

# **Diamonds in the Rough: Creating Optimal, Composite Inventories in the Texas Air Emissions Repository**

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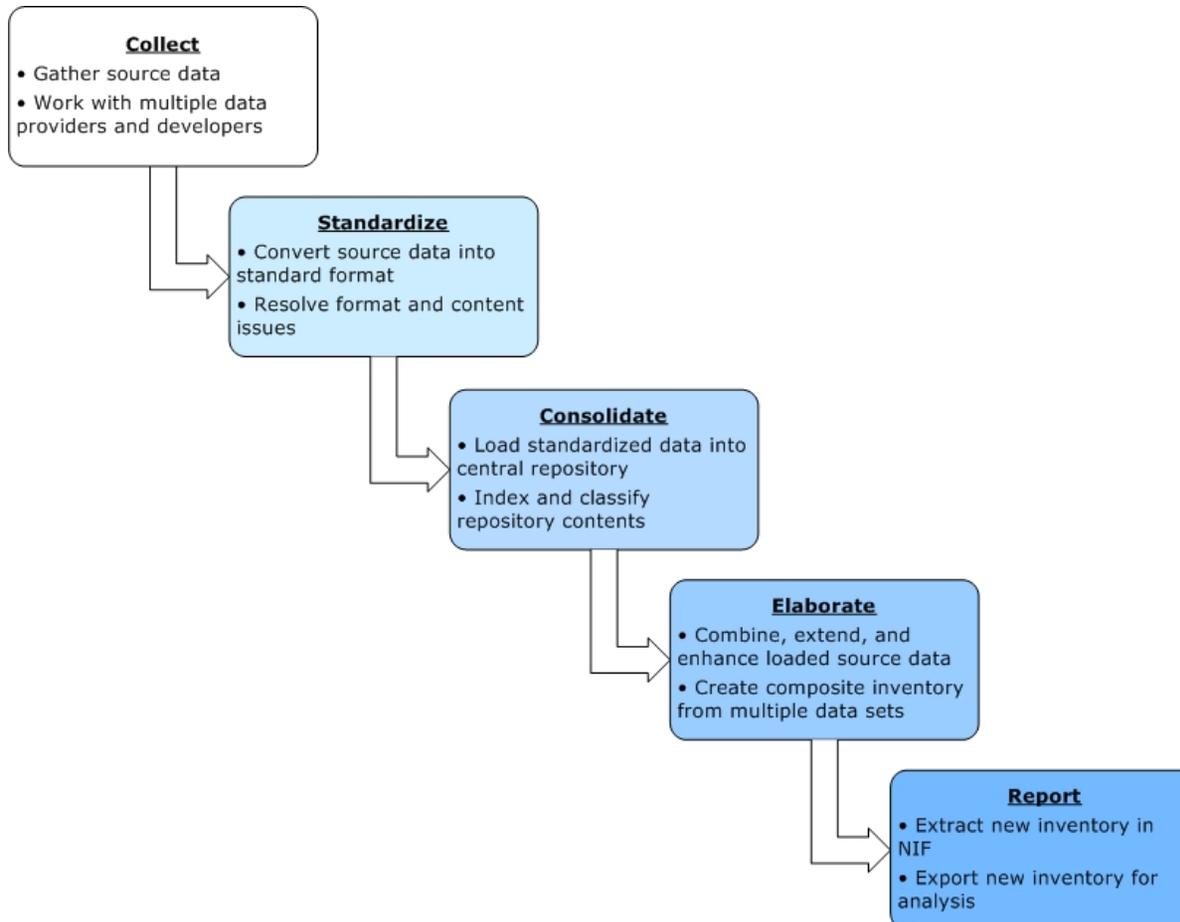
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## TexAER: Management System For Non-Point Data

- Secure, central repository for all of Texas's non-point data
- Stores, develops, and reports emissions inventories
- Built on Oracle, ColdFusion, Flash, and ArcIMS technology
- Joint project of TCEQ and ERG

