

Software for LEPCs

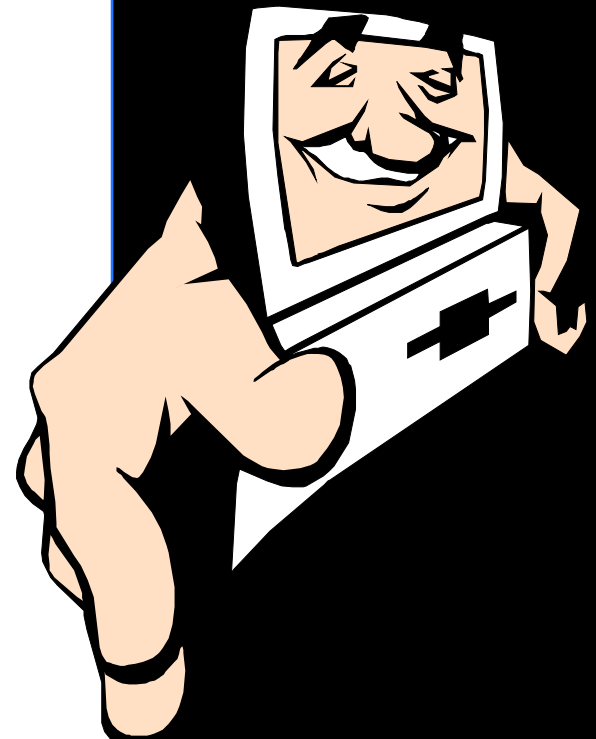


CAMEO
ALOHA
MARPLOT



What is CAMEO?

Computer
Aided
Management of
Emergency
Operations





1987



► CAMEOfm

Response Planning and Record Keeping, Tier II Data

► CAMEO Chemicals

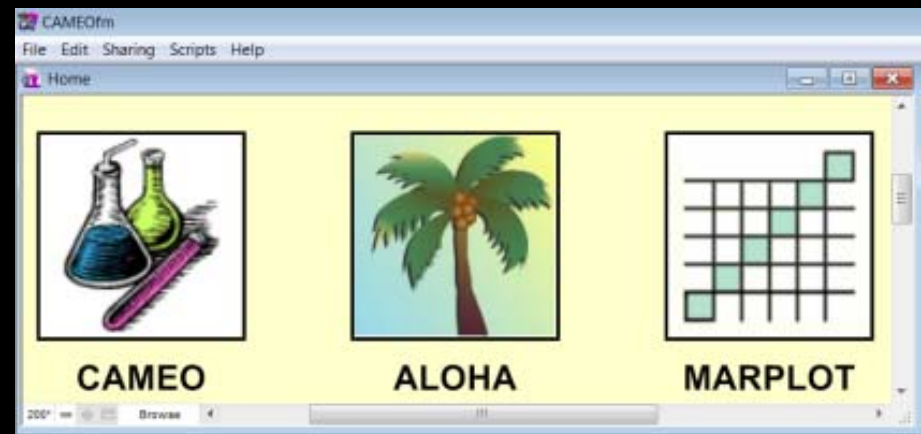
Chemicals database, Chemical Datasheets, ERG, MSDS, Reactions, Chemical Hazards, Firefighting

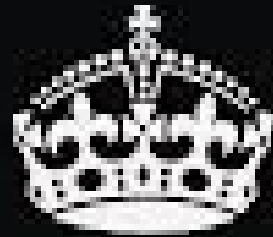
► ALOHA

Aerial Plume Modeling Module

► MARPLOT

Plume and Response Mapping Program





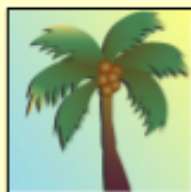
**KEEP
CALM
CAUSE
IT'S
FREE !**

Search for a Chemical

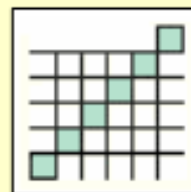
Search for a Facility



CAMEO
Chemicals



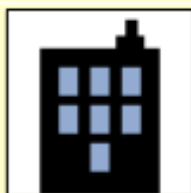
ALOHA



MARPLOT



Help



Facilities



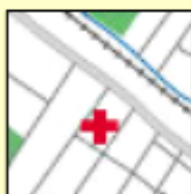
Chemicals
In Inventory



Contacts



Incidents



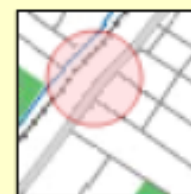
Special
Locations



Routes



Resources



Screening &
Scenarios

CAMEO Chemicals

An online library of more than 6,000 (true chemical) data sheets.



Data Sheets Contain:

- Response-related information
- Recommendations for **HAZMAT** commonly transported, used, and/or stored in the United States.

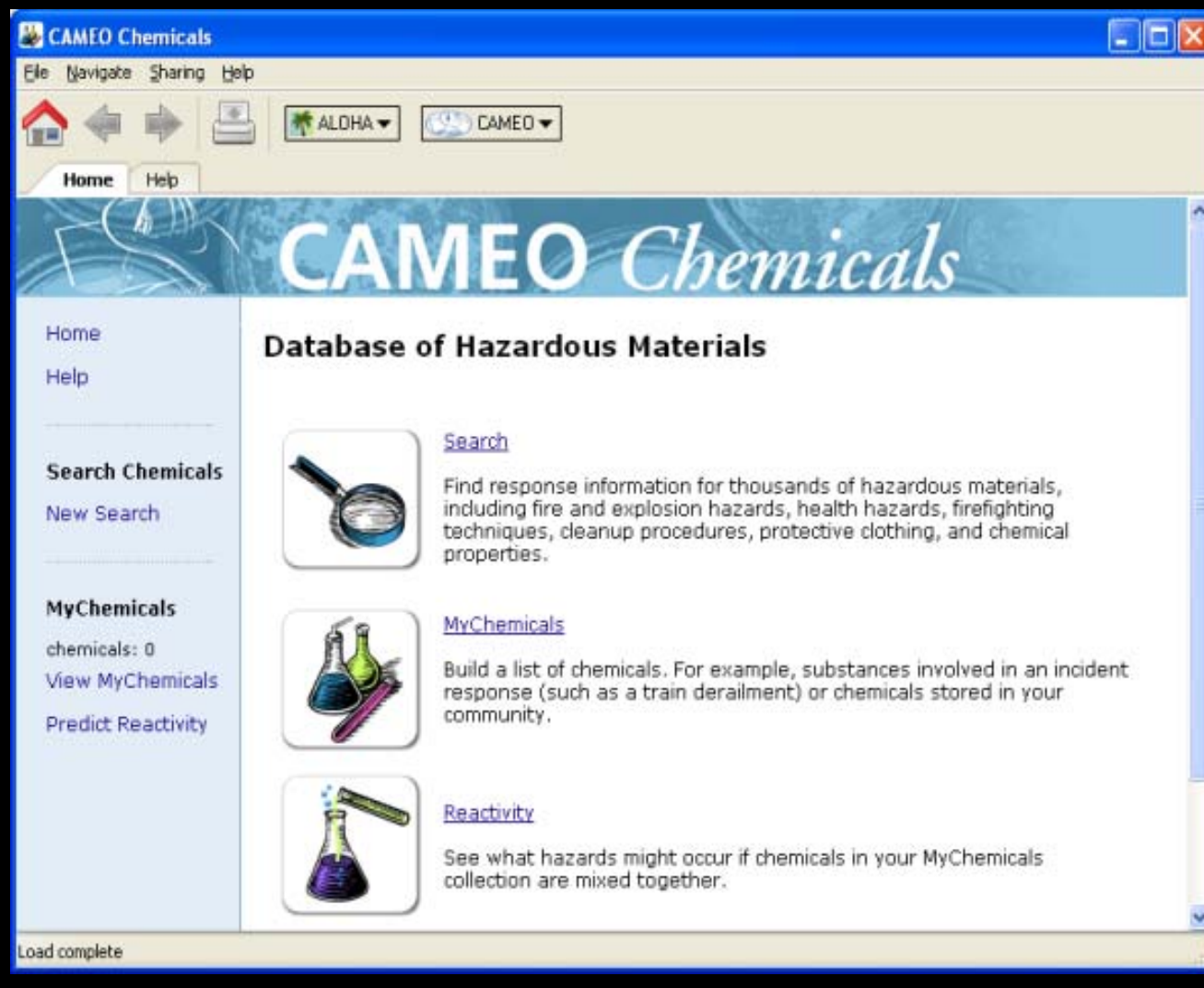
CAMEO CHEMICALS LIBRARY



**Chemical
Search Tool**

My Chemicals

**Reactivity
Worksheet**



CAMEO CHEMICALS SEARCH TOOL



**Search:
Ammonium
nitrate**

File Navigate Sharing Help

ALPHA CAMEO

Search Help

CAMEO Chemicals

[Home](#)
[Help](#)

Search Chemicals
[New Search](#)
[Modify Search](#)
[Search Results](#)

MyChemicals
chemicals: 0
[View MyChemicals](#)
[Predict Reactivity](#)

Search

Enter a chemical name or identification number to begin searching for datasheets.

