



TREVOR L. ATKINSON, P.E.

74 Quail Hollow Road ♦ Logan, Utah ♦ 84321 ♦ (435) 770-4767 ♦ Fax: (435) 514-0617

Title: Principal Engineer, *Mountain Ridge Environmental LLC*

Expertise: Petroleum Aboveground/Underground Storage Tanks
Remediation System Design & Pilot Testing
Operation & Maintenance Oversight & Construction Management
Civil & Environmental Engineering
Environmental Site Assessments

Registration: California Registered Professional Civil Engineer (No. C 62026)
Utah Certified Underground Storage Tank Consultant (No. CC #173)
Utah Registered Professional Engineer (No. 334534)
Utah Certified Soil and Groundwater Sampler (No. GS-1360)

Certifications: 40-Hour OSHA Health and Safety Training; (1997)
8-Hour OSHA Health and Safety Supervisor Training (1997, 2004)
8-Hour OSHA Health and Safety Refresher, Updated Annually (1998-2006)

Experience: **Principal Engineer - Mountain Ridge Environmental LLC, Logan, Utah (2001-2006)**

Principal Engineer for Barker's White Pine, located in Logan, Utah (2001-2006). Provided expertise during investigation and emergency abatement of gasoline vapors inside two local motels that posed a risk to human health and the environment. Worked closely with the local Health Department and the Fire Department under a "rapid response" time frame to install a permanent vapor abatement system so the motels could re-open. Vapors inside the motel decreased to below detectable levels following emergency abatement. Additionally, conducted a subsurface investigation to identify the vapor source, and enhanced fluid recovery events were used to recover free product from a number of monitoring wells in the area. Completed cost estimate and workplan to provide monitoring, abatement and further investigation of site. Completed pilot testing of SVE and air sparging wells to determine radial influence and appropriate well spacing required for full-scale remediation at the site. Completed Design plans and specification to implement corrective actions. Obtained all necessary environmental permits including air emission discharge, building permits, and placement of system compound and extraction points. Managed project, budget and supervised construction crews and subcontractors and personnel during the installation of the of an SVE and air sparge system at site including 9 sparge and 6 SVE wells. Performed startup, troubleshooting and operation of system to verify and monitor cleanup objectives (UT).

Principal Engineer for Mackay Marine Brine Shrimp, located in Hyrum, Utah (2001-2006). Coordinated meeting with State DEQ regarding abatement actions for free product removal and treatment alternatives for the site. Obtained air permit and operated SVE/AS remediation system. Evaluated and completed subsurface investigation including installing additional wells. Completed emission permits and soil aeration plan for soil excavation and landfarm to remove contaminated soils from subsurface. Supervised collection of soil and groundwater samples to confirm site cleanup and completed results report (UT).

Project Engineer, for Chevron Station No. 7-5959, located in Green River, Utah (2001-2003): Assisted with the construction and operation of two long-term multi-phase extraction pilot tests focusing primarily on a 400 foot horizontal well and a short term pilot test on vertical wells. Site had more than 4-feet of free product on and off-site. Performed calculations, radial influence graphs, and completed technical summary reporting for pilot test. Performed pilot testing for a third pilot study involving high-vacuum extraction and moderate-vacuum extraction from vertical extraction wells. Presented results to State which resulted in a closure settlement based on the infeasibility of remedial technologies (UT).

Principal Engineer, for Former Chevron "Ginn Property" located in Forestville, California (2003-2004): Designed, performed calculations, and drafted drawings and specifications for a MPE system which included 50 Hp Liquid ring pump with abatement of vapor emissions using catalytic oxidizer and cleanup of extracted groundwater using granular activated carbon. Prepared drawdown results and radial influence estimates. System was a design build project on a rapid response time frame to clean up the property prior to future planned construction. Obtained building permits, electrical, propane, air discharge and sewer discharge permits for system installation (CA).



Experience: Principal Engineer - Mountain Ridge Environmental LLC, Logan, Utah (2001-2006)

Project Engineer for former Chevron Service Station No. 9-6309, located in Forestville, California (2003-2004): Designed, performed calculations, obtained permits and drafted drawings and specifications for a 50-Horsepower Two Phase Extraction system which included the expedited remediation of impacted groundwater and soil vapors from 15 four-inch vapor wells and abatement of vapor emissions using a thermal oxidizer and groundwater treatment using granular activated carbon. Prepared specifications package and cost estimate for bid and coordinated installation and purchase of all equipment, parts and procurement of power for the site (CA).

