

Dr. C. Thomas Williams

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PROFESSIONAL HISTORY

Citizens Coalition for A Safe Community, Snr. Technical Adviser Inglewood Oil Field, Baldwin Hills
SNGS/CPUC Avondale-Glen Elder Neigh'hd. Assoc./Legal Services North. Calif. & Thomas Law Group
Montebello Gas Storage Field, Sierra Club, Montebello Task Force
Dubai World, Nakheel, & Limitless (Ports & Free Zones), Dubai, UAE, Technical Advisor - Major Projects
Jebel Ali Free Zone Authority, Dubai, UAE, Technical Advisor for Major Projects
MHA Environmental Consulting, Inc., San Mateo CA (1999-2001; Director of Environmental Assessment)
Wood Hole Group, East Falmouth MA (2000-2001, Development Adviser Middle East)
NASA Internat'l. Group (Dames & Moore, URS-Woodward/Clyde; UAE 1999; Senior Technical Adviser)
Hyder Consulting Ltd. (UAE, Qatar, and Oman; 1997-99; Senior Project Manager/Resident Engineer)
ERM / ERL Asia Ltd. (Hong Kong, China; 1990-91; Senior Consultant)
Parsons Corp., Environmental Services, Harlund Bartholmeuw Assoc. (California and Overseas; 1978-97;
Senior Associate/Scientist/Engineer, Project Manager, Team Leader)
Engineering-Science, Inc. Berkeley/Arcadia California (1975-78; Scientist/Engineer, Project Manager)
URS Research Company San Mateo California (1972-75; Senior Scientist, Project Manager)
Assistant Professor, Calif.State Univ. San Francisco; Univ. Calif., Davis; Univ.Calif. Bekeley
Museum of Archeology and Prehistory, Nairobi, Kenya
Harvard University Peabody Museum and Museum of Comparative Zoology, Cambridge, MA.
University of Kansas, Museum of Natural History, Lawrence, KS.

EDUCATION

Bachelors of Science, Geology and Zoology, University of Kansas, Lawrence Kansas, 1962
Masters of Arts, Zoology, University of Kansas, 1967
Doctorate (Geology/Zoology), University of California, Berkeley, 1976

EXPERTISE

- Project and Construction Management
- Procurement and Contract Tendering, Award, and Administration
- Turn-Key, Design/Build, and PPP-BOO/BOT Projects
- Major Project Planning, Siting/Routing, and Design
- Claims, Variation, and Value Management
- Environmental Assessment, Alternatives, Mitigation, Monitoring, and Reporting
- Geology and Paleontology
- Mineral Resources, Quarrying/Mass Grading, and Tunneling
- Petroleum Exploration, Production, and Abandonment
- Natural Gas Production/Storage Injection-Withdrawal Planning and Design
- Hydropower, Gas/Oil, Nuclear, and Integrated Power Systems
- Near-Shore Oceanography and Coastal Processes
- Surface Hydrology, Desalination, and Groundwater Management Programs
- Wastewater Treatment, Conservation, and Reuse/Recycling Programs
- Solid and Hazardous Wastes Management Programs
- Air Quality and Air Toxic Management Programs

Major Marine/Geologic Projects Involvements

Dr. Williams has been an environmental and infrastructure planner, designer, and manager who has long experience in project development, design, engineering, and construction along with environmental review, assessment and mitigation during project and alternatives development. He has participated and conducted technical, engineering, and financial aspects of siting and routing studies for maritime and infrastructure projects in California, the US, South America, Asia, Pacific Islands, Middle East and Africa.

Dr. Williams has conducted many hydrological, groundwater, and geological studies and projects related to uses of surface stream flows, impounded surface waters, and treated effluents for irrigation and groundwater recharge and recovery in both temperate and desert environments. He has diverse environmental background and project experience in virtually all phases of project assessments, permitting, and development and integrates environmental aspects into the engineering and project development at the earliest stages in both protective and enhancement considerations.

