STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION FOR THE PURPOSE OF CONSIDERING:	)	
APPLICATION OF THE NEW MEXICO OIL CONSERVATION DIVISION FOR REPEAL OF EXISTING RULE 50 CONCERNING PITS AND BELOW GRADE TANKS AND ADOPTION OF A NEW RULE GOVERNING PITS, BELOW GRADE TANKS, CLOSED LOOP SYSTEMS AND OTHER ALTERNATIVE METHODS TO THE FOREGOING, AND AMENDING OTHER RULES TO MAKE CONFORMING CHANGES; STATEWIDE	)	CASE NO. 14,015

OFFICIAL EXHIBIT FILE
COMMISSION HEARING
(2 of 15: OCD Exhibits 19-33)

BEFORE: MARK E. FESMIRE, CHAIRMAN
JAMI BAILEY, COMMISSIONER
WILLIAM OLSON, COMMISSIONER

November 5, 6, 7, 8, 9, 13, 14, 15, 16, 26, 27, 30, 2007;
December 3, 4, 6, 7, 10, 14, 2007; February 14, 2008;
March 12, 13, 2008

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Commission, MARK E. FESMIRE, Chairman, on November 5, 6, 7, 8, 9, 13, 14, 15, 16, 26, 27, 30, 2007; December 3, 4, 6, 7, 10, 14, 2007; February 14, 2008; and March 12, 13, 2008, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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CASE NO. 14015
OCD EXHIBITS
VOLUME 2