Project Engineer for Chevron USA Products Company (Chevron), Station No. 9-0160: located in Watsonville, California (2000-2002): Designed, performed calculations, and drafted drawings and specifications for a 500 cfm SVE, 30 gpm Groundwater Extraction and air sparging systems which included extraction of impacted ground water and soil vapors from on-site extraction wells and abatement using a catalytic oxidizer, low profile air stripper and carbon polishing. Prepared specifications package and cost estimate for bid and coordinated installation and purchase of all equipment, parts and procurement of power for the site (CA).

Project Engineer, for Chevron Station Nos. 9-3093 and 9-2780, located in San Jose, California (2001-2003): Designed, performed calculations, and drafted drawings and specifications for a 150 and 300 scfm SVE and 20 and 30 gpm Groundwater Extraction systems which included extraction of impacted ground water and soil vapors from on-site extraction wells and abatement of water and vapor emissions using a granular activated carbon. Prepared bid package and coordinated installation and purchase of all equipment, parts and procurement of power for the site (CA).

Project Engineer, for Chevron Station No. 9-6293, located in Gilroy, California (2001-2003): Designed, performed calculations, and drafted drawings and specifications for a 250 scfm SVE system which included extraction of impacted soil vapors from on-site vapor wells and abatement of vapor emissions using a catalytic oxidizer. Prepared specifications package and cost estimate for bid and coordinated purchase of all equipment, parts and procurement of power for the site (CA).

Project Engineer, for former Texaco Service Station, located in San Jose, California (2002-2003): Designed, performed calculations, and drafted drawings and specifications for a MPE system which included 50 Hp Liquid ring pump with abatement of vapor emissions using catalytic oxidizer and cleanup of extracted groundwater using granular activated carbon (CA).

Project Engineer, for ARCO Station Nos. 1905 and 1912, located in Fountain Valley, California (2000-2001): Designed, performed calculations and drafted drawings for two MPE systems in Southern California which included extraction of impacted ground water and soil vapors from on-site extraction wells. Provided detailed specifications for all parts and equipment for construction. (CA)

Project Engineer, for former British Petroleum Station No. 29, located in Kearns, Utah (2001-2003): Assisted in the design, setup and operation of SVE and air sparging pilot testing on wells screened across a perched water table. Performed calculations, and completed technical summary for pilot test (UT).

Project Engineer, for Chevron, Chevron Pipeline and Industrial Sites located in Lake Powell; Utah, Wendover, Utah; Burley, Idaho and Ogden, Utah (2001-2005): Conducted monthly and quarterly operation, maintenance and troubleshooting activities for active remediation systems, which included SVE and groundwater extraction with monthly maintenance of a low profile air stripper (UT).

Experience: Senior Engineer/Project Manager - Science Applications International Corporation (SAIC), Lakewood, Colorado (2003-2006)

Senior Engineer for former Chevron Facility No. 7-7992, located in Limon, Colorado (2004-2006): Organized, developed plans and reviewed site information for investigation and expedited pilot testing using vacuum truck for in-situ testing of high vacuum multi-phase extraction technologies and air sparging for complex subsurface consisting of contamination absorbed into fractured bedrock. Prepared cost estimate for corrective action alternatives, results report and workplan for pilot testing. Supervised on-site personnel during 14-day pilot test and completed technical results summary and preliminary design for Corrective Action Plan (CO).



Experience: Senior Engineer/Project Manager - SAIC, Lakewood, Colorado (2003-2006)

Senior Engineer for former Chevron Facility No. 7-0825, located in Littleton, Colorado (2005-2006): Organized, assisted and developed plans for expedited in-situ pilot testing of high vacuum multi-phase extraction (MPE) technologies at the site. Prepared workplan for 7 day MPE pilot test involving down-hole submersible pump (20 gpm) and high vacuum claw pump capable of 18" Hg. Due to elevated hydrocarbon emissions, a second week long MPE test was performed using submersible pump (10-22 gpm) and 25 Horsepower liquid ring pump with thermal oxidizer. Supervised on-site personnel during both 7-day pilot tests and completed technical results summary and preliminary design for internal review and distribution to Chevron. Completed preliminary design and calculations for 2 separate SVE systems to remove petroleum hydrocarbons underneath school basement and former service station property. Prepared pilot testing calculations and summary information for submittal to Chevron (CO).

Senior Engineer for Former Chevron Terminal No. 129-0350, located in Ogden, Utah, (2004-2006): Organized, developed plans and reviewed site information for subsurface investigation and interim abatement actions, including completely refurbishing existing interceptor trench system as an interim remedial action to satisfy state regulators. System installed involves new pumps, replacement of treatment components and modifications to include secondary containment and emergency shut-down. Prepared cost estimate for investigation, alternative selections, design, implementation and operation of the current system. Currently moving towards long term remediation options and design for future corrective actions at site (UT).

