



## THE CHALLENGE:

Geosynthetic containment systems are precision installation projects that require meticulous attention to detail. Failure to execute even the smallest of details can mean a significant breach in containment.

A highly specialized skill set, geosynthetic installations are experiencing increased regulatory oversight and unprecedented market growth. Currently there is a shortage of qualified personnel and an influx of inexperienced and unqualified contractors.

Vendor selection will dictate your Return On Investment (ROI). So, how do you ensure your geosynthetics projects maintain the quality that is so imperative to your success?

## OUR SOLUTION

A first of its kind, comprehensive geosynthetics Vendor Management Program (VMP).

Our VMP will provide an enforceable standard across all geosynthetic projects to ensure consistent repeatable quality.

The core components of our VMP are training and testing platforms built by the field for the field. These modules include:

- Documentation Systems
- Specifications and Field Protocols
- Industry Specific Safety (does not replace MSHA, OSHA, or any other mandated safety program)
- One-Day Training Webinar
- Certification Testing



## WHY NOW?:

The challenge of Geosynthetic Vendor Management has increased significantly in the past few years, in part due to the events listed below:

### **Regulatory:**

- Increased regulatory oversight across multiple market segments
- Regulatory push towards low – zero leak containment systems
- Increasing fines & political concerns

### **Low Quality Installers**

- This is a word of mouth trade without a formal system for education, monitoring progress or promotion.
- Market booms, such as the shale gas industry, allowed start-up installation firms to go unregulated and uneducated.
- Inexperienced firms are infiltrating other markets for sustainability.

### **Geosynthetics Market**

- Industry insiders realize there is a critical shortage of **experienced personnel** available to meet current installation demands.
- Experienced crews are being diluted to “spread” the experienced staff further.
- Coal ash landfills became governed by RCRA Subtitle D, requiring geosynthetic liner installations as part of their containment systems.

**Goal of Containment Systems:  
To Contain**

## Actual Site Inspections

### Site 1



Where do we start with the issues on this repair???

- Wrong Patching Material
- Ragged Edges
- Failure to Seal/Missing Welds
- Duct Taped to Repair Holes
- Rips in Patches...

### Site 2



Our inspection after system “Completion”

- Unwelded Areas
- Bathroom Caulk for “Extrusion”
- Popped Welds & Poor Repairs



## SPECIFICATIONS AND FIELD PROTOCOLS

Proper specifications are key to completing a quality project successfully, on time, and under budget.

Field protocols are also essential to keeping a project moving while obtaining the superior quality for which you are paying. Such protocols include timely turn around on paperwork, keeping material inventory current, and even typical roles and responsibilities that vendors should be performing in order to optimize project quality.

Our staff will review and customize your current specifications and provide a list of recommended specifications and field protocols that should be included in the construction guidance documentation such as the CQA Plan, Construction Specifications, etc.

## Samples of 2015 Specifications

- **Table of Minimum Testing Requirements** lists minimum required values and references a document such as GRI GM-13.  
However, values listed in current table are outdated and have increased, meaning the material is being tested to inferior specifications.
- **“Tears shall be repaired by patching.”**  
There is no reference to performing a key-hole cut on each end of the tear to prevent propagation under stress.
- **“Trial welds need to be performed at the beginning of every shift.”**  
At least a trial seam is required in this case; however, there is nothing about frequency, changing conditions, materials, etc. The certifying engineer could only uphold what was in the specifications.
- **“35 mm film must be used for photo documentation. Negatives to be supplied to owner.”**  
Indicates entire document may be outdated.





## STANDARD CERTIFICATION TESTING

Being able to compare apples to apples when evaluating vendors is critical to picking the supplier that will best serve your needs.

Standardized testing allows you to go beyond the resume and qualification package and really see what you are getting, so as to weed out the bad apples.

Our team will review your various vendor types for different project types. As we work with you, we will create baseline requirements for each of the different vendor roles and project types to establish what vendor roles require which certification.

Resumes submitted in the bid package are often not the individuals who show up on site. Online proctored certifications allow your vendors to quickly test individuals who will be working on your site to maintain your project quality and keep timelines on track.