[How does this search work?](#)

Name (not case sensitive)

CAS Number (with or without dashes)

UN/NA Number (4-digit number)

Other ways to find chemicals
[Advanced Search](#) [Browse](#)

CAMEO Chemicals version 2.4.1

CAMEO CHEMICALS SEARCH RESULTS

File Navigate Sharing Help

ALPHA CAMEO

Search Results Help

CAMEO Chemicals

Home
Help

Search Chemicals
New Search
Modify Search
Search Results

MyChemicals
chemicals: 0
View MyChemicals
Predict Reactivity

Search Results

27 datasheets matched all search criteria

Name contains **ammonium nitrate** matched 27 datasheets
Name contains **ammonium** matched 107 datasheets
Name contains **nitrate** matched 143 datasheets

1 - 20 of 27 results < Prev Next > Page 1 of 2 Go to page: Go

AMMONIUM NITRATE, WITH ORGANIC COATING
Odorless white to light gray or brown solid pellets or flakes. Sinks and mixes with water. (USCG.
DOT Hazard Label: Explosive 1.1D PAC-3: 440 mg/m3
CAS Number: 6484-52-2
UN/NA Number: 0222
This chemical is also known as:
• **AMMONIUM NITRATE, WITH ORGANIC COATING**
• **AMMONIUM NITRATE**
• **AMMONIUM NITRATE, [ORGANIC COATING]**

[View Datasheet](#) [Add to MyChemicals](#)

AMMONIUM NITRATE, [NO ORGANIC COATING]
A colorless crystalline solid. Soluble in water. Does not readily burn but will do so if contain...
DOT Hazard Label: Oxidizer PAC-3: 440 mg/m3
CAS Number: 6484-52-2
UN/NA Number: 1942
This chemical is also known as:

Load complete

File Navigate Sharing Help

ALPHA CAMEO

Help

View Datasheet Add to MyChemicals

AMMONIUM NITRATE FERTILIZER
A brownish-black granular solid. Will accelerate the burning of combustible materials. Can be c...
DOT Hazard Label: Oxidizer PAC-3: 440 mg/m3
CAS Number: 6484-52-2
UN/NA Number: 1942
This chemical is also known as:
• **AMMONIUM NITRATE FERTILIZER**

AMMONIUM NITRATE FERTILIZER, N.O.S.
A grayish white solid in the form of prills. Soluble in water. Produces toxic oxides of nitrog...
DOT Hazard Label: Oxidizer PAC-3: 440 mg/m3
CAS Number: 6484-52-2
UN/NA Number: 2072
This chemical is also known as:
• **AMMONIUM NITRATE FERTILIZER, N.O.S.**
• **AMMONIUM NITRATE FERTILIZERS**
• **AMMONIUM NITRATE FERTILIZERS, [TYPE B]**

[View Datasheet](#) [Add to MyChemicals](#)

AMMONIUM NITRATE FERTILIZER, WITH NOT MORE THAN 0.4% COMBUSTIBLE MATERIAL
A grayish white solid in the form of prills. Does not readily burn but will readily do so if co...
DOT Hazard Label: Class 9 PAC-3: 440 mg/m3
CAS Number: 6484-52-2
UN/NA Number: 2071
This chemical is also known as:
• **AMMONIUM NITRATE FERTILIZER, WITH NOT MORE THAN 0.4% COMBUSTIBLE MATERIAL**
• **AMMONIUM NITRATE FERTILIZER, [WITH <= 45% AMMONIUM NITRATE]**
• **AMMONIUM NITRATE FERTILIZERS**

View
Datasheet

CAMEO CHEMICALS DATA SHEETS

Data Sheet:
Ammonium
nitrate fertilizer
UN 1942

Lists:

- Chemical Identifiers
- Hazards
- Response Recommendations
- Physical Properties
- Regulatory Information
- Alternate Chemical Names


ing Help

ALPHA CAMEO

NITRATE FERTILIZER Help

CAMEO Chemicals

Chemical Datasheet [Add to MyChemicals](#) [Print Friendly Page](#)

AMMONIUM NITRATE FERTILIZER 


[Chemical Identifiers](#) | [Hazards](#) | [Response Recommendations](#) | [Physical Properties](#) | [Regulatory Information](#) | [Alternate Chemical Names](#)

Chemical Identifiers

[What is this information?](#)

CAS Number	UN/NA Number	DOT Hazard Label	CHRIS Code
6404-52-2	1942	Oxidizer	none

NFPA 704

Diamond	Hazard	Value	Description
	Health	0	No hazard beyond that of ordinary combustible material.
	Flammability	0	Will not burn under typical fire conditions.
	Instability	3	Capable of detonation or explosive decomposition or explosive reaction but requires a strong initiating source or must be heated under confinement before initiation.
	Special	OX	Possesses oxidizing properties.

(NFPA, 2010)

General Description

A brownish black, granular solid. Will explode in the presence of combustible materials. Can be used to explode under confinement and convert to toxic fumes. The

CAMEO CHEMICALS DATA SHEETS (CONT.)

Ammonium nitrate Hazards:

- Reactivity Alerts: Explosive, Strong Oxidizing Agent
- Air and Water Reaction
- Fire Hazard
- Health Hazard
- Reactivity Profile
- Reactive Group Listings
- Potentially Incompatible Absorbents

The screenshot shows the CAMEO Chemicals Data Sheet for Nitrate Fertilizer. The window title is "CAMEO" and the subtitle is "NITRATE FERTILIZER". The "Hazards" section is highlighted in orange. Below it, the "Reactivity Alerts" section lists "Explosive" and "Strong Oxidizing Agent" with yellow warning icons. The "Air & Water Reactions" section states that the substance is water soluble and may decompose explosively under confinement. The "Fire Hazard" section includes an excerpt from GUIDE 140 [Oxidizers] stating that these substances will accelerate burning and may explode from heat or contamination. The "Health Hazard" section includes an excerpt from GUIDE 140 [Oxidizers] stating that inhalation, ingestion, or contact may cause severe injury, burns, or death. The "Reactivity Profile" section provides a detailed description of the substance's hazards, including its explosive nature and potential for decomposition. The "Belongs to the Following Reactive Group(s)" section is also visible at the bottom.

Hazards
What is this information? ▶

Reactivity Alerts

- Explosive
- Strong Oxidizing Agent

Air & Water Reactions
Water soluble. Hot aqueous solutions of the nitrate above 50% conc., under confinement may decompose explosively. This process is aided catalytically with such substances as nitric acid and chloride ion, Chem. Abs., 1982, 97, 78074.

Fire Hazard
Excerpt from [GUIDE 140](#) [Oxidizers]:
These substances will accelerate burning when involved in a fire. Some may decompose explosively when heated or involved in a fire. May explode from heat or contamination. Some will react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, oil, clothing, etc.). Containers may explode when heated. Runoff may create fire or explosion hazard. (ERG, 2012)

Health Hazard
Excerpt from [GUIDE 140](#) [Oxidizers]:
Inhalation, ingestion or contact (skin, eyes) with vapors or substance may cause severe injury, burns or death. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. (ERG, 2012)

Reactivity Profile
AMMONIUM NITRATE offers well studied fire and explosion hazards. Has caused several extremely severe explosions with significant loss of life and property, [Chem. Eng. News, 1962, 70, 51; see Bretherick 5th edition for additional other references]. Mixtures with alkyl esters may explode, owing to the formation of alkyl nitrates; mixtures with phosphorus, tin(II) chloride or other reducing agents may react explosively [Bretherick 1979 p. 108-109]. A mixture with aluminum powder can be used as an explosive. Mixtures with zinc, cadmium, copper, magnesium, lead, cobalt, nickel, bismuth, chromium, and antimony behave similarly. A number of explosions have occurred when ammonium nitrate and aluminum were mixed with carbon, hydrocarbons, with or without oxidizing agents [Mellor 5:219 1946-47]. A mixture with acetic acid ignites when warmed, especially if the acid is concentrated [Von Schwartz, p. 322 1918]. Causes decomposition of sodium hypochlorite within a few seconds [Mellor 2 Supp. 1:350 1956].

Belongs to the Following Reactive Group(s)

CAMEO CHEMICALS DATA SHEETS (CONT.)

Ammonium Nitrate Response Recommendations:

- Isolation and Evacuation
- Firefighting
- Non-Fire Response
- Protective Clothing
- First Aid

The screenshot displays the CAMEO Chemicals web interface. At the top, there are tabs for 'ALPHA' and 'CAMEO'. Below these, a search bar contains the text 'NITRATE FERTILIZER'. The main content area is titled 'Response Recommendations' and includes a link 'What is this information?'. The recommendations are organized into sections: 'Isolation and Evacuation', 'Firefighting', 'Non-Fire Response', and 'Protective Clothing'. Each section provides specific guidance based on the type and size of the incident (e.g., small fire, large fire, spill).

Isolation and Evacuation
Excerpt from [GUIDE 140](#) [Oxidizers]:
As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
LARGE SPILL: Consider initial downwind evacuation for at least 100 meters (330 feet).
FIRE: If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. (ERG, 2012)

Firefighting
Excerpt from [GUIDE 140](#) [Oxidizers]:
SMALL FIRE: Use water. Do not use dry chemicals or foams. CO2 or Halon® may provide limited control.
LARGE FIRE: Flood fire area with water from a distance. Do not move cargo or vehicle if cargo has been exposed to heat. Move containers from fire area if you can do it without risk.
FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. (ERG, 2012)

Non-Fire Response
Excerpt from [GUIDE 140](#) [Oxidizers]:
Keep combustibles (wood, paper, oil, etc.) away from spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Stop leak if you can do it without risk. Do not get water inside containers.
SMALL DRY SPILL: With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.
SMALL LIQUID SPILL: Use a non-combustible material like vermiculite or sand to soak up the product and place into a container for later disposal.
LARGE SPILL: Dike far ahead of liquid spill for later disposal. Following product recovery, flush area with water. (ERG, 2012)

Protective Clothing

CAMEO CHEMICALS SEARCH TOOL

Search by UN:



ring Help

ALPHA CAMEO

CAMEO Chemicals

Search

Enter a chemical name or identification number to begin searching for datasheets.

[How does this search work? ▶](#)

Name (not case sensitive)

CAS Number (with or without dashes)

UN/NA Number (4-digit number)

Other ways to find chemicals
[Advanced Search](#) [Browse](#)

CAMEO Chemicals version 2.4.1

CAMEO CHEMICALS SEARCH TOOL

**Search by UN:
Produces this view in
CAMEO Chemicals**

- **Links to Datasheets**
- **Links to ERG**

ing Help

ALCH4 CAMEO

Help

CAMEO Chemicals

United Nations/North American Number Datasheet

UN/NA 1942

CAMEO Chemicals has 2 chemical datasheets with response recommendations for this UN/NA number. Response recommendations from the ERG are provided below.

Emergency Response Guidebook (ERG, 2012)

What is this information? ▶

Material Names

Ammonium nitrate, with not more than 0.2% combustible substances

2012 ERG

Response Guide 140

Click here

Hazmat Table (49 CFR 172.101)

What is this information? ▶

There are no initial isolation and protective action distances listed in the ERG.

The ERG doesn't predict that large amounts of toxic-by-inhalation gases will be produced if this material is spilled.

GUIDE 140

OXIDIZERS

The screenshot shows a web browser window with two PDF documents open side-by-side. The left document is titled 'GUIDE 140' and 'POTENTIAL HAZARDS'. The right document is titled 'GUIDE 140' and 'EMERGENCY RESPONSE'. Both documents are from 'ERG 2012' and 'October'. The left document lists hazards for fire, explosion, health, and reactivity. The right document lists emergency response procedures for fire, spill/leak, and first aid.