Senior Engineer for Active Chevron Terminal No. 129-0334, located in Salt Lake City, Utah (2005-2006): Organized, developed plans and reviewed site information for subsurface investigation and interim abatement actions, including restarting the Soil Vapor Extraction (SVE) and interceptor trench systems as an interim solution to prevent off-site migration of contaminants onto jurisdictional wetlands properties. System will include explosion-proof pumps and motors and replacement of components to comply with Chevron Refinery electrical codes. Prepared cost estimate for investigation, alternative selections, design, implementation and operation, maintenance and monitoring (UT).

Senior Engineer / Project Manager for Chevron Facility No. 7-2858, located in Midvale, Utah (2004-2006): Organized, developed plans and reviewed site information for subsurface investigation and interim abatement actions. Prepared cost estimate for investigation, workplan and abatement actions and currently moving towards preliminary pilot testing options including MPE and SVE technologies as well as the design for future corrective actions at site (UT).

Senior Engineer / Project Manager for Chevron Facility No. 7-2818, located in Ogden, Utah (2004-2006): Organized, developed plans and reviewed site information for subsurface investigation and interim abatement actions. Prepared cost estimate for investigation, workplan and abatement actions and currently moving towards preliminary pilot testing options including MPE technologies as well as the design for future corrective actions at site (UT).

Senior Engineer, for Chevron Sites located in Lake Powell and Ogden, Utah (2003-2006): Conducted monthly and quarterly operation, maintenance and troubleshooting activities for active remediation systems, which included SVE and groundwater extraction systems (UT).

Senior Engineer for former Chevron Facility No. 7-7991, located in Grand Junction, Colorado (2004-2006): Organized, developed plans and reviewed site information for investigation and in-situ pilot testing of high vacuum multi-phase extraction technologies at the site. Prepared cost estimate for corrective action alternatives and workplan for pilot testing. Pilot testing will involve 25 HP liquid ring pump and down hole stinger to remove free product and test feasibility of MPE at the site (CO).

Senior Engineer for former Texaco Facility No. 21-1382, located in Denver, Colorado (2003-2005): Designed, performed calculations, and reviewed site information for investigation and expedited soil removal of approximately 3,000 cubic yards of petroleum hydrocarbon impacted soil beneath proposed commercial building located at the former station property. Prepared cost estimate for corrective action alternatives and recommendations for site cleanup (CO).



Experience: Senior Engineer/Project Manager - SAIC, Lakewood, Colorado (2003-2006)

Senior Engineer for Chevron Bulk Terminal and Station No. 129-0858, located in Montrose, Colorado (2004-2005): Prepared preliminary design and reviewed site information for investigation and pilot testing at former chevron facility. Prepared cost estimate and completed conceptual corrective action plan alternatives and recommendations for site cleanup, including proposed pilot testing plan. (CO).

Experience: Project Engineer/Project Manager – BIO-WEST, Inc., Logan, Utah (2001-2003)

Project Engineer for Krey's Service LLC, located in Tremonton, Utah (2001-2003): Designed, performed calculations, and drafted drawings and specifications for a 400 cfm MPE and aquifer sparging system with vapor abatement using a catalytic oxidizer, and groundwater treatment using a low profile air stripper. Completed Corrective Action Plan, cost estimate and agreement for Performance Based Corrective Action with the State of Utah Petroleum Storage Tank Fund. Obtained all necessary environmental permits including air emission discharge and disposal to the city sewer, and placement of system compound and 30 extraction points. Managed subcontractors and personnel during the installation of the system wells and the remediation system. Performed startup, troubleshooting and operation of system. Site obtained full closure (within project budget) from state in 2005 after 2-year remediation goals were met (UT).

Project Engineer for Moroni Feed Co-Op, LUST Site, located in Moroni, Utah (2001-2003): Completed Corrective Action Plan, cost estimate and submitted winning bid for Performance Based Corrective Action with the State of Utah Petroleum Storage Tank Fund. Designed, performed calculations, and drafted drawings and specifications for a 850 cfm SVE and 200 cfm aquifer sparging system which included extraction of soil vapors from 42 dual completion SVE/AS wells. Discovered separate release of free product and supervised installation of an additional 30 free product recovery wells. Scheduled field personnel and oversaw 5 weeks of enhanced fluid recovery events to capture and separate groundwater and free product and treat and dispose of groundwater to sanitary sewer using granular activated carbon. Ordered equipment and piping for system installation and oversaw personnel during the drilling and installation of remediation wells. Prepared results report and cross sections for site and investigation, abatement and determining the extent of free product plume (UT).