- Dubai Port & Free Zones/Dubai World (Jebel Ali Properties, Nakheel, Limitless Projects/Contracts)
- Nakheel-Wide Geological, Geotechnical, and Marine Environments, Investigations, and Reviews
- Nakheel-Wide Infrastructure - Sewage Treatment Plant and Water, Irrigation/Firewater System
- Lost City-Cavern Hotel, Infrastructure, Master Plan, Geological, & Environmental Constraints Management
- Mina Seyahi and Jumeirah Fishing Harbors Redevelopment Design and Implementation
- Palm Jumeirah – Island-Crescent/Crown/Trunk, Marine, Lands, and Underwater Hotels
- Palm Jebel Ali – Island-Crescent, Crown, and Trunk, Marine and Land
- World Islands Contracting, Planning, Design, and Implementation
- Port Rashid Redevelopment and Palm Deira – Planning, Design, and
- Ras Haysan/Waterfront Land and Marine Development
- Rio De Arabia – Beach Resort, Umm Seqeim
- Jumeirah Beach Restoration – Jumeirah and Umm Seqeim
- Dubai-Arabian Canal with Marine Hydrology
- Fujairah-Al Awir Railroad Tunnels Master Plan
- Magraq (Ruwais, Abu Dhabi-AD) Ferry and Marina Port, Planning, Design, and Procurement
- Sila (AD) Gulf Harbor, Breakwater and Reclamation Assessment and Implementation
- Dibbah (Fujairah) Fishing Harbor Redevelopment, Feasibility, and Appraisal
- Umm Al Quwain Industrial Port Rehabilitation and Appraisal
- Ocean Palace Hotel (Dubai, offshore), Planning, Design, and Procurement
- Quarry Resources Management Plan (RAK), Master Plan, Action Plan, Phase 1 Siting/Design
- Buraimi-Qidfa Gas Pipeline (AD, RAK, Fujairah) Route and Environmental Assessment/Mitigation
- Resort/Marina/Beach Development Placencia, Belize, Central America
- Majuro, Marshall Islands Water Supply and Wastewater System
- Kota Kinabalu, E. Malaysia Wastewater Systems and Ocean Outfall

Dr. Williams has conducted and contributed significantly to development of project descriptions, alternatives formation, and thorough assessments along with practical mitigation. He has supervised and coordinated teams of in-house staff and outside sub-consultants, while also participated as a senior analyst for geology, groundwater, and health risk assessment.

As part of recent technical activities Dr. Williams has conducted and is conducting review, comments, alternative developments, and mitigation/compensations for various environmental/infrastructure projects throughout California:

- Environmental assessment for Edison Hydroelectric Generating Assets (CPUC, Sierra and San Bernardino Ranges)
- EIR for Jamestown Effluent Disposal Pipeline Project (Tuolumne County)
- Preliminary assessment and Initial Study for Export of Surplus Groundwater from Tri-Valley District (Mono County, Owens Valley)
- Mitigated Negative declaration for Sale of Montebello Gas Storage Facility (CPUC, Los Angeles County)
- Environmental assessment for Sale of Surplus Southern California Gas Lands at Playa del Rey (Initial Study and EIR, in City of Los Angeles, associated with Playa Vista Project)
- Review of EIR for Foster City Lagoon dredging and restoration of Sea Cloud Lagoon (Central San Francisco Bay)
- Red Line Phase 1 Procurement and Construction Review and Management for Tunnels and Yard
- Red Line Phase 2 Planning and Corridor Assessment for Tunnels
- Orange Line Light Rail Planning and Corridor Assessment for Surface and Tunnel Alternatives
- MTA/Caltrans Express/Toll Lanes for I-10 and I-110
- MTA – High Desert Corridor and Alternatives
- I-710 South Expansion and Alternatives
- SR-710 North Extension and Alternatives
- Rail Pass-Thru Union Station
- Metrolink Double-Tracking Rail Central-Western San Fernando Valley to Ventura and to Palmdale including >5 miles of tunnels
- CHSR Palmdale – Burbank, Burbank – Union Station, & Union Station-Anaheim
- Alameda Corridor North (Cut&Cover Tunnel) through LA Central/PiggyBack and Taylor Yards
- San Pedro Ocean Outfall Headworks for Treated Wastewater
- SR-710 Tunneling Alternatives and Alternative 7 – Single and Double Tunnel Systems
- Sepulveda/I-405 Tunnel Alternatives
- SCAQMD Rule 1905 Vent Emissions from Vehicular Tunnels
- Inglewood Oil Field - Baldwin Hills Community Standards District
- Montebello Oil Field and Gas Storage Facility
- Playa Del Rey/Venice Oil Fields and Gas Storage Facility
- La Cienegas, Salt Lake, Beverly Hills, and Sawtelle Urban Oil Fields
- Aliso Canyon Casuda Hills, Horse Meadows, and Mission Oil Fields
- Aliso Canyon, Honor Rancho, and Goleta Gas Storage Facilities
- Seismic Research Related to Oil Fields and Gas Storage Facilities
- Well Stimulation Regulations DOGGR/SB4 and SCAQMD 1148.2
- Gas Storage Facilities Regulations DOGGR and SCAQMD 1148.3

