

### Summary of selected projects and services

<b>ID</b>	<b>Prime Contractor*</b>	<b>Client</b>	<b>Years</b>	<b>Location</b>	<b>Brief description of project and services provided</b>
86	Keta Waters	Squaxin Island Tribes	2011-ongoing	Shelton, WA	Develop groundwater flow model for the Goldsborough Creek watershed in Mason County, Washington to evaluate groundwater surface water interactions.
85	Keta Waters	Muckleshoot Indian Tribe	2011-ongoing	King County, WA	Assist in estimating effects of land use changes and water resources development on stream flow and temperatures in the Soos Creek watershed as part of a temperature TMDL.
84	Keta Waters	Washington Department of Ecology	2009-ongoing	Tacoma, WA	Provide technical analysis and advice regarding remediation of groundwater contamination in the vicinity of the Occidental Chemical Company site near the Hylebos waterway.
83	Keta Waters	Swinomish Indian Tribal Community	2010-ongoing	La Connor, WA	Provide technical analysis and advice regarding stream flows and groundwater/surface water interactions.
82	Keta Waters	Crystal Mountain Ski Resort	2012-ongoing	Crystal Mountain, WA	Provide technical analysis and advice regarding transfer of water rights from surface water to groundwater.
81	Keta Waters	Water Access Now	2011-ongoing	Ghana, Africa	Provide technical advice for groundwater development in rural areas of northern Ghana.
80	Keta Waters	Muckleshoot Indian Tribe	2010-2011	King County, WA	Assist in estimating effects of land use changes and water resources development on stream flow and temperatures in the Newaukum Creek watershed as part of a temperature TMDL.
79	Wilcox Family Farms	Wilcox Family Farms	2010-ongoing	Roy, WA	Provide technical analysis and advice regarding water rights.
78	Ridolfi Engineering	City of Yakima	2012	Yakima, WA	Evaluate the expected thermal effects of infiltrating water from the City's waste-water treatment plant to develop and enhance riparian fish habit along the Yakima River.
77	Keta Waters	Muckleshoot Indian Tribe	2011	King County, WA	Assist in estimating effects of land use changes and water resources development on stream flow and temperatures in the Bear Creek watershed as part of a temperature TMDL.
76	Keta Waters	Tulalip Tribes	2010	Camano Island, WA	Evaluate potential impacts of tidal flooding on Leque Island to the Camano Island Sole Source Aquifer and Camano Water Systems Association water supply
75	Ridolfi Engineering	Yakama Nation	2009-2012	Hanford, WA	Provide technical analysis and advice regarding remediation of groundwater contamination on the Hanford site.
74	Keta Waters	Kalispel Tribe of Indians	2009-ongoing	Usk, WA	Provide technical support on modeling work associating with the Pend Oreille River TMDL
73	Keta Waters	Water for People	2007-2009	Malawi, Africa	Evaluate water supply systems in rural areas along the shores of Lake Malawi and advise on activities to improve these systems.
72	Keta Waters	LOTT Alliance/Brown and Caldwell	2006-2009	Olympia, WA	Perform hydrogeological investigations necessary to evaluate the groundwater recharge potential of sites that may be considered for groundwater recharge facilities for reclaimed water.

