



GEO FORWARD

Azad Adam Kaligi, PG

Professional Geologist
Project Manager

DTLA Headquarters:

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Education:

- Bachelor of Science in Geology
California State Polytechnic
University Pomona, Class of 2008

Professional Licenses:

- CA Licensed Professional Geologist
 - (Lic. No.: 9287)
- CA Licensed Class-A General
Engineering Contractor– *DBA Geo
Forward Engineering Contractor*
 - (Lic. No. 1010931)
- CA Certified Hazardous Substance
Removal & Remediation
Contractor (HAZ)
- LADBS Licensed Methane Deputy
Building Inspector
 - (Lic. No. P035300)

Occupational Certifications:

- California Occupational Safety &
Health Administration (OSHA)
Hazardous Waste Operations &
Emergency Response (HAZWOPER)
- Mine Safety & Health
Administration (MSHA)
- ExxonMobil – LPS

Primary Responsibilities:

- Phase 1 & 2 Environmental Site
Assessments
- Soil/Groundwater Contamination
Assessment & Remediation
- Methane Soil Gas Testing
- Methane Mitigation Design
- Methane Barrier Inspection
- Vapor Intrusion Investigations

Additional Responsibilities:

- Geotechnical Engineering
- Hydrogeology
- Water Well Design & Construction
- Building Construction

Azad Kaligi is a California Licensed Professional Geologist, Licensed Class-A General Engineering Contractor, and Certified Hazardous Substance Removal & Remediation Contractor experienced in the environmental, geotechnical and water-resources industries. From his work history at reputable geological/engineering consulting firms, Mr. Kaligi has an extensive understanding about subsurface contamination assessment and remediation methodologies. Since 2008, Mr. Kaligi has been taking on a variety subsurface contamination projects with responsible parties such as: global oil & gas companies; energy corporations; aerospace manufacturing facilities; factories handling hazardous waste; and more.

SUMMARY OF WORK EXPERIENCE

ENVIRONMENTAL CONSTRUCTION

Mr. Kaligi started as a journeyman on a variety of construction and grading projects while completing his undergraduate degree in geology. As a chainman land surveyor for City of Los Angeles - Department of Public Works, Mr. Kaligi participated in engineering projects involving excavation, mapping, road construction, slope stability, erosion control and more. While working for the Bureau of Engineering, Mr. Kaligi assisted in a slope stability study of the Griffith Park Mountains, and a long-term grading project at the Los Angeles Zoo. As a field geologist in the environmental engineering industry, Mr. Kaligi has also managed numerous UST and contamination-source excavations, road demolition projects and well drilling/construction assignments.

ENVIRONMENTAL ENGINEERING

Mr. Kaligi kick-started his career as a geologist working for reputable geologic/engineering firms providing soil and groundwater remediation projects for global oil & gas companies such as ExxonMobil. Projects involved scientific assessment, geologic characterization, hydrogeological modeling and engineering methods for remedial design to reduce contamination levels and achieve closure with the Water Quality Control Board. Typical projects included drilling, data analysis, designing and constructing monitoring well networks, soil sampling, groundwater monitoring, laboratory testing, report writing and regulatory agency correspondence. Advanced engineering projects included in-situ chemical oxidation for groundwater remediation, groundwater pump-and-treat, and air-sparge with soil vapor extraction.



ENVIRONMENTAL ASSESSMENT & REMEDIATION

Mr. Kaligi continued his career into the environmental due diligence and remediation consulting field to assist commercial lenders, developers and investors by providing site assessment, remediation and construction services throughout the western United States. These projects included Phase I and Phase II Environmental Site Assessments, contamination source and UST excavation, vapor barrier installations, active and passive soil gas mitigation system design and construction, air quality testing and mitigation, negotiations with regulatory agencies, and various forms of soil and groundwater contamination remediation. Additional investigations included legally driven contamination migration pathway studies, fate & transport modeling, and responsible party studies for the State Water Resources Control Board, and various contamination legal disputes.