Our standardized testing is available in an array of solutions that includes a CQA Solutions third party proctored & certified option.

## Enhanced Testing

Our Enhanced Testing Platform offers all the features of the Standard Certification Testing module while providing the opportunity for customized testing that includes client specific questions or modules, such as following a site specific training class.

Your test questions and modules will be integrated into our testing platform in which a separate test and link would be used to access the test.

This platform offers you the greatest opportunity to incorporate all required testing protocols into one convenient test with all the reporting generated to one source.

## DOCUMENTATION SYSTEMS

Documentation is critical to successfully managing a geosynthetics installation! Without documentation, it is impossible to cross check that all the required installation activities were completed.

Our VMP offers the choice of three formats: paper documentation, our electronic tablet software, SuperTek, or a paper/SuperTek customization option.

### Paper Documentation

Our paper documentation system will provide standard customized forms for up to 2-3 different projects (additional projects available as needed) and a list of standardized cross checks.

The documentation system will also provide the minimum requirements for obtaining a useful as-built survey, and a site specific list for photographic documentation.

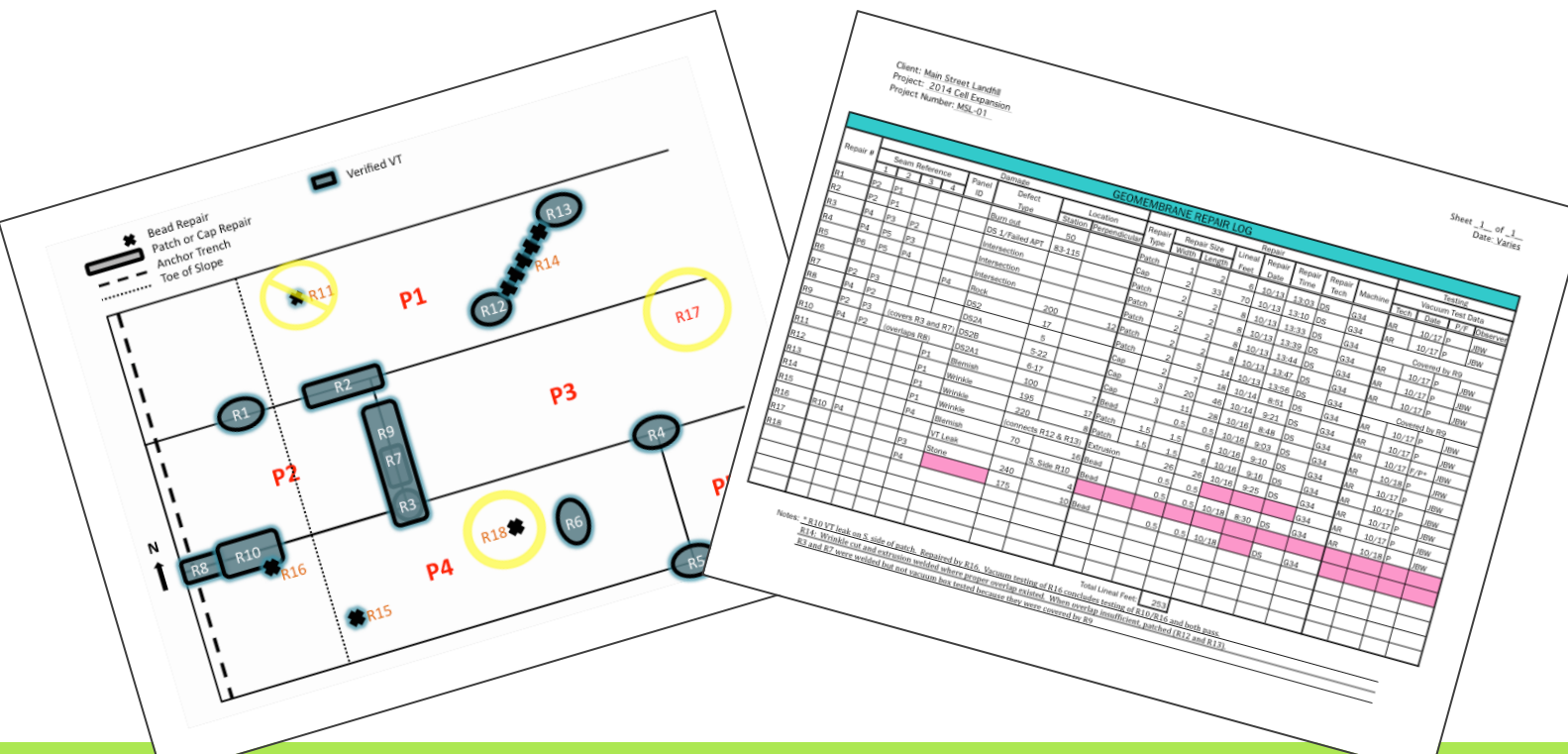
In addition, we will provide a list of requirements for running a successful preconstruction meeting.