More Descriptive Project Discussion

- Environmental Review of Applications to the CPUC.* (MHA) Review and preparation for environmental compliance and reviews of Proponent's Environmental Assessments and related CPUC environmental-compliance documentation. Conducted/supervised adequacy/completeness reviews of applications, developed consistent environmental checklists and approaches for Energy Division projects.
- Environmental Impact Report for CDC/DGS Jamestown Effluent Disposal Pipeline Project.* (MHA) Prepared and developed the project and Environmental Impact Report for California Dpt. of Corrections and Sierra Conservation Center's proposed effluent disposal project, including 8+ mile transmission pipelines, 600+ ac-ft storage reservoir, and 3000 ac irrigation area with permitting plan and MMRP
- Environmental Review of Sea Cloud Lagoon Dredging/Spoiling Project.* (Sequoia Audubon Society) Assess and review for environmental compliance, impact, and mitigation.
- TriValley Groundwater Mngmt. Distr. (Mono County, CA) Groundwater Master Plan.* (MHA) Long-term project development for "surplus" groundwater resources/production beyond TriValley aquifers/basin.
- Palm Island (UAE-Dubai), Master Plan.* (Woods Hole Group) Review of project development and preliminary environmental assessment of wave, current, and circulation conditions and impacts for dredge/fill project of 6,000,000 cu m in the South Arab Gulf.
- Dubai (UAE, South Persian Gulf) Structure Plan – Natural Resources and Environmental Plan Element.* Environmental Team Leader for Natural Resources and Environmental Management for the Dubai Structure Plan for 20 year development program for population of 2.2 million. Natural resources element included recharge and recovery of treated effluents in shallow groundwater aquifers for landscape irrigation and effects of widespread septic tank use on shallow groundwater.
- Sweihan (Abu Dhabi, UAE, South Persian Gulf) Groundwater Management Plan.* Project Manager for groundwater exploration, development, and management of shallow water resources of a 6000 sq mile area of desert with saline and sweet groundwater to support irrigation and livestock development. Management included control of irrigation leachate and urban and livestock wastewater effluents for hyper-saline barriers and optimal use of brackish groundwaters for tolerant fodder irrigation.
- Khalifa B Ground Conditions Studies and Remediation.* Project Manager for construction supervision of studies and remediation for cavernous and unstable ground conditions for a 25,000 ac housing (>50,000 houses) and commercial development in coastal region of the UAE. Planned and conducted groundwater, geological, and geophysical surveys and monitoring to establish sites and remediation for unstable ground conditions related to infrastructure installation and future housing development over caverns and tunnels in gypsum beds and cemented sandstones.
- Al Qurayyah (Fujairah, UAE, Gulf of Oman) Storm Water Control Project.* Project Manager and Engineer for planning, design, and construction supervision for flood (5,000+cfs flows) control measures to protect villages in the coastal plains. Developed first ever recharge facilities for flood flows of 1/2 to 1/50 year flood flows, successfully recharging all winter flood flows during construction and Year 2000. Routed flood diversion channels to enhance recharge for existing well extraction areas.
- Allepo and Latakia (Syria) Wastewater Management Plans.* Senior Environmental Engineer and Associate Project Manager for planning and design for sewerage and storm water management for populations of 1.5 million in six urban areas of more than 500 sq miles in northern Syria and on the coast of the Mediterranean Sea. Developed sewage treatment facilities (100 MGD) for production of effluent for irrigation of fodder, cereal, and directly edible crops (10,000+ ac) through an extensive pipe and channel transmission and distribution network (400+ miles).
- Sewerage Transmission, Treatment, and Reuse, Amman, Jordan*
- Cairo (Egypt) Water Management Plan.* Senior Environmental Engineer for all groundwater development aspects including inspection and restoration of physical facilities, monitoring of groundwater resources, pumping, and distribution, siting of new facilities and fields for more than 100 MGD, and evaluation of environmental impacts of extraction and impacts of development on groundwater resources.