WATER RESOURCES

Mr. Kaligi provided geologic and hydrogeologic services for several high-profile water-supply projects throughout California. While employed at GEOSCIENCE Support Services, Inc., his involvement with the California American Water Company included diagonal drilling and slanted-well construction underneath the ocean floor to provide an intake source for a proposed ocean-water desalination plant in Monterey, California. Mr. Kaligi also assisted with a major groundwater and geologic exploration project in the Mojave Desert which required drilling a network of boreholes through limestone bedrock as deep as 2,000 feet below ground surface to characterize karstic features and their water-bearing properties. Other projects included designing and installing groundwater production wells for major water agencies and municipalities under the supervision of the nation's top hydrogeologists.

WORK HISTORY

GEO FORWARD, INCORPORATED

- Location: 445 South Figueroa Street, Suite 3100, Los Angeles, California 90071
- Duration of Employment: 2015-Present
- Position: Project Manager
- Service: Environmental, Geologic, Engineering & Construction Consulting

Geo Forward, Inc. is a full-service environmental engineering and geological consulting firm focused on concerns related to soil and groundwater contamination, soil-gas intrusion and earthwork-construction. Services include subsurface investigations/characterizations, environmental site assessments, subsurface contamination remediation (or cleanup), analysis for soil-gas intrusion risk, active and passive mitigation system designs for vapor intrusion into building structures, groundwater monitoring, and more.

GEOSCIENCE SUPPORT SERVICES, INCORPORATED

- Location: 620 Arrow Highway, La Verne, California 91750
- Duration of Employment: 2014-2015
- Position: Hydrogeologist III
- Service: Geologic, Engineering & Groundwater Production Consulting

Geoscience Support Services, Inc. is a prestigious hydro-geologic consulting firm with involvement in various high profile water-supply projects throughout California. As a consultant to water-supply companies and agencies, projects involved geologic analysis, deep-aquifer drilling, ocean-floor drilling, bedrock drilling, aquifer identification and testing, production/injection well design and construction, modeling, groundwater quality testing/monitoring, and more.



PARTNER ENGINEERING & SCIENCE, INCORPORATED

- Location: 2154 Torrance Boulevard, Suite 200, Torrance, California 90501
- Duration of Employment: 2011-2014
- Position: Project Geologist, Project Manager
- Service: Environmental Geologic & Engineering Consulting

Partner Engineering and Science is one of the national leaders in environmental consulting for commercial lenders, developers and investors. During employment, projects involved environmental site assessments, contamination remediation projects, air quality testing and monitoring, excavation and contamination source removal, shallow soil-gas investigations and plume-source investigations throughout the western United States. Remediation projects frequently required negotiations with the California Water Quality Control Board. Litigation support projects required detailed geologic and hydro-geologic analysis of subsurface contamination migration.

ETIC ENGINEERING, INCORPORATED

- Location: 898 North Fair Oaks Avenue, Suite A, Pasadena, California 91103
- Duration of Employment: 2008-2010
- Position: Staff Geologist
- Service: Environmental Geologic & Engineering Consulting

ETIC Engineering, Inc. is a reputable environmental engineering consulting firm contracted by the responsible parties of soil and groundwater contamination sites, to achieve case closure with the California Water Quality Control Board. As per the direction of the Water Board, scientific assessments, subsurface characterization and remedial efforts were made on a variety of ExxonMobil and Pacific Gas & Electric Sites throughout California. Typical projects included drilling, designing and constructing networks of groundwater monitoring wells, soil sampling, soil-gas probe installations, soil-gas sampling and monitoring, groundwater monitoring, laboratory testing, report writing and regulatory agency correspondence. Advanced engineering projects included in-situ chemical oxidation for accelerated groundwater remediation, groundwater pump-and-treat, and air-sparge with soil vapor extraction.

