



Lean Event Dates: November 15-19 2010

Project: Improving DEEP's Potable Water Program Processes	
Bureau: Bureau of Water Protection and Land Reuse (WPLR)/Remediation Division (RD)	
Team: Total number of team members = 8 originally. Lost 2 members and recruited 1 new member (7staff within Division / 0 staff outside Division)	
Team Sponsor(s)/Title(s):	Patrick Bowe, Director, Remediation Division
Team Leader(s)/Title(s):	Drew Kukucka, EA-2, RD
Team Members /Titles:	Bill Warzecha, Supervising EA, RD; Kevin Neary, EA-2, RD; Scott Wing, EA-3, RD; Mike Senyk, EA-2, RD; Carl Gruszczak, EA-2, RD; Claire Foster, E-Intern, RD (new member)
Team Champion(s)/Title(s):	Robert Bell, Assistant Director, RD
Opportunity Statement: When DEEP determines that a private drinking water well is polluted above a state drinking water "action level", DEEP has authority to provide a short-term supply of drinking water (bottled water and/or filter) to all affected well owners, while the source of pollution is being investigated. Such determination usually triggers various DEEP staff to arrange for (1) bottled water delivery and/or installation of a water treatment system; (2) conduct well water sampling of the affected well; (3) conduct sampling of neighboring wells to determine drinking water quality; and (4) monitor and maintain the DEEP-installed water treatment system to ensure it is working satisfactorily. All of these activities are arranged and scheduled by various remediation staff. There is great opportunity to evaluate these processes to reduce waste, ensure that the DEEP-installed filter systems are sampled on an appropriate schedule, make information/data more sustainable, real-time and transparent, improve the quality of DEEP decision-making, make coordination more efficient between well water sampling staff and project leads, and reduce the time to provide information and treatment to homeowners.	
Objective: Thoroughly evaluate:	
1. Before Filter is Installed: (a) The steps taken, starting from the moment DEEP is made aware of a potential exceedance of an Action Level in a well, to obtain written approval for the provision of bottled water and installation of a water treatment systems; (b) Arranging and scheduling the installation of a water treatment system.	
2. After Filter Is Installed: (a) Scheduling and performing well water sampling and filter maintenance at affected and potentially affected properties; (b) Opportunities for improving how the Division "sees" its business.	

Goals/Key Performance Indicators:

<p>Pre-Kaizen Event Goals – Date: November 2010</p>	<p>Post-Kaizen Event Results/Key Performance Indicators – Status Date: September 2011</p>
<p>Reduce time from receipt of initial notice of a potentially polluted well to obtaining approval to provide bw/treatment, from a current average 8-10 weeks to a goal of 4 weeks or less.</p> <p>Streamline the process of going from the final approval to provide bottled water and water treatment system, to actual delivery of water and installation of treatment, from a current average timeframe of up to 10 days (bottle water) and 5 weeks (GAC filter) and /or 6-8 staff hours, to not more than 7 days (bottled water) and 10 days (GAC filter) and 3 hours of staff time.</p>	<p>Improvements to Potable Water Program processes have been made including drafting of several procedures and protocols to standardize and streamline how potable water projects are managed.</p> <p>(1) Streamlined the approval process for providing bw/treatment; several approval steps were eliminated and the process flow has been standardized and converted to an electronic format (100% complete). Reduced approval process from 2-3 days to <1 day.</p> <p>(2) Created new bottled water request forms and standardize submittal of form to email only (95% complete). Improved process and consistency and made change to allow for better tracking of information.</p> <p>(3) Streamlined filter installation process/duration (100% complete). New procedure requires contractor to install (or attempt to install, based on homeowner availability) within 5 days from authorization from DEEP. Standardized process and reduced timeframe to install filter from up to 5 weeks to 1-2 weeks (depending on homeowner availability).</p> <p>(4) Created new reconnaissance form for recording information from homeowner and surrounding area regarding a potential contaminated well. (100% complete)</p>
<p>Establish sustainable and transparent contaminated well list and well water sampling/water treatment maintenance scheduling procedures to reduce scheduling of monitoring from an average of 3 or more staff hours to 1 or less staff hour and to provide the ability to quickly and easily see whether well water sampling is recurring as needed.</p>	<p>Contaminated well list initial data entry is 95% complete. Prior to kaizen no comprehensive database existed. Several "historic" contaminated wells exist that need to be researched to determine if they are resolved or whether additional actions are warranted. Once dataset is complete, including "threatened" wells, next step will be to develop procedure to improve well water sampling scheduling.</p>
<p>All maintenance/monitoring is set on a recurring schedule as site conditions warrant (monthly, quarterly, annually, etc). Filter maintenance to occur within the month previously scheduled.</p> <p>Water sampling staff to sample, on average, 8-10 sites per day for the purpose of sampling polluted and potentially polluted drinking water wells.</p>	<p>Process improvements underway which includes making sampling equipment more readily available and designing a new database tracking system. The database will be used going forward to schedule routine sampling and for checks and balances to make sure the work is being completed accurately and on time. This will also allow for us to quantify the volume of work being completed on average per day, week, month, etc. More staff resources needed to expedite database improvements .</p>
<p>DPH laboratory forwards lab results for well water samples to staff within 24 hrs of DPH completing analysis.</p> <p>Residents are informed of results in timely fashion. Reduce timeframe from up to 1 month or more to within 3 days from receipt of lab results.</p>	<p>Working with Lab to reduce timeframe for lab to send results by eliminating the waiting time for additional review and signoff. DPH rolled out a new lab program that has resulted in changes to our paperwork process and the delivery of the results. We are currently working with DPH Lab management to make any</p>

