

NEW INSPECTION TOOLS for PIPELINE CONDITION ANALYSIS

Russell NDE Systems Inc. is pleased to announce the launch of their new **See Snake Tools** for pipeline condition surveys:

President, Dave Russell said: "The launch of the See Snake Tools represents a new technological breakthrough for the rapid inspection of pipelines for internal and external flaws".

There is a demand in the market for improved probability of detection (P.O.D.) and exceptional accuracy for sizing of corrosion pits. Competing tools that use Magnetic Flux Leakage (MFL) require intimate contact with the pipe wall in order to achieve acceptable flaw sizing. Unfortunately many pipelines have internal deposits of wax, scale or sand and others are lined with cement mortar, epoxy or polyethylene, preventing the effective use of MFL tools. **See Snake** technology, on the other hand, **requires no contact with the pipe wall, and can measure through scale, wax and non-magnetic liners.** In fact, See Snake tools have a clearance of 0.250" (6.3mm) to allow passage of the tool past weld roots, dents and internal deposits.



Just like the real thing, **See Snake tools are flexible.** So flexible in fact that they can be made to negotiate multiple 90 degree welded elbows.

See Snake Tools are completely water proof and can be pumped through the pipeline with the product flow, or with compressed air.





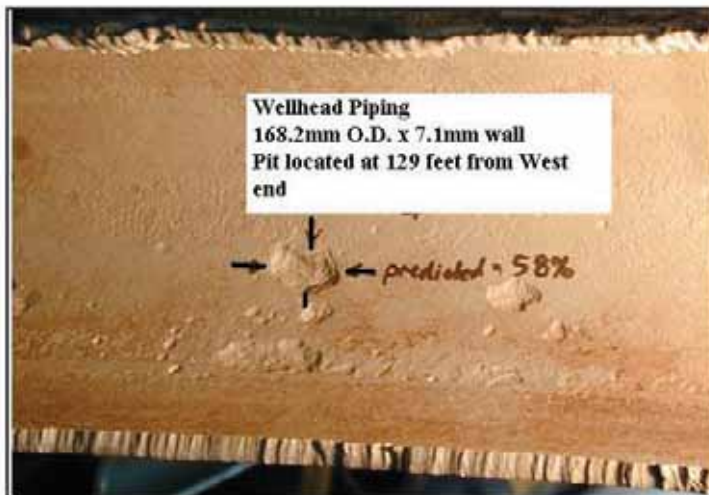
See Snake Tools are rugged! They have no external movable parts (unlike MFL tools) so there is nothing to break off or get caught at tees and branches. They have been tested in the cold Canadian winter and in the heat of summer time in Australia. The internal batteries and flash memory are scalable: in other words you can run them for long distances if required.

See Snake tools are fast! Inspection speeds of 1 to 2 km/hour are normal in common pipe wall thicknesses (0.125" to 0.156"). All data is stored on board and is downloaded over USB or Blue Tooth connection after the run.

See Snake tools measure more information: Because **See Snakes** use "Remote Field Technology" (a through transmission, A.C. technique) they have equal sensitivity to internal or external pits. They also measure both remaining wall thickness AND surface area (length and width) with accuracy that competing technologies cannot match. In addition, **See Snakes can measure STRESS** on the line. Pipelines that are under

external stress due to soil movement, bridging, inadequate support, rippling or denting have local variations in magnetic permeability that are measured by the tools. While these are not precisely quantified, they are detected very well, and can be quickly located.

See Snake Tools can be detected from the surface. No need for an extra "Sonde" for tool tracking. **See Snake** signals are detectable from above ground because their unique signal travels through the wall of the pipe and up to the surface of the soil in an instant. Above ground markers can track the passage of the tools, and locate them quickly if they get stuck.



The internal pits shown in the pipe sample to the right were detected by the RFT technology used in the See Snake Tools. (6", schedule 40 seamless pipe)

See Snake tools may be introduced to the pipeline via a "pig launcher" or a stuffing box at a cut end, riser, flange or hot-tap and can be pushed by product flow or air pressure to the far end of the line or the target distance.

