


Efficiency of an Online Chain of Custody Service



Environmental Measurement
Symposium ~ 2014

Promium
Scot Cocanour
Chief Executive Officer



Replacing thousands of pieces
of paper with one online service



Accurate. Efficient. Reliable.



Dynamic data instead of
PDF forms and static images


Amazing technological advances

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40 Years Later

A yellow pencil with a pink eraser and green bands is pointing towards a large green arrow that points to the right.

T:\Work\Report 2000		CHAIN OF CUSTODY RECORD		Analyses Required	
Sample report #21210		Project: Well Group			
Name: Susan Spence					
Address: 500 BRITISH ST. FISH KILLER PARK 0486					
Phone: (904) 482-6106					
Type / Container	Preservation				
T - Tissue Composite	NHCl	INCL1	pH21		
P.C. - Filter Composite	NH4OAC	NO	pH22		
Grab	Nitrogen, CO2	NO204	pH23		
P - Pumpable	NO	NO205	pH24		
G - Gas	NO20, Sodium, CO2		pH25		
P - Vials	NO20, Sodium, CO2		pH26		
P - Vials	NO20, Sodium, CO2		pH27		
P - Vials	NO20, Sodium, CO2		pH28		
P - Vials	NO20, Sodium, CO2		pH29		
P - Vials	NO20, Sodium, CO2		pH30		
P - Vials	NO20, Sodium, CO2		pH31		
P - Vials	NO20, Sodium, CO2		pH32		
P - Vials	NO20, Sodium, CO2		pH33		
P - Vials	NO20, Sodium, CO2		pH34		
P - Vials	NO20, Sodium, CO2		pH35		
P - Vials	NO20, Sodium, CO2		pH36		
P - Vials	NO20, Sodium, CO2		pH37		
P - Vials	NO20, Sodium, CO2		pH38		
P - Vials	NO20, Sodium, CO2		pH39		
P - Vials	NO20, Sodium, CO2		pH40		
P - Vials	NO20, Sodium, CO2		pH41		
P - Vials	NO20, Sodium, CO2		pH42		
P - Vials	NO20, Sodium, CO2		pH43		
P - Vials	NO20, Sodium, CO2		pH44		
P - Vials	NO20, Sodium, CO2		pH45		
P - Vials	NO20, Sodium, CO2		pH46		
P - Vials	NO20, Sodium, CO2		pH47		
P - Vials	NO20, Sodium, CO2		pH48		
P - Vials	NO20, Sodium, CO2		pH49		
P - Vials	NO20, Sodium, CO2		pH50		
P - Vials	NO20, Sodium, CO2		pH51		
P - Vials	NO20, Sodium, CO2		pH52		
P - Vials	NO20, Sodium, CO2		pH53		
P - Vials	NO20, Sodium, CO2		pH54		
P - Vials	NO20, Sodium, CO2		pH55		
P - Vials	NO20, Sodium, CO2		pH56		
P - Vials	NO20, Sodium, CO2		pH57		
P - Vials	NO20, Sodium, CO2		pH58		
P - Vials	NO20, Sodium, CO2		pH59		
P - Vials	NO20, Sodium, CO2		pH60		
P - Vials	NO20, Sodium, CO2		pH61		
P - Vials	NO20, Sodium, CO2		pH62		
P - Vials	NO20, Sodium, CO2		pH63		
P - Vials	NO20, Sodium, CO2		pH64		
P - Vials	NO20, Sodium, CO2		pH65		
P - Vials	NO20, Sodium, CO2		pH66		
P - Vials	NO20, Sodium, CO2		pH67		
P - Vials	NO20, Sodium, CO2		pH68		
P - Vials	NO20, Sodium, CO2		pH69		
P - Vials	NO20, Sodium, CO2		pH70		
P - Vials	NO20, Sodium, CO2		pH71		
P - Vials	NO20, Sodium, CO2		pH72		
P - Vials	NO20, Sodium, CO2		pH73		
P - Vials	NO20, Sodium, CO2		pH74		
P - Vials	NO20, Sodium, CO2		pH75		
P - Vials	NO20, Sodium, CO2		pH76		
P - Vials	NO20, Sodium, CO2		pH77		
P - Vials	NO20, Sodium, CO2		pH78		
P - Vials	NO20, Sodium, CO2		pH79		
P - Vials	NO20, Sodium, CO2		pH80		
P - Vials	NO20, Sodium, CO2		pH81		
P - Vials	NO20, Sodium, CO2		pH82		
P - Vials	NO20, Sodium, CO2		pH83		
P - Vials	NO20, Sodium, CO2		pH84		
P - Vials	NO20, Sodium, CO2		pH85		
P - Vials	NO20, Sodium, CO2		pH86		
P - Vials	NO20, Sodium, CO2		pH87		
P - Vials	NO20, Sodium, CO2		pH88		
P - Vials	NO20, Sodium, CO2		pH89		
P - Vials	NO20, Sodium, CO2		pH90		
P - Vials	NO20, Sodium, CO				