LOS ANGELES PUBLIC WORKS, BUREAU OF ENGINEERING, LAND SURVEY DIVISION

- Location: 555 East Ramirez St., Los Angeles, California
- Duration of Employment: 2007
- Position: Engineer Intern

The Land Survey Division of the City of Los Angeles is in charge of the field engineering tasks within the Public Works Department. Projects involved guiding excavators during grading projects, mapping streets and hillsides, and planning for new road or bridge construction projects.



TOP PROJECTS

Phase 1 Environmental Site Assessment

– Proposed Hotel Development Project & Former City Owned Parking Lots: Los Angeles, CA

Employer: *Geo Forward, Inc.*

This project was purposed to provide the purchasers (a nationwide hotel corporation) and their lenders with an assessment of potential environmental risk, prior to the acquisition of multiple commercial/industrial parcels of land. A large hotel development was proposed above 6 adjoining properties. This Phase 1 Environmental Site Assessment was conducted in accordance to the American Society for Testing and Materials (ASTM) Standard Practice E1527, and the Environmental Protection Agency (EPA) Standards for All Appropriate Inquiries (AAI) under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Afterwards, a detailed Phase 1 Environmental Site Assessment Report and an executive summary was tendered to the Clients and their lending entity.

Phase 2 Environmental Subsurface Investigation

– Proposed Mixed-Use Complex & Former Oil Pumping & Storage Facility: Wilmington, CA

Employer: *Geo Forward, Inc.*

This project was purposed to provide the purchasers of a commercial/industrial property with an assessment that provisionally investigated whether the subsurface had been impacted by contaminants. This Phase 2 Subsurface Investigation was conducted in accordance with ASTM Standard Practice E19003. A 60-unit mixed-use structure with 3-level subterranean parking garage was also proposed on site, thus vapor intrusion concerns posed a significant concern. The property included an abandoned oil & gas production well and crude oil storage facility. This assessment included soil, soil-gas and groundwater testing to laterally and vertically delineate the extent of any potential subsurface contamination. Chemicals of concern included polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and toxic metals. Afterwards, a Phase 2 Subsurface Investigation Report with detailed notes, figures and data-tables was tendered to the Clients and their lending entity. Furthermore, iso-concentration maps were drafted to demonstrate the lateral and vertical extent of chemical constituents found groundwater. Lastly, a detailed summary of estimated costs for cleanup and vapor intrusion mitigation was prepared for the Client undergoing transaction. Remedial action is currently in progress by Geo Forward, Inc.

Phase 1 & 2 Environmental Site Assessment

– Proposed Recording Studio & Former Automobile Repair Facility: North Hollywood, CA

Employer: *Geo Forward, Inc.*

This project was purposed to provide all parties of a commercial/industrial property transaction with an assessment of environmental risk and liability. A recording studio was proposed on site. A Phase 1 Environmental Site Assessment was conducted per ASTM and EPA standards, indicating the presence of numerous environmental risks (hydraulic lifts, underground tanks, leach field, hazardous waste storage areas, etc.). Per ASTM guidelines, a Phase 2 Subsurface Investigation was then conducted to determine whether the subsurface had been impacted by contaminants from these high-risk devices. The investigation included soil and soil-gas testing to delineate the extent of any potential subsurface contamination. Chemicals of concern included TPH, VOCs, SVOCs and toxic metals. Upon completion, a detailed set of reports with executive summaries were furnished for all parties of the transaction, as well as the major lending entity represented by the purchaser of the property.



Methane Soil Gas Assessment & Vapor Intrusion Mitigation Barrier Design

– Proposed Multi-Family Residential Building & Former Oil & Gas Field: West Los Angeles, CA

Employer: *Geo Forward, Inc.*

A 32-unit multi-family residential structure and subterranean parking garage was proposed in a Los Angeles Methane Zone. The City of Los Angeles required a methane soil gas assessment to determine the minimum design parameters for a methane gas mitigation system. As per the standards of the City of Los Angeles Department of Building and Safety, a Methane Soil Gas Survey Report was prepared, which summarized the design parameters for a vapor intrusion barrier. The methane mitigation requirements for the proposed development required a passive and active mitigation system. A de-watering and advanced water-proofing barrier was also required. The methane mitigation plan included a systematic network of subsurface horizontal ventilation pipes within a gravel-packed layer engineered to be above the groundwater table. A series of ventilation risers were connected to a blower and pumping system to mechanically mitigate the risk of methane gas intrusion.

