

Mr. Anderson has over 31 years of experience as a geological engineer, environmental consultant, government manager and professor involving environmental characterization, compliance and remediation, mining, geology, water resources development, and program and project management. He has worked as a consultant at five DOE sites during the past decade: Hanford and Oak Ridge reservations, Portsmouth and Paducah Gaseous Diffusion Plants, and INEEL. He has also been a manager for the U.S. Geological Survey and the U.S. Office of surface Mining, and an assistant professor of geology. Mr. Anderson was responsible for FY 2001 Interim Measures engineering design and construction activities for the Tank Farm Vadose Zone Project, and prepared Section 3.5 and Appendix F in this document.

**Dwayne Crumpler**, Senior Hydrogeologist, Jacobs Engineering Group, Inc.

B.S. Geology, Lamar University 1985  
M.S. Geology, Baylor University 1989

Mr. Crumpler has over 15 years of experience in groundwater field investigations related to RCRA facility investigations and CERCLA remedial investigations at municipal landfills, Department of Defense and Department of Energy facilities. He serves as a Senior Geologist and Regulatory Specialist for the preparation of various RCRA and NEPA documents related to Hanford. He has conducted and analyzed seismic field studies, aquifer pumping tests and slug

tests, installed monitoring wells and soil borings, and conducted groundwater and surface-water sampling programs at DOE and DOD facilities. He has prepared the site-specific work plans associated with the Single-Shell Tanks RCRA corrective action program and has been involved in the single-shell tank retrieval program. He was the coordinator for the document and preparation of the human health risk analyses, regulatory analyses, introduction, approach, conclusions and recommendations for this document.

### **Thomas E. Jones**

Tom Jones holds a Ph.D. in Inorganic/Analytical Chemistry from Washington State University and has over 20 years experience at Hanford in the areas of tank waste characterization, development of tank waste inventory estimates, and tank farm vadose zone investigations. Over the past four years, Dr. Jones has led the task developing tank leak inventory estimates.

**Raziuddin Khaleel**, Consulting Engineer, Environmental and Nuclear Initiatives, Flour Federal Services.

B.S.	Civil Engineering, Bangladesh University of Engineering and Technology	1966
M.S.	Water Science and Engineering, Asian University of Technology	1970
Ph.D.	Soil and Water Engineering, Texas A&M University	1977

Dr. Khaleel has over 30 years of experience in groundwater hydrology and numerical simulations of subsurface flow and transport. He was a key contributor to the Hanford Site solid waste PAs and the immobilized low-activity waste PA, particularly in the area of conceptual model development, direction of modeling, and in writing the document. For this document, he was responsible for creating the modeling data package, coordinating the modeling work, and writing of several sections.

**Anthony J. Knepp**, Manager, CH2M HILL Hanford Group, Inc.

B.S.	Engineering, Johns Hopkins University	1971
M.S.	Environmental Systems Engineering, Clemson University	1973

Anthony Knepp was responsible for the management and direction of the report including its conclusions and recommendations. Mr. Knepp has over 25 years of experience in environmental cleanup and has worked as a consulting engineer, project engineer, government manager, and project manager. His experience includes water resources planning, development of water supply systems, construction of industrial treatment facilities, and environmental characterization and cleanup. For the last 10 years, he has concentrated on remediation of radiologically contaminated groundwater and soils.

**Frederick M. Mann**, Scientist, CH2M Hill Hanford Group

B.S.	Physics, Stanford University	1970
Ph.D.	Physics, California Institute of Technology	1975

Dr. Mann is the team leader for the ILAW Performance Assessment activity, which is charged with preparing this document. He was the main author of the 1998 and 2001 versions of the Hanford *Immobilized Low-Activity Tank Waste Performance Assessment*. He has worked for over 25 years in the field of nuclear data and the application of those data to large energy facilities. He has advised the DOE and the International Atomic Energy Agency. He was the chief internal reviewer of the document.

