A large portion of Baker & O'Brien's work involving the EPC industry is concerned with domestic and international construction-related disputes. These often involve detailed analyses of work order claims, project management performance, adequacy of bid documents, contractor bid preparation, quality of construction, schedule and time extensions, and interface and interference issues. We are familiar with all of the factors that affect the execution of projects, ranging from fixed price to reimbursable transactions. We can act solely as consultants, or as testifying experts in mediation, arbitration, or litigation. Many of our consultants have previously served as project or construction managers for owners and contractors on large energy projects throughout the world, including North America, the Middle East, and Asia. Accordingly, we are able to quickly assess the range of issues that are often at the core of a construction-related dispute.

RELATIONED INDUSTRIES

Additional Process Industries
- Gas Processing
- Oil and Gas Production
- Petrochemical / Chemical
- Petroleum Refining
- Power Generation
- Renewable / Alternative Energy
- Transportation and Storage

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EXPERT WITNESS AND DISPUTE SUPPORT
Engineering, Procurement, and Construction (EPC)

PRIMARY CONTACTS

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RELATED EXPERIENCE

- **Ammonia Plant Construction Insurance Dispute**
  Evaluated the technical basis for a ammonia plant insurance claim involving construction defects and warranty work. Inspected the plant, evaluated project records, and reviewed maintenance records.

- **Chemical Plant Business Interruption Claim**
  Analyzed the impact of a major equipment fabrication error on a chemical plant business interruption (BI) claim including schedule delay and financial impacts.

- **Business Interruption Claim and Root Cause Analysis**
  Monitored rebuild engineering and construction of facilities damaged by fire and offered expert opinion on the appropriate construction period for the business interruption claim. Participated in the incident root cause analysis.

- **Caustic Soda Contract Dispute**
  Reviewed caustic soda plant expansion and the ability of supplier to deliver the required volume of caustic soda under contract. Advised on the reasonableness of the expansion construction schedule based on review of environmental permits, public data, and internal documents on construction activities.

- **Construction Dispute - Gas Plant**
  Provided expert reports and testimony regarding project management issues, alleged defects, and liquidated damages for international arbitration between owner and contractor. The project involved an offshore platform, an undersea pipeline, an onshore pipeline, an onshore cryogenic gas processing plant, and a sales gas pipeline.

- **Construction Dispute - Petrochemicals Plant**
  Prepared a confidential "Cold Eyes Review" assessment concerning a contemplated claim between an owner and a contractor of a grassroots petrochemical facility. Reviewed draft claims, researched evidence, and interviewed key personnel in order to produce an independent view of the claim.

- **Construction Dispute Litigation - Gas Plant**
  Assisted in a litigated dispute between Owner-Operator and Engineering & Construction Contractor over whether a cryogenic gas plant, as engineered, procured, and constructed, met the stipulated contractual performance guarantees; prepared expert witness rebuttal report with respect to relevant issues.

- **Contractual Dispute**
  Performed a due diligence of owner allegations and contractor claims pertaining to a Lump Sum-Turn Key contract termination. Reviewed documents, schedules, witness statements, and expert reports to advise counsel on implications of contracting strategy and contract management following award.

- **Damages from Steam Turbine Failure**
  Assisted in determining economic damages resulting from failures associated with a new steam turbine that was provided and installed by a turbine manufacturer at a power generation facility. Conducted independent assessment of economic losses suffered by electric cooperative as a result of both short-term and long-term performance shortfalls and outages.

- **Economic Damages Litigation - Plant Explosion**
  Retained concerning claims of design errors and failures in project management, following explosions and fires at a petrochemical plant. Conducted in-depth reviews of engineering, procurement, and construction agreements; process technology and design basis; construction records; owner's operating procedures; and actual operating history since start-up of the plant. Evaluated operating system provided against prevailing industry standards and examined potential for equipment failure.
Ethylene Plant Construction Litigation
Assisted in a dispute concerning allegations that poor engineering work product contributed to a >$100 million cost overrun. Assisted with discovery, inspected plant, evaluated construction documents, analyzed the project critical path, and analyzed lost income due to delays in the project schedule.