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71	Keta Waters	Squaxin Island Tribes	2006-2012	Shelton, WA	Provide hydrogeologic conditions and water rights evaluation services
70	Keta Waters	Tulalip Tribes	2005-ongoing	Tulalip, WA	Provide assistance as an expert to assist the Tribes in developing, negotiating, and implementing strategies to protect tribal treaty and reserved water rights.
69	Keta Waters	Suquamish Tribes	2005-ongoing	Suquamish, WA	Provide hydrogeologic conditions and water rights evaluation services.
68	Keta Waters	Center for Justice	2004-2010	Spokane, WA	Provide technical support on modeling work associating with the Spokane River TMDL
67	Keta Waters	Muckleshoot Indian Tribe/U.S. EPA	2002-ongoing	Auburn, WA	Provide technical analysis and modeling for the White River Total Maximum Daily Load (TMDL) assessment. This TMDL involves limiting phosphorus input to the White River to address issues related to periphyton growth and high pH.
66	Keta Waters	Muckleshoot Indian Tribe	1995-ongoing	Auburn, WA	Provide technical analysis, advice, and expert testimony related to groundwater resource development and interactions between groundwater and surface water.
65	MGS Engineering Consultants	WSDOT	2008	Olympia, WA	WSDOT Agreement DP00871, Amendment 8. Geotechnical Development of Infiltration Design Procedures for CAVFS, Ecology Embankments and Related BMP's.
64	Keta Waters	Suquamish Tribe Dept. of Natural Resources	2008	Kitsap County, WA	Review 3-dimensional groundwater model developed by the U.S. Department of the Interior, Bureau of Reclamation. The model was developed to simulate the groundwater flow system in the vicinity of the Port Madison Indian.
63	Pacific Groundwater Group	Port of Vancouver and Clark County PUD	2006-2008	Vancouver, WA	Provide peer review of the groundwater flow and transport models developed to assess contaminant migration
62	Pacific Groundwater Group	City of Camas, WA	2007-2008	Camas, WA	Develop saturated/unsaturated groundwater flow model to estimate seepage rates from the Washougal River.
61	Keta Waters	Friends of the San Juans	2007-2008	Friday Harbor, WA	Review and evaluate groundwater pumping tests and groundwater model developed to assess impacts of a proposed development on San Juan Island.
60	Keta Waters	Azure Green Consultants	2007-2008	Puyallup, WA	A MODFLOW groundwater flow model was developed to evaluate water level elevations in a natural channel. The groundwater model was used to estimate stage-storage-discharge relationships for the natural channel and to evaluate likely changes in groundwater levels due to the filling activities at a nearby gravel mine.

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59	Parametrix	Port of Illahee	2007-2008	Bremerton, WA	Development of the Illahee Creek aquifer protection plan. The objective of this project was to identify specific measures to protect and enhance groundwater resources in the Illahee Creek watershed. These protection and enhancement measures relate to both groundwater quality and groundwater quantity and specifically focus on the role of groundwater in supporting stream flow in Illahee Creek.
58	Keta Waters	Cascade Water Alliance	2007-2008	Bellevue, WA	This study was aimed at identifying the types of hydrogeological conditions or scenarios that may result in significant improvements to in-stream flow and temperature conditions through seasonal pausing of groundwater extraction from wells. Included converting a steady-state, 3-dimensional MODFLOW model developed by the USGS to a transient model.
57	Keta Waters	Okanogan Highlands Alliance	2006-2008	Tonasket, WA	Review the report that describes the groundwater flow model used to support the Final Supplemental Environmental Impact Statement (FSEIS) for the Buckhorn Mountain Project. The model is described in the September 7, 2006 report prepared for the Department of Ecology by URS.
56	Keta Waters	Quinault Indian Nation	2006-2008	Taholah, WA	Develop 3-dimensional MODFLOW model for the simulating groundwater flow in the Chehalis River basin.
55	Keta Waters	Muckleshoot Indian Tribe	2000-2008	Auburn, WA	Provide technical analysis and related potential impacts of the Lake Tapps Reservoir Water Right.
54	Keta Waters	University of Washington	2007	Seattle, WA	Provide technical assistance to estimate nitrate loadings to Hood Canal via groundwater discharge.
53	Keta Waters	Squaxin Island Tribe	2006-2007	Shelton, WA	Develop 3-dimensional MODFLOW model for simulating flow in the Woodland Creek watershed. Derive opinions about the relationship between surface water, groundwater, and water withdrawals in the Woodland Creek watershed
52	Keta Waters	Muckleshoot Indian Tribe U.S. EPA	2006-2007	Auburn, WA	Assess feasibility of water supply from Coal Creek Springs for hatchery operations. Involved evaluating existing spring collection facilities and providing recommendations for locating new wells to increase yield.
51	GeoEngineers	WSDOT	2006-2007	Olympia, WA	On-Call Agreement Y-9967. Infiltration Pond Research Extension. Washington State Department of Transportation Technical Monitors. Glorilyn Maw/ Rocio (Rose) Peralta/Tony Allen
50	Keta Waters	Washington Department of Ecology	2006-2007	Olympia, WA	Provide peer review of a groundwater flow model for the Spokane Valley Rathdrum Prairie (SVRP) Aquifer. The SVRP Aquifer study is intended to provide an improved scientific basis for evaluating water management alternatives for the SVRP aquifer and Spokane and Little Spokane Rivers. The SVRP Aquifer Study is a cooperative effort between the State of Idaho, Washington and the United States Geological Survey.
49	Keta Waters	Tulalip Tribes	2006-2007	North Bend, WA	Review North Bend Mitigation Forecasting Model developed by Golder Associates Inc.