# The Problem: Building a Statewide Inventory



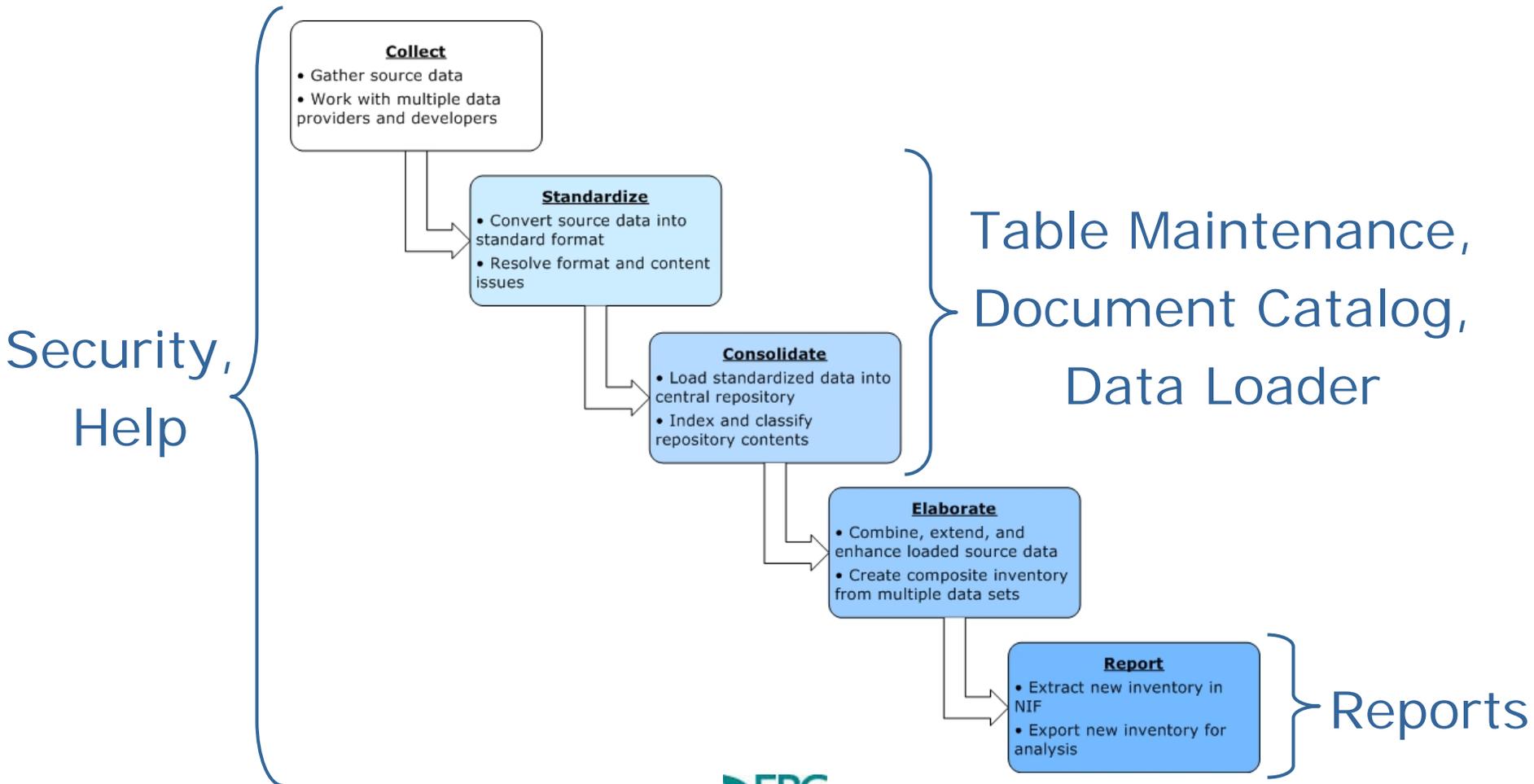
## The Goal: Quality and Efficiency

- The inventory development process must be
  - *Streamlined*
  - *Transparent*
  - *Repeatable*
  - *Evolutionary*

## The TexAER Solution: First Stage

- Establish an infrastructure for loading, storing, and reporting emissions data
- Deploy a foundation of integrated modules
  - Security
  - Table Maintenance
  - Document Catalog
  - Data Loader
  - Reports
  - Help

## First Stage's Results



## The TexAER Solution: Second Stage

- Focus on elaborating composite inventories from source data within TexAER
- Enhance the system with three tools
  - Emissions Editor
  - Projected Reports
  - Inventory Builder

## A Common Interface

- Emissions Editor and Projected Reports are extensions to Report Creator

### Report Creator Options

Data	Emissions, Controls, Projections
Filters	County, SCC, Pollutant, Time Period, Controls... (11 choices)
Display	UOM, Sort, Title
Output	On Screen (Full Color and Data Only), NIF 3.0 Text, CSV, Tab

## Emissions Editor

- Allows administrators to edit emissions data in repository
- Administrator-only option in Report Creator
- Places editing overlay on report results
  - Modify existing estimates
  - Add new estimates
- Maintains full audit trail



Non-Point Source Emissions Data at Your Fingertips.

