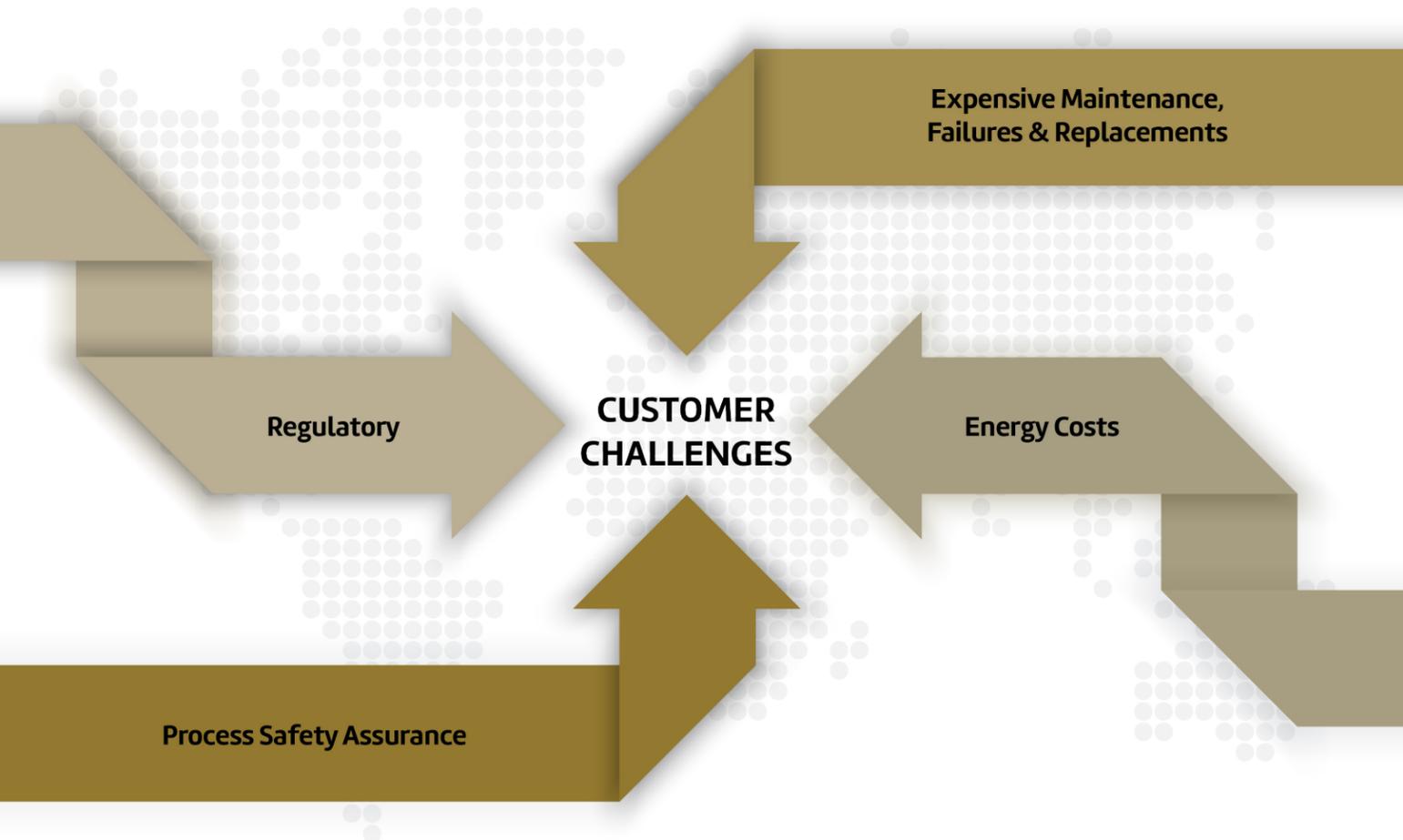




# Signet Services

## Why Choose Signet?

- **Expert Team:** Our skilled professionals bring years of experience in industrial monitoring and analytics, ensuring top-tier service delivery.
- **Advanced Technology:** We leverage cutting-edge technology to provide accurate and timely service for our reliability and emissions testing services.
- **Customized Solutions:** We understand that each client's needs are unique. Our services are tailored to meet your specific operational challenges and regulatory requirements.



## Signet Services

Since 2008, SIGNET Monitoring & Analysis has been providing specialized services to oil & gas and other industrial sectors, to help companies solve vibration and performance issues and reduce maintenance costs on their compression equipment.

In 2014, we further expanded our services to include compliance emissions stack testing services on engines, boilers, and heaters being newly required by the provinces as part of their facility permitting and approval processes to mandate emissions reduction.

