



EXCALIBUR GROUP, LLC

ENVIRONMENTAL CONSULTANTS, ENGINEERS & LIABILITY MANAGEMENT EXPERTS

INSURANCE CLAIMS & THIRD PARTY TECHNICAL REVIEWS

Since 1999, **EXCALIBUR** has been providing insurance claims management and 3rd party engineering technical support to help our clients ensure that claims are eligible and that payout funds are reasonable, necessary and appropriate. Over this time, **EXCALIBUR** has saved its insurance clients over \$10M. **EXCALIBUR's** geologists, hydrogeologists, chemists, and engineers, routinely serve as technical experts on site characterization, environmental engineering, and remediation to evaluate and comment on the more complicated claims for environmental cost reimbursement. **EXCALIBUR's** professionals evaluate claims of soil and groundwater contamination, in part, to help its clients determine if site characterizations were performed efficiently and interpreted correctly, and if remedial approaches/technologies were the appropriate and cost effective.

EXCALIBUR 3rd party technical reviews are founded on reviews of environmental files/back-up data, interviewing applicants, consultants, and regulators, and researching key engineering, regulatory, and risk-based closure issues. **EXCALIBUR** frequently conducts site-specific remedial alternatives analyses and associated cost estimate for comparison against costs already incurred to evaluate the reasonableness of claimed costs. **EXCALIBUR** uses the results of its analyses to prepare detailed technical opinion letters describing the appropriateness, completeness, or deficiencies in the completed work relative to regulatory requirements and eligibility for reimbursement, offering our recommendations for reimbursement, additional data collection, or other measures. Several case studies of the hundreds conducted by **EXCALIBUR** illustrating some of the substantial cost savings to **EXCALIBUR's** insurance clients are provided below.



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INSURANCE CLAIMS & 3rd PARTY ENGINEERING TECHNICAL REVIEW CASE STUDIES

Case 1 – Marina Clean-up

A technical review by **EXCALIBUR** saved the insurance client at least \$250,000 on this remediation project. This substantial savings resulted from **EXCALIBUR**'s review of the cost effectiveness of a consultant's proposed remedial solution for a marina, petroleum contaminated site along the Susquehanna River. The consultant had proposed designing, installing and operating a pump and treat system for three years with an additional two years of attainment monitoring for a total cost of about \$250,000.

A technical review by **EXCALIBUR** saved the insurance client at least \$250,000 on this remediation project. This substantial savings resulted from **EXCALIBUR**'s review of the cost effectiveness of a consultant's proposed remedial solution for a marina, petroleum contaminated site along the Susquehanna River that included designing, installing and operating a pump and treat system for three years with an additional two years of attainment monitoring. After completing its technical review of the site data and the proposed remedial action plan, **EXCALIBUR** concluded that; (a) the consultant's proposed plan was not cost effective; and (b) it would not remediate the site. **EXCALIBUR** determined this based on its observations that the consultant's proposed approach / design would: (1) do little to address the source of groundwater contamination (the clay soils where the bulk of the site contamination mass resides); (2) preferentially recover water from the bedrock rather than contaminated water from the silty clay overburden; and (3) likely result in pumping and treating high volumes of clean river water rather than addressing the site contamination due to the close proximity to and hydraulic connectivity with the river (via bedrock fractures). After completing its own remedial alternatives evaluation and inspecting the site, **EXCALIBUR** concluded it



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would be feasible and cost effective to remove (excavate) the limited volume of soil contamination while coordinating a lowered river level with the dam operator, thereby, addressing the shallow source of groundwater contamination and the shallow groundwater issues simultaneously. **EXCALIBUR** reviewed its findings with the owner / operator (insured) who was in favor of the alternative approach to a quicker and more cost-effective cleanup. **EXCALIBUR** ensured the regulatory agency was involved in the change in remedial approach, attainment demonstration planning and implementation. The source removal effort was successfully completed under **EXCALIBUR's** field observation and groundwater attainment demonstration was initiated immediately. It is estimated that **EXCALIBUR**'s review of this site saved its insurance client at least the originally proposed \$250,000 amount as this money would likely have been spent without making any significant progress on remediating the site.