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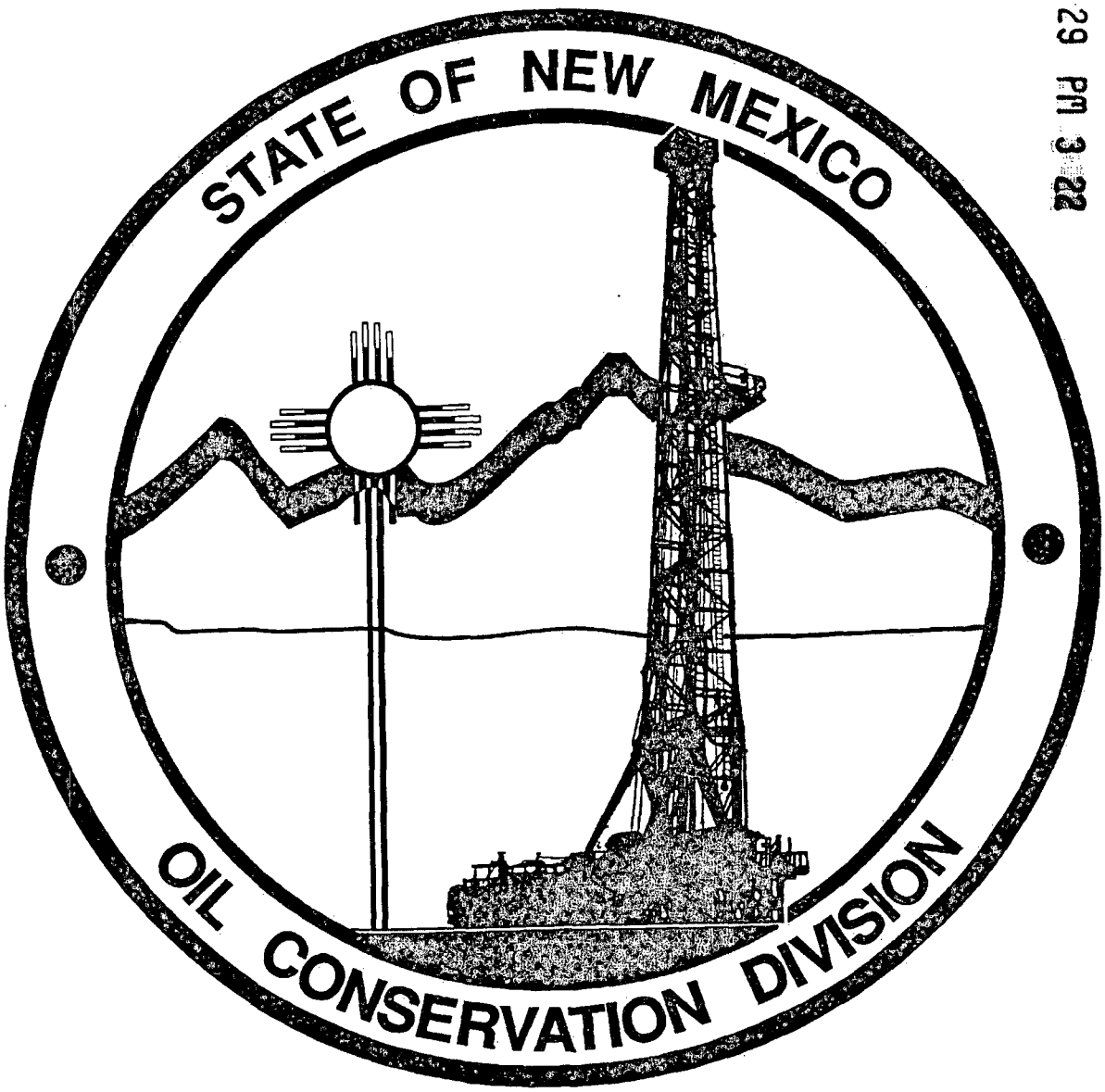
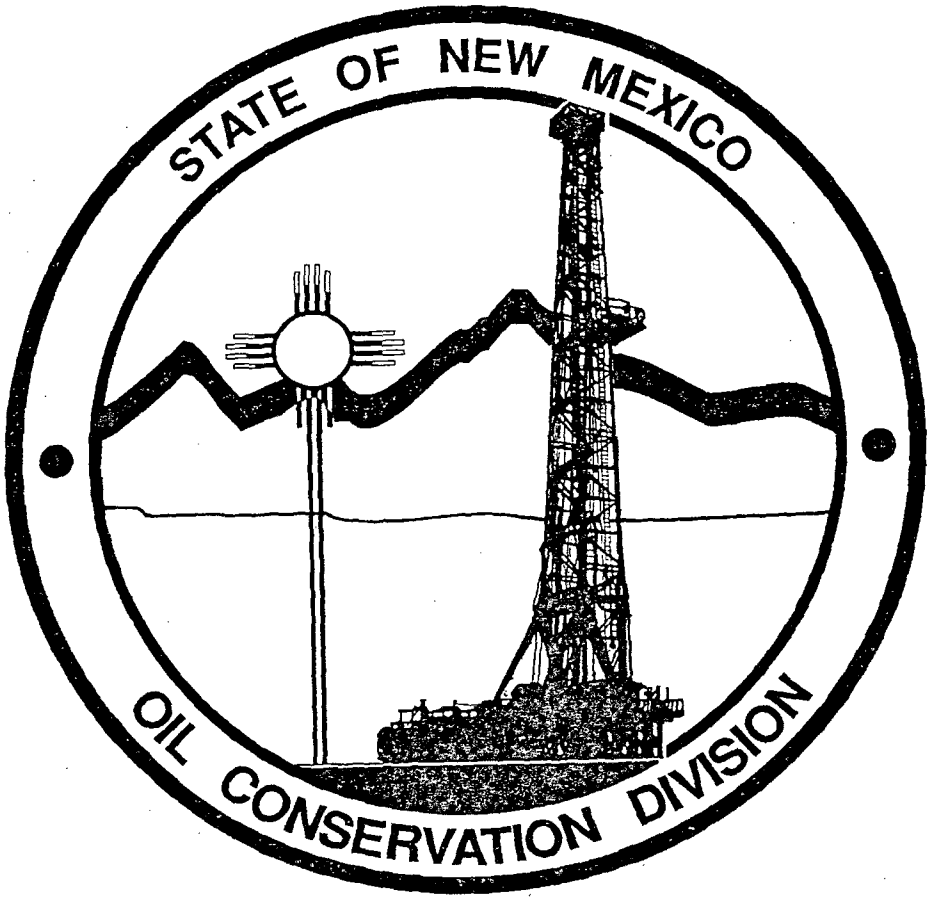


CASE NO. 14015
OCD EXHIBIT 19



Edward J. Hansen

Hydrologist, Environmental Bureau,
Oil Conservation Division, New Mexico Energy, Minerals, Natural Resources Department

Professional Experience

2006-present: Hydrologist for the Environmental Bureau, Oil Conservation Division, New Mexico Energy, Mineral and Natural Resources Department
Member of the National Ground Water Association since 1994
Solid Waste Association of North America Certified Landfill Inspector, #30260, since 1991

I conduct and supervise professional hydrogeologic reviews and investigative studies to determine actual or potential threats to ground water from the past, current or proposed activities of oil / gas industry related to discharge permits and holders of same. I review, evaluate and inspect discharge permit applications and facilities pertaining to oil refineries, gas processing plants, compressor stations, oilfield service companies, gas storage wells, and class III brine wells and class I injection wells. I also obtain environmental samples as required to determine compliance with the facility's discharge plan.

