

# PROGRAMMATIC IMPLEMENTATION OF TRIAD FOR SMALL SITES WITH A STATE-WIDE REIMBURSEMENT PROGRAM

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MADISON, WISCONSIN



*Your Partner in the Field*

*Your Partner in the Lab*

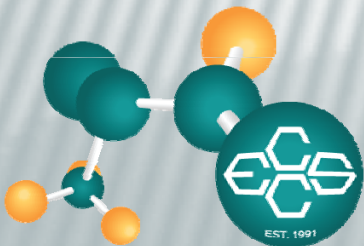
*Your Partner in Success*



# OVERVIEW



- Objectives
- DATCP Program History and Overview
- Typical Site Layout
- Triad Concepts
- Real-Time Measurement
- Conclusions

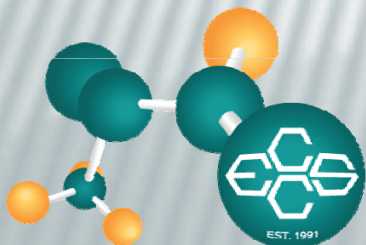


# OBJECTIVES

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To demonstrate...

- That the Triad approach can be used on small sites
- A “programmatic” application of Triad
- A “Triad” project that never uses the term “Triad,” i.e., Triad chicken and egg debate

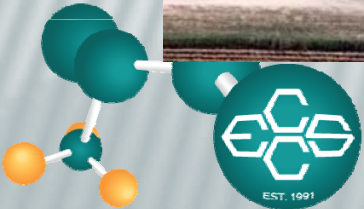




# TYPICAL SITE LAYOUT – AGCHEM COOPERATIVE



Kampen Rd





# ANHYDROUS AMMONIA WAGON



[www.purplewave.com](http://www.purplewave.com)

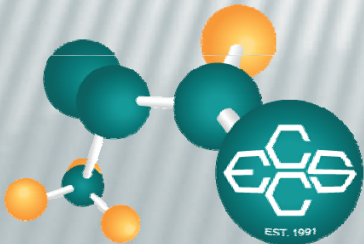
# ACCP PROGRAM OVERVIEW



Department of  
Agriculture, Trade  
and Consumer  
Protection  
(DATCP)

The Agricultural Chemical Cleanup Program (ACCP) has two separate functions.

- Provides a regulatory mechanism to manage the clean up of releases of pesticides and fertilizers
- Provides a regulatory mechanism to reimburse responsible parties for eligible costs incurred during the cleanup





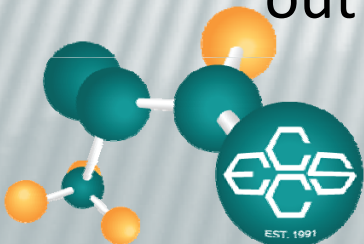
# ACCP PROGRAM OVERVIEW

Pre-1994 Problem: DNR and DATCP stumbled through joint management of investigation and cleanup of these facilities.