Problems with paper CoCs

1. Double entry of data
2. Transcription errors
3. Confusing & hard to read

Undermines the integrity of chain of custody

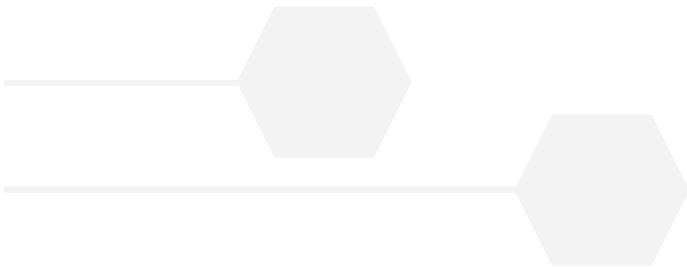


Translucent Costs

The costs are sometimes

$$\begin{array}{l} \text{Data Entry} \\ 15\text{-}20 \text{ minutes} \\ \text{for every CoC?} \end{array} + \begin{array}{l} \text{Correcting Errors} \\ 20\text{-}45 \text{ minutes} \\ \text{for every CoC?} \end{array} = \begin{array}{l} \text{At least \$10.00} \\ \text{per paper CoC?} \end{array}$$

...for **thousands** of CoCs every year



Example of an expensive mistake

Terraine, Inc. - Chain Of Custody Record

ACCOUNT INFORMATION
NAME OF PM TO BILL: K. Campbell
PURCHASE ORDER NO 04-41001/3.4.2

TERRAINE PROJECT NO.
0 4 - 4 1 0 0 1
DATE: 12/5/
PAGE: 1 of 2

TERRAINE TASK NO.
3.4.2

QC DELIVERABLES
☒ STANDARD
☐ LEVEL 2
☐ LEVEL 3
☐ LEVEL 4

FIELD INFORMATION
TERRAINE, INC.
4002 Sutherland Avenue
Knoxville, TN 37919
TELEPHONE: 800-531-1242 FAX: 786-206-3138
TURNAROUND TIME (BUSINESS DAYS): ☒ STD ☐ 10 DAYS ☐ 5 DAYS ☐ 3 DAYS ☐ <24 HRS
TEMPERATURE ON RECEIPT (°C):
ELECTRONIC DELIVERABLES: ☒ FAX RESULTS ☐ E-MAIL PDF ☐ ELEC. DATA

SPECIAL INSTRUCTIONS OR NOTES:

Field Sample Identification

LAB USE	Field Sample Identification	DATE	TIME	MATRIX (AIR, GIN, SOIL, SLUDGE, WWT)	NO. OF CONT.	VOCs	PAH (1270)	TRPH (FL-PR)	Sulfate
	CEF-046-15I								
	CEF-046-12I						✓	✓	✓
	CEF-046-09I						✓	✓	✓
	CEF-046-07I						✓	✓	✓
	CEF-046-02I						✓	✓	✓

REQUESTED ANALYSIS (if more than one method is listed, circle one)

Container PID Readings or Laboratory Notes/Remarks

Date: 12/6/ Time: 12:20

09/1/01 Revision

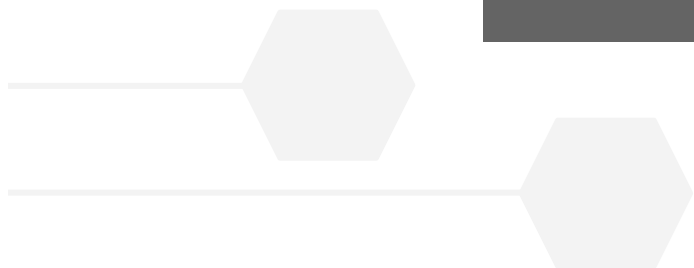
The Result

Comments: 01/04/ Revised Report to change sample ID's as follows:
CEF-046-121 to CEF-046-12I
CEF-046-5I to CEF-046-05I
CEF-046-6D to CEF-046-06D

Also, at client request only BTEX/MTBE reported instead of full 8260.