FCC Construction Litigation
Provided expert testimony regarding allegations that construction errors in the installation of an FCC catalyst cooler resulted in a significant business interruption claim. Assisted in discovery, analyzed operating data, evaluated design issues, calculated property damages and business interruption losses.

Force Majeure Dispute
Provided expert report relating to a claimed force majeure event that extended a petrochemical plant’s turnaround schedule. The plant operator claimed force majeure due to defects in critical equipment that was required to be installed during the turnaround. The correction to the defects then resulted in the late delivery of equipment.

Formaldehyde Plant Construction Litigation
Assisted in a dispute concerning allegations that completion delays and poor plant performance at a European formaldehyde plant resulted in a multi-million dollar damage claim. Assisted with discovery, inspected plant, evaluated plant operating records, reviewed construction contracts, valued the plant, and calculated damages. Presented and defended conclusions at hearing.

Incident Analysis - Petrochemicals
Performed an investigation analysis following fire and explosion incidents at a major Gulf Coast manufacturing facility. The engagement entailed development of the sequence of events, root cause analysis, assessment of the decision to rebuild, and reconstruction monitoring. An independent project schedule and cost estimate for the plant reconstruction was developed.

Interstate Pipeline Inspection Practices
Provided expert testimony on inspection and maintenance practices for interstate petroleum products pipelines. Issues included reasonable depth of additional overfill and width of maintenance right-of-way.

Lender's Independent Engineer
Served as independent engineer for a "grassroots" olefins project. Prepared the technical due diligence for a US$4 billion facility on behalf of international export credit agencies and onshore and offshore lenders.

M&A Dispute
Evaluated the foreseeability of project cost overruns that negatively impacted the economics of the acquisition of an EPC Firm.

Manufactured Gas Plant
Provided technical assistance and review of historical documents in support of litigation regarding the environmental cleanup of a manufactured gas plant site. The site, which had various gasification units in operation between approximately 1870 to 1950, had been used for a number of other purposes. Analysis investigated the contamination present at the site to all previous and current gas plant operations.

Marine Terminal Development
Reviewed design requirements and monitored construction, start-up, and operation of a project to develop a bulk liquids terminal. Work included review of dredging requirement, schedule, and interfaces between this project and a project to export ammonia from the terminal.

Nitroparaffins Litigation
Assisted in a dispute between an operator and an EPC firm concerning allegations that the process design contributed to an explosion at a nitroparaffins manufacturing plant. Assisted in discovery, evaluated design issues, and provided expert testimony.
Offshore Pipeline Failure
Following a business interruption claim concerning number of failures on a large subsea crude oil pipeline, examined original construction specifications, maintenance, inspection, and operation records of the pipeline. Also reviewed the repair plans and repair execution of the failed components and made recommendations to include: a) comprehensive metallurgical analyses; b) preparation of an efficient repair and execution schedule; and c) complete subsea modeling of the pipeline for the purpose of failure mode and time to failure predictions.

Offshore Pipeline Project
Served as Independent Engineer on behalf of a major financial institution for a $200 million project to build a deepwater gas and oil-gathering system. Prepared a valuation of offshore pipelines and an onshore gas processing plant for gathering and processing of deepwater Gulf of Mexico oil and gas production in support of structured finance. Certified completion of the project for financial purposes.

Offshore Platform Design
Assessed design of elevated platform and ladders on a jack-up oil derrick which was under construction. Compared design to industry standards.

Paper Coating Plant Project Finance
Served as independent engineer on behalf of a major financial institution for the construction of a new $100 million paper coating plant. Prepared due diligence, assessed technology, evaluated project scope of work and schedule, reviewed engineering, procurement, and construction contracts, and advised bank with respect to mitigation of project risks.

Paraxylene (PX) Contract Dispute
On behalf of a major international buyer of paraxylene, prepared an expert analysis concerning damages claimed by a large US based supplier. Analysis included a detailed evaluation of supplier's paraxylene manufacturing economics.

