



Streamlining Pipeline Design and Mitigation Planning at a Major Operator

AT A GLANCE

Customer: Project Engineer

Products Used: Pipeline Toolbox (PLTB)

THE CHALLENGE

This case study features a Project Engineer working at one of the top 20 midstream operators by market capitalization. Like many teams in large, asset-intensive organizations, their challenge wasn't just about getting calculations right — it was about creating a standardization, defensible approach to pipeline design that could scale across projects and teams.

"AS A PROJECT ENGINEER THERE ARE A BUNCH OF CALCULATIONS THAT NEED TO BE COMPLETED FOR PIPELINE DESIGN. THE ISSUE IS ENSURING A CONSISTENT APPROACH TO DOCUMENTING THE DESIGN CHOICES AS WELL AS ENSURING THAT THE CALCULATIONS ARE COMPLIANT WITH CURRENT CODES."

Prior to adopting Technical Toolboxes, the team relied heavily on homegrown spreadsheets to document calculations. While some of those sheets are still in limited use today, they presented real risks from buried formula errors to the challenge of updating them as code standards change.



"BEFORE TT WE WERE USING OUR OWN HOME BAKED EXCEL SPREAD SHEETS TO DOCUMENT THE CALCULATIONS... BUT THE PROBLEM THAT THESE HAVE IS THE POTENTIAL FOR ERRORS IN THE CALCULATIONS WHICH CAN BE DIFFICULT TO IDENTIFY. ADDITIONALLY, IF THERE EVER IS SOME CHANGE IN CODE REQUIREMENTS, THIS COULD REQUIRE UPDATING CALCULATIONS OR SPREADSHEETS TO REFLECT THESE ADJUSTMENTS AND WE DON'T INTERNALLY HAVE SOMEONE THAT IS GOING TO BE MAKING THOSE CHANGES WHO IS 'IN THE KNOW'."



THE SOLUTION: PIPELINE TOOLBOX

The discovery of Technical Toolboxes came organically – through peers trying to solve similar problems. With the organization already holding licenses, this engineer decided to explore what was available.

"OTHER COWORKERS WERE LOOKING FOR TECHNICAL SOLUTIONS TO COMMON ISSUES THAT THEY KEPT RUNNING INTO. SINCE WE HAD SOME LICENSES, I DECIDED TO LOOK INTO IT TO SEE IF THERE WERE SOME SOLUTIONS TO SOME OF MY ISSUES. TURNS OUT THAT THERE WERE A FEW TOOLS THAT I WAS ABLE TO UTILIZE."



Now, the Pipeline Toolbox (PLTB) is used daily across a variety of engineering scenarios – ranging from standard pressure calculations to estimating emergency blowdown times.

"I USE IT TO CREATE REPORTS FOR THINGS LIKE WHEEL LOAD ANALYSES, THRUST LOAD ANALYSES, RELIEF SIZING, REACTION FORCE CALCULATIONS, REGULATOR AND PIPE SIZING, AND BLOWDOWN TIME ESTIMATES. OTHERS IN MY GROUP USE IT FOR OTHER ASPECTS SUCH AS CORROSION/WALL LOSS CALCULATIONS, BLASTING CALCS, ETC."

THE RESULTS

One of the most significant benefits has been the ability to run complete, professional reports with speed and confidence. The clarity of the required variables, built-in compliance, and output formatting save hours of manual documentation work.

"THERE IS DEFINITELY TIME SAVINGS ASSOCIATED WITH HAVING A TOOL THAT CLEARLY INDICATES THE REQUIRED VARIABLES NEEDED FOR A CALCULATION AND GENERATES A REPORT WITH THE CLICK OF A BUTTON."

This efficiency has translated into real-world impact. In a recent project, corrosion was discovered on a remote pipeline. Using PLTB, the engineer quickly assessed the condition, determined safe operating pressures, and developed a response plan – including calculating blowdown duration based on equipment limitations. As a result, a potentially disruptive issue was resolved in just over a week.

"A SIMPLE EXAMPLE: WE RECENTLY ENCOUNTERED CORRODED PIPE ON A REMOTE PIPELINE. WE USED TT TO RUN AN ANALYSIS ON THE CORROSION TO SEE WHAT SORT OF MITIGATIVE EFFORTS WOULD BE REQUIRED... WE WERE ABLE TO DETERMINE A SAFE PRESSURE AT WHICH TO OPERATE THE SEGMENT UNTIL THE REPAIRS COULD BE MADE... IN THE END THE PROJECT WAS TACKLED IN A MATTER OF A LITTLE OVER A WEEK."



FINAL THOUGHTS

Success for this engineer is measured by project delivery — on time and within budget. With its reliable calculations and time-saving design, Technical Toolboxes' Pipeline Toolbox helps support that mission with minimal added cost.

"COMPLETING PROJECTS ON TIME AND WITHIN THE ANTICIPATED BUDGET IS HOW I MEASURE SUCCESS. TT HELPS BY SAVING TIME AT LITTLE ADDITIONAL COST."

In a dual role that includes both project engineering and management, the biggest challenge is being able to provide fast, data-backed answers that enable decisive action. With PLTB, that's now possible.

"ONE OF MY BIGGEST CHALLENGES, AS AN ENGINEER, IS BEING ABLE TO QUICKLY PROVIDE INFORMATION ON WHICH DECISIONS CAN BE MADE."

For engineers at large operators who need fast answers and trusted results, this Project Engineer sees Technical Toolboxes as a valuable, low-barrier solution — one that delivers clarity, compliance, and time back to the team.



The screenshot shows the Pipeline Toolbox software interface. The top navigation bar includes tabs for 'PLTB Corrosion', 'Crossing Hydraulics', 'Inspection', 'On-Bottom Stability', 'Welding', 'Training', and 'Tools'. The 'Tools' tab is active, showing a list of tools in the sidebar. The main area displays the 'Wheel Load Analysis (Gas)' tool. The interface includes a 'Select Case' dropdown menu with 'Tulsa, OK - WL Crossings' selected. Below this, there are buttons for 'Run Report', 'Save as', and 'Calculate'. The 'Input Parameters' section is divided into two tabs: 'Wheel Load' and 'Sensitivity Analysis'. The 'Wheel Load' tab is active, showing a form with various input fields and dropdown menus. The fields include 'Pipe Description' (831.8), 'Pipe Regulatory Code' (Pipe Line - API Specification 5L), 'Select Pipe Type' (12-3/4 inch), 'Select Nominal Pipe Diameter' (12.750), 'Outside Diameter' (0.172), 'Wall Thickness' (inch), 'Reduced Wall Thickness' (checkbox), 'Select Pipe Grade' (X65), 'SMYS' (65,000.0), 'Soil Type' (Granular Materials without Cohesion), 'Top Layers/Pavement Type & Material' (No Pavement), 'Crossing Construction Type' (Open Cut-Rock), 'Design Class Location' (1), and 'Operating Class' (1).

WANT TO LEARN HOW PIPELINE TOOLBOX CAN STREAMLINE YOUR PIPELINE DESIGN AND COMPLIANCE WORK?

Pipeline Toolbox takes the guesswork out of pipeline engineering with built-in code alignment, ready-to-run calculations, and auto-generated reports. Whether you're sizing valves, checking wall thickness, or modeling regulator stations, PLTB helps you move faster, reduce rework, and stay compliant — all from one intuitive platform. If you're tired of spreadsheets and second-guessing your numbers, this is your solution.

[LEARN MORE](#)

WWW.TECHNICALTOOLBOXES.COM