I perform professional hydrologic, geologic, and engineering work related to receipt, processing and approval / denial of soil remediation plans and groundwater abatement plans submitted pursuant to Oil Conservation Division (OCD) and Water Quality Control Commission (WQCC) regulations.

I supervise, review, approve, and recommend changes for ground water investigation and remediation plans and reports for release remediation and closure of oil / gas industry pits to ensure proper enforcement.

I perform professional hydrologic, geologic, and engineering work related to the OCD's environmental protection efforts under the Oil and Gas Act and OCD rules and regulations. I perform advanced engineering and scientific tasks in support of New Mexico's Oil and Gas Act and Water Quality Act.

I interpret petroleum engineering oilfield procedues and processes from a technical aspect to design requirements of data management and further interfacing between oil field operations and management.

I have resonsibility and oversight of OCD automation projects relating to OCD's Risk-Based Data Management System (RBDMS) (a database with a Microsoft Access™ interface) automation plan. I manage RBDMS to ensure that functionality meets requirements of OCD staff. I perform editing on the OCD website to meet the information disimination needs of the Division. I prioritize information to be made available on the Internet, training needs, and screen and form design based on interview results.

I interpret OCD Rules and Regulations as expert for oil and gas related issues including being an expert witness. I participate as a Task Force Member for the amendments of the OCD Pit Rule.

I also perform simulations using predictive environmental models (**HELP** and **MULTIMED**) and evaluate results for supporting testimony at Oil Conservation Commission hearings regarding amendments to OCD rules.

1991-2006: Environmental Scientist / Water Resource Specialist III / Hydrologist / Program Manager for the Permit Section, Solid Waste Bureau, Environmental Protection Division, New Mexico Environment Department;

I coordinated with the Information Technology Bureau (ITB) in the development of TEMPO™ (IDEA – an integrated computer database for the New Mexico Environment Department) and in the migration of data into TEMPO™ (IDEA) for the Solid Waste Bureau (SWB). I also coordinated with the ITB regarding the maintenance of the database to ensure that functionality met the requirements of the Department staff. In addition, I assisted in the training of staff on the use of the database regarding data entry and information retrieval.

I developed the procedure for the review of sampling and analyses of liquid waste (e.g., petroleum contaminated liquids) for beneficial use (e.g., dust control) at landfills. I oversee the review of use review of use plans for regulatory compliance.

I reviewed and approved Boring Plans for the site investigations to determine the geology and hydrogeology for the permit application process.

I reviewed Assessments of Corrective Measures (ACMs) and recommended approval of the Selection of Remedy for groundwater remediation at contaminated sites.

I reviewed permit applications for landfills, transfer stations, recycling facilities, composting facilities and transformation facilities are reviewed for administrative and technical completeness and compliance with the Solid Waste Management Regulations. In addition, I observed solid waste facilities during construction to ensure approved plans were followed.

I provided testimony as the Environment Department's expert witness on applications for Solid Waste Facility Permits at public hearings as required by the Solid Waste Act. I also provided testimony as the Environment Department's expert witness at Environmental Improvement Board hearings regarding amendments to the Solid Waste Management Regulations.

I reviewed and recommended approval or disapproval of Groundwater Monitoring Requirements Suspension Petitions. The review entails interpreting site-specific field measurements and evaluation contaminant fate and transport predictions. I also performed simulations using groundwater flow models (**HELP**, **MULTIMED**, etc.) and evaluate results for applicability of suspension petitions. In addition, I developed policies for technical issues regarding contaminant fate and transport predictions that maximize contaminant migration.

