

# **LLOYD A. KORTBEEK, P.Eng., CIP, CFEI**

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***Accident investigator and claims support analyst focused on industrial losses and particularly those losses involving oil and gas equipment. Investigations include fire and explosion analysis, mechanical breakdown and process upset. Involved in claims analysis for losses valued in excess of US\$1.2B. Familiar with most forms and wordings for Property, Casualty, and Specialty Lines insurance, including Boiler and Machinery, and Course of Construction/Construction All Risks. Effectively able to use standard project management principles to develop or evaluate claims.***

## **SUMMARY**

- Registered in Alberta as a Professional Mechanical Engineer (P.Eng) and Chartered Insurance Professional (CIP), as well as a Certified Fire and Explosion Investigator (CFEI) through the National Association of Fire Investigators (NAFI)
- Experienced accident and fire investigator specializing in industrial incidents with a strong focus on oil and gas, including oil sands, related equipment. Formal training with KT processes and able to utilize other formal rational investigative processes, such as taproot, fault tree, etc.
- Involved in the assessment or assembly of claim packages for projects valued up to \$540 Million in direct costs, and excess of USD \$1.2 Billion final project costs
- Experienced with project execution methods as well as key progress indicators and measurement techniques both for expedited and non-expedited projects and able to modify and use these principles in the support of the insurance claim process
- Skilled at cost management and review with significant experience handling issues surrounding the value of acceleration/expediting, improvements/betterment as well as determination of Actual Cash Value (ACV) for various repairs. Valuations include the consideration of actual cost expenditures rather than generalized estimating values
- Managed multidisciplinary teams of up to 18 people, including in-house and third parties
- Proficient with various computer platforms and software including standard office programs. Familiar with data management and basic understanding of database structure and operation

## **PROFESSIONAL EXPERIENCE**

2005 – present **E2I2 Consulting Inc**, President

Provide engineering expertise to insurance and industry for incident related services including fire and explosion cause determination, general industrial incident investigation and claim support and analysis. Work independently or as lead or support to a multi-function team of independent consultants or within organizations to complete tasks. Manage data and address specific client needs, while providing focused support to efficiently and effectively complete projects

Notable investigations with E2I2 Consulting Inc include:

- Multiple failure investigations of reciprocating compressors involved in gas compression, including Waukeshaw, Caterpillar drivers and Ariel or Ingersol Rand compressors
- Multiple failure investigations of rotating gearboxes, including high speed expander gearbox bearing and seal failures in Organic Rankin Cycle (ORC) service, low speed spill gate seal failures in hydroelectric service

- Investigation and assessment of both high and medium voltage switchgear failures and damages arising from failures
- Investigation of fires involving waste biomass fluidized bed electrical generating equipment
- Investigation into fully laden, custom mobile machine run-away
- Multiple failure investigations involving commercial HAVC systems, particularly air cooling units up to 600 tons
- Investigation of damage to a high speed drilling mud centrifuge, failure of plastic flow mold machine and sabotage of concrete mixing and molding equipment
- Fire and explosion investigations involving propane vehicles and equipment both in mobile and fixed applications and included the investigation of complex fire at a large propane distribution facility involving a large number of personal and commercial portable storage containers and various highway bulk carriers
- Fire investigation on common and unique mobile equipment including: highway trucks, bulldozers (all sizes), backhoes and shovels up to 45 ton per pass hydraulic units, locomotives, wood chipper units, piling units, bridge inspection units, picker trucks
- Multiple oil and gas battery fire cause and origin investigations completed on behalf of equipment owners or insurers. Included working with various data systems including Distributed Control Systems (DCS), Programmable Logic Control (PLC) and coordinating and managing data from both Oracle and SAP based cost systems. Equipment involved dehydrators, heaters, treaters, separators, amine units, propane refrigeration units, bulk storage tanks and compressors and pumps
- Fire and explosion investigations of glass fiber manufacturing equipment, heat treating oven, countertop fabrication equipment
- Investigation of accidental pipeline cut, product contamination of feed into fractionator, water pipeline hydraulic hammer
- Investigation of errors in design of pipeline transfer facility

Notable claim support projects with E2I2 Consulting Inc. include:

- Oil sands coker fire (property excess \$540 Million) – Assembled technical information to support scope of repair to fire damaged and freeze damaged equipment on behalf of plant owner. Supported external consultants responsible for assembling cost information for direct physical damage as well as Business Interruption aspect of claim. Supported site valuation and risk surveys. Managed technical information requirements and cost allocation justifications to meet the needs of both OIL and commercial market adjusting teams
- Oil sands plant fire repair (property excess \$250 Million and claimed BI in excess \$1.2 Billion) – Managed property claim preparation, submissions and assessments of project scope on behalf of plant owner. Supported external consultants for owners in assessment of schedule and project expediting costs for OIL assessment. Managed and interfaced with third party engineering team working for Insurers. Provided framework for data management and technical assistance in migrating and managing data.
- Consecutive oil sands plant fires (property damage for each loss roughly \$100 Million) - Supported adjusting firm in the evaluation of property repair claims, specifically addressing the needs of OIL in dealing with expediting and betterment. Included verifying scope assessment by adjuster's contracted engineers, validating manpower and assessing costs for various activities.
- Oil refinery plant fire (property damage assessment in excess of \$70M) – working on behalf of adjusters to support in-kind replacement estimate by third party firm,

provide technical assessment of key process equipment and evaluated submitted actual repair costs