Royal Commission of Yanbu and Jubail, Saudi Arabia (KSA), Yanbu Industrial City. Snr Environmental Scientist for development of environmental compliance for industrial wastes management. Reviewed existing waste generation, transport, and storage. Reviewed existing processing of disposition. Inspected and evaluated existing storage of general industrial, objection/difficult wastes, and hazardous wastes. Prepared reports and recommendations with regard to hazardous wastes and waste storage and recycling. Developed groundwater monitoring systems to establish baselines and trends of hypersaline groundwater conditions. Designed hypersaline groundwater/crystallization containment system for difficult and short-term hazardous waste storage. Evaluated Jubail hazardous waste treatment facilities and rejected them for use at Jubail.

Reviewed environmental compliance for permitted air, water, and solid waste generations and reporting to KSA Royal Commission. Developed computerized, modern reporting system for generators.

Reviewed KSA air quality monitoring and Yanbu refinery emissions

Land Use and Infrastructure Master Plan Riyadh, Kingdom of Saudia Arabia

Fujairah Geothermal Spring and Development Prospectives. Development of geothermal resources in Fujairah (UAE). Conducted regional photo/image analyses for geological, hydrological, and vegetation resources related to geothermal sources and their development. Supervised field surveys and discovery of similar new sources. Prepared feasibility study for development of low energy uses, insufficient commercial high temperature sources for at least ten years.

North Qatar Corniche Development Assessment. (Hyder Middle East) Planning and review for transportation corridor improvements, coastal protection, and drainage project along northern Qatar.

Clark (Air Base) Development Zone (Philippines)-200 MW Power Plant and Wastewater Systems. Environmental manager for build-operate-transfer utilities for the re-commissioned Clark Air Force Base for civilian purposes. Coordinated environmental and groundwater requirements and impacts for 200 MW distillate-fired reciprocal/turbine generation systems. Conducted planning for all technical and multiple use elements and directed economic analyses for project. Developed all design and planning of wastewater and solid waste management including recycle/reuse of effluent and materials.

Environmental Impact Assessment for 5000 MW Black Point Power Plant, Hong Kong (Coal and Gas Fired Alternatives). Senior Environmental Associate for environmental assessment for 5000 MW coal/gas fired power plant, transmission corridors, and gas pipelines. Conducted construction impact analyses for air, marine waters, stormwaters, and archaeological resources. Supervised all field surveys and conducted marine water and biotic resources surveys. Reviewed and evaluated computer and physical modelling of air emissions dispersions.

Environmental Assessment of Coal-Fired Power Plants in Mongolia. (Mott-Macdonald) Managed for 3 years for development/implementation of environmental review process for all projects through the Ministry of Nature and Environment. Conducted environmental review of existing and future coal-fired power plants, gold mining, and copper mining/melting. Established design, site, and environmental requirements and measures for projects and environmental review/revision process.

Environmental Review of Winter Discharges from Hydroelectric Projects in Mongolia and Idaho. Mott-Macdonald) Led Asian Development Bank Project Review Team review of hydroelectric scheme in Mongolia. Environmental reviews/analyses of wintertime environmental impacts on hydrology and fisheries. Developed analogue models for similar hydroelectric project in Idaho and Montana.

Majuro, Marshall Islands Hydrology and Marine Dynamics

US-National Intermediate Nuclear Wastes Transport and Storage

Environmental Review of San Francisco International Airport Runway Development Project. (MHA) Review of environmental compliance and various alternatives for flight approaches at SFO. Reviewed and presented alternatives for dredging/spoiling and wetland mitigation within Central San Francisco Bay. Developed cumulative and growth-inducing effects assessment for land-side elements of the project.