It is through meticulous attention to detail, professionalism, technical capabilities, quality assurance, and excellent customer service that Signet has gained the reputation as industry leaders in equipment performance management and compliance.

### Our Services

- **RELIABILITY SERVICES:** We provide proactive maintenance and reliability solutions to ensure your equipment operates at peak performance, reducing downtime and extending asset life. In addition, we offer **CONSULTING SERVICES** to support our clients with design and procurement review, risk identification, asset management, and a range of analysis and engineering services.
- **EMISSIONS TESTING:** We offer emissions stack testing services for provincial permitting, federal Multi-Sector Air Pollutant Regulation (MSAPR) compliance testing, as well as other non-regulatory specialised projects. Our experienced team ensures accurate and timely reporting to keep your operations compliant. In 2024 to support the increased requirement for NOx emissions control, we have commenced a full suite of new **CATALYST SERVICES**, including new catalyst supply and a non-intrusive cleaning operation.



## Reliability Services

Signet's reliability services offer comprehensive solutions for monitoring & analyzing equipment performance, empowering customers, & maximizing equipment performance & service life

### Highly Skilled Analysts

Our team consists of highly skilled analysts with over 200 years of industry experience. They are dedicated to assisting customers in resolving vibration and performance issues while reducing maintenance costs.

### Industries Served

Customers in the Oil & Gas, Mining, Pulp & Paper, Manufacturing, Transportation, and Agricultural industries benefit from Signet's reliability services in minimizing operating costs, minimizing emissions, optimizing efficiency, maximizing uptime and preventing process safety events.

### Specialized Technologies

Reciprocating equipment analysis tools allow for a thorough assessment of machinery health, efficiency, and safety. Accompanied by other inspections, machinery time between repairs can be extended substantially.

Motion Amplification® video analysis provides a visual diagnostic capability wherein "invisible" vibration is measured and displayed in a way that makes it understandable.



## Reliability Services

### Condition Monitoring

Visual inspection, vibration analysis, ultrasonic leak detection, process variable trending, and other specialized techniques:

- Augment any reliability-focused maintenance program
- Detect the onset of component wear and potential failure
- Minimize maintenance spend and maximize uptime

### Performance Analysis

Reciprocating Engine and Compressor diagnostics as part of your CM program or as a way to assess efficiency and causes of failures:

- Compare performance to facility and project requirements for commissioning and warranty support
- Diagnose the cause of failures to prevent recurrence
- Minimize energy costs per unit throughput
- Minimize emissions
- Maximize uptime and minimize maintenance costs

### Lateral & Torsional Vibration Analysis

Part of a functional condition-monitoring (CM) program or one-time diagnosis:

- Predict and prevent failure of components minimizing unplanned downtime and the risk of process safety events
- Compare vibration levels to industry and project guidelines for commissioning and warranty support
- Diagnose the cause of failures to prevent recurrence
- Maximize uptime and minimize maintenance costs





## Emissions Testing & Program Management

### Ensuring regulatory compliance & environmental responsibility

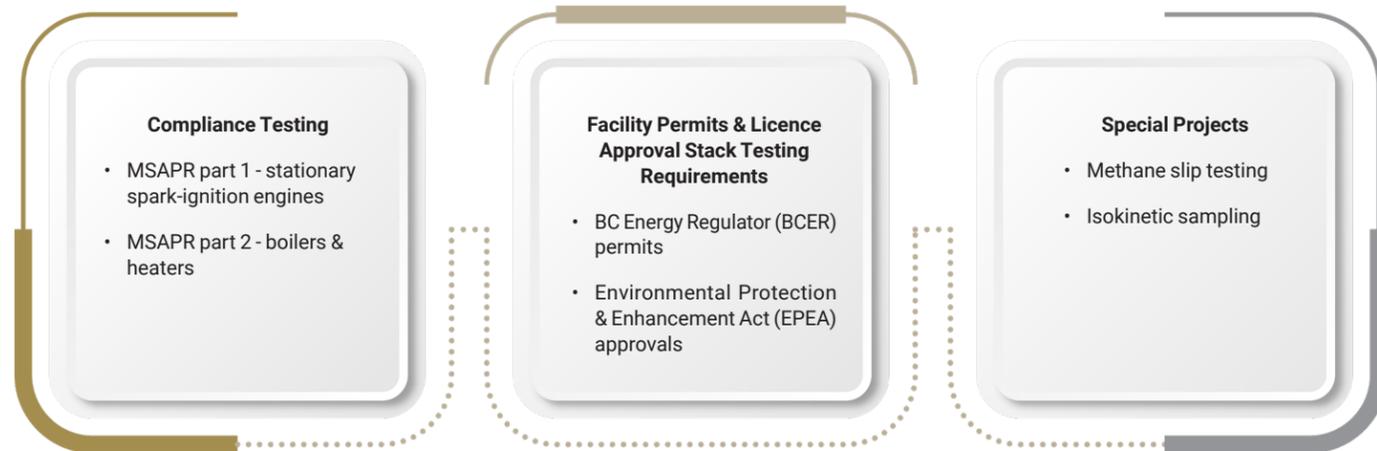
At Signet, we specialize in providing a comprehensive range of emissions testing services to help Canadian oil and gas producers ensure regulatory compliance and meet their internal Environmental, Social, and Governance (ESG) disclosure goals.