CAMEO CHEMICALS REACTIVITY WORKSHEET

ALOHA CAMEO

Help

CAMEO Chemicals

MyChemicals

MyChemicals Collection

1. [CHLORINE](#)

Add Water **Add Reactive Group**

Accidentally removed a chemical? [Retrieve it here.](#)

Type in a chemical:
Chlorine

Add Water

View and Print
Reactivity Report

Chemical Reactivity

Substances In The Mix

1. CHLORINE
2. WATER

Reactivity Alerts

CHLORINE

- Strong Oxidizing Agent
- Water-Reactive

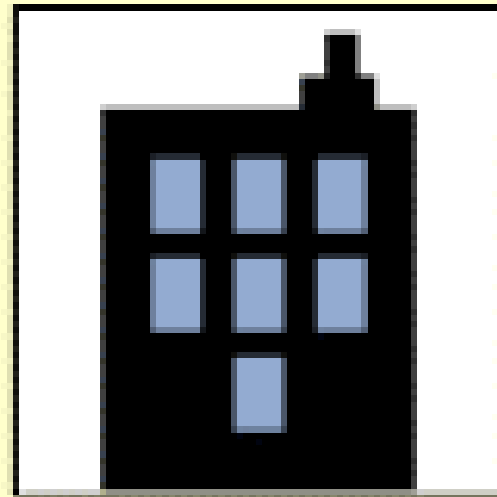
Hazard Predictions

WATER, mixed with
CHLORINE

- Reaction products may be corrosive
- Reaction liberates gaseous products and may cause pressurization
- Exothermic reaction at ambient temperatures (releases heat)
- Reaction may be particularly intense, violent, or explosive
- Reaction products may be toxic
- May produce the following gases:
 - Acid Fumes
 - Chlorine
 - Chlorine Dioxide
 - Hydrogen Sulfide
 - Hydrogen Bromide
 - Hydrogen Cyanide
 - Hydrogen Chloride
 - Hydrogen Fluoride
 - Hydrogen Halide
 - Nitrogen Oxides
 - Oxygen
 - Sulfur Dioxide

Facilities Module of CAMEOfm

- Allows User to Build Library of Tier II Facility Data
- Developed to work with Tier II Submit
- Allows User to Easily Import Tier II Data



Facilities

Facilities Module of CAMEOfm

The screenshot shows the CAMEOfm web application interface for the Facilities module. The browser window title is "CAMEOfm - [Facilities]". The menu bar includes "File", "Edit", "Record", "Search", "Sharing", "Scripts", and "Help". Below the menu is a navigation bar with buttons: "Home", "View List", "New Search", "Edit", "New Record", and "Help". A status bar indicates "1 of 1 found".

The main section is titled "Facilities" with a "Last Modified" date of "5/15/2014". It contains a form for editing a facility record. The form has a "Shipper" checkbox and a "Report Year" dropdown set to "2013". The "Facility Name" field contains "Hiland Dairy Foods--Norman". The "Department" field is empty. The "Site" field shows "1 of 1".

Below the form are several tabs: "ID and Regs", "State Fields", "Map Data", "Site Plan", and "Notes". The "Address" tab is selected, showing fields for "Street Address", "City", "County", "Country", "State", "Zip", "Fire District", and "Cross Street". The "Street Address" field contains "302 S. Porter Ave.". The "City" field contains "Norman", "State" contains "OK", and "Zip" contains "73071". The "County" field contains "Cleveland" and "Fire District" contains "Norman Fire Department". The "Country" field contains "USA".

Below the "Address" tab is the "Mailing Address" section, which includes fields for "City", "Country", "State", and "Zip". The "City" field contains "Norman", "Country" contains "USA", "State" contains "OK", and "Zip" contains "73070".

for a Facility

This is a partial screenshot of the CAMEOfm web application interface, showing the "Facilities" section. It includes the "New Record" and "Help" buttons, and a status bar indicating "1 of 1 found". The "Facilities" section is visible, showing the "Last Modified" date of "5/15/2014". The form for editing a facility record is partially visible, showing the "Facility Name" field containing "Hiland Dairy Foods--Norman".

Click on the Facility List, and Look up the Facility Record

Facilities Module of CAMEOofm

- Facility Address and Coordinates
- Facility Contact Names and Phone Numbers
- Chemical Inventory on Site
- Facility Site Maps

User can Add Any Attachments they Like . . .

The screenshot displays the CAMEOofm Facilities Module interface. At the top is a menu bar with options: File, Edit, Record, Search, Sharing, Scripts, Help. Below the menu is a navigation bar with buttons: Home, View List, New Search, Edit, New Record, Help, and a status indicator showing 1 of 1 found. The main section is titled "Facilities" with a "Last Modified 5/15/2014" timestamp. A form for facility information includes a "Shipper" checkbox, "Facility Name" (Hiland Dairy Foods--Norman), "Department" (empty), "Report Year" (2013), and "Site" (empty) of (empty). Below the form is a tabbed interface with tabs: Address, Facility Phones, Contacts, Chemical Inventory, Checklist, ID and Regs, State Fields, Map Data, Site Plan, and Notes. The "Site Plan" tab is selected, showing a list of attachments: AMMONIA SUTDOWN INSIDE.AVI, AMMONIA SHUT DOWN OUTSIDE.AVI, AMMONIA TANK OUTSIDE KING VALVE.JPG, AMMONIA TANKS OUTSIDE KING.JPG, and Emergency Action Plan for Ammonia Release example.doc. An "Open" button is located to the right of the attachment list.

WHAT IS ALOHA?

- ▶ **Areal Locations of Hazardous Atmospheres.**
- ▶ **Air Dispersion Model**
- ▶ **Evaluates Hazardous Chemical Release Scenarios**
- ▶ **Predicts Dispersion**
- ▶ **Includes TEELs, ERPGs, and AEGLs.**

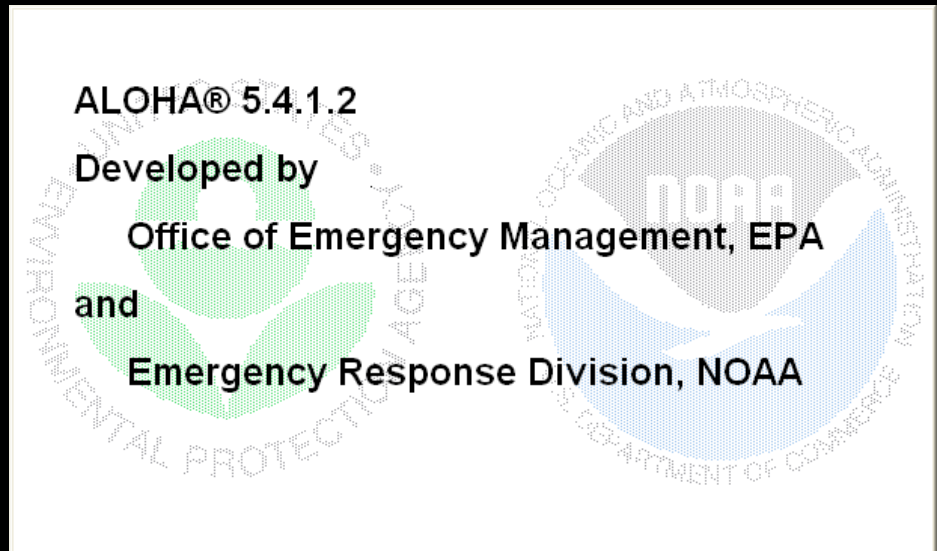
ALOHA® 5.4.1.2

Developed by

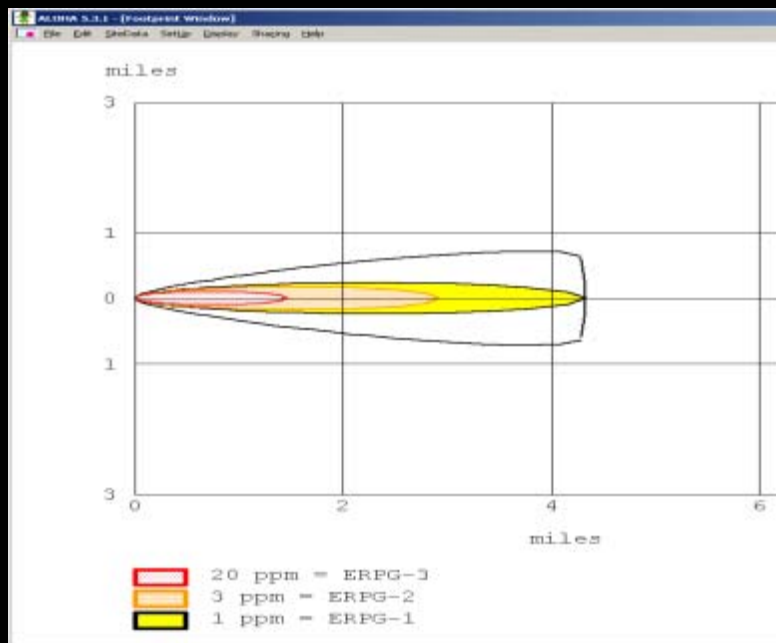
Office of Emergency Management, EPA

and

Emergency Response Division, NOAA



WHAT CAN ALOHA DO?



**FOOTPRINT
PLOT**

- ▶ Estimates: Impact Distances
- ▶ Uses Toxicological / Physical Properties of Released Chemical
- ▶ Uses Real Time Weather
- ▶ Plots Predicted Affected Area
- ▶ Shows Concentrations at important locations.