ADMIN | REPORTS | TOOLS | DOCUMENT CATALOG | HELP | LOGOUT

Emissions | Control Strategy | SCC | Saved

## Emissions Detail Report

*If you print your report, set the page orientation to "Landscape" for optimal display.*

### Petroleum Products Report San Antonio Area Sources

**Inventory:** C 2002 SAN ANTONIO AREA SOURCES—2002 / AREA  
**Display Unit of Measure:** Tons  
**Report Type:**

[Show Row Details](#)

#### Petroleum Products

	Location	SCC	SCC Short Description	CO		NOX		VOC	
				ANNUAL (YEARLY)	OZONE SEASON (DAILY)	ANNUAL (YEARLY)	OZONE SEASON (DAILY)	ANNUAL (YEARLY)	OZONE SEASON (DAILY)
	ATASCOSA COUNTY	2310000000	OIL AND GAS PRODUCTION: ALL PROCESSES	<a href="#">237.30</a>	<a href="#">0.6503</a>	<a href="#">282.60</a>	<a href="#">0.7741</a>	<a href="#">1,242.00</a>	<a href="#">3.4030</a>
	ATASCOSA COUNTY	2501000120	PETROLEUM PRODUCTS: ALL STORAGE TYPES: BREATHING: GASOLINE	<a href="#">(Add)</a>	<a href="#">(Add)</a>	<a href="#">(Add)</a>	<a href="#">(Add)</a>	<a href="#">77.31</a>	<a href="#">0.2118</a>

## Projected Reports

- Permit forecasts and backcasts of emissions data
- Incorporate economic growth factors and control scenarios
- Support projections of detail (NIF-level) and summarized data
- Provide option to convert projections into new, independent inventories



Non-Point Source Emissions Data at Your Fingertips.

REPORTS DOCUMENT CATALOG HELP LOGOUT

Emissions Control Strategy SCC Saved

## Projected Delta Summary Report

*If you print your report, set the page orientation to "Landscape" for optimal display.*

### Projected Report East Texas 5-County Area Area Sources

**Base Inventory:** C 2002 EAST TEXAS 5-COUNTY AREA SOURCES—2002 / AREA  
**Display Unit of Measure:** Tons  
**Grown Inventory Target Year:** [2002](#)  
**Includes alternative control strategy information?:** [Yes](#)  
**Report Type:**

Location ▲	Pollutant	Time Period	Base	Projected (Base Controls)	Projected (New Controls)	Delta of Projected
GREGG COUNTY	CO	Annual (Yearly)	1,845.20	1,845.20	1,845.20	0
GREGG COUNTY	CO	Ozone Season (Daily)	3.7969	3.7969	3.7969	0
GREGG COUNTY	NOX	Annual (Yearly)	4,605.83	4,605.83	4,605.83	0
GREGG COUNTY	NOX	Ozone Season (Daily)	13.2262	13.2262	13.2262	0
GREGG COUNTY	VOC	Annual (Yearly)	7,363.63	7,363.63	7,282.47	81.16
GREGG COUNTY	VOC	Ozone Season (Daily)	19.9137	19.9137	19.6625	0.2512
<b>Total</b>			<b>13,851.60</b>	<b>13,851.60</b>	<b>13,770.19</b>	<b>81.41</b>

## Inventory Builder

- Both a tool and a set of procedures
- Supports each step in build process
  - 1) Inventory Manager -> Create and assign blocks
  - 2) Auditors -> Choose best available data
  - 3) Peer Reviewers -> Check Auditors' work
  - 4) Inventory Manager -> Resolve conflicts and assemble inventory

## Inventory Builder

- Administrative interface for Inventory Manager
- Rich client comparison tool for Auditors and Peer Reviewers
  - Side-by side comparison of source data
  - Filtering and aggregation/drill-down
  - Comparative statistics
  - Multi-level sorting
  - Hiding, freezing (in position), and rearranging of data columns