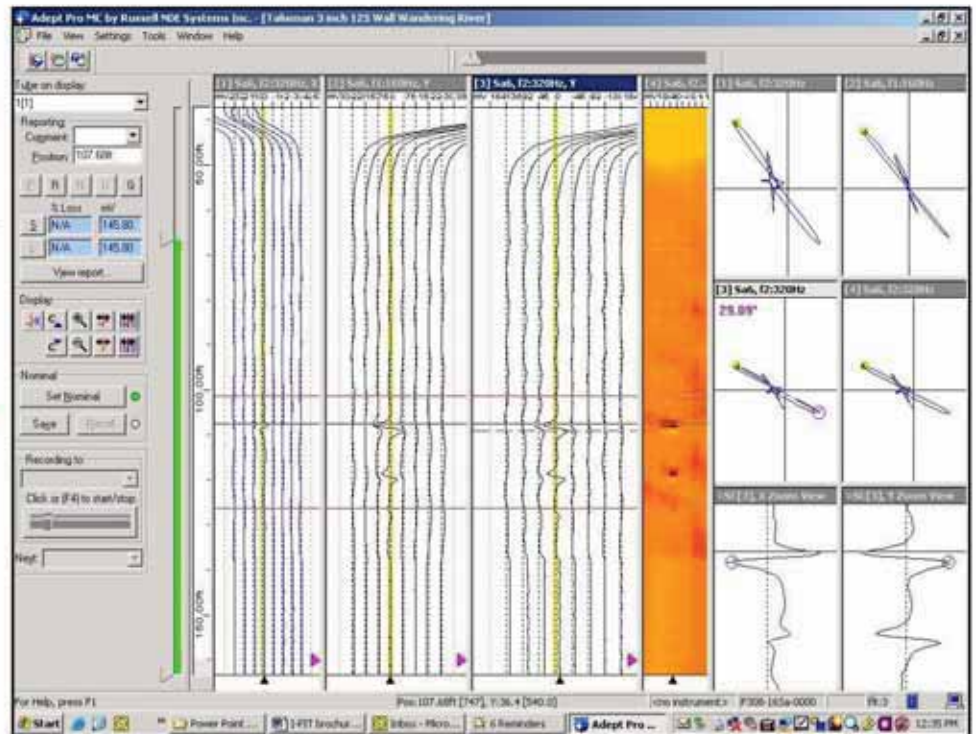
They can be trapped at a standard pig trap, or can be tethered with a wireline and then winched back to the launch point.

See Snake data analysis is semi-automatic and a report is created as the analysis is being performed. Depending on the line condition, analysis and reporting can be done in the field, but is usually done the next day, off-site, to reduce labour costs.

The multi-channel **See Snake** Tools inspect 360° of the pipe. The data is displayed as color map, strip-chart logs and voltage planes.

The screen capture at right shows two pits at 6 o'clock.

Unlike MFL tools, **See Snake** tools contain no magnets, so they can be pushed with relative ease. If an air compressor is used, a pressure of 25 psig is often enough to push the tool.



Applications:

- Inspect pipelines prior to purchase or after construction to ensure integrity
- After a pipeline failure: check several km each side of the repair for more corrosion damage
- Check an old or abandoned line before re-commissioning it
- Tools are available from 2" (50mm) to 8" (200mm) diameter, in wall thickness to 0.375" (9.5mm).
- Larger tools will be available soon

SPECIFICATIONS

Run Time	Minimum of 5 hours (scalable)
Speed	1-2 km/hr
Sensors	One sensor (channel) per 0.5" of pipe circumference
Clearance	0.250" (6mm) to 1" (25.4mm) clearance around tool
Memory	64 Kb to 2Gb/channel (scalable)
Length	Approx 7' (213cm) total length
Minimum bend radius	90 degree long radius welded elbow (1.5D)
Frequency	User selectable: 5 Hz to 200 Hz
Drive	0-18 VAC
Data presentation	Strip charts, colour maps, 3D views and voltage planes
Reporting	Data analysis is semi automatic, reporting module is built-in

FOR MORE INFORMATION:

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