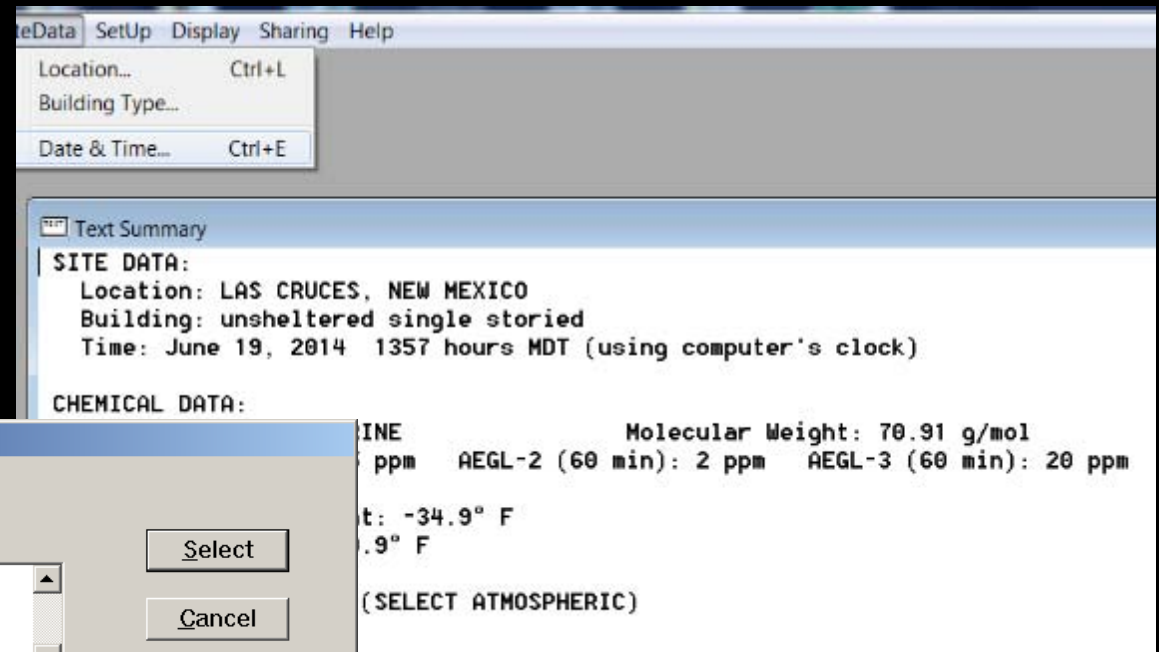
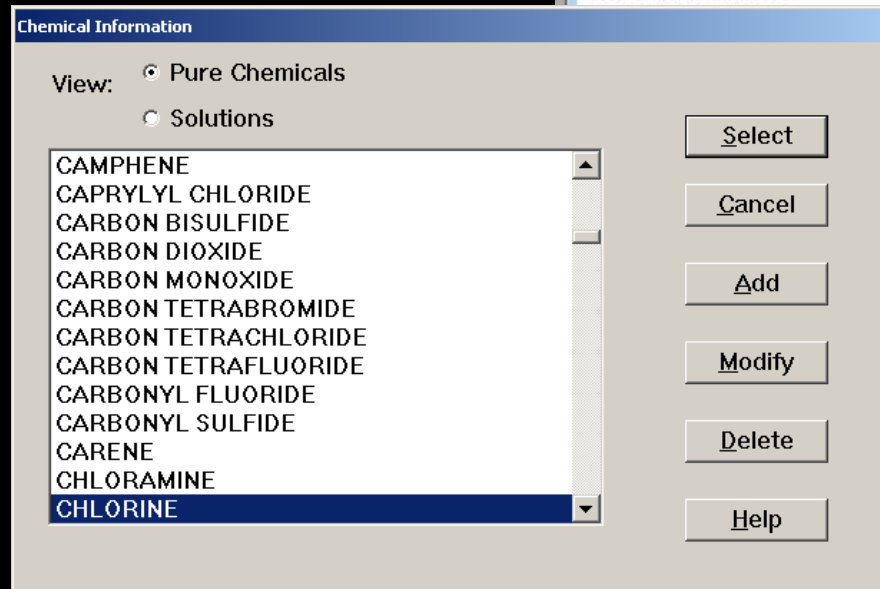
**Provides Estimates, not
Precise Answers!!!**

WHAT DO YOU NEED TO DO TO RUN ALOHA?

► SPECIFY SITE DATA

- Incident location
- Release time / date

► SPECIFY CHEMICAL INFORMATION

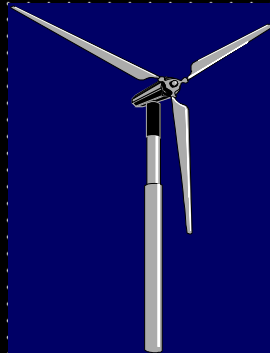


WHAT DO YOU NEED TO DO TO RUN ALOHA?

► ENTER WEATHER CONDITIONS

► ENTER SOURCE INFORMATION

- Direct
- Puddle
- Tank
- Gas Pipeline





Atmospheric Options

Wind Speed is : 10 ☐ knots ☒ mph ☐ meters/sec [Help](#)

Wind is from : S Enter degrees true or text (e.g. ESE)

Measurement Height above ground is: [Help](#)




☒  ☐  OR ☐ enter value : 3 ☐ feet ☒ meters

Ground Roughness is : [Help](#)

☒ Open Country ☐ Urban or Forest OR ☐ Input Roughness (Z₀) :

☐ Open Water

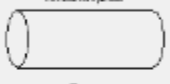

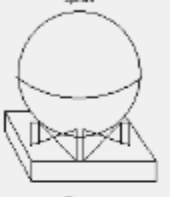
Select Cloud Cover : [Help](#)

☒  ☐  ☐  OR ☐ enter value : 3 (0 - 10)

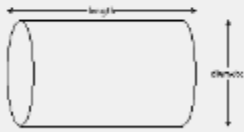
[OK](#) [Cancel](#)

Tank Size and Orientation

Select tank type and orientation:

☒  ☐  ☐ 

Enter two of three values:

 diameter 5 ☐ feet ☐ meters

length 20 ☐ gallons ☐ cu feet

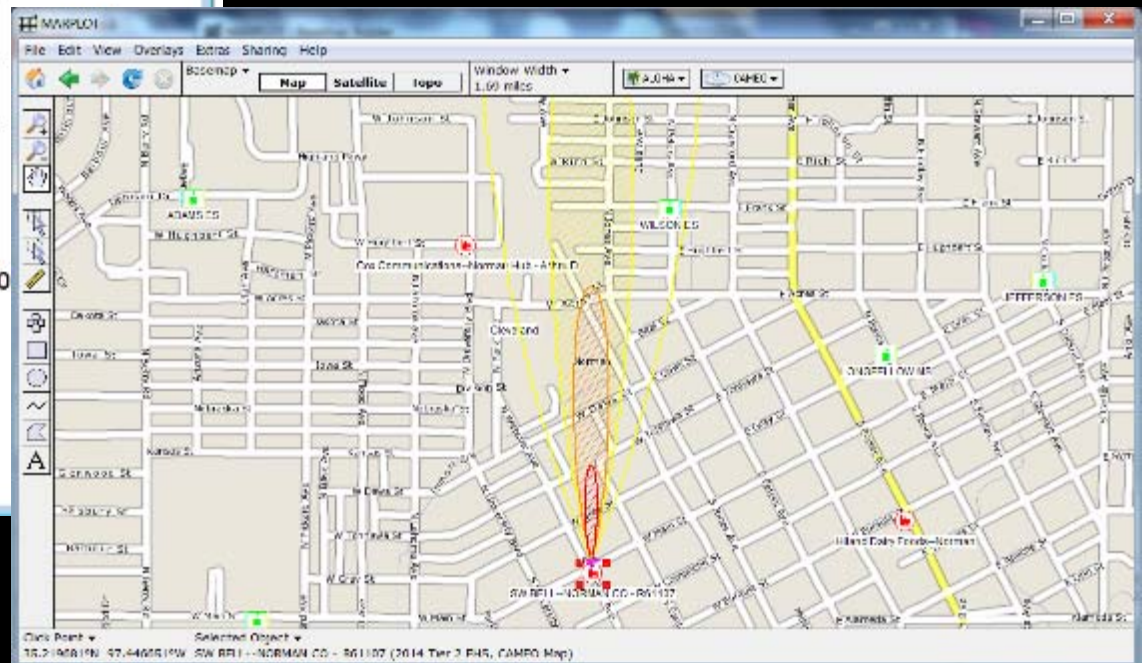
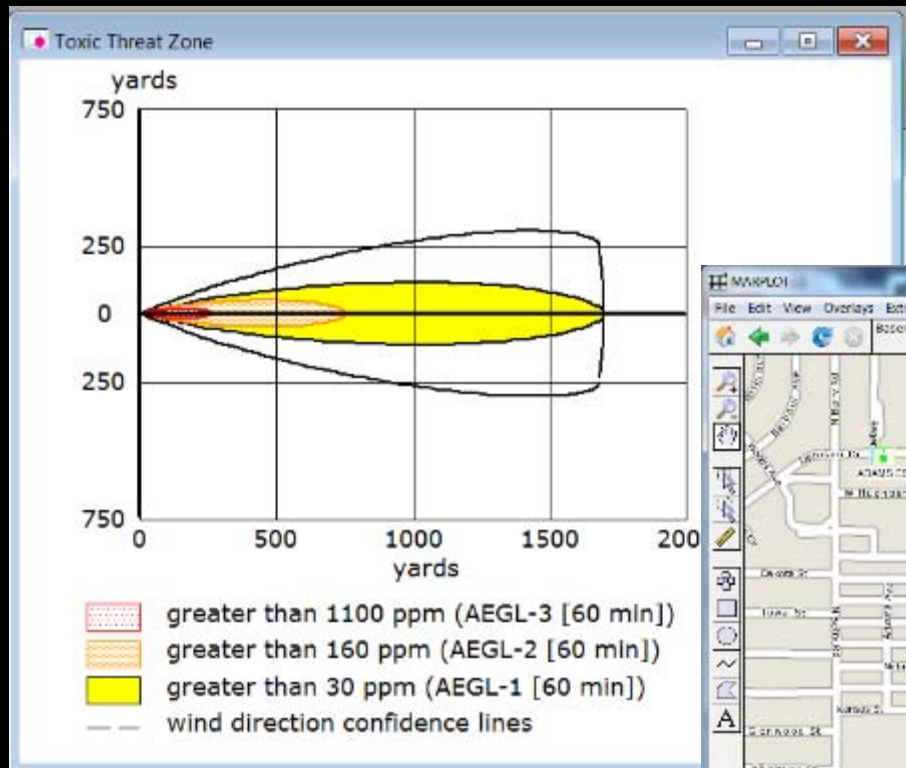
volume 2,938

[OK](#) [Cancel](#) [Help](#)

WHAT DO YOU NEED TO DO TO RUN ALOHA?