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48	Keta Waters	Tulalip Tribes	2005-2007	Tulalip, WA	Work with Tribal personnel and Indian Health Service to improve the water supply system for the reservation. This project involved evaluating existing supplies, recommending modifications to the existing system, and designing new water supply wells.
47	Aspect Consulting	Lewis County Department of General Administration	2006	Lewis County, WA	Provide technical support for flow and transport modeling that was conducted to evaluate plume dynamics, and to provide reliable predictions of restoration timeframes for a set of remediation alternatives. The site is defined by a groundwater plume of chlorinated solvents. Included 3-D MODFLOW, MODPATH, and MT3D models.
46	Keta Waters	Swinomish Indian Tribal Community	2006	La Conner WA	Evaluate proposed amendment to the Instream Resource Protection Program in the Skagit River Water Resource Inventory Areas. Estimate of aquifer recharge from septic systems.
45	Keta Waters	The Trumpeter Swan Society	2005-2006	Maple Plain, MN	Evaluation of Ground Water and Surface Water Hydrology in the Vicinity of Hines Marsh, Long Beach Peninsula, Washington. January 7, 2006
44	Keta Waters	Illahee Forest Preserve and the Port of Illahee	2005-2006	Kitsap County, WA	Evaluate impacts of development on groundwater and surface water resources in the Illahee Forest Preserve.
43	Keta Waters	Swinomish Indian Tribal Community	2005-2006	La Conner WA	Effects of Groundwater Extraction from Exempt Wells on Stream Flow in the Lower Skagit River Basin. January 27, 2006.
42	Aspect Consulting	Gila River Indian Community	2004-2006	Gila River, AZ	Provide technical support to help plan strategic and operational delivery of water to meet agricultural, municipal, and industrial uses. Assist in developing a groundwater model to simulate both quantity and quality of groundwater resources, including potential effects of salt build-up due to irrigation practices.
41	Keta Waters	Black Hills Audubon Society	2005	Thurston County, WA	Assist in developing a long-term groundwater monitoring plan to help protect wetlands adjacent to gravel mining at the Maytown Aggregates site.
40	Northwest Hydraulic Consultants	Shared Strategy for Puget Sound	2005	Olympic Peninsula, WA	Instream Flow Assessment Pilot Project aimed at assessing human impacts on stream flow and salmon populations within subbasins of the Stillaguamish Watershed.
39	Pacific Groundwater Group	Port of Seattle	2004-2005	Seattle-Tacoma, WA	Provide peer review of the groundwater flow and transport models developed for the Port of Seattle to assess contaminant migration at the SeaTac airport
38	Keta Waters	Swinomish Indian Tribe	2004-2005	La Conner, WA	Evaluate groundwater-surface interactions in the Lower Skagit River basin, with particular focus on effects of exempt wells on flow in tributaries to the Skagit River.
37	Pacific Groundwater Group	Arkema (formerly Atofina Chemicals)	2003-2005	Tacoma, WA	Evaluate effects of upland groundwater contamination on sediment quality under tidally-influenced conditions. Work with state and federal regulators to gain approval for in-situ stabilization activities. Evaluate impact of inter-tidal habitat restoration activities on groundwater flow and transport.