- Pipeline breach, pollution liability claim support. Assisted claims consultant in managing and processing pollution liability claim resulting from a pipeline breach in an urban area. Specifically worked to develop claim project tasks and timeline, establish communication and document management protocols both internally within the owner company and externally with adjusters, their experts and various counsel. Managed project based on tasks as associated budgets.
- Chemical plant fire arbitration assistance (property excess \$300 Million and BI claimed in Excess of \$350 Million) – Supported review of property costs and completed review of owner's portion of submitted costs.
- Heavy Oil Processing facility fire repair (property excess \$10 Million and claimed BI of excess \$30 Million) – Managed scope of damage and repair assessments with third party engineers and adjuster, monitored scope and interfaced with project superintendent regarding scope and execution of work. Established data management needs and assembled costs
- Pipeline construction project claim – Supported forensic accounting firm in review and apportionment of costs associated with specific work scopes to replace components supplied by a specific vendor within a greater project scope. Supplied costs included all costs to rectify multiple deficiencies claimed against various vendors.
- Completed assessments for adjusters, counsel and owners of various types and pieces of processing equipment to assess scope of damage and repair following an incident including damage to
  - Oil and gas equipment damaged by fires and explosions
  - Vessels and equipment damaged in transit due to a variety of causes including contact with bridges, vehicles, and the ground
  - Manufacturing equipment damaged due to improper operations and operator errors
- Prepare estimates for repair and calculate the Actual Cash Value (ACV) of repairs or damages

1999 – 2005 **Matthews ~Daniel International (Canada) Ltd.**

2003 – 2005 **Vice President – Operations (Calgary Operations)**

Adjusted technically complex files specializing in losses relating to heavy industrial equipment and processes for property, liability (as well as pollution liability), and boiler and machinery claim types. Conducted on-site investigations, managed relationships between clients and their customers and provided full service reporting to satisfy the needs of clients. Managed office personnel to ensure proper operation of the Calgary office including managing staffing levels, establishing and stewarding budgets, managing information systems, business development and expenses.

1999 – 2003 **Lead Engineer/Permit Holder (Engineering Division)**

Directed the engineering division and its resources to effectively respond to the needs of corporate clients on multiple, concurrent individual projects from initial field response through to litigation support. Client needs included incident investigations, and engineering/construction support to understand multi-disciplinary technical information, cost control measures, constructability and schedule issues. Also responsible for establishing initial cost estimates related to an incident, damage assessment protocols and cost/work breakdown systems. Maintained relationships between clients and their customers and supported corporate IT infrastructure

Notable projects with Matthews ~ Daniel International (Canada) Ltd. include:

- Oil sands plant fire during construction (property excess \$150 Million and claimed delay in startup in excess \$500 Million) - Independent adjuster - responsible for initial response, assessment and investigation, management of multi-disciplinary engineering team, establishing data management and transfer protocols, loss recovery cost control requirements, claims team cost control and evaluation of project status, interface between client engineering project teams and client's customer's project team
- Gas liquids extraction plant explosion and fire repair (approx. \$40 Million) - Engineer - participated in investigation team, led field engineering/project monitoring team (Clerk of Works), directed multi-discipline project team on assessment of repairs and evaluation of project schedule and associated scope addition impacts, and detailed the required project repair scope in comparison with executed construction scope
- Main reactor cracking for glycol manufacturing facility (claimed property values excess \$16 Million and BI excess \$16 Million) - Independent adjuster - led investigation team, monitored and reported on project status based on review of project indices, conducted field examinations to validate reported project milestones and status, and provided ongoing reports to market
- Crane collapse during construction and associated delay in start-up (approx. \$15 Million) - Engineer - led field investigation and coordinated project team in assessing validity of costs and impact to project schedule
- Pipeline Rupture Repair with resultant pollution liability claim (approx. \$10 Million) - Independent adjuster - evaluated property damage and cleanup costs and directing pollution consultant while providing regular reporting to clients
- Turbine Failure (approx. \$5 Million) - Engineer - led investigation team, evaluating property costs and repair duration to providing project support for litigation
- Compressor failure with resulting explosion and fire and interruption of business (approx. \$5 Million) – Engineer - conducting investigation and scope of damage assessment, evaluating repair costs and supporting litigation
- Investigated, assessed scope of damage, repair costs and repair plans for multiple compressor and battery explosions and fires and miscellaneous light through heavy industrial equipment failures.