▶ ALOHA Models the plume

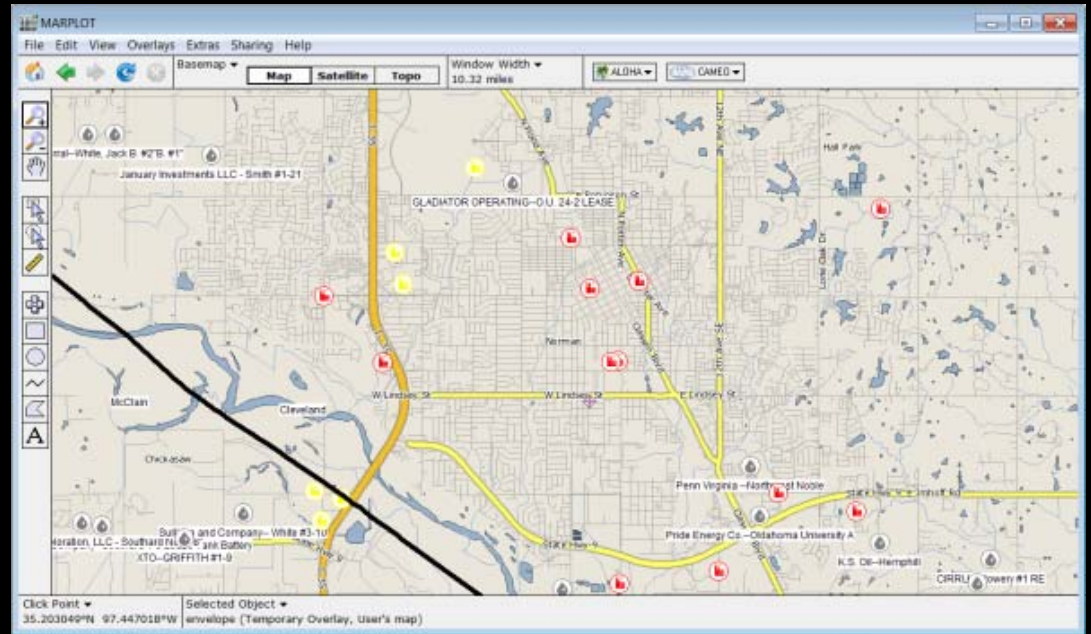
▶ Add the plume on the map in MARPLOT



MARPLOT

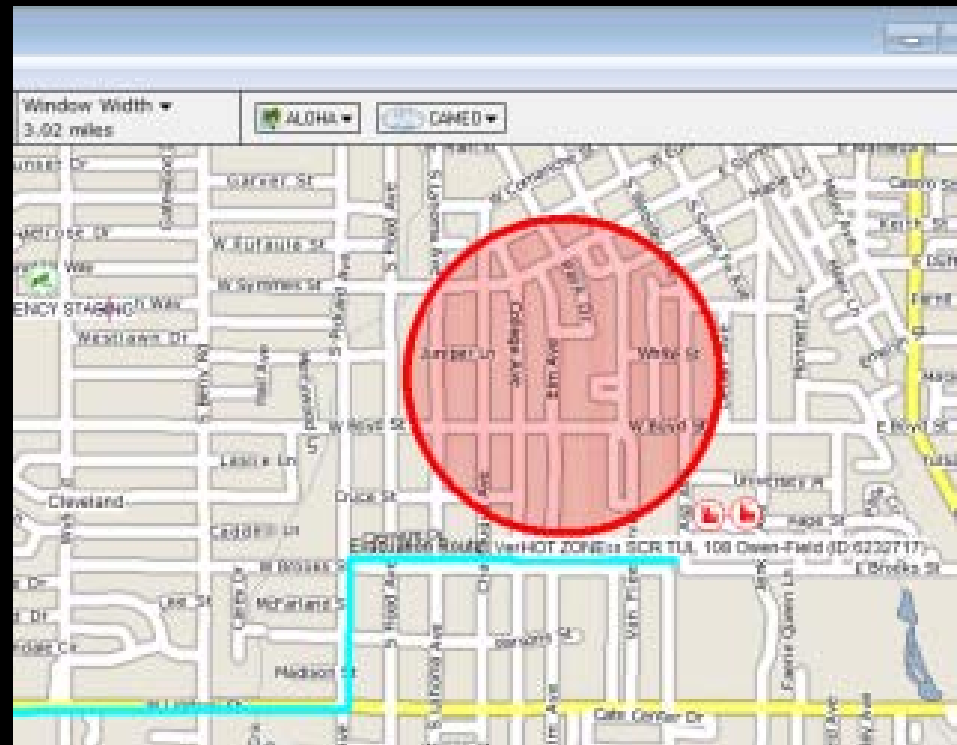
Mapping Application

Consists of a
Basemap
and
Overlay Tools



MARPLOT

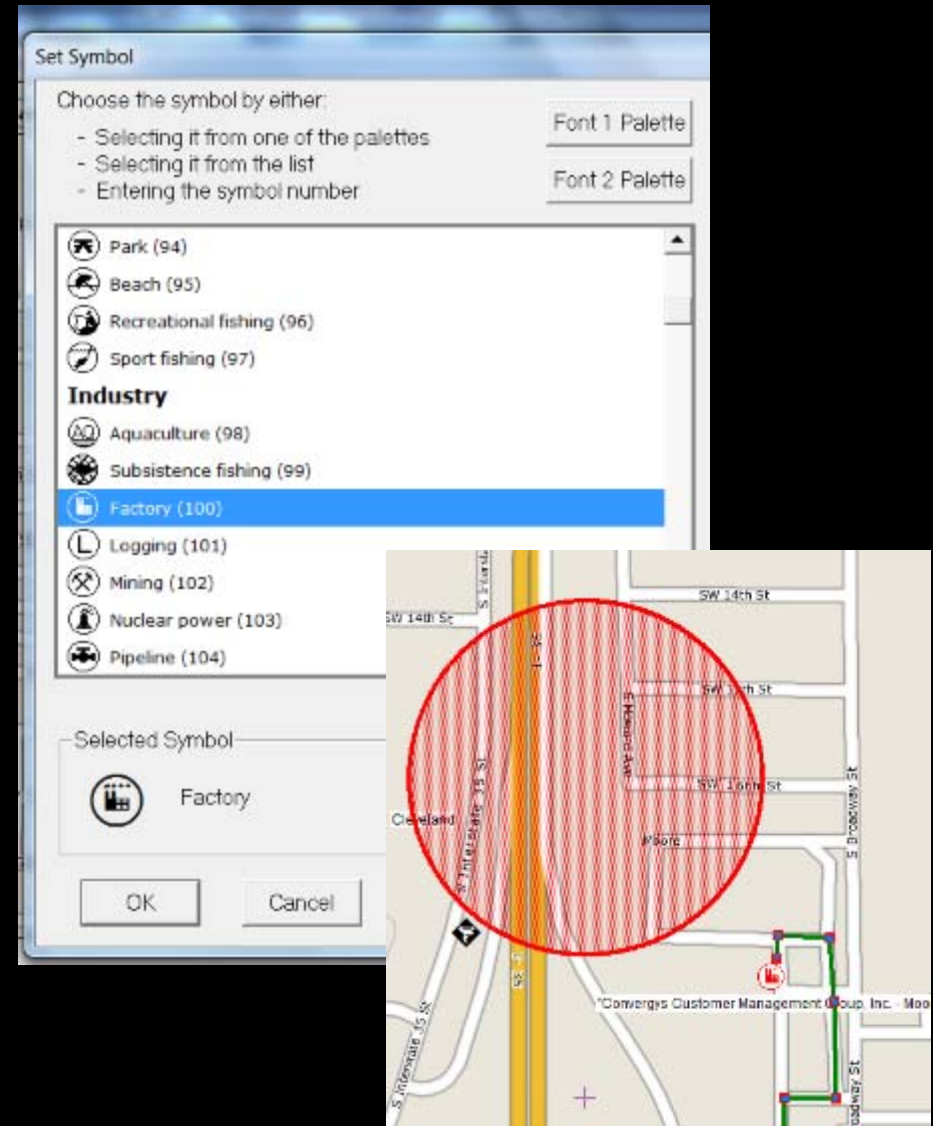
- Basemap contains data such as streets, population data, and aerial photos
- Use overlay tools to draw on the basemap
- View information within the basemap



MARPLOT

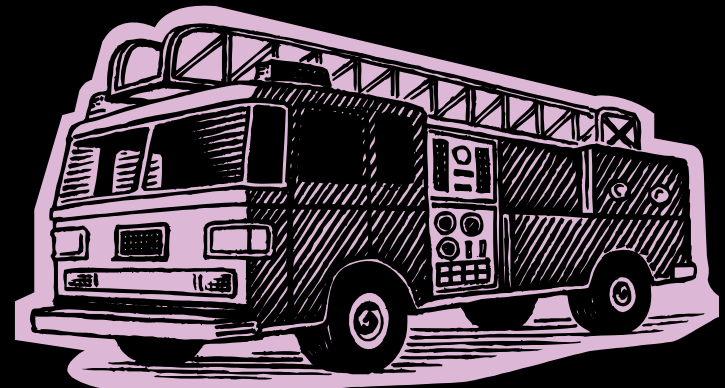
Overlay Tools Can:

- Draw lines and polygons
- Label Anything the user chooses
- Select area to show affected population statistics



INCOMING CALL...

- ▶ *Chlorine release in wastewater treatment area at Champion Technologies 115 Proctor Street.*
- ▶ *Look up the facility record in CAMEO_{fm}...*



- Find record in Facilities module.
- Look up chemicals on site and building site plans.