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36	Pacific Groundwater Group	City of Milwaukie, Oregon	2003-2005	Milwaukie, Oregon	Provide technical analysis, advice, and expert testimony related to groundwater contamination which has affected the City's municipal water supply system.
35	Aspect Consulting	Glacier Northwest	2004	Dupont, WA	Provide technical support in reviewing and revising a 3-dimensional MODFLOW model for simulating groundwater flow in the vicinity of North Sequelitchew Creek. The model was developed to evaluate the potential impacts of a gravel mine expansion.
34	J. Massmann	State of Washington Attorney General	2003-2004	Olympia, WA	Provide technical analysis, advice, and expert testimony related to a groundwater and surface water contamination site in Spokane, WA.
33	GeoEngineers	WSDOT	2003-2004	Olympia, WA	On-call agreements Y-7717 and Y-8319. An Approach for Estimating Infiltration Rates for Stormwater Infiltration Dry Wells. Involved use of computer models to derive regression equations for estimating infiltration rates from dry wells.
32	J. Massmann	Muckleshoot Indian Tribe	2002-2004	Auburn, WA	Assist in developing habitat models for WRIA's 8, 9, and 10. Dr. Massmann's responsibilities included developing models for simulating flow and temperature in main-stem channels and tributaries.
31	J. Massmann	American Public Works Association	2003	Olympia, WA	Teach short course on design of storm water infiltration facilities and implementation of the Washington Department of Ecology's 2001 Stormwater Manual
30	Inter-Fluve and Pacific Groundwater Group	Public Utility District #1 of Whatcom County.	2003	Bellingham, WA	WRIA 1 Multipurpose Storage Grant, Grant G0300131 awarded by the Washington Department of Ecology. Evaluated projects related to groundwater storage and groundwater/surface water interactions, including converting surface water diversions to groundwater withdrawals and augmenting flow with groundwater.
29	Keta Waters	WSDOT	2002-2003	Olympia, WA	Implementation of Infiltration Ponds Research. Included development of 3-dimensional MODFLOW model for evaluating groundwater infiltration facilities. Lump Sum Agreement Number Y8265.
28	Brown and Caldwell	Orange County Sanitation District and Santa Ana Watershed Project Authority	2001-2002	Irvine, CA	Member of an expert panel convened to evaluate alternatives for the Santa Ana River Interceptor Expanded Alternatives Study. This project looked at various alternatives for constructing an interceptor sewer line along the Santa Ana River. My role was as an expert in hydrology and applications of decision analysis.
27	J. Massmann	Thistledown Farms	2001	Eugene, OR	Evaluate effects of dewatering activities associated with a proposed gravel mine and evaluate proposed mitigation of these de-watering activities through the use of infiltration trenches.

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26	Planning and Management Consultants, Ltd.	U.S. Army Corp of Engineers	2000-2001	Norfolk, VA	Evaluate the risk of water shortages in the Lower Peninsula, Virginia, including a review of future water use in the service area of a consortium of water utilities representing Newport News, Hampton, Poquoson, Williamsburg, York County, and James City County, Virginia. It was my responsibility to review and evaluate studies aimed at estimating the groundwater yield for these utilities
25	Farella Braun & Martel, San Francisco	Nestle Waters of North America (Perrier Water)	2000-2001	San Francisco, CA	Evaluate the hydrogeology and groundwater flow systems at several sites that provide spring water. Assessed compliance with regulations established by the Food and Drug Administration for spring waters
24	J. Massmann	Muckleshoot Indian Tribe	2000	Auburn, WA	Evaluated impacts of the White River Amphitheater on groundwater resources and water supply. Interacted with representatives from the National Marine Fisheries Services to obtain necessary approval and permits related to water resource impacts.
23	University of Washington	U.S. Department of Energy	1999-2000	Richland, WA	Use decision analysis techniques to determine if a partitioning interwell tracer test (PITT) at the Z-9 Trench in the Hanford Reservation. This project involved quantifying the value of information related to site remediation activities.
22	Boateng Associates	Atofina Chemicals	1999-2000	Tacoma, WA	Assess the performance of groundwater remediation activities along the Hylebos Waterway. These remediation activities include a barrier wall and groundwater extraction system.
21	J. Massmann	Westinghouse Savannah River Co.	1995-2000	Aiken, SC	Provide technical review and recommendations for groundwater remediation activities at the F- and H-area seepage basins on the Department of Energy's Savannah River site.
20	Robertson, Monagle, Eastaugh	Homer Electric Association	1999	Anchorage, AK	Review analyses aimed at estimating impacts of groundwater contamination on construction costs at adjacent properties.
19	J. Massmann	Portland Water Bureau	1998-1999	Portland, Oregon	Provide technical advice related to assessing the vulnerability of their South Columbia Wellfield to surface contamination. This is a 100 MGD system that is located beneath an industrialized area.
18	University of Washington	City of Seattle, Office of Economic Development	1997-1998	Seattle, WA	Duwamish Coalition Hydrogeologic Pathways Project. Developed three-dimensional groundwater flow model for the Duwamish River industrial corridor
17	Foster-Wheeler	Washington Department of Ecology	1996-1997	Olympia, WA	Assist in developing risk-based clean-up standards at contaminated sites for the Washington Department of Ecology, including development of soil cleanup standards to protect in-door air quality.
16	Parametrix, Inc.	Kitsap County	1996	Bellevue, WA	Provide technical review and design recommendations for landfill gas control system at the Hansville Landfill.
15	J. Massmann	U.S. Department of Justice	1996	Washington D.C.	Provide expertise regarding groundwater movement and contaminant transport from the Whidbey Island Naval Air Station, Washington