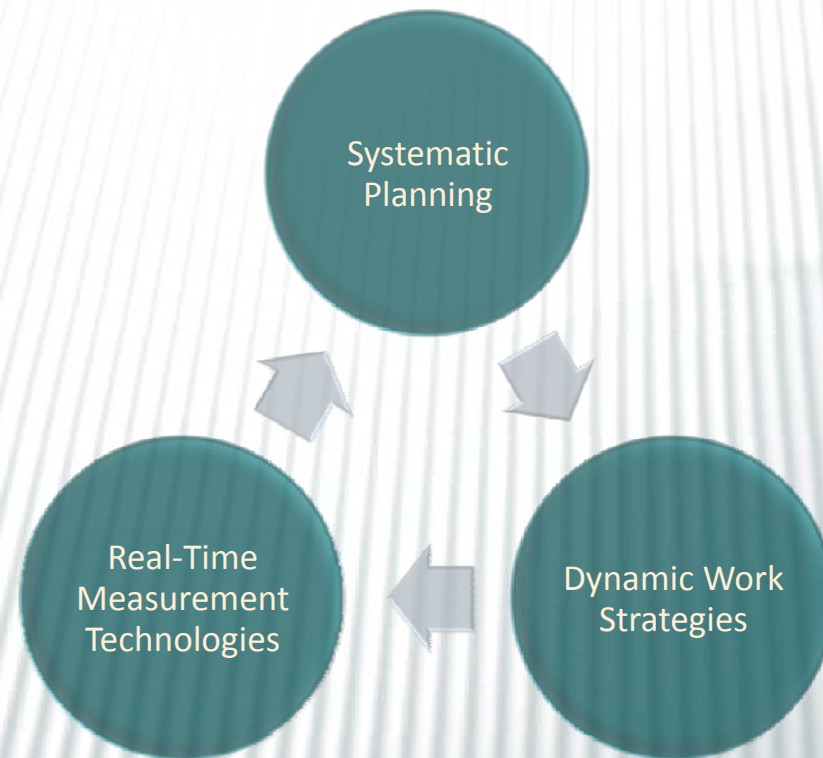
1994 – ACCP Established DATCP as the Lead Agency

1994 to Present – Success story

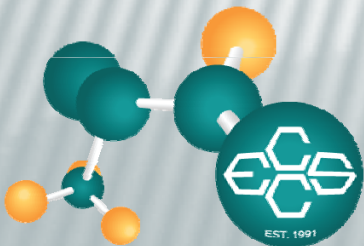
- Completed 509 facility-related soil cleanups
- Closed out over 287 facility-related cleanup cases
- Responded to and closed out over 97% (848) of the 874 reported spills of agrichemicals
- Received 1,120 reimbursement applications and have paid out over \$38 million in reimbursements



# BASIC TRIAD CONCEPTS



[www.triadcentral.org](http://www.triadcentral.org)

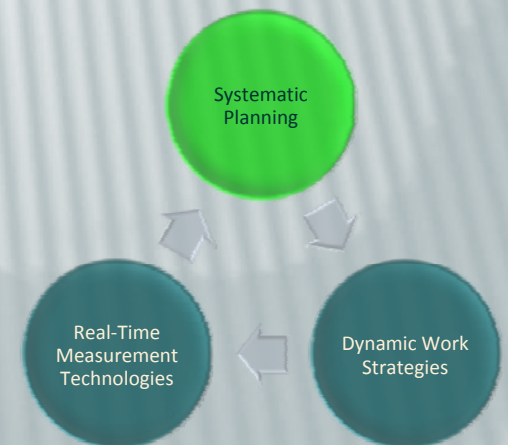
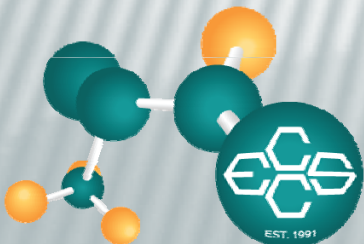




# DATCP SYSTEMATIC PLANNING & CSM

## DATCP State-wide Strategic Planning – Mid 1990's

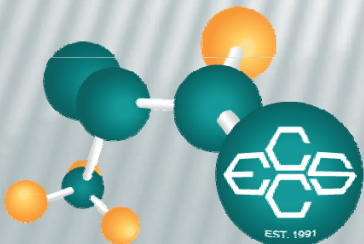
- Between 86 and 99% sites in Wisconsin can be expected to be contaminated.
- Up to 75% will require soil remediation
- Sites are very much alike – common areas will be targeted
- Flexible work plans/budgets and expedited processes were essential for success of the program
- ACCP code provides regulatory driver