Facilities Last Modified: 11/13/2003

☐ Shipper Report Year: 2000

Facility Name: Green Valley Water Facility (DEMO)

Department: Chlorination Division Site: 1 of 1

Street Address

U.S. Highway 15

City: Haymarket State: VA Zip: 87530

County: North Fire District:

Country: Cross Street:

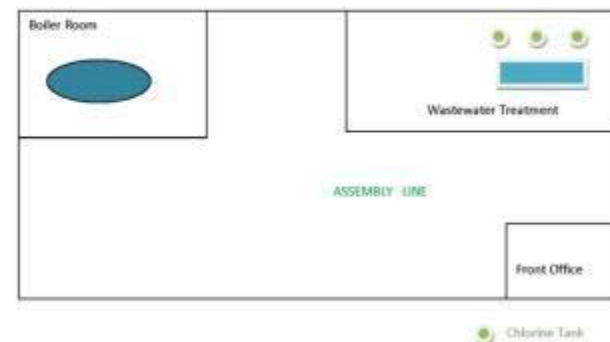
Mailing Address (if different from street address)

Town Hall

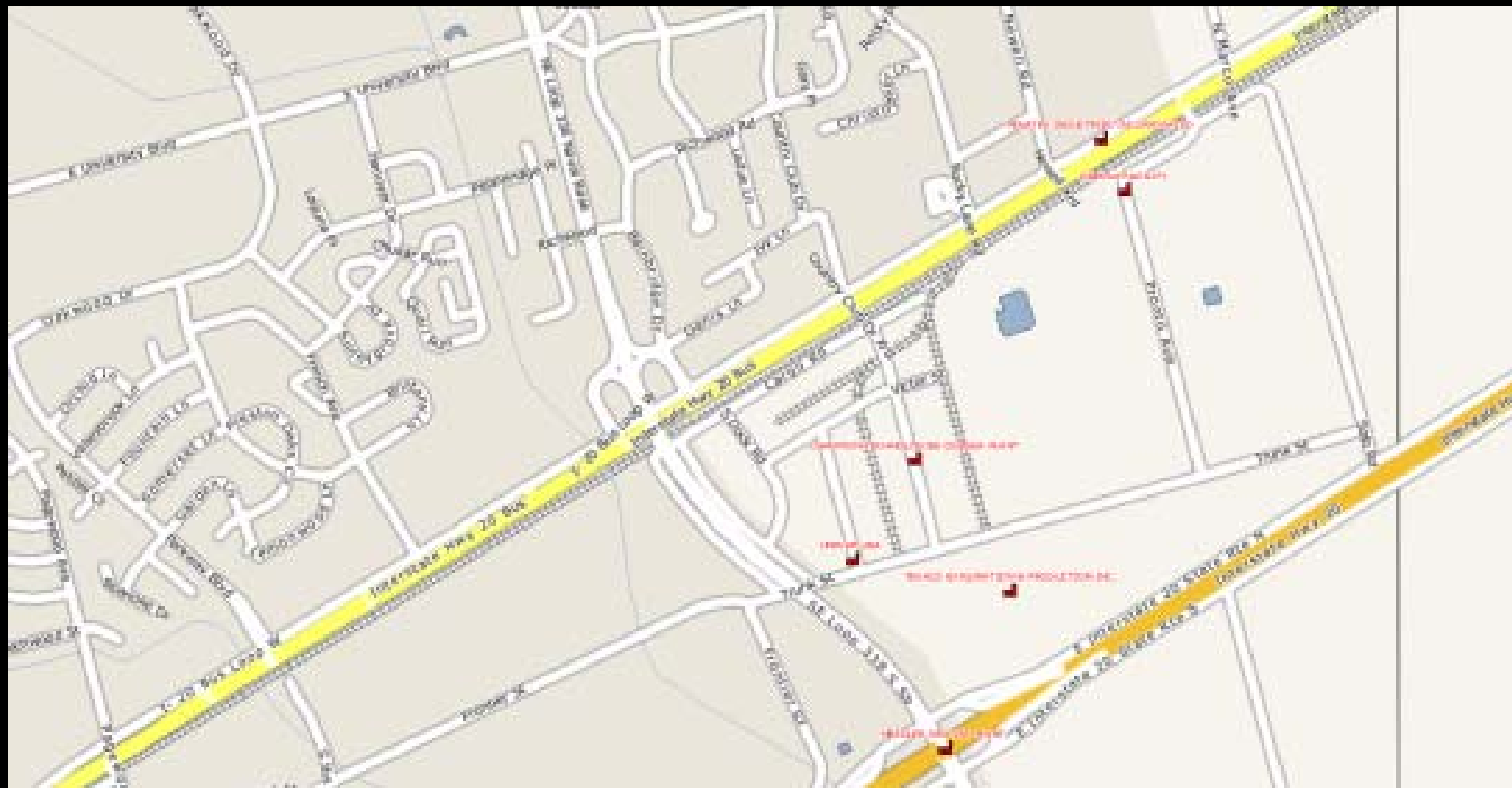
City: Haymarket State: VA Zip: 87530

Country:

Email



VIEW THE FACILITY LOCATION IN MARPLOT...



*LOOK UP CHEMICAL HAZARDS IN CAMEO
CHEMICALS...*

[illegible]

doi:10.1017/S0022292412001709

GUIDE
124

GASES - TOXIC AND/OR CORROSIVE - OXIDIZING

ERG2008

POTENTIAL HAZARDS

HEALTH

- **TOXIC:** may be fatal if inhaled or absorbed through skin.
- Fire will produce irritating, corrosive and/or toxic gases.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Runoff from fire control may cause pollution.

FIRE OR EXPLOSION

- Substances does not burn but will support combustion.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- These are strong oxidizers and will react vigorously or explosively with many materials including fuels.
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- Some will react violently with air, moist air and/or water.
- Cylinders exposed to fire may vent and release toxic and/or corrosive gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

PUBLIC SAFETY

- CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations. ONLY if it is not effective in spill situations where direct contact with the substance is possible.

