

# Engineering & Consulting

With an environmental disaster on its hands that threatens to destroy Metropolis' water supply and upset the balance of the Metropolis Bay ecosystem, the city has turned to Empire Engineering International for help in finding the source of toxins and oxygen-depleted brine pouring into the bay.


Using modem-equipped laptops running NEXTSTEP, field engineers are able to access Empire's knowledge base, comparing information stored on-line with information taken from field-measurement probes. The company's vast storehouse of data from previous projects, including blueprints, reports, and graphs, has been converted into digital format using GS Corp's eXTRASCAN and eXTRAREAD software, along with Collaggi Palettes that store detailed maps of Metropolis' waterways. Using Athena Design's Mesa, the data is captured in real-time and modeled in graphs and spreadsheets. Conexions 3270 products allow the engineers to access data stored on Empire's mainframe computers.

There's no time to fly in all.

necessary personnel and subject matter experts, so Empire's engineers contact them using video-teleconferencing systems based on NEXTIME technology. Documents are shared using NEXTSTEP's built-in fax and e-mail capabilities.

Because they have quick access to Empire's rich knowledge base, containing not just text but rich text, images, maps, and voice annotations, Empire's engineers have been able to put a stop to the impending disaster.





ENGINEERING COMPANY INTERNATIONAL

DATE: June 21, 1994 TO: Empire Engineering Corporate Head Northern California Branch Consulting/Engineering Dept. ATTN: Joe Bechtel/SR, VP, Engineering	<table border="1"> <tr><th colspan="2">FIELD SERVICE REPORT</th></tr> <tr><td>SITE:</td><td>Mexico City</td></tr> <tr><td>PROBLEM:</td><td>Cooling Tower Fouling</td></tr> <tr><td>FIELD TECH:</td><td>Jason Foxboro</td></tr> <tr><td>ID#:</td><td>165847525</td></tr> </table>	FIELD SERVICE REPORT		SITE:	Mexico City	PROBLEM:	Cooling Tower Fouling	FIELD TECH:	Jason Foxboro	ID#:	165847525
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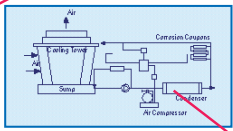
Joe,

The municipal water treatment plant was just notified that there are toxins and oxygen depleted brine pouring into the bay. Fish are dying due to the low oxygen content and the environmental watchdogs (Greenpeace) have called out the press.

The officials at the city level have dispatched their fleet of 150 monitoring trucks to check all of the arteries that link to the main discharge pipe. The wastewater treatment plant is at full capacity and the overflow is responsible for the pollutants escape.

The world's largest environmental consulting firm (Empire Engineering) has been notified to be prepared to receive the data collected from the 150 trucks that are covering the city. Each truck is equipped with an electronic water quality analysis device that utilizes probes that can give instantaneous measurements in real time. This large quantity of data needs careful evaluation to determine corrective measures to stop the flow before irreversible environmental damage is done.

The probes are measuring several parameters of the water quality and storing this data in a portable laptop computer. This data will then be transmitted via modem to Empire Engineering for evaluation studies. Each truck is capable of checking 6 sites per hour or in 12 hours 72 possible sources of the pollutants throughout the city underground and along main of sewer lines. With 150 trucks on the move each measuring 72 sites and at each site measuring 5 water quality parameters, Empire Engineering now has the staggering task of dealing with 54,000 pieces of information in just the first 12 hours of the environmental disaster.



SMS WATER QUALITY SPECIFICATIONS	
Resistivity (megohm-cm @ 25 °C)	18
Na (ppb)	
Total silica (ppb)	<3
	<5

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