# COMMON AREAS OF CONTAMINANT RELEASE

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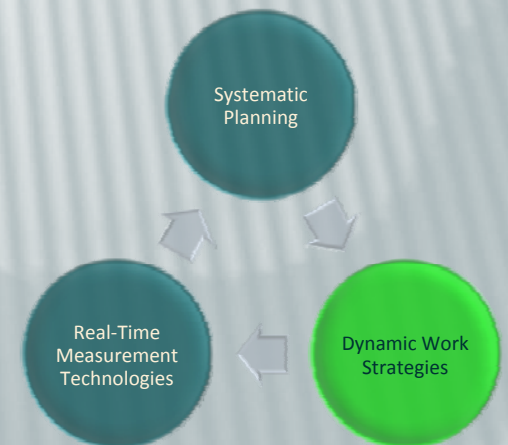
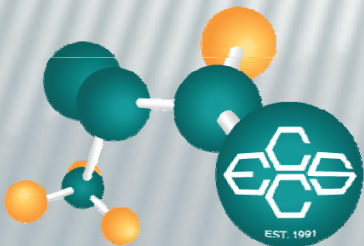
- Pesticide and Fertilizer Storage Areas
- Equipment Cleaning and Parking Areas
- Mixing and Loading Areas
- Railway Off-loading Area
- Drainage Ways or Ponding Areas
- Historical Spills
- Landfill Areas
- Burn Piles





# THE TYPICAL ACCP PROCESS

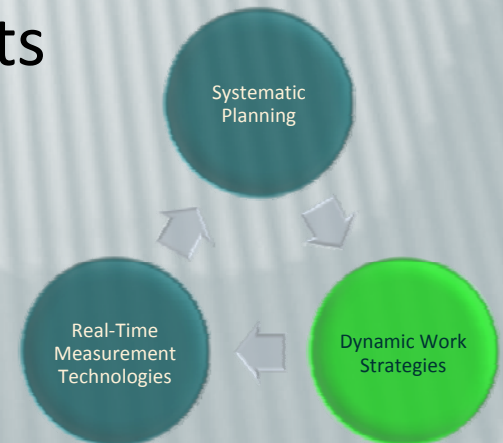
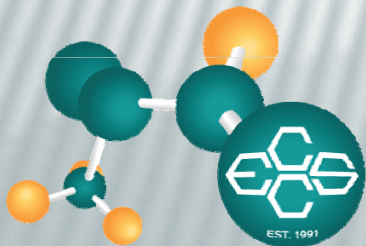
- DATCP collects soil samples, if contaminated, sends a letter to cooperative to join program.
- Cooperative hires a consultant, typically in Q1.
- Consultant prepares a flexible work plan.
- Investigation occurs quickly by end of Q2.
- Soil remediation and land spreading occurs in Q4.
- If no GW contamination is found, site is closed within a year. ~50% of sites have GW issues



# DYNAMIC WORK STRATEGY

## Keys to success....

- Start with the programmatic CSM
- Understand the site-specific nuances
  - History of operations
  - Geology/hydrogeology
- Use experienced field staff
- Informed stakeholder group w/decision makers available during real-time events

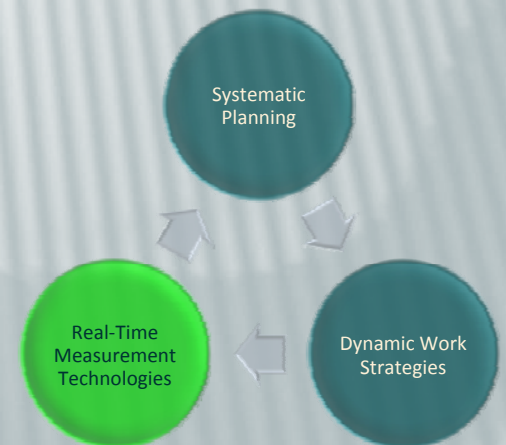
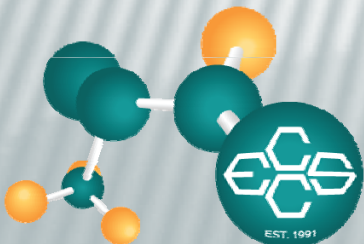