I reviewed and approved Groundwater Monitoring System Plans. The review includes determination of the depth to the uppermost aquifer, groundwater flow diction, groundwater gradient, etc. I also reviewed and approved alternate groundwater sampling frequencies and parameters: alternate source demonstrations; etc. In addition, I developed policies for technical issues regarding statistical testing of analytical data.

I reviewed and recommended approval of Closure / Post-Closure Care Plans for landfills. The review includes determination of the final cap design, vegetation plan, etc. I prepared and edited technical reports and correspondence. This included recommend approval documents and background information for Closure / Post-Closure Care Plan, deficiency letters to applicants for Solid Waste Facility Permits, preparing reports on groundwater monitoring results, etc. I also performed simulations with environmental computer models (**HELP**, **MULTIMED**, etc.) and evaluated results. In addition, I provide information on suitability of cover systems. I inspected closed sites to verify closure has been completed in accordance with the approved Closure Plan. I also developed policies for technical issues regarding cover designs.

1991-2006 (con't.):
I reviewed disposal management plans for the disposal of special waste (e.g., petroleum contaminated soils, sludge, certain oil and gas industry wastes, etc.) for regulatory compliance. I also reviewed special waste analyses for compliance with regulatory standards for treatment and disposal e.g., petroleum contaminated soils, sludge, certain oil and gas industry wastes, etc.

I approved special waste analytical parameters; alternate PQLs; laboratory QA/QC plans; special waste alternate sampling frequencies; contaminated soils, remediation reports. I also developed policies for technical issues regarding regulatory interpretation.

I supervised five staff members as the Program Manager of the Permit Section of the Solid Waste Bureau. I directed the daily work activities of staff (i.e., assigned review tasks: assigned responses to request; etc.) I provided training on computer modeling: database use; interpretation of the Regulations; inspections; etc. I also develop criteria for tracking section and bureau effectiveness. In addition, I actively participate in the development and implementation of the bureau's strategic plan.

I responded in timely and comprehensive manner to inquiries and request from the Office of the Secretary of Environment, Division Directors, executive and legislative branches of government, regulated entities and the public. I served, when directed by the Bureau Chief, as the bureau's spokesperson at board, commission and legislative meetings and hearings. When appropriate, reviewed and approved draft press releases and respond to press inquiries in accordance with departmental policy.

1988-1990: Research Assistant for the Civil and Environmental Engineering Department of Washington State University

My research was funded by Battelle PNL as part of their research program in remediation of hazardous constituents in water resources. I was part of a team for the development of a remediation strategy for groundwater contamination at the Laboratory. Also, the characterization of the microbes responsible for the transformation was included in the scope of the project. I designed and conducted scientific experiments and also reported results and formulated conclusions from these experiments.

1978-1987: Engineering Aide / Engineering Technician for the Water Quality Control Division, Colorado Department of Health

I collected and performed field analyses on water samples of wells, rivers and streams for water quality control data; and wastewater discharge samples for NPDES permits and enforcement actions. I also inspected water treatment plants and wastewater treatment facilities for compliance with appropriate regulations. I evaluated water treatment plants for the feasibility of community water fluoridation, designed the type of feed system for a particular water treatment plant, and then presented cost estimates at city council meetings. If a community approved fluoridation, I assisted the community in obtaining grant funds fro fluoride feed equipment and in procuring the equipment. I developed and supervised a monitoring and surveillance program to assure the optimum fluoride level was maintained and provide technical assistance if warranted. Also, I conducted seminars on community water fluoridation for water superintendents and local health officials.

1972-1975: Worked as a technician at a Gas Compressor Station for three summers (total 9 months).

Education

1991-present: "Risk-Based Data Management System (RBDMS) Training"; presented by National Groundwater Protection Council; 20 hours; April 22-25, 2007; Sarasota, Florida

"Hydrogen Sulfide Safety"; presented by Alliance Fire, Safety and Training; 4 hours; December 6, 2006; Artesia, New Mexico

"Basic First Aid", including CPR; presented by Alliance Fire, Safety and Training; 4 hours; December 6, 2006; Artesia, New Mexico

On-the-job training in Refinery Inspections; produced water collection; oil well drilling; and RBDMS; sampling at refineries and oil / gas well pits

"Arid Climate Landfill Symposium" presented by SWANA; 20 hours; June 13-15, 2006; Albuquerque, New Mexico