Case 2 – Forensic Analysis Finds Contamination Attributable to Older, Uninsured Sources

EXCALIBUR's data analysis of a consultant's proposed remedial approach for a gasoline retail facility saved an estimated \$500,000 in project expenditures, including ~\$200,000 in system installation costs and an estimated \$300,000 in system operation and maintenance costs. **EXCALIBUR**'s data analysis revealed that the consultant had prematurely proposed a remedial solution for unleaded gasoline remediation given; (a) there were multiple sources of site contamination (including an abandoned UST that had yet to be removed and up gradient / off-site sources), that were not identified or located so they could be targeted by the solution; (b) bio feasibility testing completed by the consultant was not supportive of the bioremediation component of the proposed approach; and (c) forensic sampling and analysis conducted by **EXCALIBUR** and its experts revealed the bulk of the site contamination was primarily from a separate ineligible heating oil release. After **EXCALIBUR** presented its review conclusions to its



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client and the information was eventually shared with the insured's consultant and the regulators, the site regulatory contact subsequently agreed that the insured had already completed its share of the site characterization and interim remedial measures work at the site through product bailing alone and a Remedial Action Completion Report could be issued for regulatory approval. Through **EXCALIBUR**'s methodical review of available site data, forensic sampling and interpretive work and interactions with its clients, the consultant, the regulatory agency and others, the consultant's proposed remediation program was determined to be unnecessary with resulting savings of an estimated \$500,000.

Case 3 – Denial of Claim Coverage Based on Forensic Analyses

At the request of an environmental insurance client, **EXCALIBUR** conducted a methodical review of site data, forensic analysis and information provided along with a new release claim to conclude that there had actually been no new release as had been claimed at a previously impacted site saving the insurance client an estimated \$1.5M in future remediation cost reimbursement for the cleanup of the highly contaminated site.

The new release claim was made by the insured after approximately \$1M had already been expended under an existing / open claim. In a detailed rebuttal of the new release claim, **EXCALIBUR**, at the request of an environmental insurance client found; (a) there was no reason to believe that significant quantities of product were ever recovered at this site after the historical 2,400-gallon product spill; (b) MTBE was never detected in groundwater at particularly high levels at the site, indicating the original source material probably was a relatively low-content MTBE gasoline consistent with past use of MTBE in gasoline products; (c) independent forensic expert evaluation of the gas chromatogram comparisons resulted in a decidedly different conclusion, that the product samples were consistent with a significantly weathered gasoline and not consistent with an unweathered gasoline; (d) no distinct trend in the benzene



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concentrations detected in a monitoring well since early 2005 as had been suggested; (e) the insured and its consultant failed to identify / substantiate the specific source and cause of the alleged “new” release; and (f) the alleged new release incident was not reported as required to either the regulatory agency or to **EXCALIBUR**’s insurance client. In summary, through careful and thorough research of the file material, **EXCALIBUR** was able to determine there was no basis for a new release claim and ongoing remediation costs anticipated to have accrued an additional \$1.5M would not be incurred by **EXCALIBUR**’s client.