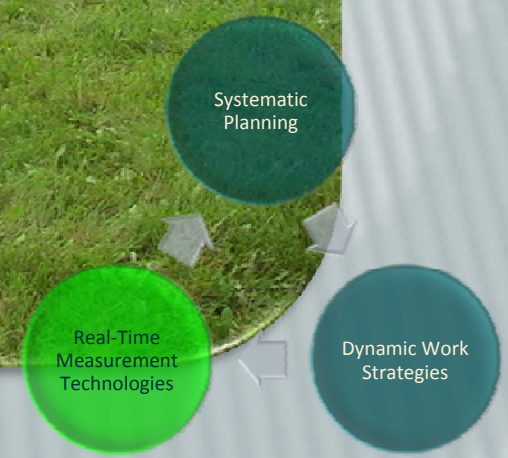
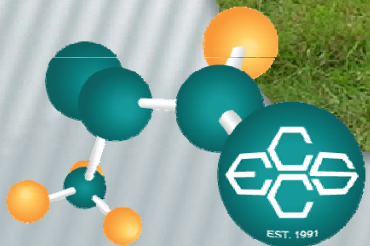
# REAL TIME MEASUREMENT TOOLS

## Direct-push Sampling Techniques

- Typical site investigation begins with ~30 borings
- Samples collected at 1', 4-5', and 8' intervals; 1' and 4-5' analyzed initially, 8' if 4-5' is above action limit, deeper if necessary
- Step-out borings occur until site is fully defined; typically nitrogen will be chased
- Shallow groundwater samples are also often collected



# REAL TIME MEASUREMENT TOOLS

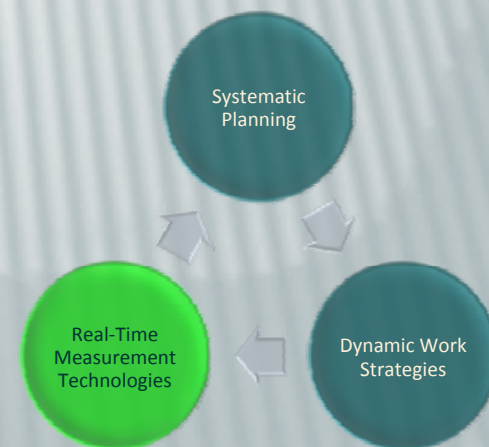
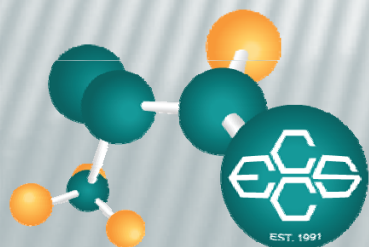




# REAL-TIME MEASUREMENT TOOLS

## Mobile Laboratory

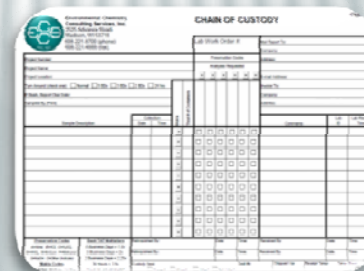
- Used for 75% of the projects (investigation and remedial action)
- Experienced chemists
- Two chemist laboratory can analyze 50+ nitrogen and 40+ pesticide samples in a 10 hour work day with overnight analysis of pesticides for a cost of ~ \$2900 per day



# TYPICAL AG-CHEM SITE INVESTIGATION

## Day 1

- Arrive early morning, 1 hr to set up lab
- Prep and analyze all nitrogen samples during 10 hr day, typically 50+
- Prep all pesticide samples, 20 results during 10 hr day, 40-50 overnight
- Typically on site an hour after last sample is received