An executed copy of the chain of custody, the project quality control data to this report. If you have any questions relating to this analytical report, please contact the project manager.

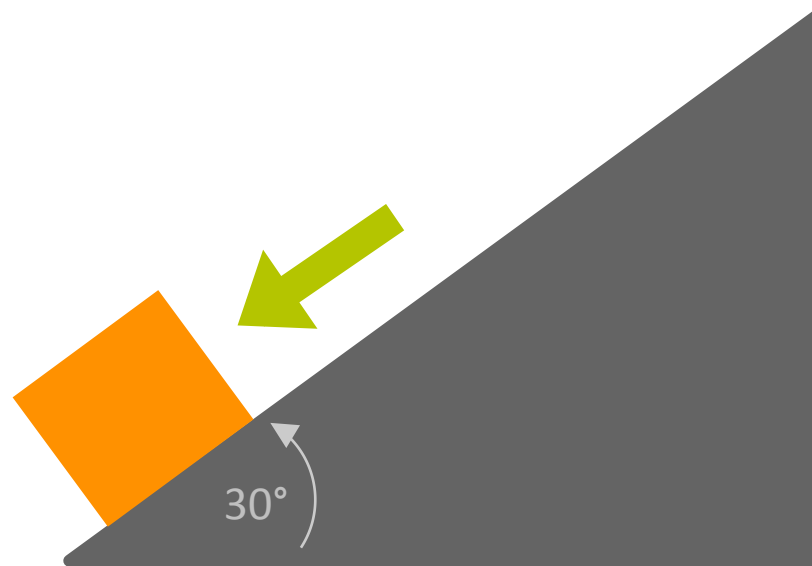
...transcription errors cost time & money



Why has that approach persisted?

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The Barrier of Inertia



$$T = \sum_{i=1}^N \frac{1}{2} m_i \mathbf{v}_i \cdot \mathbf{v}_i = \sum_{i=1}^N \frac{1}{2} m_i (\omega r_i)^2 :$$



Why has that approach persisted?