Project Engineer for Goldstein & Associates Pipeline Spill Scenario, located in Mona and Clear Creek, Utah (2001-2002): Provided expertise for a leak and spill analysis of a petroleum products pipeline project investigating the possible impacts associated with a leak or rupture in a petroleum conveyance pipeline at two locations in Central Utah. Investigated and evaluated field infiltration data and created spreadsheets and calculations to model the flow of gasoline in overland flow from the pipeline. Completed reports including four spill scenarios and the impacts occurring based on summer versus winter conditions (UT).

Project Engineer for Logan-Cache Airport Property, (2002): performed environmental site assessment and limited subsurface investigation of airport facilities and aboveground storage tanks located at the airport. Interviewed personnel and prepared results report and maps according to ASTM E 1527-00 (UT).

Project Manager/Engineer, for Casper's Ice Cream, located in Richmond, Utah (2002-2003): Prepared cost estimates and managed field personnel in collecting samples and information required for UPDES permit application for discharge to the river. Handled regulatory correspondences and reviewed analytical results and flow data required for permit. Made preparations for design of a water collection and land application system, due to the high loading rates and effluent limitations of the waste stream (UT).

Project Engineer for Trenton Feed Property and Former Trans-Lux ISE property located in Logan and Trenton, Utah (2001-2002): performed environmental site assessment and limited subsurface investigation and data review in vicinity of aboveground storage tanks, dispenser islands and repair shop located at the site. Prepared results report, maps and discussion according to ASTM E 1527-00 (UT).

Experience: Project Engineer – Delta Environmental Consultants, Inc., Rancho Cordova, CA (1998-2001)

Project Engineer for Ultramar, South Lake Tahoe, CA (2000): Was subpoenaed and deposed by the South Tahoe Public Utility District regarding information pertaining to MTBE in the ground water. Performed Witness Testimony and supplied information regarding active service station in South Lake Tahoe (CA).



Experience: Project Engineer – Delta Environmental Consultants, Inc., Rancho Cordova, CA (1998-2001)

Project Engineer for Exxon Company USA (Exxon), Ultramar Inc. (Ultramar) and ARCO (1998-2002): Scheduled, Managed and Performed Quarterly Ground Water Monitoring and Reporting for over 60 hydrocarbon impacted gas stations in Northern California. Completed reports describing both the ground water results and status of the remediation systems for each site. Generated and Drafted Figures for each report which included elevation contours, concentration maps and process flow diagrams (CA).

Project Engineer for Exxon, Ultramar, Chevron & ARCO (1998-2001): Conducted quarterly and monthly operation and maintenance reporting, oversight and calculations for more than 40 active remediation sites in Northern California which included Ground Water Extraction, SVE, Air Sparging & Bioventing Systems. Supervised several field technicians and ordered all necessary parts and equipment required to keep systems running efficiently and maintain compliance with permitted values. Also, updated and completed reports to appropriate regulatory agencies regarding the required permits (CA).

Project Engineer for Ultramar, Chevron & ARCO (1998-2001): Organized and performed Site Assessment and Sensitive Receptor Surveys for over 100 client properties located in Northern California. Each site assessment included a site visit including documentation of on-site facilities, tanks, dispensers and preparation of site map. In addition, each site assessment included a utility search, on-site verification of utility vaults, depths, photographs and sensitive receptor survey which included water well search, surface water verification, door to door observations and on-site interviews (CA).

Project Engineer for ARCO Service Station No. 2111 and 1033, located in San Leandro and Malibu, California (2000-2002): Completed technical summary for an on-going Multi-Phase Pilot Testing and remediation conducted in Malibu, California less than 100 feet from the Pacific Ocean. Performed calculations of the radius of influence, hydraulic influence and removal rates during the pilot test, and presented recommendations to improve future performance at each site (CA).

Project Engineer for ARCO Service Station Nos. 2111, 4977 and 6206, located in San Leandro, Castro Valley and Fremont, California (2000-2002): Designed, performed calculations and drafted drawings for three sites undergoing upgrades to install system piping and extraction wells for future pilot testing and remediation systems. Provided detailed specifications for all parts and equipment for construction. Conducted bid walk and performed construction monitoring and oversight (CA).