Environmental Sciences  
10000 16th Ave  
Denver, CO 80202  
303.556.1000

CHAIN OF CUSTODY

Lab Order # \_\_\_\_\_

Client Name \_\_\_\_\_

Site Name \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Phone/Fax \_\_\_\_\_

Analyst Name \_\_\_\_\_

Sample ID \_\_\_\_\_

Sample Description \_\_\_\_\_

Sample Type \_\_\_\_\_

Sample Volume \_\_\_\_\_

Sample Date \_\_\_\_\_

Sample Time \_\_\_\_\_

Sample Location \_\_\_\_\_

Sample Container \_\_\_\_\_

Sample Preservation \_\_\_\_\_

Sample Storage \_\_\_\_\_

Sample Handling \_\_\_\_\_

Sample Analysis \_\_\_\_\_

Sample Results \_\_\_\_\_

Sample Report \_\_\_\_\_

Sample Archival \_\_\_\_\_

Sample Disposal \_\_\_\_\_

Sample Return \_\_\_\_\_

Sample Comments \_\_\_\_\_

Sample Signature \_\_\_\_\_

Sample Date \_\_\_\_\_

Sample Initials \_\_\_\_\_

Sample Title \_\_\_\_\_

Sample Department \_\_\_\_\_

Sample Division \_\_\_\_\_

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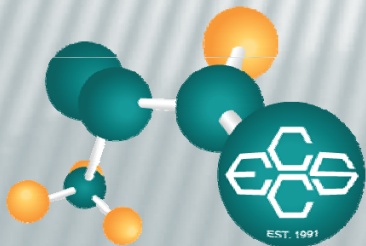
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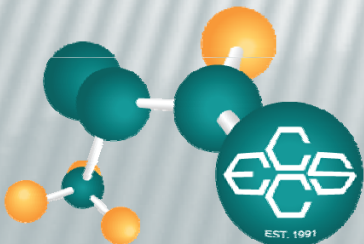


# TYPICAL AG-CHEM SITE INVESTIGATION

Day 1

Day 2

- On site ~30 minutes before sampling team
- 50-60 samples second day,
- Prep and analyze all nitrogen during 10 hr day
- Prep all pesticide, 30 results during 10 hr day, 50+ overnight
- Typically on site an hour after last sample is received



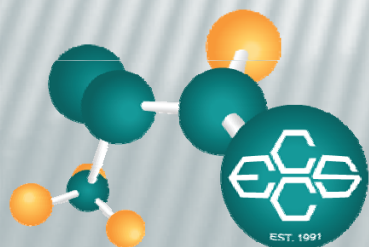
# TYPICAL AG-CHEM SITE INVESTIGATION

Day 1

Day 2

Day 3

- On site ~30 minutes before sampling team
- Less samples, sampling team is completing extent
- Typically chasing nitrogen, rarely pesticides

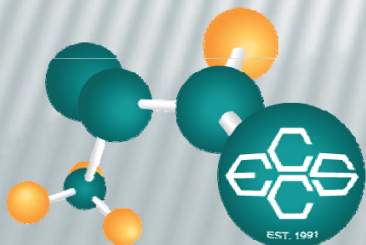




# MOBILE LABORATORY TEST METHODS

## Established, Certified Test Methods

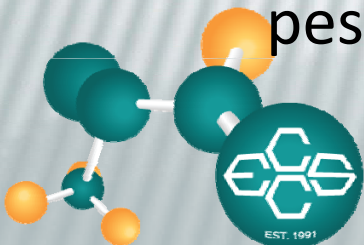
- Pesticides by SW-846 8141 (GC/NPD), 17 DATCP targets; self-contained extraction techniques for both soil and water



# MOBILE LABORATORY TEST METHODS

## Established, Certified Test Methods

- Ammonia and nitrate/nitrite by ion selective electrode techniques; ammonia by standard ISE technique; nitrate+nitrite reduced to ammonia and measure with ammonia ISE probe; KCl solution extraction for soil
- For any one sample, test results within fifteen minutes for nitrogen and 1-1 ½ hours for pesticides