Our electronic software offers a host of cost-effective benefits that makes managing a geosynthetic installation much easier.

With SuperTek, the cross-check validations are performed as data is entered in the field, thereby minimizing errors and creating a real-time punch list of any outstanding issues. This data can be viewed by designated personnel anywhere in the world with access to the internet.

New for 2016, CQA Solutions will be renting field tablets to users with SuperTek already preloaded. This will prevent end users from having to buy new tablets just to meet the operational requirements of SuperTek!







## STAFF TRAINING

Proper training of those working on the project is imperative to the success of the project. For those who will be more involved in the project, or perhaps even working on site, we have more detailed classes which delve into all the details of a geosynthetics installation.

These training services are broken down into the following categories:

- Webinar with unlimited attendees
- In-Person training
- On line training

We also offer auditing training to key staff members who wish to be able to visually and physically audit the performance of their vendors.

## AUDITING SERVICE

Accountability is another primary key to obtaining the optimum performance and quality from your vendors.

Our auditing services include documentation auditing and in-person auditing during installation

activities.

## **Documentation Auditing**

Our staff will remotely perform a high-level review of submitted data and prepare a report summarizing our findings.

## **In-Person Auditing**

A staff project manager will perform 5 days of auditing on site and prepare a report summarizing our findings for both the installer and QA/QC. We will not only look at the activities in the field, but also perform a high level inspection of forms being completed in the field, as well as the overall conformance of the installation to project specifications.

## VENDOR TRAINING

Our online customized vendor training allows you to select the training requirements for your vendors while giving them the greatest flexibility to fit the training into their schedules.

This training can be either hosted by your firm or vendor paid.

## INDUSTRY SPECIFIC SAFETY

Safety should be the number one focus on a jobsite and numerous studies show that most on site accidents are avoidable.

Geosynthetics projects have a unique set of safety hazards that range from minor cuts through fatalities. While there are certainly some generalized policies that can and should be implemented, site specific considerations must be addressed.

Our safety module will evaluate the proposed construction methods for each site and provide our list of recommended safety standards that should be incorporated into the site-specific Health and Safety Plan, Job Hazard Analysis, Job Safety Analysis and daily safety tailgate meetings.

Our safety module is not intended to replace any other safety requirements such as site specific training/orientation, Health and Safety Plans, MSHA, OSHA or any other programs.

## GEOSYNTHETICS INTRODUCTION TRAINING

Proper training of those working on the project is imperative to the success of the project. Whether the involvement is a full-time worker on site or a manager who spends less time on the site, it is important they have a fundamental understanding of a geosynthetics installation.

Our training is designed to provide a high-level overview of the installation process, including common roles and responsibilities of the involved parties, common pitfalls and how to avoid them, common safety concerns, and tricks for properly managing a geosynthetic installation.

## Safety Highlight

Deploying conductive sheeting under high power transmission lines:

- We have seen sudden wind gusts lift liner with people on it several stories high.
- Wind can displace acres of liner systems by 1000's of feet and they can become tangled in transmission lines.
- Un-trained staff often try and hold liner down during wind gusts and become airborne with the sheeting.
- We have seen foremen tell their entire crew to "hop" on a panel before it blows away.... very dangerous.
- Proper procedures & ballasting can mean the all the difference.