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14	Landau Associates	Boeing	1995	Seattle, WA	Provide technical review and advise on gas extraction activities at the Boeing facility in Gresham, Oregon.
13	J. Massmann	Baltimore Gas and Electric	1993-1995	Baltimore, MD	Provide technical review of subsurface contaminant transport modeling activities associated with site-remediation at Spring Gardens gasification facility. Evaluation included interactions between groundwater and the Chesapeake Bay.
12	R. Allen Freeze Consulting	Swedish Fuel and Waste Management Co.	1994	Stockholm	Present a five-day short course entitled "Hydrogeological Decision Analysis." This course focused on design of waste management facilities in uncertain hydrogeologic environments.
11	Jacques Whitford	Government of Newfoundland and Labrador	1994	Gander, New Foundland	Provide technical review and advise on gas extraction activities for cleaning soils beneath the Trans-Canada highway.
10	J. Massmann	GATX Transportation	1994	Chicago, IL	Facilitate implementation of decision analysis and observational approaches for conducting remedial actions at Saegertown Industrial Site, Pennsylvania
09	Tampere University	Finnish Ministry of the Environment	1993-1994	Helsinki, Finland	Provide technical review of field characterization activities at a site with chlorinated solvent contamination in Hattulla, Finland.
08	Riddell, Williams, Bullitt & Walkinshaw	Confidential	1993	Seattle, WA	Provide expertise regarding groundwater and contaminant transport for a CERCLA hazardous waste site contaminated with dense non-aqueous phase liquids.
07	Geraghty-Miller, Inc	U.S. Department of Energy	1989-1993	Reston, VA	Application of decision analysis and groundwater modeling techniques in groundwater extraction design for the Savannah River site, Aiken, South Carolina
06	Hart Crowser, Inc.	City of Anchorage	1990-1992	Anchorage, AK	Provide technical review and design recommendations for landfill gas control system at the Merrill Field Landfill. This landfill underlies an airport and light-industrial developments.
05	U.P. Engineering	Baraga County	1988-1989	Houghton, Michigan	Evaluation of regional groundwater flow systems for municipal groundwater supply.
04	Heller, Ehrman, White & McAuliffe	Confidential	1988	Seattle, WA	Provide expertise regarding groundwater and contaminant transport for a CERCLA hazardous waste site.
03	Hart Crowser, Inc.	Aluminum Company of America (ALCOA)	1986-1987	Vancouver, WA	Design and implement a remedial investigation and feasibility study for groundwater contamination from waste piles contaminated with arsenic.
02	Hart Crowser, Inc.	Washington Department of Ecology	1985-1987	Kent, WA	Develop and implement a sampling and work plan for completing the remedial investigation and feasibility study for the landfill, including evaluating procedures and methods used to assess landfill gas migration and design emergency gas control activities.*

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01	Hart Crowser, Inc.	Shell Oil Company	1986-1987	Tacoma, WA	Design and install a petroleum recovery system to clean groundwater contaminated with petroleum products. This site is located along the City Waterway and was influenced by tidal fluctuations.

\*The prime contractor is identified for those projects where Keta Waters was a sub-consultant. For those projects that list Keta Waters as the prime contractor, they contracted directly with the client.