Our team of experts possesses mechanical expertise and extensive experience in engine tuning and balancing, enabling us to collaborate effectively with your maintenance staff to ensure that your engines meet emissions standards, while maintaining productivity, minimize environmental impact, and comply with regulations.

### Exhaust Stack Emissions Testing & Program Management

Signet offers turnkey emissions testing and program management services utilizing experienced emissions testing technicians, CEMS grade testing equipment, and providing detailed testing reports.

**Over 6,000 MSAPR engine and boiler/heater tests successfully completed.**



#### Compliance Testing

- MSAPR part 1 - stationary spark-ignition engines
- MSAPR part 2 - boilers & heaters

#### Facility Permits & Licence Approval Stack Testing Requirements

- BC Energy Regulator (BCER) permits
- Environmental Protection & Enhancement Act (EPEA) approvals

#### Special Projects

- Methane slip testing
- Isokinetic sampling

## Emissions Testing & Program Management

### Regulatory & Specialized Testing

- CEMS grade testing equipment for key air containments and greenhouse gases
- Isokenetic Kit/Method 5 Sampling Train
- Ability to handle natural gas engines, boilers and heaters, and turbines

### Experience & Expertise

- Extensive stack testing experience with over 6,000 MSAPR regulatory tests completed to date
- Expertise to assist with engine tuning and problem diagnosis
- Capacity to handle 2,000 emissions tests per year

### Compliance Assurance

- Advice on program management and compliance approach optimization
- Intimate knowledge of the regulation and the allowed testing methods
- Comprehensive compliance reports provided for each test

### Customer Service

- Full-time planner/scheduler
- Technical support/problem diagnosis
- Compliance readiness assessments





## Consulting Services

### Seamless solutions for rotating equipment while optimizing performance

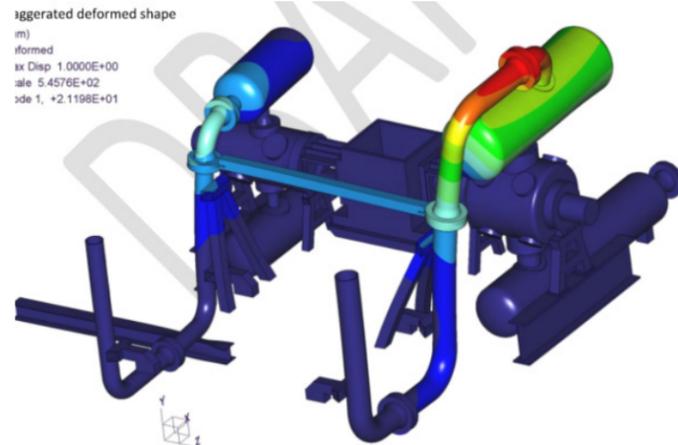


Figure 1.9 Existing Structure 1<sup>st</sup> MNF

Finite Element Modeling to Solve Vibration Problems

Our team offers comprehensive services for the successful purchase, installation, and commissioning of rotating equipment. Our experienced team provides expertise in design and procurement review, risk identification, asset management, and a range of analysis and engineering services. Companies can rely on Signet to ensure a smooth process and optimal performance of their rotating equipment.

## Consulting Services

### Design Review

- Foundation design review to prevent vibration-related failures
- Equipment specification and bid spread to buy the right equipment to minimize total lifecycle cost
- HAZOP and risk assessment participation/leadership to prevent process safety and operational problems
- Drawing and document reviews to ensure the right thing gets built
- Develop maintenance programs for lowest cost and maximum production

### Root Cause Failure Analysis

- Learning from failures prevent future failures
- Lead or participate in RCFA investigations
- Evidence gathering, preservation and analysis
- Complete failure tree analysis
- Provide rotating equipment expertise

### Specialized Design Services

- Guide or complete specialized modeling services to prevent failures, design solutions for existing problems and optimize performance
- API 618 acoustical/mechanical studies
- Torsional modeling
- Specialized structural modeling
- Compression applications modeling

### Commissioning Services

- Make sure the project deliverables have been met
- Pre-commissioning inspection for installation and fabrication details that are critical to reliability
- Performance and vibration testing to ensure design parameters have been met and to allow long-term reliability and efficiency
- Baseline to start an optimized maintenance program



#### Review & Oversight

Our team thoroughly reviews design and procurement documents, offering valuable insights and recommendations.