# Data Comparison

Expand All Collapse All Export

	1-EST	2-EST	3-EST	FINISHED	WHICH	REASON	AUDIT COMMENT	QTY	CONFLICT	REJECT	PEER COMMENT
▶ Totals											
▶ COLLIN COUNTY											
CO-Annual Tons Per Year	3.4690	3.4690		<input type="checkbox"/>		R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
NH3-Annual Tons Per Year	1,778.4800	1,073.3346	1,778.4800	<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
NH3-Ozone Season Daily Tons Per Day	358.4096	0.0363	358.4096	<input type="checkbox"/>		R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
PM10-FIL-Annual Tons Per Year	1,941.8570	1,748.0590	1,941.8570	<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
PM10-FIL-Ozone Season Daily Tons Per Day	5.3293	0.8525	5.3293	<input type="checkbox"/>		R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
PM10-PRI-Annual Tons Per Year	1,879.0730	1,778.0730	1,534.3590	<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
PM25-FIL-Annual Tons Per Year	371.6667	333.1160	371.6667	<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
PM25-FIL-Ozone Season Daily Tons Per Day	1.0137	0.1263	1.0137	<input type="checkbox"/>		R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
PM25-PRI-Annual Tons Per Year	376.3950	356.0950	306.2160	<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
VOC-Annual Tons Per Year	3.8950	3.8950		<input type="checkbox"/>		R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
▼ DALLAS COUNTY											
2302003000 DEEP FAT FRYING				<input type="checkbox"/>							
VOC-Annual Tons Per Year	11.7900	11.7900		<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
2302003100 FLAT GRIDDLE FRYING				<input type="checkbox"/>							
CO-Annual Tons Per Year	20.0800	20.0800		<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
PM10-PRI-Annual Tons Per Year	162.1000	162.1000		<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
PM25-PRI-Annual Tons Per Year	123.2000	123.2000		<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
VOC-Annual Tons Per Year	9.7210	9.7210		<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
2302003200 CLAMSHELL GRIDDLE FRYING				<input type="checkbox"/>							
PM10-PRI-Annual Tons Per Year	10.3800	10.3800		<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
PM25-PRI-Annual Tons Per Year	8.7880	8.7880		<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
VOC-Annual Tons Per Year	0.3760	0.3760		<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
2801000003 TILLING				<input type="checkbox"/>							
PM10-FIL-Annual Tons Per Year	311.8000	293.2000	311.8000	<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
PM10-FIL-Ozone Season Daily Tons Per Day	0.8585		0.8585	<input type="checkbox"/>	3	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
PM10-PRI-Annual Tons Per Year	289.7000	293.2000	289.7000	<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
PM25-FIL-Annual Tons Per Year	62.3600	58.6400	62.3600	<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
PM25-FIL-Ozone Season Daily Tons Per Day	0.1736		0.1736	<input type="checkbox"/>	3	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
PM25-PRI-Annual Tons Per Year	57.9400	58.6400	57.9400	<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
2801700001 ANHYDROUS AMMONIA				<input type="checkbox"/>							
NH3-Annual Tons Per Year	0.0000	0.0000	0.0000	<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
NH3-Ozone Season Daily Tons Per Day	0.0000		0.0000	<input type="checkbox"/>	3	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
2801700002 AQUA AMMONIA				<input type="checkbox"/>							
NH3-Annual Tons Per Year	0.0000	0.0000	0.0000	<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
NH3-Ozone Season Daily Tons Per Day	0.0000		0.0000	<input type="checkbox"/>	3	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
2801700003 NITROGEN SOLUTIONS				<input type="checkbox"/>							
NH3-Annual Tons Per Year	97.4700	48.7300	97.4700	<input type="checkbox"/>	2	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	
NH3-Ozone Season Daily Tons Per Day	22.0200		22.0200	<input type="checkbox"/>	3	R1-DEFAULT			<input type="checkbox"/>	<input type="checkbox"/>	

**Subinventories**

1. A 2002 STATEWIDE V2: AREA ONLY - 2002 - AREA
2. E 2002 AREA SOURCES: DRAFT 2 GROWN 1999 - 2002 - AREA
3. A 2002 STATEWIDE V1: AREA & NONROAD - 2002 - AREA
4. F 1999 PEI: STATEWIDE - 1999 - AREA

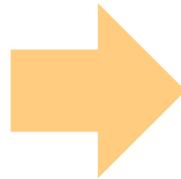
**Statistics**

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Close

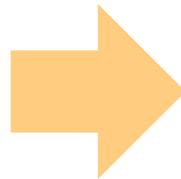
## Conclusion: Getting to the Diamonds

Emissions Editor &  
Projected Reports



*Intuitive tools for  
preparing source data*

Inventory Builder



*A controlled, productive  
approach to creating  
composite inventories*

- ✓ Expedite development
- ✓ Maintain consistent history
- ✓ Continuously improve results