**David A. Myers**, Scientist, CH2M HILL Hanford Group, Inc.

David Myers earned a Master of Science in geology and hydrology from the University of Idaho. He is a registered professional geologist in Idaho and Oregon. His work has focused on water resources, as well as environmental monitoring and remediation of groundwater contamination. Since arriving at the Hanford Site in 1974, Mr. Myers has provided technical support for the Site-Wide Groundwater Monitoring Program, as well as early development of the *Resource Conservation and Recovery Act of 1976* monitoring program for the low-level waste burial grounds. He served as a senior hydrogeologist within the environmental restoration program, actively participating in the design and implementation of groundwater remediation projects. He supports the Tank Farm Vadose Zone Project as a technical coordinator, ensuring that multiple aspects of this complex problem are integrated and coordinated. For this document, he was responsible for preparing the geology sections and field investigation activities sections in Sections 2.0 and 3.0 and Appendices B and C.

**Leiloni J. Page, Sr.** Technical Writer/Editor, Jacobs Engineering Group Inc.

B.A.	English, University of Idaho	1992
------	------------------------------	------

Ms. Page has 11 years of technical writing and editing and document publication experience. Her experience includes 8 years of working directly with managers and senior technical staff from various disciplines on highly technical risk and safety analysis documents to provide document editing, rewriting, and reorganization expertise as needed to ensure clarity, consistency, and readability. Ms. Page also works directly with project teams to develop internal production schedules and coordinates and manages document production staff to carry out editing, word processing, and graphics generation. She was the technical information coordinator for this report and maintained and coordinated the document production schedule in addition to providing technical editing support.

**R. Jeffrey Serne**, Staff Scientist in PNNL's Applied Geology and Geochemistry Group

B.S.	Chemistry, University of Washington	1969
B.S.	Oceanography, University of Washington	1969

Mr. Serne currently is leading the PNNL applied geochemical research and characterization efforts supporting the Office of River Protection Vadose Zone project. The goal is to determine the distribution of contaminants that have leaked from SST's and their future fate. Mr. Serne is also lead geochemist for the near-field and the far-field geochemical studies for the proposed Immobilized Low-Activity Waste repository. Finally, Mr. Serne is a co-investigator/collaborator on 4 EMSP basic science projects pertaining to the Vadose Zone. He was lead author on the four borehole characterization reports found in the appendices of the FIR.

**Harold A. Sydnor**, Scientist, CH2M HILL Hanford Group, Inc.

B.S.	Geology, Western Kentucky University	1979
M.S.	Environmental Resource Management	1998

Mr. Sydnor is the team leader for characterization activities inside the single-shell tank farms. He has over 20 years of experience performing geologic and hydrogeologic investigations and evaluations in the private and public sectors. He was the field team leader for characterization activities associated with the work plan addenda.

**Marcus I. Wood**, Principal Scientist, Waste Management, Fluor Hanford, Inc.

B.S.	Geology, University of North Carolina	1973
Ph.D.	Geology, Brown University	1980

Dr. Wood currently is responsible for developing the PA analyses for the disposal of solid low-level waste at the Hanford Site. He is the coordinating author of the Hanford Site solid waste performance assessments and has been largely responsible for the integration and the interpretation of the analytical results in those documents. He has coordinated similar analyses for the Environmental Restoration Disposal Facility (ERDF), at which wastes generated in the remediation of Hanford Site waste sites regulated under the *Comprehensive Environmental Resource Conservation and Recovery Act of 1981* and the 200 West Area low-level burial grounds are disposed. He has directed numerous projects to quantify the geochemical properties of radionuclides in the Hanford Site geohydrologic environment. He also was responsible for developing a multifunctional waste package backfill material for isolating spent fuel and high-level waste. He was responsible for the conceptual model and for writing Chapters 2 and 3.