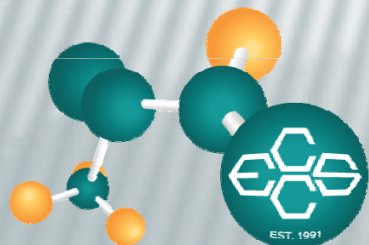




# MOBILE LABORATORY TEST METHODS

## DATCP Target Pesticide List

- Acetochlor
- Alachlor
- Atrazine
- Desethyl Atrazine
- Deisopropyl Atrazine
- Butylate
- Chlorpyrifos
- Cyanazine
- Dimethenamid
- EPTC
- Metolachlor
- Metribuzin
- Pendimethalin
- Prometon
- Propazine
- Simazine
- Trifluralin
- 40 other commonly used neutral extractable pesticides validated by method

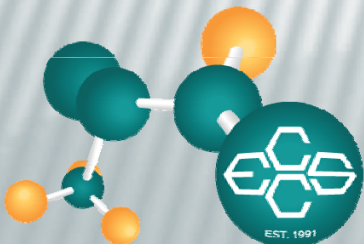


# MOBILE LABORATORY TEST METHODS

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## Other Less Common Ag-Chem Mobile Laboratory Test Methods

- Organo-chlorine pesticides by SW846 Method 8081
- Acid herbicides by SW846 Method 8321:
  - 2,4-D
  - MCPA
- Fumigants by SW846 Method 8260:
  - EDB
  - Carbon tetrachloride

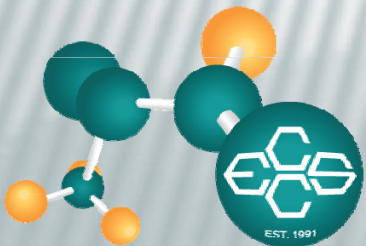




# CONCLUSIONS

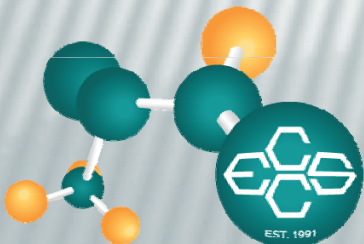
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- The Triad approach can be used on small sites
- Triad techniques can be used “programmatically”
- Is this Triad??



# ECCS TOP 10 – WHEN TO FIRE YOUR MOBILE LAB

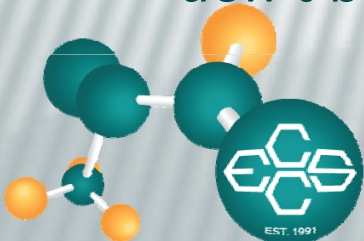
- # 10 Chemist refuses to analyze samples because jar labels are “crooked.”
- # 9 Lab report is illegible from what appears to be drool.
- # 8 By second day of excavation, lab staff admits to using a ouija board to generate data.
- #7 Analyst is more interested in holding his face over an open solvent container than working on your samples.
- # 6 Lab staff constantly ringing their hands, gazing at data, and mumbling “my precious, my precious.”





# ECCS TOP 10 – WHEN TO FIRE YOUR MOBILE LAB

- # 5 No results for the last 6 hours because chemist is severely depressed over torn pocket protector.
- # 4 Samples must be submitted to mobile lab through slot in barred and chained lab door.
- # 3 Lab results are written in crayon because staff not allowed to use sharp objects
- # 2 GC/MS instrumentation that was brought on site looks suspiciously like a George Foreman Master Grill
- # 1 Lab shows up on site with sign that says: *“If the lab is a rockin’ don’t bother knockin.”*



# ADDITIONAL QUESTIONS?

Contact ECCS:

**ECCS** **NATIONWIDE** MOBILE LABORATORIES

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**Linked in**