"Alternate Method of Determining Background Levels for Naturally-Occurring Constituents in Groundwater" presented by Jonathon Myers of Shaw Environmental, Inc.; 2 hours; February 24, 2005; Santa Fe, New Mexico

"Designing and Operating Bioreactor Landfills" presented by the University of Wisconsin; 14 hours; December 13-14, 2004; Madison, Wisconsin

"McCoy's 2004 RCRA Seminar" presented by McCoy and Associates; 24 hours; June 15-17, 2004; Santa Fe, New Mexico

"Landfill Gas Operation and Maintenance" presented by the Solid Waste Association of North America (SWANA); 20 hours; April 20-21, 2004; Denver, Colorado

"Landfill Gas Basics" presented by SWANA; 10 hours; April 19, 2004; Denver, Colorado

"New Mexico Geological Society (NMGS) 2004 Annual Spring Meeting" presented by NMGS; 6 hours; April 16, 2004; Socorro, New Mexico

"Household Hazardous Waste Management and Disposal Course" presented by the RINCHEM Training and Consulting Center; 8 hours; April 13, 2004; Santa Fe, New Mexico

"Alternative Landfill Cover Short Course" presented by the University of New Mexico and SF Dwyer Engineering; 6 hours; September 4, 2003; Santa Fe, New Mexico

"Low-Flow Ground Water Sampling Training" presented by Severn Trent Services, Inc.; 4 hours; July 28, 2003; Santa Fe, New Mexico

"New Mexico Geological Society (NMGS) 2003 Annual Spring Meeting" presented by NMGS; 6 hours; April 11, 2003; Socorro, New Mexico

"OSHA Blood-borne Pathogens" presented by Stericycle, Inc.; 4 hours; September 25, 2001

"MULTIMED Model Workshop" presented by U.S. Environmental Protection Agency (U.S. EPA), Region VI; 7 hours; June 11-12, 2001; Dallas, Texas

"4th Annual Arid Climate Symposium" presented by SWANA; 15.5 hours; April 18-20, 2001; Las Vegas, Nevada

"New Mexico Geological Society (NMGS) 2001 Annual Spring Meeting" presented by NMGS; 6 hours; March 23, 2001; Socorro, New Mexico

Education (con't.)

"3-D Ground Water Flow and Contaminant Modeling for Natural Attenuation, Remediation Design and Water Resources Management" presented by the National Ground Water Association; 30 hours; March 12-14, 2001; Denver, Colorado

"3rd Annual Arid Climate Symposium" presented by SWANA; 9 hours; April 12-13, 2000; Albuquerque, New Mexico

"EPA / States Groundwater Modeling Forum" presented by U.S. EPA, Region VI; 6 hours; February 10, 2000; Dallas, Texas

"*In-situ* Permeable Reactive Barriers: Application and Deployment" presented by the Interstate Technology Regulatory Cooperation and U.S. EPA; 14 hours; November 16-17, 1999; Dallas, Texas

"Geological Society of America (GSA) Annual Meeting" presented by GSA; 30 hours; October 25-28, 1999; Denver, Colorado

"Landfill Design and Management: A Focus Discussion of Critical Emerging Issues" sponsored by U.S. EPA, Region VI; presented by the University of Wisconsin - Madison; 18 hours; June 15-17, 1999; Arlington, Texas

"Bioremediation of Groundwater and Soil: Scientific Basis and Applications" presented by the University of New Mexico; 40 hours; Spring Semester 1999; Tele-link, Santa Fe, New Mexico

"Designing and Implementing Alternative Earthen Final Covers for Waste Containment Facilities" presented by the University of Wisconsin - Madison; 14 hours, February 8-9, 1999; Los Angeles, California

"Natural Attenuation of Chlorinated Solvents in Groundwater" presented by the Interstate Technology and Regulatory Cooperation Work Group; 17 hours; July 15-16, 1998; Salt Lake City, Utah

"Assessing Passive Bioremediation at Leak Sites" presented by John Wilson, U.S. EPA, R. S. Kerr Environmental Research Laboratory; 7 hours; May 22, 1998; Santa Fe, New Mexico

"Arid Climate Landfill Symposium" presented by SWANA; 7 hours; April 14, 1998; Santa Fe, New Mexico

"Treatment Technologies for Superfund" presented by Halliburton NUS Corporation for the U.S. EPA; 22.5 hours; March 30-April 3, 1998; Santa Fe, New Mexico