**John M. Zachara**, Chief Scientist VI, Pacific Northwest National Laboratory

B.S.	Chemistry and Geology, Bucknell University	1973
M.S.	Soil/Watershed Chemistry, University of Washington	1979
Ph.D.	Soil Chemistry, Washington State University	1986

Dr. Zachara is chief scientist and one of four associate scientific directors of the William R. Wiley Environmental Molecular Sciences Laboratory (EMSL) at Battelle, Pacific Northwest National Laboratory. The EMSL is a state-of-science U.S. Department of Energy user facility focused on environmental molecular science. Dr. Zachara employs various molecular spectroscopies, electron and scanning probe microscopies, and modeling techniques in the study of contaminant geochemistry. He has performed research on these subjects for over 25 years and is the author of over 120 scientific publications. Dr. Zachara coordinates EMSL research focused on the Hanford vadose zone, and he functioned as chief scientist for the Science and Technology piece of the S and SX tank farms study that is summarized in Appendix D.

**I.1.3 PEER REVIEW TEAM**

Charles R. Cole	Pacific Northwest National Laboratory
Karl R. Fecht	Bechtel Hanford Inc.
Prem Attanayake	Bechtel Corporation
Larry Holm	CH2M Hill, Inc.

**I.1.4 SUPPORT TEAM****I.1.4.1 Field Work**

Dave Curry	Resonant Sonics International
Mike Gomez	Resonant Sonics International
Kevin Hartelius (Health Physic Technician)	LMHC
Lisa Hartley (Nuclear Chemical Operator)	LMHC
Mark Hasey	Resonant Sonics International
Loyd Petty (Person in Charge)	LMHC
Kent Reynolds	Waste Management Technical Services
Greg Sullivan (Nuclear Chemical Operator)	LMHC
Wesley Worth	Resonant Sonics International

**I.1.4.2 Laboratory Measurements and Analysis (all PNNL)**

C. C. Ainsworth	B. N. Bjornstad	C. F. Brown
D. B. Burke	R. E. Clayton	G. W. Gee
D. G. Horton	I. V. Kutnyakov	C. W. Lindenmeier
A. V. Mitroshkov	V. L. LeGore	D. C. Lanigan
G. V. Last	C. W. Lindenmeier	M. J. O'Hara
R. D. Orr	A. T. Owen	K. E. Parker
H. T. Schaeff	J. N. Serne	S. C. Smith
K. B. Wagnon	B. A. Williams	T. C. Wilson

### I.1.4.3 Computer Modeling and Risk Calculations

Robert Emmel	Jacobs Engineering Group Inc.
R. Douglas Evans	Jacobs Engineering Group Inc.
Mart Oostrom	PNNL
Mark D. White	PNNL
Mark D. Williams	PNNL

### I.1.4.4 Science and Technology Participants

Calvin C. Ainsworth	PNNL
Bruce Arey	PNNL
David Balkwill	Florida State University
David L. Bish	LANL
Gordon E. Brown	Stanford University
Susan Carrol	LLNL
Jeffrey G. Catalano	Stanford University
Chia-chen Chen	Ohio State University
Steven J. Chipera	LANL
Mark S. Conrad	LBNL
John DePaolo	LBNL
Evan Dresel	PNNL
John C. Evans	PNNL
Orville T. Farmer	PNNL
Jim Fredrickson	PNNL
Amy P. Gamerdinger	WSU
Paul L. Gassman	PNNL
Glendon W. Gee	PNNL
Yongtian He	Ohio State University
Steven M. Heald	ANL, PNNL
David Kennedy	PNNL
Jean Kimberling	PNNL
Heather Kostandarithes	PNNL
Shu-mei Li	PNNL
Peter C. Lichter	LANL
Richard M. Lindstrom	NIST
Chongxuan Liu	PNNL
James P. McKinley	PNNL
Matthew Newville	ANL
Susan McKinley	PNNL
Odeta S. Qafoku	PNNL
Karsten Preuss	LBNL
Sarah Roberts	LLNL
Todd Schaefer	PNNL
Steven C. Smith	PNNL
Peg Snow	LANL
Carl Steefel	LLNL

Steven Sutton	ANL
James E. Szecsody	PNNL
Samuel J. Traina	Ohio State University
Andy L. Ward	PNNL
Jeffrey A. Warner	Stanford University
Mark D. White	PNNL
Steve B. Yabusaki	PNNL
Isao Yamakawa	Ohio State University
Cynthia J. Zeissler	NIST
Pihong Zhao	LLNL

This page intentionally left blank.