



Pipeline Performance Capability

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PIPELINE PERFORMANCE CAPABILITY

Urban Pipelines



PIPELINE PERFORMANCE CAPABILITY

Inspection - How Many Sites ?



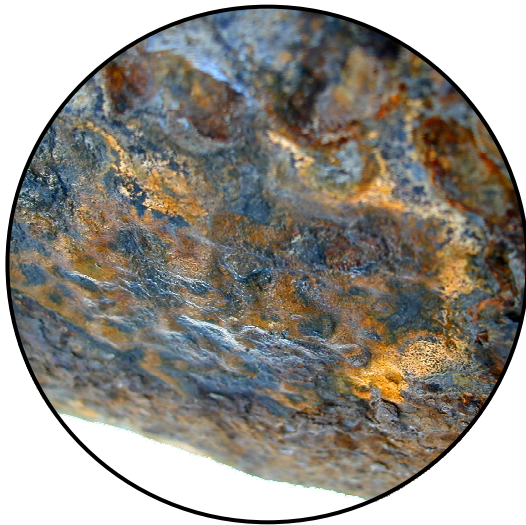
- **Classify - Sections of Similar Conditions**
 - Records - Construct + Operate + Failure / PCM
 - Underground / Aboveground + Interfaces
 - Environment - Coatings + Soil + Specific
 - Loading - Internal + External + Specific
- **Random locations within Sections**
- **Maximum Information at Minimum Cost**
- **Agree inspection plan with Client**

PIPELINE PERFORMANCE CAPABILITY

Inspection - Data Quality



- **Today or The Future ?**



- **Coatings** - Type / Condition / Future
 - **Soil** - Type / Corrosivity / Support
 - **Pipe Wall** - Thickness & Defects
-
- **Pipe Wall - External *Magnetic* Inspection**

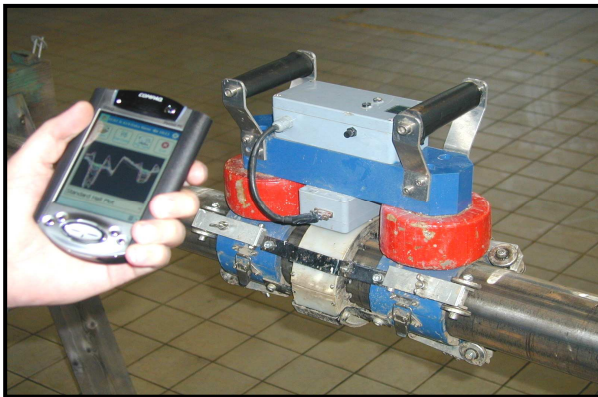
PIPELINE PERFORMANCE CAPABILITY

Pipe Inspection Tools



- **Pipe Wall - External *Magnetic* Inspection**
 - **Tools** - AESL design/manufacture
 - Lightweight + Portable + Battery/Generator
 - Semi-automatic data collection / PDA

Small - 75-150 mm



Large - 200 mm+



PIPELINE PERFORMANCE CAPABILITY

Data Collection



- **PDA + BlueTooth + E-Mail**

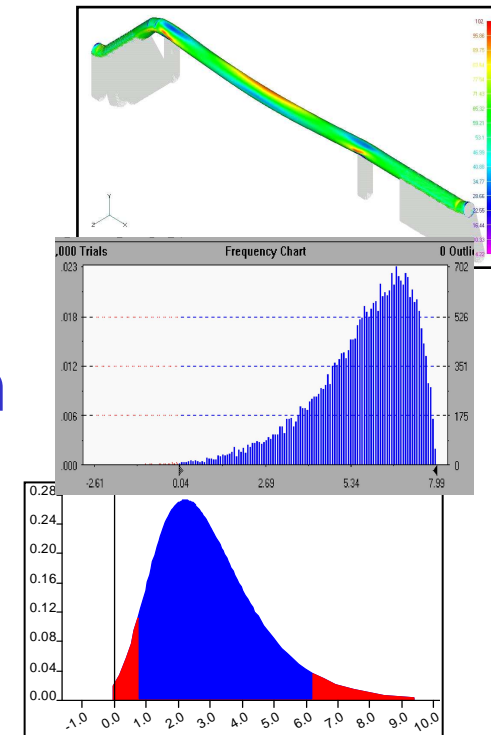


- **Tool** - Control + Data + GPS
 - **Software** - AESL developed
 - **Data** - Display + Validate / Assess
 - **Send** - Transmit to AESL Server
-
- **Data received before AESL Team leave site**

PIPELINE PERFORMANCE CAPABILITY Data Analysis



- **Structural Condition + Time to Failure**
 - **Stress** - 3D FE model + loading
 - **Corrosion** - Depth + Distribution
 - **Statistics** - Rate + Correlation
- **Predict - Time to Failure ??**

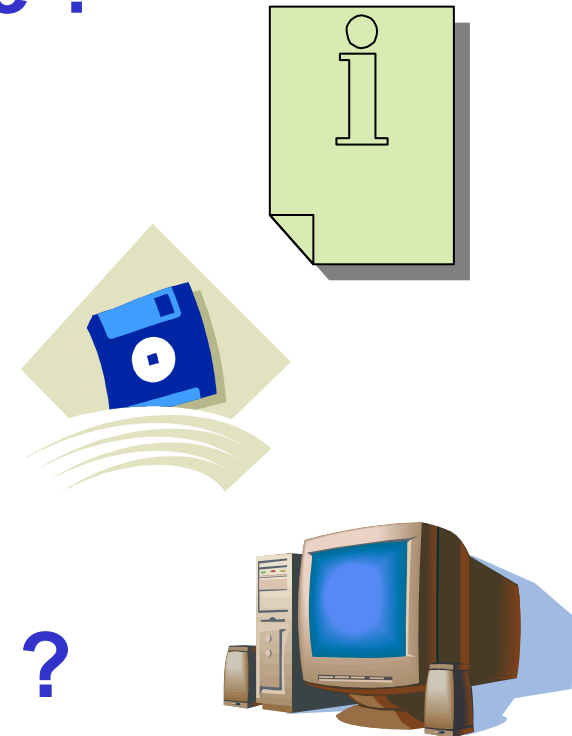


PIPELINE PERFORMANCE CAPABILITY

Deliverables



- **What can analysis provide ?**
 - Condition / Integrity / Life
 - Likelihood of Worst Case
 - Confidence Limits
 - Cost v Condition
 - What Next
- **What does Client want ?**
- **How best delivered ?**



Pipeline Performance Capability



**Any
Questions ?**