1997 – 1999 **SAMAC Engineering Ltd. - Collision Analyst and Industrial Loss Specialist.**

Responsible for building industrial loss support area of practice within the company and conducting technical investigations into serious injury collisions involving commercial vehicles such as buses, trucks and truck/trailer combinations. Successfully managed relationships with clients and third parties to effectively monitor and report on project status and costs. Industrial Projects include:

- Ammonia fertilizer project reformer furnace overheat (>\$10 Million direct loss) – lead investigator, field inspector monitoring project progress and auditing costs (Clerk of Works), provided support for scope of damage and repair while providing interface between adjusters and claimant's project team
- Field Compressor Battery compressor failure with explosion and fire – lead investigator and consultant on scope of damage including providing litigation support for repair costs and duration of repair
- Ammonia fertilizer project control system failure during emergency shutdown (>\$5 Million direct loss) – lead investigator, field inspector monitoring project progress (Clerk of Works) and auditing costs, provided support for scope of damage and repair while providing interface between adjusters and claimant's project team

1990 – 1997 **Syncrude Canada Ltd.**

1994-1997 - **Mechanical Engineer – Mining Division**

Primary field engineer responsible for mine mobile fleet covering all field support equipment including cranes, graders, bulldozers, loaders, Class 8 and off-highway trucks and other smaller mobile mining equipment. Duties included support of high volume fueling and maintenance equipment. Support field engineer for production shovels and haul trucks up to 240 ton capacity. Role also required providing Upgrading Division with field engineering support for major outages or turnarounds

**1991-1994 - Maintenance Engineer – Extraction Division**

Field engineer responsible for ore concentration equipment including pan feeders, conveyors, rotary kilns, cyclofeeders and vibrating screens. Responsibility included coordinating and executing ongoing maintenance and reliability measures, major equipment refurbishment and replacement projects.

**1990-1991 - Student Maintenance Engineer – Upgrading Division**

Field engineer responsible for supporting maintenance and operations.

## TECHNICAL TRAINING AND PRESENTATIONS

- 2015 - **H2S Alive**, Allstar Enviro Safety (October 2015)
- 2012 - **National Advanced Fire, Arson & Explosion Investigation Training Program –** National Association of Fire Investigators (NAFI)(August 2012)
- 2010 - **Project Management Principles applied to the Claims Process** - Southern Alberta Risk and Insurance Managers (SARIMS) (May 6, 2010)
- 2009 - **Processes and Risks of Industrial Fire Investigations** - Canadian Industrial Emergency Conference and Exposition (October 2009)
- 2007 - **Perspectives, a contrast of experiences of an adjuster and claim support contractor** – Northern Alberta Risk and Insurance Managers conference (March 2007)
- 2006 - **Practical Claims Management** – Western Canadian Construction Conference (September 2006)
- 2005 - **Claims Management: Torts** – University of Calgary Continuing Education, Calgary
- 2004 - **Claims 2** – Insurance Institute of Canada, Calgary
- **Bodily Injury Claims** – Insurance Institute of Canada, Calgary
- **The Business of Insurance** – Insurance Institute of Canada, Calgary
- **Fraud Awareness and Prevention** – insurance Institute of Canada, Calgary
- 2003 - **Automobile Insurance – Part 1**, Insurance Institute of Canada, Calgary
- **Claims 1** - Insurance Institute of Canada, Calgary
- **Insurance Against Liability**, Insurance Institute of Canada, Calgary
- **Insurance Against Crime**, Insurance Institute of Canada, Calgary
- **Specialty Lines**, Insurance Institute of Canada, Calgary
- 2002 - **Project Management for Professionals in the Oil and Gas Industry**, University of Calgary, Calgary
- **Dynamic Analysis of Compressor Systems**, University of Calgary, Calgary
- **Principles and Practice of Insurance**, Insurance Institute of Canada, Calgary
- **Insurance on Property – Part 1**, Insurance Institute of Canada, Calgary
- **Introduction to Personal Lines**, Insurance Institute of Canada, Calgary
- 2000 - **Workplace Hazardous Materials Identification System Basic Training**, Survival Systems Training Limited, Halifax, Nova Scotia
- 1996 - **Mechanics of Heavy Duty and Truck Combinations**; University of Michigan, Ann Arbor
- 1995 - **Kepner Tregoe Rational Processes**; Syncrude, Fort McMurray
- 1994 - **Welding Metallurgy, Masters Level course**; University of Alberta
- **Synthetic Lubricants**, Society of Tribology and Lubrication Engineers (STLE); Calgary
- 1993 - **Introduction to the Design and Behavior of Bolted Joints**; Raymond Engineering Ltd. (John Bickford), Ft. McMurray

## EDUCATION

- 1991 B.Sc. (Mechanical Engineering), Cooperative Program; University of Alberta

2004 CIP (Chartered Insurance Professional), Insurance Institute of Canada

2012 CFEI (Certified Explosion and Fire Investigator), National Association of Fire Investigators

## **PROFESSIONAL ASSOCIATIONS & MEMBERSHIPS**

- Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA)
- Insurance Institute of Canada
- Insurance Institute of Southern Alberta
- National Association of Fire Investigators (NAFI)

## **LANGUAGES**

- French (verbal and written)
- Dutch (verbal)