"Natural Attenuation Workshop" presented by Sandia National Laboratories; 7 hours; May 18-19, 1997; Albuquerque, New Mexico

"Modeling of Groundwater Flow for Contaminant Assessment and Remediation" presented by the University of Wisconsin - Madison; 32 hours; January 7-10, 1997; Tucson, Arizona

"Construction Quality Assurance for Municipal Solid Waste Landfills" presented by David E. Daniel and Mark Cadwallader for U.S. EPA; 14 hours; March 11-12, 1996; North Little Rock, Arkansas

"Landfill Liner Design and Ground Water Monitoring" presented by the U.S. EPA; 22 hours; March 13-15, 1996; North Little Rock, Arkansas

Education (con't.)

"Design of Waste Containment Liner and Final Closure Systems" presented by the American Society of Civil Engineers (ASCE); 14 hours; September 26-27, 1995; Albuquerque, New Mexico

"Groundwater Monitoring and Sampling Technology" presented by the American Society for Testing and Materials (ASTM); 16 hours; April 3-4, 1995; Denver, Colorado

"The Princeton Course: Groundwater Pollution and Hydrology" presented by Princeton Groundwater; 44 hours; July 11-15, 1994; San Francisco, California

"Ground Water Geochemistry" presented by the Los Alamos National Laboratory; 28 hours; January 18-21, 1994; Los Alamos, New Mexico

"Groundwater Flow & Contaminant Transport Modeling: Analytical Methods & Practical Applications" presented by H^+GCL, Inc.; 14 hours; October 21-22, 1993; Albuquerque, New Mexico

"*In-situ* and On-site Bioremediation 2nd International Symposium" presented by the Battelle Memorial Institute; 28 hours; April 5-8, 1993; San Diego, California

"Vadose Zone Hydrology" presented by Daniel B. Stephens & Assoc., Inc.; 18 hours; 1992, Santa Fe, New Mexico

"Clay Liners and Covers for Waste Disposal Facilities" presented by the University of Texas at Austin; 24 hours; June 12-14, 1991; Austin, Texas

"Groundwater Investigations" presented by U.S. EPA, R. S. Kerr Environmental Research Laboratory; 19.5 hours; May 21-23, 1991; Albuquerque, New Mexico

"Managing Landfill Operations" presented by SWANA; 24 hours; February 13-15, 1991; Albuquerque, New Mexico

1987-1990: Master of Science in Environmental Science, Hazardous Waste Option, specializing in groundwater protection. Washington State University, Pullman, WA.

1978-1987: Numerous courses and workshops in water quality, including a 40-hour course, "The Fundamentals of Ground-Water Contamination" presented by Geraghty & Miller, Inc.

1972-1976: B.S. in Science Education, (Biology / Chemistry) Ferris State College, Big Rapids, MI.

Publications and Presentations

"Landfill Gas Effects on Groundwater", U.S. EPA, Region VI, Technical Roundtable, June 14, 2000

Hansen, E. J., D. L. Johnstone, J. K. Fredrickson, and T. M. Brouns. 1994. Transformation of Tetrachloromethane under Denitrifying Conditions by Subsurface Bacterial Consortium and Its Isolates. pp. 293 - 297. *In*: R. E. Hinchee, L. Semprini, and S. K. Ong (eds.). Bioremediation of Chlorinated and Polycyclic Aromatic Hydrocarbon Compounds. Lewis, Ann Arbor, MI.

"Transformation of Tetrachloromethane under Denitrifying Conditions by Subsurface Bacterial Consortium and Its Isolates", Battelle Memorial Institute, 2nd International Symposium, *In-Situ* and On Site Bioreclamation, 1993

"The Transformation of Carbon Tetrachloride under Denitrifying Conditions", Pacific Northwest Pollution Control Association, 1990 Conference

Panel Member at the 1981 and 1984 National Fluoridation Conferences, San Antonio, TX and Kansas City, MO, respectively

Hansen, E. J., "Fluoridation Installation and Operation", Opflow American Water Works Association (AWWA), August 1983

Hansen, E. J., "Safety Procedures Necessary during the Fluoridation Process", Opflow (AWWA), July 1983

Hansen, E. J., "Fluoride Compounds used to Prevent Tooth Decay", Opflow (AWWA), May 1983