

# DESIGN AND PROCUREMENT GUIDELINES



## *Phase 1: Equipment Selection, Design, and Pricing*

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[www.mleequipment.com](http://www.mleequipment.com)

## ***Design and Procurement Guidelines***

These guidelines are published by MLE Equipment to assist customers with the design and procurement of remediation and treatment equipment. Over the years, we've found that more-informed customers and effective vendor/customer communication results in excellent project outcomes. Our goal is to continue to improve our customer relationships, and create a dialog so that the design and procurement process is continuously improving.

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## Phase 1: Equipment Selection, Design, and Pricing

Fabrication of remediation and treatment equipment is just one piece of the solutions that MLE Equipment can provide to customers. We can also serve as a valuable resource during the initial stages of remediation and treatment projects. Budget pricing, design assistance support, and full proposals are some of the valuable services available to our customers.

When contamination is discovered, or the need for treatment equipment is identified, the first step is usually to evaluate the available remediation or treatment options. The MLE Equipment website is a valuable resource for information on the types of equipment available, and the typical applications of this equipment. Assuming equipment is one of the options under consideration, we can provide rough budget pricing to assist with this evaluation. Rough budget pricing is typically accurate to  $\pm 20\%$ , and is mainly based on the type of system, allowing the customer to effectively compare equipment with other options.

Should equipment become the option of choice, the project typically proceeds to the design stage. At this point, customers have selected the type of equipment to be employed (eg. a multi-phase extraction system) and are evaluating and selecting the specific technologies to be used within the system (eg. rotary-claw vs. liquid-ring vacuum pumps). Our Applications Engineers are available to explain the various technologies and provide specifications for the components used in remediation and treatment equipment; alternatively, [mleequipment.com](http://mleequipment.com) can provide similar information. We are able to provide design assistance support and more-detailed budget pricing to help with this process. To assist with equipment design, Applications Engineers can size major components (eg. enclosures, control panels, pressure and vacuum equipment, pumps, etc.). Equipment specifications can also be combined with detailed budget pricing – while the detail is not that of a full proposal, budget pricing at this stage is accurate to  $\pm 10\%$  and does allow for the evaluation of specific technologies and major pieces of equipment. Rough equipment layouts are often provided at this stage of the project; an equipment layout is important for many customers for site layout and for arranging services.

When it comes time to procure equipment, customers request detailed proposals. The request-for-proposal (RFP), or request-for-quotation (RFQ) details the type of system, the required performance, the major components, and often many of the minor components. It is now the job of Applications Engineers to meet these requirements, detailing exactly what will be provided and an exact cost. Applications Engineers consider all aspects affecting the equipment design, including the contaminant(s)-of-concern, material-compatibility issues, site constraints, elevation and weather conditions, safety of equipment operators, equipment maintenance, and the effects of sound on neighboring buildings and people. The detail of the proposal goes beyond that of budget pricing, listing the majority of components, down to piping materials, valves, and inlet and outlet connection types.

For the benefit of customers, proposals are broken down by module (eg. liquid-ring pump module, enclosure module, controls module, etc.). To enhance understanding and visualization of the proposed equipment, a process-and-instrumentation drawing (P&ID) is a great tool that is also available with the full proposal. The proposal will also detail shipping costs and, if required, costs for system commissioning; equipment layouts can be provided with proposals, as well.

The design and procurement of equipment does not always follow this process. Sometimes, one of the steps previously described can be skipped, or more detail may be required at a specific step – MLE Equipment is flexible enough to accommodate these needs.

To illustrate this process, a recent example is provided:

A customer looking for a groundwater-treatment solution contacted MLE Equipment, requesting help to decide between: an air stripper with final polishing by activated carbon, or; contaminant removal by specialty media with final polishing by activated carbon. MLE Equipment first determined the required equipment by sizing the air stripper and carbon vessels and determining the appropriate carbon and specialty media for the contaminants of concern. Applications Engineers were now able to determine budget costs for both alternatives, considering the major pieces of equipment, types of enclosures, and required controls. The customer was provided with budget pricing, numbers illustrating treatment effectiveness, and rough layouts for both options.

The customer reviewed this information and decided to treat the contaminated groundwater with the air stripper and activated carbon, based on the effectiveness of the equipment and the lower maintenance requirements. It was then determined that a duplicate treatment process should be included to ensure the system could remain operational during routine maintenance, and for backup in case of equipment failure. The customer requested a full proposal from MLE Equipment, complete with a detailed equipment layout and a P&ID to illustrate the treatment process. The proposal listed the site and system constraints that were considered in the design (i.e. the contaminants of concern, the electrical classification of the equipment, the site power, the site elevation and normal weather conditions, etc.). It also detailed, in easy-to-read, bulleted format, each of the components in the system; each major component was hyperlinked to its respective specification on the MLE Equipment website. The order of components mirrored the order on the P&ID, making it easy to understand the flow of the system. Finally, the equipment layout illustrated the physical dimensions and location of the equipment within the enclosure. All of this detail allowed the customer to fully understand the equipment that was being quoted.

By providing budget pricing, design assistance, and full proposals, MLE Equipment helps customers make informed decisions about technologies, components, and equipment configurations. Informed decisions result in cost savings, more effective treatment of contaminated sites, and better overall project outcomes.

## About MLE Equipment

MLE Equipment, founded in 1992, designs, builds, commissions, and supports systems for soil remediation and industrial applications. The systems range from single-well pumping systems to large, combined soil-vapor extraction/groundwater pump-and-treatment systems. Systems are highly customized with sophisticated control systems, designed specifically to provide innovative solutions for our customers' unique requirements. MLE Equipment also distributes a range of environmental products including pumps, sampling equipment, air strippers, and carbon filters. We are the Canadian master distributor for QED, the leading manufacturer of groundwater sampling equipment in North America and pioneers of MicroPurge sampling. Key customers include leading environmental engineering consulting firms, and large environmental contracting firms. Sales and support in Canada and the United States are provided through an established network of highly respected business partners. MLE Equipment is known in the industry for its professional, long term approach to the business, delivering quality solutions to support our business partners' and customers' success.