<p>Remediation staff makes service calls to water treatment contractors within one day of receiving the results from the lab that indicate a treatment system is needed or system requires maintenance, or notified that maintenance of a water treatment system is needed. The contractor will complete the maintenance within 5 days of DEEP authorization to proceed.</p>	<p>necessary adjustments to allow us to meet the objective of our Lean process. The lab changes has consequently delayed progress on these tasks.</p> <p>Streamlined filter installation process/duration (100% complete). New procedure requires contractor to perform maintenance (or attempt to, based on homeowner availability) within 5 days from authorization from DEEP. Standardized process and reduced timeframe from up to 5 weeks to 1-2 weeks (depending on homeowner availability).</p>
<p>Information/data related to above tasks are entered into case management system within two days of receiving the information/data, including adding new sites to the contaminated well list.</p>	<p>New initial data entry form has been created. Waiting on IT staff to incorporate into CSM (75% complete). Additional phases of database improvements scheduled for 6-month and 12-month goals. Database improvements will lead to greater visibility of key performance indicators. Need further staff and IT resources to expedite database improvements.</p>

Spaghetti Diagram showing distance traveled for the process under review during the *Pre-Kaizen phase*: *Post- Kaizen phase*:

Comments:

Value Stream Mapping: The activities and steps, both value and non-value added, as shown in the Pre-Kaizen state versus Post-Kaizen desired state.

Type of Process	Pre-Kaizen – # of Processes	Post-Kaizen – # of Processes
Valued Added	13	11
No Value Added but Necessary	53	36
No Value Added	71	0
Waiting	43-88 days	6-32 days
Transport	13 hours	3-10.5 hours
Total	137	47

Percent Reduction in the Number of Total Steps = 66% Reduction



The Post-Kaizen desired state has resulted in a number of improved program efficiencies and include the following:

- Reduce redundancy and "reinventing the wheel"
- streamline decision making processes for technical staff by creating standardized procedures/policies
- Eliminate unnecessary approval loops
- Create homeowner forms and information to help communication

Highlights and Implementation of the Project Plan (2, 6 and 12 month deadlines):

Two Month Goals - Procedures/policies underway to standardize processes: confirmatory sampling, sampling frequency and analytes, bottled water, filter procurement, 5-S project Phase 1 nearly complete. All procedures/policies in draft form, half are ready for the review process.

Six Month Goals - Streamlined several procedures to improve consistency and reduce timeframe. Developed additional tools (ie. incoming phone call interview form, homeowner information form, etc). Rorganized Potable Water files on S drive to make more user friendly.

Twelve Month Goals - Clarify policy decisions under 22a-471. Meeting with DPH management pending to outline any changes to procedures regarding contaminated wells and filter installation and monitoring. Eliminate backlog of well sampling, auto-generate results letters, CMS - refine PW module, train staff on new processes and database improvements.

Additional Comments/Observations/WOWS/Innovations from the Team:

What went well - team worked well together, communication, guest participation crucial, introduced Lean concepts to DPH lab staff

"WOW" moments - DPH lab visit identified immediate areas for improvement on DEEP lab requests to minimize waiting time for lab results, need to streamline approval process, digital forms, letters, schedules needed to improve efficiency

Areas for improvement - could benefit from pre-Kaizen preparation, recommend at least one person on team with previous Lean experience

9/9/11 update: Our team lost two members over the winter due to extended medical leave. We were able to recruit one new staff member to help fill the void. In general, staff resources need to be increased in order to meet timeframes set out in Implementation Plan. Also, new tasked have been identified as we work through the Lean process which have, for the most part, fallen within the scope of the Lean event, but has resulted in additional tasks to complete.

Unforeseen changes to processes at DPH lab resulted in delays and changes to our goals. Also, meeting planned with DPH management to discuss any changes to addressing contaminated wells, filter system design and monitoring/maintenance has been delayed by DPH management. Outcome of this meeting with DPH may have significant impact on our plans to Lean certain processes.

Revision Date: 9/13/11