Toxic Soil Vapor Mitigation & Remediation System

– Proposed Mixed-Use Complex & Former Petroleum-Industrial Site: Downtown Los Angeles, CA

Employer: *Geo Forward, Inc.*

A mixed-use residential and commercial structure with a planned subterranean and podium parking garage was proposed atop a parcel of land highly contaminated by historical industrial facilities and oil & gas production wells. A soil vapor survey was initially conducted to assess the level of hazardous subsurface soil gas at the subject property. Afterwards, vapor intrusion modeling was conducted to optimize a vapor mitigation plan (based on cost and functionality). Lastly, a soil vapor extraction system was designed to remediate the contamination to soil vapor underlying the property. Upon completion, the remediation and mitigation system included a computer activated unit comprised of a sub-slab soil vapor extraction system (with remedial action onsite), an indoor HVAC system along with sensors and alarms at the lowest occupied levels, and a dual-purpose hazardous vapor and water-proofing barrier. The advanced water-proofing system was strategically designed to withstand the hydrostatic pressures of the groundwater formation surrounding the proposed subterranean garage, meanwhile preventing the incursion of toxic soil gas.

Grading Report, Artificial Fill Compaction Certification, and Limited Slope Stability Study

– Corrective Action Requirement by Los Angeles County: Agua Dulce, CA

Employer: *Geo Forward, Inc.*

Under the oversight of the Los Angeles County Department of Public Works, a Notice of Violation of Grading Code was issued due to numerous stockpiles of uncertified imported soil onsite, observed to obstruct the pre-existing natural drainage course (Section J103.1 – Grading work performed without benefit of permit or inspection; and Section J103.2 – Grading work that obstructs a drainage course). The objective of this project was to determine the geological engineering factors that pertain to the soil compaction tasks onsite by preparing: a description and evaluation of the site specific geology and soil/bedrock conditions; an assessment of existing uncertified/imported soil stockpiles and their suitability for use as artificial fill material; a limited environmental screening of the uncertified/imported soil stockpiles to test for possible contamination; a limited geotechnical analysis to obtain the ideal maximum dry density and optimum moisture content for soil compaction testing; and a comprehensive review and revision of the proposed grading plan prior to excavating and filling at the subject site.



New Drinking Water Source Exploration

– Cadiz Groundwater Exploration Project: Mojave, CA

Year: 2015

A geological and hydrogeological exploration for water-bearing karstic features within limestone and dolomitic-limestone bedrock: The project included long-term reverse circulatory method drilling (mud, air, and foam) through alluvial and bedrock sections as deep as 2,000 feet below ground surface. A network of boreholes were drilled 24-hour per day, with continuous soil sampling and logging. A series of aquifer zone tests and down-hole geophysical, acoustic, caliper and video surveys were conducted to the terminal depth of each borehole. Groundwater quality, recharge rates and basin capacity were figured based on these findings.

Ocean-Water Desalination

– California-American Water Company & Monterey County Drinking Water Project: Monterey Bay, CA

Years: 2014, 2015

The Monterey Peninsula Water Supply Project included diagonal drilling and production well construction for a proposed ocean-water desalination plant: This project included long-term drilling at an 18-degree angle, 24-hours per day, as deep as 800 feet diagonally beneath the ocean floor. Drilling and constructing the well at an acute angle -apt for sea-floor environments- became a breakthrough technical process which required teams of California's top engineers and geologists. The production well's perforated zone targeted three aquifers, and required continuous soil sample analysis, isolated aquifer zone testing, the full suite of geophysical logging, development and continuous aquifer pumping test. To confirm the lack of environmental impact to groundwater quality and levels inland, the project included a network of regional groundwater monitoring wells exclusively screened within the targeted aquifer.