Case 4 – Active Remediation Proposal Found Excessive / Unnecessary to Achieve Closure

On behalf of an environmental insurance provider, **EXCALIBUR** conducted a third party technical evaluation of an insured’s proposed >\$400,000 enhanced bioremediation and bioaugmentation remediation approach involving a groundwater recirculation / treatment system with leased equipment to treat MTBE contamination. As part of its review, **EXCALIBUR** interviewed the insured’s consultant on multiple occasions, completed contaminant trend line analyses, evaluated contaminant distribution patterns / potential sources, and assessed remedial alternatives. **EXCALIBUR**’s work uncovered several potential problems with the proposed approach including: (a) the \$400,000 implementation cost estimate was biased low as there was inadequate rationale given to support the 18-month cleanup timeframe and it did not include necessary closure tasks (e.g., attainment demonstration); (b) the cost effectiveness of the proposed solution to the MTBE-only groundwater issue was not adequately demonstrated with respect to other possible alternatives; (c) no testing was completed to determine if bioaugmentation (adding microorganisms / enzymes) would be worthwhile and field-scale testing was not completed to demonstrate introduced bacteria could be successfully dispersed from the injection points; (d) the design was not supported by



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pilot testing and hydraulic modeling; (e) the design included several flaws that would have made the system inefficient and could have spread the contamination. As a result of conveying these findings to **EXCALIBUR**'s client, and eventually, the insured and its consultant and the regulatory agency, the insured reconsidered its proposed >\$400,000 approach and instead submitted a revised plan, which the regulatory agency approved, to relocate the point of compliance well onto the adjacent downgradient property boundary, thereby allowing attainment demonstration monitoring to begin immediately. The groundwater attainment demonstration was not included in the insured's \$400,000 estimate even though it would have had to have been conducted under the insured's original proposed approach. Therefore, **EXCALIBUR**'s review, inquiring of the insured's approach, and suggestions for consideration, resulted in a project cost reduction to **EXCALIBUR**'s client of more than \$400,000.

Case 5 – Cleanup Competitive Bid to Risk-Based Closure Yields “Win-Win” Outcome

EXCALIBUR assisted with technical management of a school bus maintenance / repair site claim after more than \$280,000 had already been claimed for reimbursement for site characterization work and some interim remedial actions. Closure costs were anticipated to exceed the claim ceiling which concerned the site regulator, the insured and **EXCALIBUR**'s client. **EXCALIBUR**'s client requested assistance controlling claim costs by bidding out the site remediation work. A team of **EXCALIBUR** geologists, engineers and other scientists carefully reviewed the existing record and evaluated various remedial options and likely cleanup costs coming to several early conclusions; (a) there were significant site characterization data gaps that would preclude successful bidding of the cleanup; and (b) the site probably would not be able to attain the strict generic state regulatory standards for less than the \$1M insurance policy cap. These conclusions prompted supplemental site characterization work and a consideration of



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alternative cleanup standards for the site. To fill the significant data gaps needed to identify a truly appropriate and cost effective solution and allow competitive bidding of the cleanup, **EXCALIBUR** facilitated geophysical / underground site survey to accurately locate buried and above-grade features, planned and implemented a soil boring / sampling / analytical program to definitively define the site geology and extent of source material, installed and sampled bedrock and overburden wells to determine the vertical and lateral extent of groundwater containing MTBE, 1,2,4- trimethylbenzene, 1,3,5-trimethylebenzene and other petroleum impacts, managed remedial feasibility studies to evaluate remedial options that included multi-zone aquifer testing, infiltration testing, in-situ natural attenuation and enhanced bioremediation testing, and other testing. In parallel, **EXCALIBUR** assisted its client with communicating to the insured the cost concerns with remediating the site to the strictest, generic state standards and made sure the owner was aware more flexible risk-based site-specific standards allowable under the state regulations, making sure the insured understood the advantages / disadvantages of each. On the basis of the results of **EXCALIBUR**'s data gap site characterization work, cost projections, cleanup approach communications, **EXCALIBUR** competitively bid on behalf of its insurance client the cleanup to a risk-based site-specific standard under a fixed price agreement. After fully defining the environmental problem and bidding out the closure to risk-based site-specific standards, **EXCALIBUR** was able to help ensure that the cleanup was taken to completion more cost effectively and within the limits of the claim ceiling to help ensure a win-win outcome for **EXCALIBUR**'s client, the insured and the regulatory agency.