Propane Product Quality Dispute
Investigated the design and operation of a natural gas liquid fractionation, storage, and loading facility located on the Red Sea to determine potential causes of alleged hydrogen sulfide contamination of propane cargoes.

Valuation of Pipelines and Gas Plant
Served as independent engineer on behalf of a major bank to value and certify completion of a project to build offshore pipelines and an onshore gas processing plant for gathering and processing of deepwater Gulf of Mexico oil and gas production. The valuation was prepared for the lender in support of $200 million of structured finance.

Refinery Equipment Sales
Assisted the owner of a 60,000 BPD crude oil refinery in developing a marketing plan and finding potential customers for used process equipment. The assignment generated a sale of several major processing units to a local refiner for use in the manufacture of high-octane gasoline blending stocks.

Refinery Performance Test Evaluation
Investigated claims of poor performance of a $1 billion refinery project between a refiner and a major EPC contractor. Evaluated charge and yield, feedstock quality, and efficiency issues and assisted in documentation of response to claim.

Salt Water Disposal Tank Explosion
Investigated the cause and origin of a storage tank explosion at an oil and gas salt water disposal facility in Colorado. Conducted site investigation and facility/equipment inspections, evaluated system design and operation, and conducted witness interviews. Determined cause of explosion and worked with company management to evaluate existing policies and procedures for potential areas of improvement.
- **Power Plant Construction Dispute**
  Provided expert report and oral testimony on roles and responsibilities of: (1) an EPC contractor under a Lump Sum-Turn Key contract; (2) owners in awarding and managing such projects; and (3) the capabilities of owner's and contractor's project management teams. The project involved provision of EPC services to retrofit selective catalytic reduction equipment to existing power generation units, as mandated by the regulatory authorities.

- **Refinery Feasibility Study**
  Performed a feasibility study for a small, skid-mounted refinery to be operated in Kurdistan to serve local markets. Reviewed contractor proposal regarding likely configuration, crude slate, capital costs, and yields.

- **Power Project**
  Supported lenders in mezzanine financing for construction of a cogeneration plant in Western Siberia. Advised as to the collateral value of certain equipment ordered for the project and evaluated the technical capabilities of the company to manage the project under long-term project financing.

- **Power Plant Construction Dispute**
  Provided advice on a construction dispute between owner and contractor regarding a project to upgrade and modify a power plant in the Caribbean, which had alleged defects related to the boiler heat recovery section, the desalination plant, seawater cooling piping, and instrumentation.

- **Piping Subcontractor Claim Evaluation**
  Evaluated claims for additional quantities of materials needed, due to owner caused delay and disruption on a specialty chemical plant project.

- **Refinery Construction Dispute**
  Engaged to assess claims that poor EPC performance resulted in significant cost increases and schedule delays in the construction of a residue catalytic cracking unit. Case centered around whether the prime contractor had fulfilled all of its obligations under the sub-contract and had taken all agreed steps to contain identified potential cost overruns and other factors impacting the schedule. Prepared an expert report on the project and provided evidence at the hearing.

- **Refinery Reactivation and Upgrading**
  Worked on behalf of a major investment banking group to evaluate the plans of an independent refiner to upgrade and reactivate its 200,000 barrels per day refinery. Conducted “due diligence” on the company's plans and specifications, evaluated likely economics, and assessed competitive forces in the marketplace. Upon closing of the financial transaction, monitored the construction progress, schedule, and budget over a period of four years. Reviewed all invoices for labor and materials and approved draw down of construction funds in accordance with the contractual agreements.

- **Polypropylene Manufacturing**
  Assisted in a dispute concerning insurance claims for property damage and business interruption in connection with a reactor incident during construction of a production facility.

- **Refinery Construction Dispute**
  Assisted law firm representing Russian refiner in dispute with U.S. engineering firm that provided a refinery for a location in Russia. Ascertained construction status of units and reviewed issues in dispute regarding design basis, scope of work, and costs for a modular refinery constructed in the U.S.