Groundwater Contamination Remediation with Comingling Plumes

– Former Aircraft Manufacturing Facility & Former Hotel Laundry/Dry-Cleaning Facility: Gardena, CA

Years: 2013, 2014

A legally complex Cleanup Program Site with the Regional Water Quality Control Board: A hotel laundry facility released DNAPL chlorinated solvents into to the subsurface, creating a comingling plume with a pre-existing release of LNAPL hydrocarbons and chlorinated solvents caused by a former aircraft parts manufacturer in the 1970s. This case became a high priority case with the Water Board because the water-bearing units directly overlying the Gauge Aquifer were impacted. Additionally, responsibilities and remedial obligations of the comingled plume were legally disputed. Remedial efforts were made simultaneous to site characterization. All remedial activity and ongoing site assessment was conducted under regulatory oversight. Determining the complete lateral and vertical extent of the plumes required a complex series of dedicated zone drilling/sampling to avoid cross-contamination. The project also required long-term groundwater pump & treat remediation, quarterly monitoring, and soil vapor intrusion risk analysis. Reporting tasks required hydrogeologic exploration for site conceptual modeling, quarterly monitoring with conclusions and recommendations, and remedial action plan design and negotiation with the Water Board.



Underground Gasoline Storage Tank Removal

– Former Global Oil & Gas Company Gasoline Station & Proposed Retail Property: Laguna Hills, CA

Year: 2012

A former gasoline service station undergoing demolition with regulatory oversight: The gasoline station was also part of a Leaking Underground Storage Tank Case with the Regional Water Quality Control Board and Orange County Health Care Agency. As per Cal/OSHA and California Building Code, the open pit area was safeguarded for the protection of onsite personnel and adjoining properties. As per the abandonment permit, the tanks were safely evacuated and prepared for removal. Excavating contractors removed two 20,000-gallon tanks and one 12,000-gallon tank of gasoline, as well as one 6,000-gallon tank of diesel. The project also included confirmation soil sampling, proper disposal of hazardous waste and construction debris, and backfilling with compaction testing.

**Portfolio of 150 Phase 1 & Phase 2 Environmental Site Assessments for a National Financial Institution
– Various Commercial/Industrial Properties: Southern- & Northern- CA**

Year: 2011

Awarded a contract by a national lending entity to conduct Phase I and Phase II ESAs for numerous commercial/industrial properties: The portfolio included gasoline service stations, dry cleaning facilities, auto repair shops, chrome plating facilities, printing shops, metal grinding/casting facilities, aircraft manufacturing facilities, historical oil production well fields and more. The sites were grouped by region, and completed within 15-day turn-around-times. The Phase I ESAs included site visits and conformed to the EPA's All Appropriate Inquiries (AIA) Standard, as well as the American Society for Testing and Materials (ASTM) E1527 Standards. The Phase II ESAs included geophysical surveys, bore-hole clearing, and direct-push or hollow-stem drilling. Soil, soil-vapor and groundwater samples were collected and analyzed for contamination assessment. Some properties additionally required vapor intrusion and health risk analysis.

Portfolio of 60 Remediation Projects for a Global Oil & Gas Corporation

– Various Gasoline Service Stations: Southern CA

Year: 2008, 2009, 2010

Awarded a long-term contract to remediate numerous gasoline service stations overseen by the Water Quality Control Board: Remedial scopes included quarterly groundwater monitoring, air-spargage with soil vapor extraction, groundwater pump & treat, in-situ chemical injection, ex-situ remediation, and more. Steps taken towards case closure required additional site characterization, site conceptual modeling, remedial action planning, and confirmation drilling.

Public Facility Grading Project and Land Surveying

– The Los Angeles Public Zoo: Los Angeles, CA

Year: 2007

A Public Works project for the renovation of the Los Angeles Zoo: The long-term grading project required establishing areas for excavators to cut and fill soil, such that the engineered slopes comply with the approved grading plan design. Fill areas required compaction testing.