- Environmental Impact Report for Residential Development in the Lake Anderson Area.* Senior Environmental Scientist for Geology, Soils, Climatology, and Biotic Resources during field work, preparation of the EIR, and presentation to the City of San Jose for a large (>1000 ac) housing and open space development in the southern sector of the City of San Jose. Studies included review of groundwater and geological conditions and identification of wetlands and both groundwater recharge areas and groundwater surface seeps and springs.
- EIRs for Numerous Bridges and Small Housing Developments in eastern and southern San Jose.* Senior Environmental Scientist for field work and preparation of more than 10 small EIRs for various bridges, smaller housing, and sports facilities projects in the eastern and southern sectors of San Jose during the 1970s. Studies included review of geology and groundwater related to recharging groundwater and soil moisture conditions for riparian vegetation.
- Monterey Bay Regional Wastewater Project, Castroville Effluent Irrigation Demonstration Project.* Senior Environmental Scientist/Engineer supervised and conducted groundwater, soil, and climatic monitoring and analyses for suitability for long-term irrigation of Castroville edible crops with advanced tertiary treated wastewater.
- Soquel Creek Water District – Water Resources Management Plan.* (URS) Geologic and groundwater resources in Soquel, Santa Cruz Co. Compiled/reviewed surface water resources, developed alternative reservoir sites, and developed program for recharge to/recovery from potable aquifers.
- San Mateo Sanitary District Sewerage Networks.* Environmental Scientist for preparation of environmental assessment and EIR for sewerage networks for the central San Mateo area serving Foster City.
- San Bruno Mountain Housing and Commercial Development, EIR.* Senior Environmental Scientist for development and preparation of the geological, hydrological, and biotic resources setting and assessments of impacts for large housing and commercial development for the northern half of San Bruno Mountain and various parcels surrounding the mountain base.
- US Navy - Elk Hills Oil Development and Transmission Systems.* Senior Environmental Scientist for more than 1000 miles of routing of four alternative pipeline systems from Elk Hills National Oil Reserve. Environmental inventory and routing of pipelines with minimum impacts, comparisons of alternatives and recommendations of feasible alternatives, and environmental assessment of selected alternative routing. Established risks and contingency planning for spills to waterways, recharge areas, and groundwater aquifers.
- SF Bay Mare Island/Vallejo Marine Dredging and Wetland Disposal*
- Chevron-Morro Bay Oil Transmission Systems-Richmond and El Segundo Segments.* Senior Environmental Planner for development of alternative pipelines to convey 100,000 bpd of crude oil from Morro Bay to Chevron refineries in California. Prepared environmental atlas and risk management schemes for alternative pipeline routes and contingency planning for terminal and pipelines.
- Los Angeles Shell Refineries-Marine Terminal Pipelines.* Project manager and route engineer for environmental aspects and permitting for upgrading and new construction of crude and product pipelines between the Port of LA Terminal and Shell Refineries in Wilmington and Dominguez and Mormon Island.
- Dominguez-ARCO Fuel-Gas Co-Generation Project.* Senior Environmental Scientist for environmental planning and design for 100+MW power plant using refinery off-gas, including process and air pollution modeling and dispersion analyses. Constructibility reviews focused on contaminated soils, groundwater contamination, and potential for offsite migration. Following design, developed permitting strategy and conducted permitting process through permit to construct.
- Los Angeles Metro Rail Subway – Construction Management.* Environmental Controls Manager for Phase One Metro Rail Construction. Organized and managed all aspects of environmental planning, design, and compliance for construction related activities, including geological and groundwater resources, surface water discharges, removal of all tanks and contaminated soils, protection and remediation of groundwater, regional receiving water quality and flow monitoring, and permitting and monitoring for all water discharges, and hazardous waste abatement and restoration.

Los Angeles Metro Rail – Eastern Extension – Phase 3. Senior Environmental Engineer for the East LA extension EIR/EIS for routing and physical environmental sectors. Conducted field surveys, compiled available data, and prepared project descriptions and alternative developments. Prepared environmental impact assessments related to geology and groundwater and risk management for potential hazardous wastes and remediations along the proposed routing and station siting.

San Fernando Valley-Orange Line – Light Rail Transit Routing EIR. Senior Environmental Scientist for project development and alternatives for light rail transit in the southern San Fernando Valley. Developed project routing and alternatives and their environmental effects and public acceptance for light rail connections and Metro Rail/Cal-Train connections.

Alyeska-Los Angeles-Midland Oil Terminal and Pipeline. Assessed and prepared combined EIR/EIS for new oil off-loading terminal at Port of LA and South Coast Air Basin, 1000+ mile pipeline system, and oil storage in Midland/Odessa. Conducted routing surveys for geological, archaeological, paleontological, and scientific resources and prepared environmental assessment elements.

North-Central Minnesota - Stoney Creek/Masabi Coal-Fired Power Plant Environmental Impact Report. Environmental planner and environmental task leader for geological, groundwater, and surface development of 50 miles of railroad network and 100 miles of transmission corridors and environmental siting and planning in a feasibility study for 1000 MW coal-fired power plant in north-central Minnesota.

Endicott Oil Production Platform/Island Arctic Ocean, North Slope Alaska

Power Generation and Vapour Recovery Systems, Valdez Terminal (Alaska). Project Manager for design and environmental review of vessel, tankage, and pipeline vapour collection at the Valdez Terminal and use of collected vapour for incineration and power production. Developed designs for collection, combustion, and emissions controls/monitoring systems.