- **Refinery Force Majeure Claims**
  Prepared expert reports and testified in an international arbitration involving multiple product supply disputes between a refinery and an adjacent chemical plant. Reviewed force majeure claims related to catalytic cracking technology, product supply contracts,
Project Cost Overrun Dispute
For a large sour condensate stripper facility, evaluated a significant project cost increase over the original estimate, taking into account work scope changes, market escalation, the accuracy of the original estimate, and the impact of project delays. An assessment was made of the reasonableness in each category and the likelihood of success with respect to cost recovery via litigation proceedings from a technical standpoint. The project was designed and constructed during a period of rapidly escalating labor and material costs.

Gas Processing Metallurgy Replacement
Evaluated the reasonableness of a large project’s cost to replace the piping with a different metallurgy for a high-pressure, high-temperature sour gas reinjection facility in Central Asia. Also opined on the industry knowledge of the proper metallurgy at the time of construction of the original facility.

Review Project Development Costs
Evaluated multi-million dollar cost overruns of yearly operating budgets of a Central Asian consortium involved with the oil and gas development and production. Costs reviewed included Engineering Support, Operating Costs, Drilling Costs, and Capital Expenditures.

Gas Plant Emergency Shutdown Design Analysis
To determine whether a system complied with key requirements, reviewed design of cryogenic gas plant emergency shutdown system in connection with a fire event to assess conformance with API RP 521 (Guide for Pressure Relieving and Depressuring Systems). Provided affidavit of merit pursuant to Texas Civil Practice Section 150.002.

Natural Gas Gathering Disputes
Provided expert report regarding claims involving natural gas measurement, prudent operations, natural gas pricing, surface estate issues, reasonable accommodations, and environmental considerations.

Oil Field Pipe Dispute-Insurance Claim
Reviewed a claim involving an insurance dispute relating to proper preservation of drilling pipe in a storage yard following a hurricane.

Refinery Construction Dispute
Evaluated dispute between a mechanical subcontractor and owner on a refinery expansion project in the Middle East. Evaluated issues related to delay and disruption caused by material delivery delays.

Refinery Contractor Indemnification Dispute
Provided expert opinion concerning an indemnification dispute between a refiner and contractor, as well as the standard of care and practice in the industry concerning the design and construction of a piping relief system. Also opined on the refinery owner’s responsibilities concerning the acceptance and maintenance of completed piping systems.

Review Project Development Costs
Evaluated multi-million dollar cost overruns of yearly operating budgets of a Central Asian consortium involved with the oil and gas development and production. Costs reviewed included Engineering Support, Operating Costs, Drilling Costs, and Capital Expenditures.

Tube Sheet, Flare Tip Matter
Investigated the cause of tubesheet and flare tip damage related to an unplanned sudden shutdown of the facility. Evaluated whether damage was caused by the shutdown, long-term wear, or contractor error during installation. Provided expert support through mediation and settlement efforts.
Biodiesel Plant Construction Dispute
Evaluated engineering and construction practices in a dispute between an owner and EPC contractor due to cost overruns. Issues included engineering and project management practices which required rework, and construction practices which created safety and operability issues. Cost estimates were prepared for correcting the deficiencies.

Gas Treating Facility Explosion Investigation
Investigated cause of system overpressure and shutdown of downstream pipelines which led to flange gasket failure and fire. Reviewed system design, construction, and overpressure protection at wellheads located upstream to determine cause of failure.

Production Sharing Dispute
Reviewed amended field development plan with respect to a PSA dispute between government and operator consortium over a proposed multi-billion dollar increase in projected final costs. Prepared expert report, reply report, and provided oral testimony.

Horizontal Drilling Property Damage
Reviewed damage to private property (farmland) allegedly caused during the installation of an underground pipeline. A portion of the pipeline was installed using the technique of horizontal directional drilling (HDD).

RFCC Arbitration Expert Report
Arbitration expert witness opinion on residual fluid catalytic cracking (RFCC) operations, prudent operating procedures, and force majeure claims related to an RFCC incident.