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Hard to connect the dots

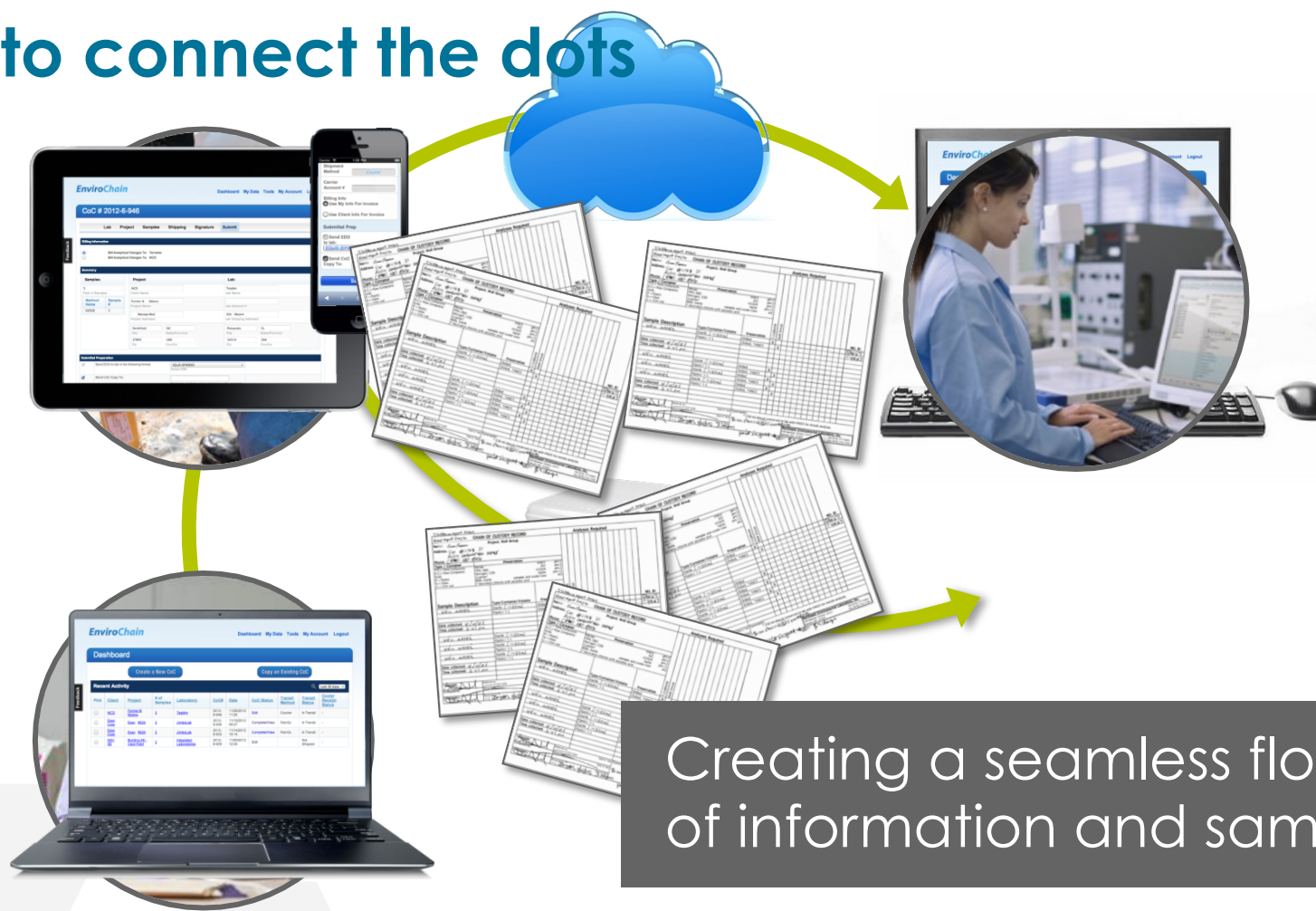


Why has that approach persisted?

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EnviroChain®

Hard to connect the dots



Automate the process

EnviroChain[®]

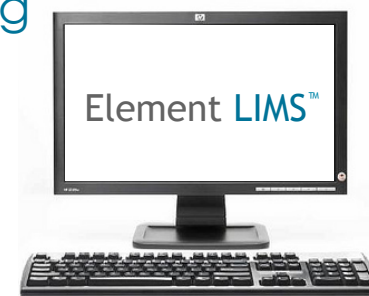
Platforms

- Mobile (Android and IOS) and web apps



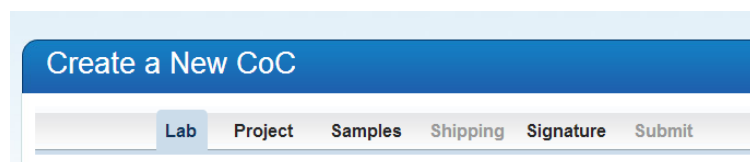
Data management

- Upload CoC data into the LIMS
- Upload photos and GIS data
- Preview incoming lab workload



Workflow

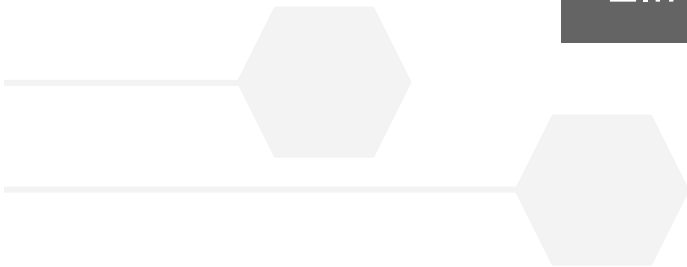
- Intuitive linear step-by-step workflow
- Pre-entered analysis methods from laboratories
- Use of previous CoCs to create new ones



Reduce cost and increase efficiency and quality

- Eliminate paper
- Reduce manual data entry
- Reduce opportunity for transcription error
- Enter once, use everywhere

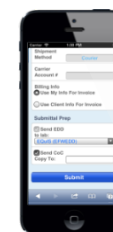
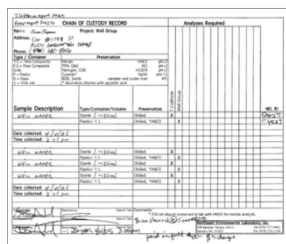
Eliminate confusion, error, and delay.



OUR DIGITAL EVOLUTION

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EnviroChain[®]



THANK YOU