#### Risk Identification & Asset Management

By leveraging our expertise, we help companies identify operating risks and develop effective asset management strategies. This leads to enhanced equipment efficiency and reduced downtime maintenance.

#### Design & Commissioning Expertise

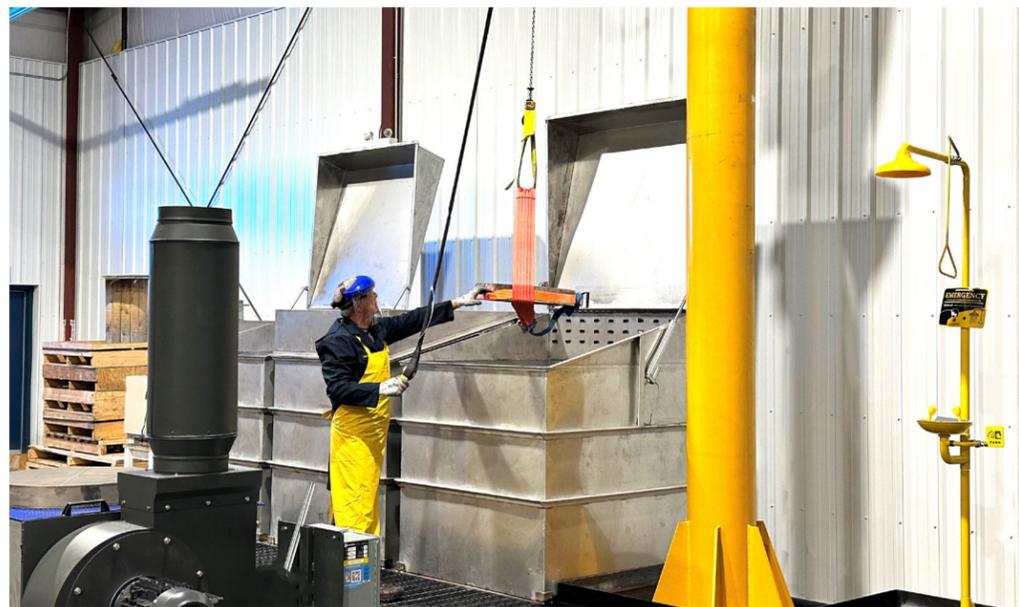
Specialized rotating equipment services for design, procurement, fabrication and installation.

We also provide oversight during the commissioning processes, ensuring that everything is implemented correctly.

## Signet Cleaning Solution

### Non-intrusive Catalyst Element Evaluation & Cleaning Process

- Physical evaluation
- Cleaning:
  - Masking contaminants are released by a combination of the proprietary cleaning solution and air agitation
- Rejuvenate the catalyst surface for optimal performance
- Catalyst elements are rinsed and dried
- Assessment - Test pre & post-catalyst for NOx, CO, and O2 (minimum of 85% effective) – **destruction efficiency value**
- Create customer report
- Safe disposal of eco-friendly cleaning solution



Catalyst Element Cleaning

Efficient and safe cleaning without damaging the catalyst element with the following methods:

- High pressure wash
- Ultrasonic Cleaning
- High temperature steam cleaning

## Signet Catalyst Management Program

### Reduce Cost of Compliance

- Extend the life of a catalyst element
- Non-intrusive cleaning process which maintains integrity of the catalyst
- Destruction Efficiency Test guaranteeing baseline performance
- Precious metal recovery credit toward your next catalyst element purchase

### Customer Service

- Engine/Catalyst assembly experts
- Catalyst troubleshooting (onsite available)
- Catalyst maintenance - best practices & training
- Choice of new or replacement elements - Standard/Premium
- Technical Data Sheet can be provided

### Catalyst Lifecycle Optimization

- Manage your catalyst element inventory with a database
- Predictive maintenance & proactive measures to prevent downtime
- Catalyst element lifecycle tracking
- Regulatory emissions testing

### Environmental Benefits

- Precious metal recovery
- Eco-friendly cleaning solution





**Partner with Signet to explore your most cost effective reliability, emissions, & catalyst solutions.**



Call us or request a quote online  
[info@signetma.com](mailto:info@signetma.com)