LNG Technical Advisor
Provided technical support regarding the FERC filing process, reviewed FEED study deliverables from contractors, and advised with regard to other contracts in support of the project, including geotechnical issues, noise survey, vapor dispersion, etc. Also reviewed progression and risks involved in estimates of project CAPEX and OPEX.

LPG Terminal
Lenders’ Engineer review for development of an LPG terminal consisting of LPG tankage, gasoil tankage, loading facilities, and associated pipelines and equipment. The facilities were planned to accommodate annual throughput volumes of 1,150,000 tons of LPG and 940,000 tons of gasoil, with minimum guaranteed volumes of 700,000 tons of LPG and 600,000 tons of gasoil with planned future facilities for increased throughput volumes, bunkering operations, and third-party storage.

Construction Dispute - Gas Processing Plant
Dispute involving delay and disruption, welding, and testing during gas plant debottlenecking project. Contractor claimed that multiple owner changes had resulted in significant additional costs, including delay. Owner claimed that the costs resulting from the changes were previously paid and that the delay in completion was due to the contractor’s poor management of the project.

LNG Due Diligence
Provided technical support to the sponsor of a multi-train liquefaction project. The scope of work included: preparation of a technical due diligence report; in-depth review of the Open Book Estimate (OBE), schedule, and project execution plan; assessment of the EPC contractor’s capabilities and experience; high-level review of geotechnical issues; assistance in the development of an Operating and Maintenance (O&M) plan; input into the formation of sponsor’s project management team; and input into the development of owner’s costs, including appropriate levels of cost and schedule contingency. Provided support to the sponsor with EPC contract negotiations.

Mexican Refinery Construction Dispute
Served as consulting and testifying experts in an ICC arbitration involving an upgrade and expansion of a large refinery complex in Mexico. Evaluated over 400 separate claims by the owner for alleged improper design and invalid extra work orders for refinery
and pipeline projects. Assignment included preparation of an expert report and testimony before the International Court of
Arbitration in Mexico City.

- **Refinery Incident Claim**
  Assisted in the investigation of a refinery leak and fire. Coordinated the collection of information related to the incident and
disseminated it to the relevant parties. Helped audit incident related retained materials and developed inventory documentation.

- **Chemical Plant Construction Dispute**
  Provided expert report on alleged engineering design and failed mechanical completion issues for a chemical plant in a lump sum
and guaranteed completion date EPC contract. Prepared expert report and provided testimony detailing the basis of findings and
opinions.

- **Natural Gas Distribution System Construction Dispute**
  Provided expert written reports and arbitration testimony in an EPC construction dispute concerning the construction of a new
hydrocracker and associated refinery units. The dispute involved a range of issues, including engineering defects, construction
quality control, and construction schedule delay impacts.

- **Fractionator Facility Design Issues**
  Reviewed contractual and design issues for fractionation facility and reviewed previously issued certificate of merit. Assisted by
evaluating issues of concern involving: 1) auto-refrigeration and brittle fracture of certain vessels; 2) Pressure Safety Valves
(PSVs), flare system, and liquid drain facilities; 3) cooling tower pump suction pipe sizing and potable water supply; and 4) the
Distributed Control System (DCS).

- **Gas Plant Supply Contract Dispute**
  Provided expert services for dispute involving a supply agreement between a new natural gas processing plant and a downstream
customer. Assessed delays in the construction of the gas plant which affected its ability to supply its downstream customer with
product. Provided expertise on industry practice to assist in the interpretation of the contract’s force majeure language and due
diligence responsibilities.

- **Gas Pipeline - Alleged Valve Defects**
  Addressed the alleged failure of valves to meet specification and the appropriateness of a party’s action to remove the valves from service.

- **Ammonia Plant Relocation**
  Evaluated technical issues related to project management in the relocation of an ammonia plant. Reviewed records related to
schedule, progress measurement, and construction budgets throughout the relocation project. Reviewed project execution plan
and compared actual execution to plan.

Also advised on responsibilities of the owner, contractor, and subcontractors on the project.