

## **Statement of qualifications**

---

**Lion Environmental is an independent environmental engineering consultancy created by people who make a difference. Lion Environmental has a proven record managing environmental liabilities. We specialize in all aspects of environmental investigation, remediation, permitting, and auditing.**

We are dedicated to delivering results on time and in full communication with project stakeholders. Lion Environmental's mission is to provide expert advice, common sense solutions, and effective actions to our clients. To deliver this mission we offer an unparalleled level of quality that results in long-term client relationships, our clients continue to come back to us with their new challenges.

We have a diverse Client portfolio but typically work for the following sectors: real estate, energy, automotive, aviation, oil & gas, telecommunication, manufacturing, chemicals, mining and pharmaceuticals.

## **Brownfields**

---

The number of European brownfield sites is an elusive number because every country uses a different terminology for its contaminated land. In short, we can say a brownfield is a property that has a legacy of environmental contamination. Lion is well versed in all the components to clear a brownfield property from an environmental burden to an economically productive development.

Lion applies the knowhow to properly assess environmental issues and identify cost effective solutions. Knowing the quickest way to clear a property, from straightforward remediation to the adoption of risk-based approach is critical to a successful solution. While it is attractive to simply dig out contaminated materials, it's a crude approach disruptive and expensive. Lion possesses the ability to assess the contamination, along with its pathways and receptors and create an appropriate and cost-effective solution.

For property developers the transitioning of brownfields to productive properties offers clear and significant potential for green growth and jobs and improve the communities their projects are in. Lion's strength is the ability to remediate brownfield sites to the right standard based on function and necessity. By choosing the cost-effective and sustainable solutions we can make development of brownfields make sense.

## Areas of Service

---

### **Site Investigations:**

Conducting traditional and innovative investigation techniques including large-scale groundwater remedy monitor well installations, direct-push drilling, vertical profiling, and temporary small diameter wells;

### **Assessments:**

Conducting environmental due diligence assessments and site investigations as part of property transfers;

### **Investigation and Remediation:**

Performing site investigations and remedial alternative evaluations for feasibility studies in order to select environmental remedies;

### **Program Management:**

Performing overall environmental program management including designing, permitting, contracting, and construction of remediation systems;

### **Remediation Planning:**

Designing, coordinating, permitting, and implementing site remediation programs in compliance with regulatory requirements;

### **Compliance and Permitting:**

Performing extensive groundwater and soil investigations for regulatory compliance and preparation of environmental permit applications;

### **Response and Negotiation:**

Assisting clients in responding to violations and negotiation with regulatory agencies;

### **Financial Analyses:**

Preparing environmental liability cost evaluations.



## The Lion Team

---

Lion's staff includes engineers, geologists, chemists, marine and environmental scientists. Our projects typically involve the execution of multiple concurrent disciplines. By encouraging and promoting input from different experienced members of each technical team we arrive at cost-effective solutions that exceed expectations and uncover novel approaches.

Should workloads or needs for expertise exceed our inhouse staff, Lion uses a select pre-approved set of subcontractors. This group is drawn from independent contractors or from academic institutions. Our project managers provide direct oversight of subcontractors to ensure compliance with all health and safety and quality assurance requirements.





## Data Collection

Analytical laboratory results that are part of reporting requirements in our projects meet our quality assurance/quality control standards. Chemical analysis is evaluated for completeness and for any data quality issues prior to releasing the information to be included in project documentation and reports. Our goal is to produce defensible data that can stand up to scrutiny by other parties and regulators.

## Phase I and II Environmental Site Assessments

Phase I Environmental Site Assessments (ESA) are performed prior to property purchase or funding of a property transaction. Performing an ESA can prevent the uninformed acquisition of property that has hidden environmental liabilities. Lion works with buyers, sellers, and lenders to develop a scope of work that satisfies all parties and meets industry standards for due diligence. Lion provides an assessment that follows ASTM standards and includes research of site history, research of permit and enforcement history, and a physical evaluation of the property as well as surrounding properties.

Lion investigates the potential for latent environmental liability in a timely and confidential manner. Accurate recommendations are made, and comprehensive documentation is provided to our clients. Lion works with each client to facilitate environmentally informed real property transactions.



## Phase III Environmental Site Assessments and Remediation

The primary objective of a Phase III ESA is to investigate the nature and extent of adverse environmental impacts identified by the Phase II ESA. To determine the potential risk to human health and the environment, and when required, develop a Remedial Action Plan (RAP).

Lion is experienced with the requirements of a site assessment and the implementation of innovative remediation approaches and the requirements needed to meet regulatory compliance. Our approach is to carefully plan, be hands-on with site supervision, maintain detailed cost control, and conduct on-going communication with clients, contractors and regulators.



### The key components of a Phase III ESA are:

- Delineation of identified constituents of concern in soil, sediment, and groundwater.
- Calculate the volume of impacted soil and/or groundwater.
- Investigate to determine pathways, movement, and migration of contaminants through soil and groundwater. Prepare a conceptual site model that incorporates the „fate and transport” of contaminants and guide actions and which can be used in a „risk assessment” if needed.
- Prepare notification requirements for appropriate regulatory agencies as required. In many instances, early involvement of regulators can facilitate transition into remedial action and hasten closure of a contaminated site.
- Determine site specific remedial goals (e.g. generic values or site-specific values generated through a quantitative risk assessment).

Develop feasible remedial options (including time frame and costs) for consultation and approval by the client. The options must include consideration of physical/chemical limitations, construction requirements, environmental as well as health and safety implications, regulatory approval and public perception.

## Health and Safety

Lion has established a Health and Safety Program to protect employees from potential chemical and physical hazards on projects. When required, a site-specific Health and Safety Plan (HASP) is prepared. For such projects, Lion evaluates risks and the steps to mitigate or avoid them. Plans will include use of proper personal protective equipment along with program controls to minimize or eliminate exposures. These plans specify training requirements for use of protective equipment, respiratory protection, eye, skin and body protection, listing of material properties for suspected hazards encountered, fire prevention measures, instrumentation need to monitor and or evaluate exposures, a risk assessment for potential hazards, toxicologic assessment of chemicals encountered, decontamination procedures, and hazard identification. Training is documented at the time of implementation and recorded as part of the project.

## REMEDy for Contaminated Sites - Annual Conference in Warsaw

In 2018 Lion initiated a national technical conference focusing on aspects related to soil & groundwater investigation and remediation of contaminated sites. The conference is a platform of communication between owners of brownfields, consultants, regulators and remedial technology providers. In three sessions namely international, domestic and technical our speakers and guests have a unique opportunity to discuss issues such as liabilities, cleanup schedules, policy frameworks and technical solutions. Two editions of REMEDy gathered over 100 participants with various backgrounds whose common interest is brownfield site development where number of participants for future editions is very likely to grow.