Project Engineer for Exxon, Seattle, WA (1999-2000): Conducted Operation, Maintenance and Troubleshooting activities for over 10 active remediation sites in Washington that included SVE, Air Sparging and Bioventing Systems. Oversaw and conducted groundwater monitoring activities for 8 petroleum hydrocarbon impacted gas stations (WA).

Project Engineer for ARCO & Ultramar (2000-2001): Scheduled, Managed and performed soil sampling at more than 20 product line and dispenser island upgrade events. Directed the overexcavation of gasoline impacted soils and oversaw the removal of underground storage tanks and performed tank basin sampling. Managed the construction and installation of equipment and connections for remediation systems in Northern California (CA).

Project Engineer for Exxon Truck Stop, West Sacramento, CA (1999-2000): Organized and performed a 72-hour pump test involving a variable flow pump and submersible data-loggers to collect ground water data. Completed graphs and data interpretations for presentation in summary report (CA)

Project Engineer for Chevron (2000-2001): Prepared several Corrective Action Plan reports and workplans for various sites in northern California. Investigated contamination into three water-bearing zones. Obtained permits and oversaw the drilling of wells including discretely screened wells (with conductor casings) and destruction of existing wells (CA).

Project Engineer for Ameripride Services, Inc., Sacramento, CA (1999-2001): Conducted quarterly ground water monitoring activities, graphed water levels vs. screened intervals, and drafted Figures for placement of Gore-Sorbors® at the site. Oversaw the Installation of 10 Geoprobes at Ameripride facility property in Bakersfield (CA).



Experience: Staff Engineer – Dames & Moore, Inc., Sacramento, California (1997-1998)

Staff Engineer for McClellan Air Force Base, Sacramento, CA (1997-1998): Conducted facility wide inspection and building by building environmental assessment and survey as part of preliminary base closure activities. Developed multiple facility Spill Prevention Control & Countermeasures (SPCC) Plans for aboveground storage tanks (including jet fuel tanks) and hazardous storage areas (CA).

Staff Engineer for Union Pacific Railroad Yard, Roseville, CA (1997-1998): Completed the design and calculations for a multi-million dollar storm water collection system for the railroad property including manual calculations of pipe sizes and flowrates to be used, checked the values using a computer model; and developed an Engineering Cost Estimate for construction. Also evaluated options for the sludge conveyance system to be used at an on-site industrial wastewater pretreatment plant (IWTP), calculated and developed the hydraulic grade line and organized the information to ensure that the plant did not exceed its permitted values (CA).

Staff Engineer for Rosboro Lumber Company, Marysville, CA (1997-1998): Completed the design of a 200 gpm Groundwater Pump & Treat Plant and 100 cfm SVE system to address contamination from solvents and wood preservatives; developed the specifications for use in an AutoCAD drawing; completed an Engineering Cost Estimate; solicited bids for the construction, and completed necessary permit documents (CA)

Staff Engineer for Union Pacific Railroad Yard, Sacramento, CA (1997-1998): Supervised and Monitored Construction and soil excavation Activities for removal of lead, arsenic, oil, and PCB contaminated soil in the former rail yard, collected soil confirmation and composite samples, conducted Air Quality monitoring activities utilizing high volume air samplers, maintained six air quality sampling stations during construction (CA)

Staff Engineer for ARCO/Tesoro Bulk Terminal, West Sacramento, CA (1997-1998): Organized a 5-day SVE and Bioventing Pilot Test for a bulk storage facility. Purchased, maintained and ran a 500-cfm thermal oxidizer unit at the site, collected vapor samples and confirmed sampling results (CA).

Staff Engineer for Union Pacific Railroad Snowshed, Norden, CA (1997-1998): Performed construction management for installation of new fueling system, Calculated mass of petroleum hydrocarbons and benzene remaining in soil for previous release inside the Norden Snowshed, Conducted Quarterly Groundwater sampling at Norden Rail Yard in the Sierra Mountains (CA).

Computer Proficiency

Excellent Auto-CAD / Microsoft Word, Excel, PowerPoint, Access / Adobe Acrobat / Surfer
Can setup and maintain computer networks and proficient using all windows operating systems
Can operate and train using Total Station Survey equipment and digital mapping software

Professional Associations and Memberships

American Society of Civil Engineers: 1993-2006

Previous Clients/Customers

Chevron Products Company, Atlantic Richfield Company, Ultramar Diamond Shamrock, Exxon Company USA, Flying J, British Petroleum, Phillips Petroleum, Tesoro, Union Pacific Railroad, Utah Division of Environmental Response and Remediation, Various Independent Clients

Education

Bachelor of Science in Environmental Engineering, Utah State University