EVACUATION

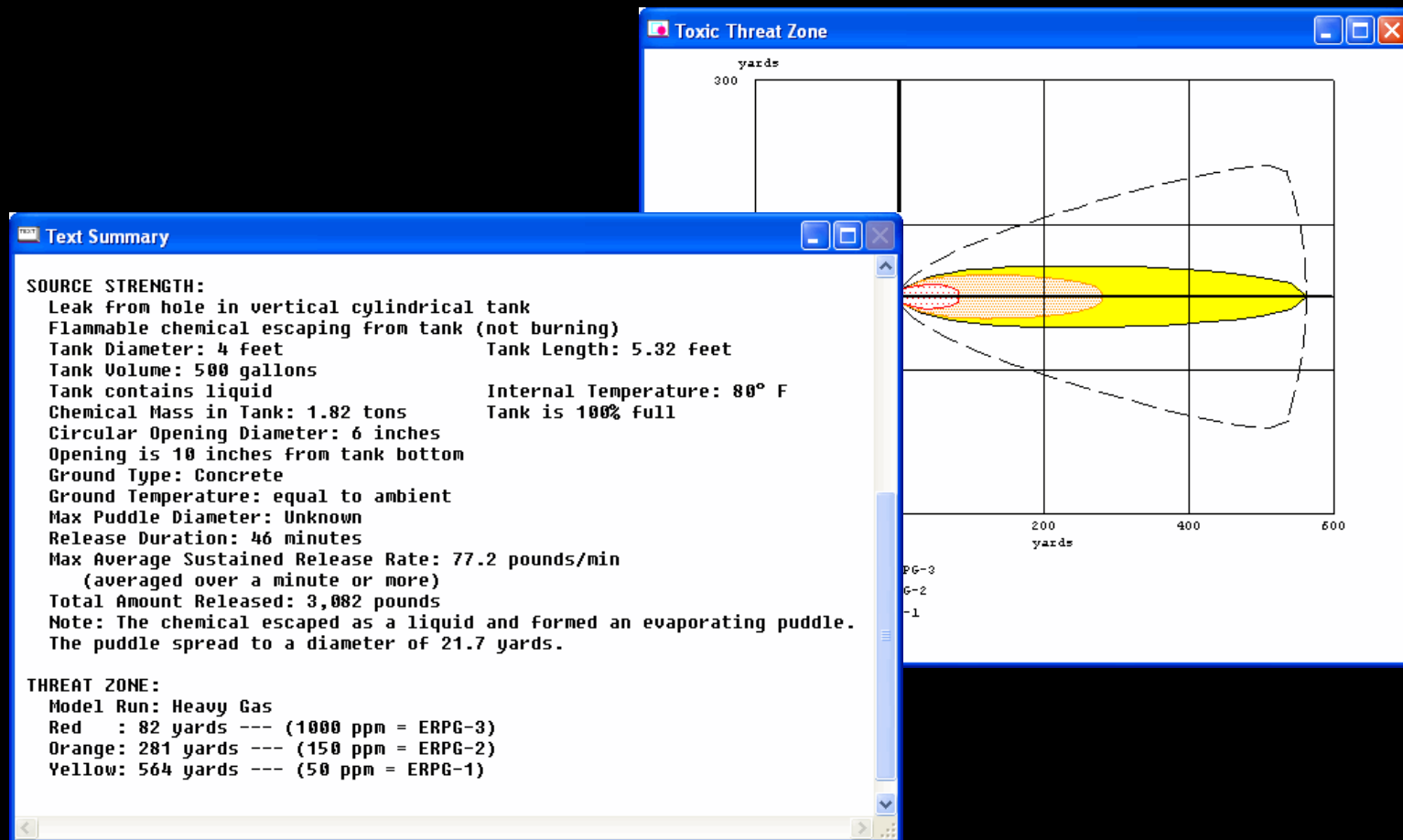
Spill

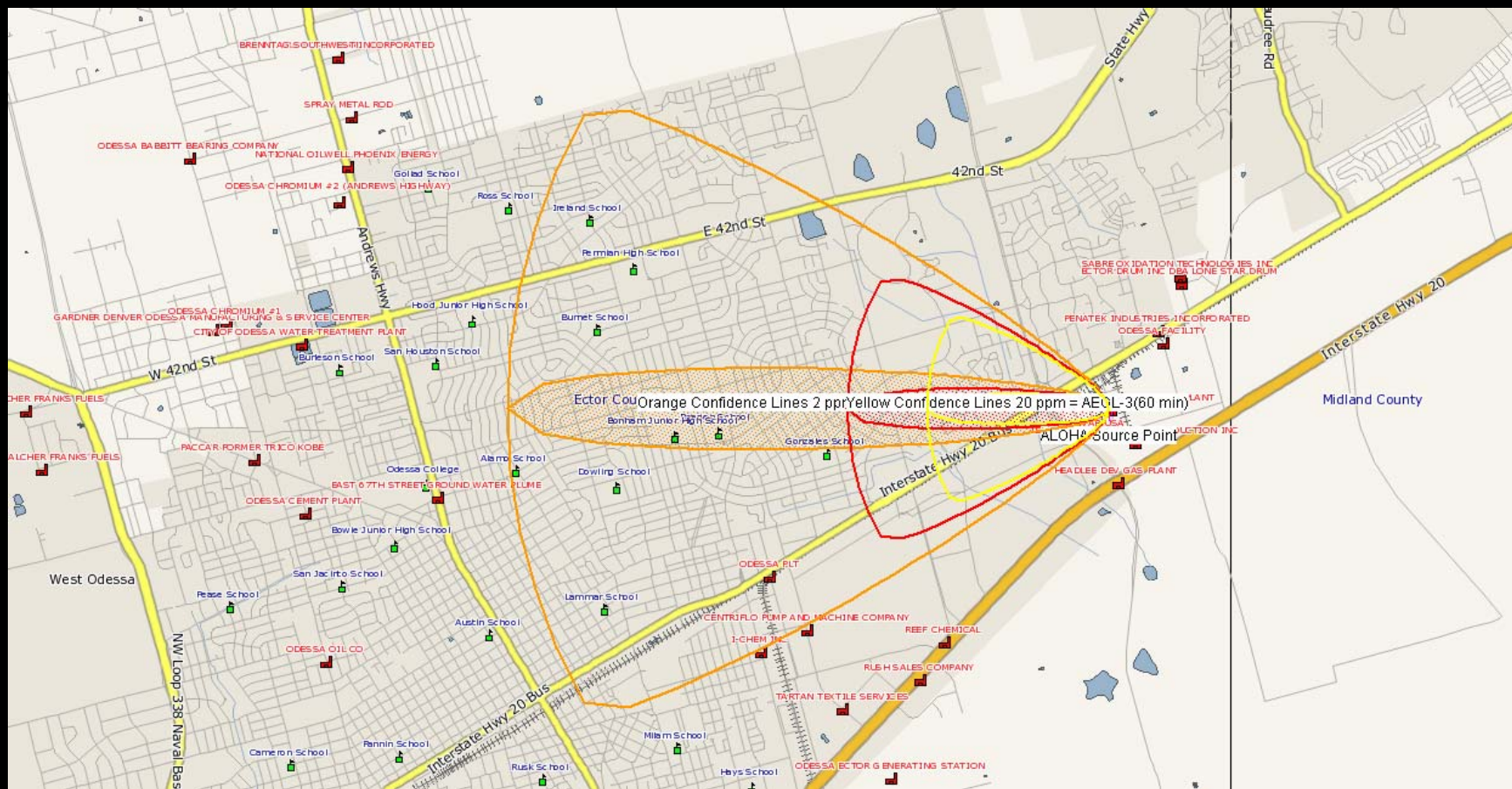
- See Table 1 - Initial Isolation and Protective Action Distances.

Fire

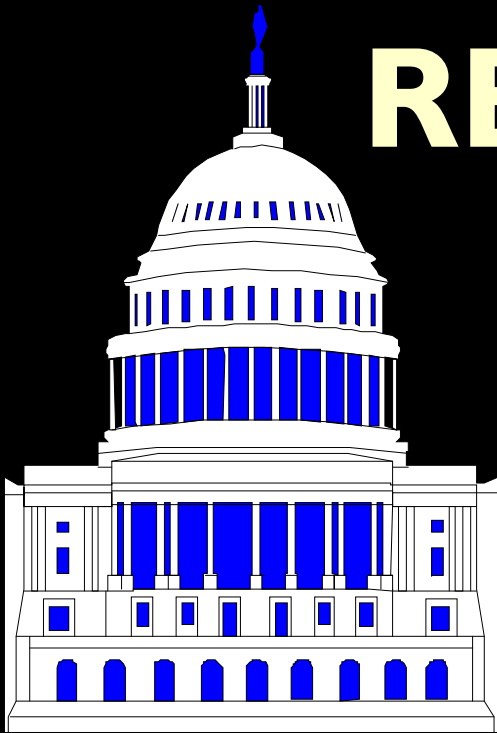
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

MODEL AN AERIAL PLUME IN ALOHA...





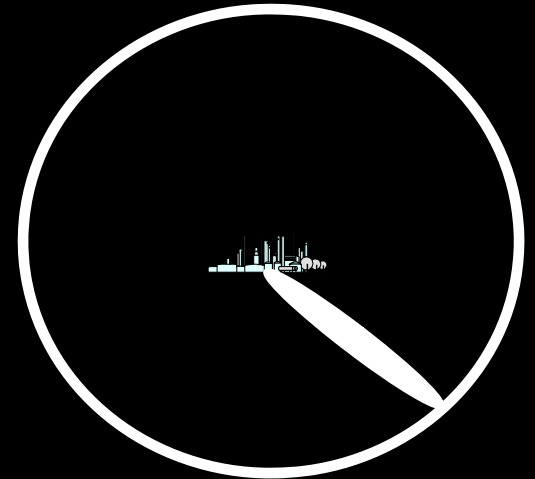
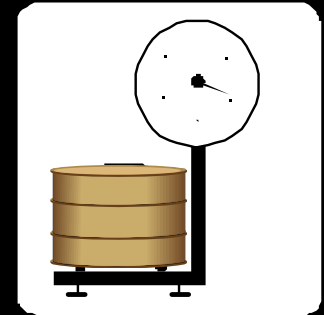
USE ALOHA FOR MEETING FEDERAL REQUIREMENTS



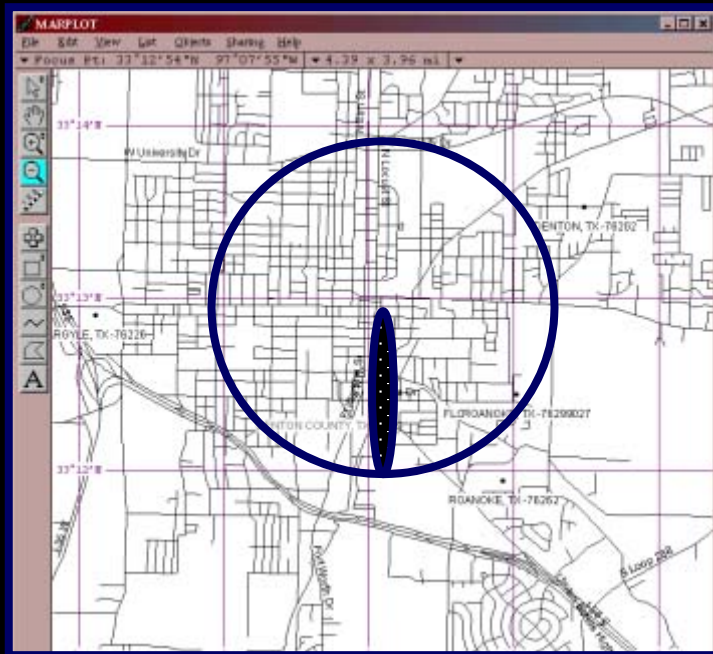
FEDERAL REQUIREMENTS

▶ **ALOHA** useful for:

- ▶ Emergency planning for EHSs under EPCRA
- ▶ Hazard analysis under CAA 112(r)
- ▶ EPA's RMP rule.



ALOHA USE FOR EPCRA



- ▶ Emergency planners **must develop an emergency plan.** Must include facilities with EHSs
- ▶ **May include real-time hazards analysis for EHSs.**
 - > Green book
 - > ALOHA
 - > Other models or methods

OKC/MOORE F5 TORNADO



OKC/MOORE F5 TORNADO

- ▶ EF5 tornado struck Moore, OK, May 20, 2013
- ▶ Killed 24 people
- ▶ Injured 377
- ▶ Stayed on ground 39 minutes over a 17-mile path
- ▶ 1.3 miles wide at its peak

EXAMPLE OF F5 DAMAGE



CAMEO USAGE DURING THE EVENT

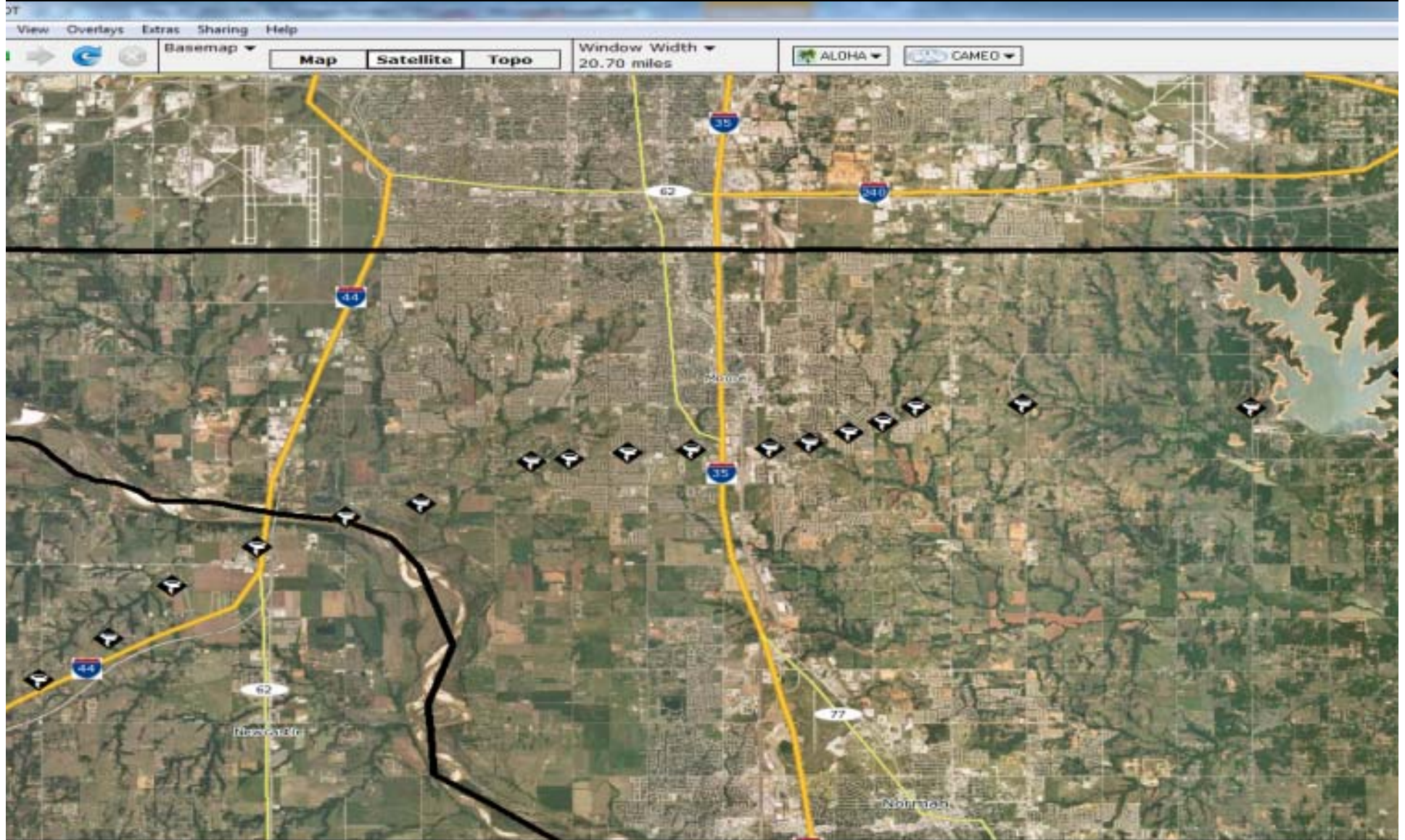
► MARPLOT:

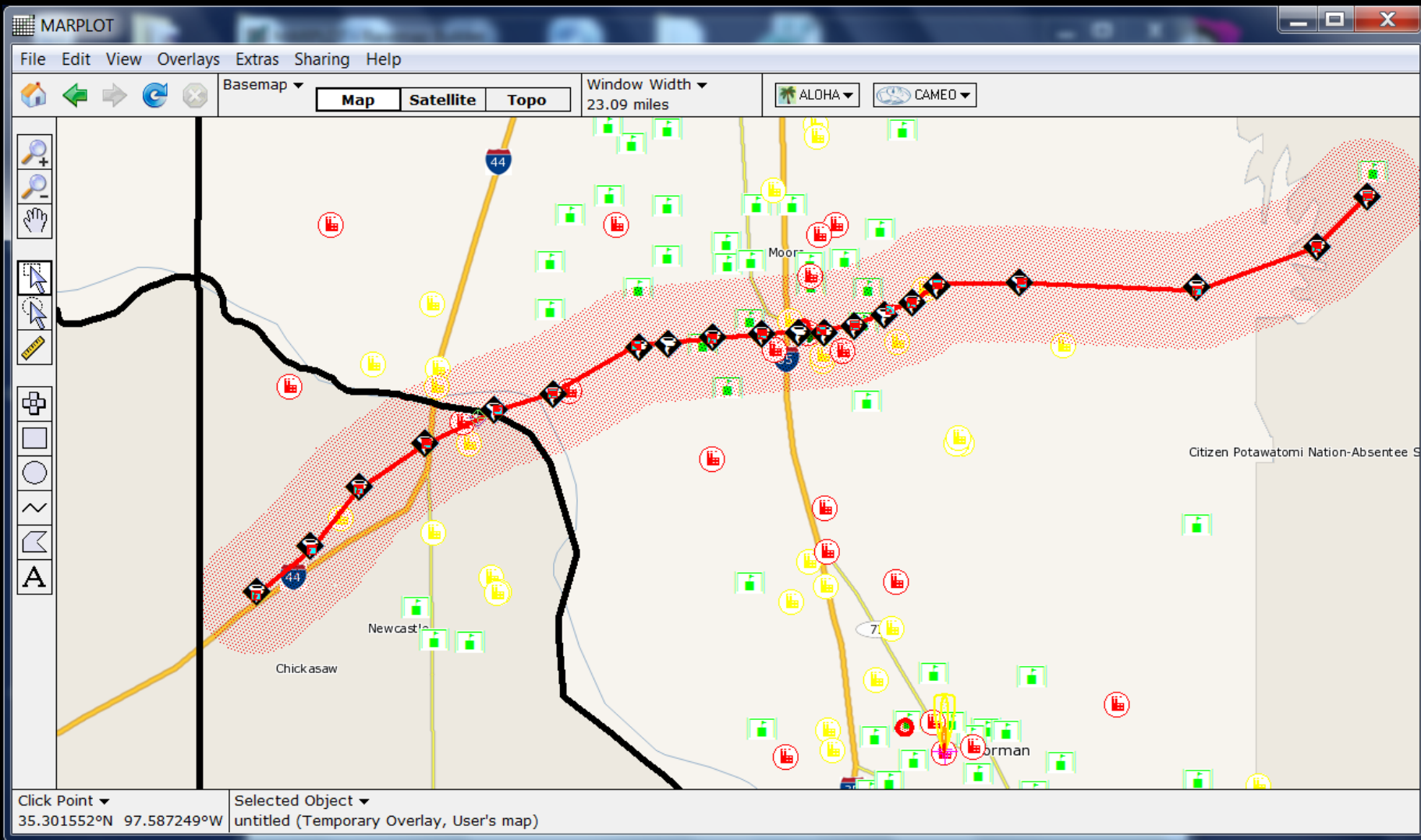
- Tracked potential damage areas in real time
- Produced affected population estimates
- Assisted responders in Search and Rescue Ops

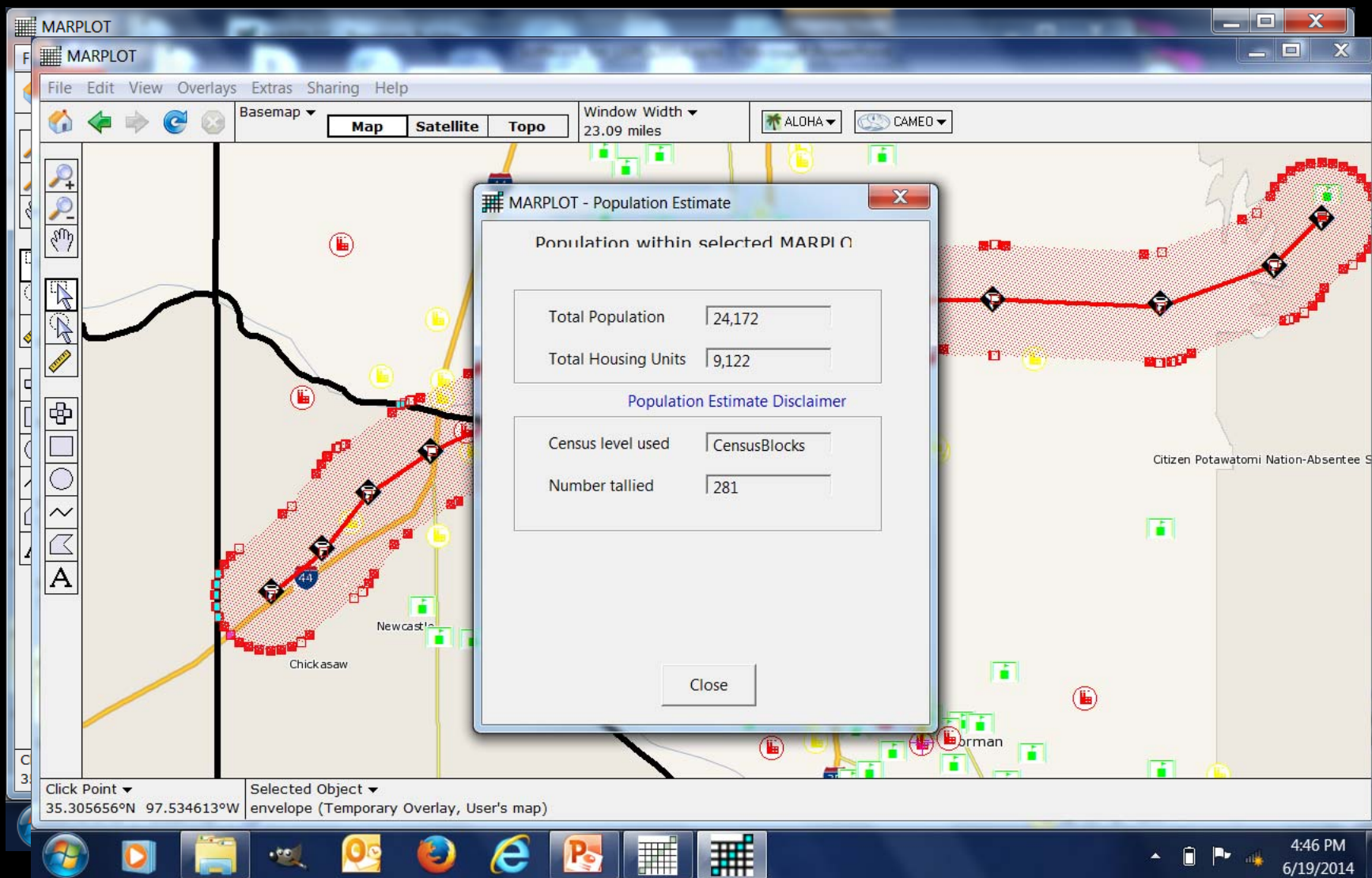
► CAMEO/MARPLOT:

- Identified sensitive locations and Tier 2 sites

REAL TIME REPORTED TORNADO POINTS







CLEVELAND CO PARCELS.csv - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Add-Ins Acrobat

Normal Page Layout Page Break Preview Custom Views Full Screen

Workbook Views

Ruler Formula Bar

Gridlines Headings

Show

Zoom 100% Zoom to Selection

Zoom

New Window Arrange All Freeze Panes

Split Hide Unhide

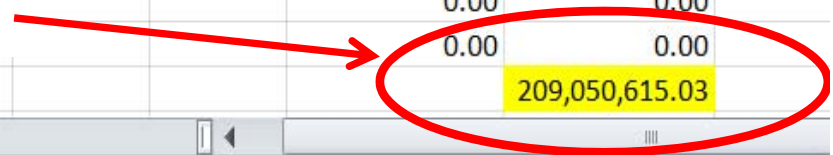
View Side by Side Synchronous Scrolling Reset Window Position

Window

Save Workspace

	I	J	K	L	M	N	O	P	Q	R	T	U	V
	dan_ACCO	dan_PARC	dan_OW	dan_OW	dan_M	PROPERTY	OWNER	dan_MA	dan_MAIL	LOCATION	dan_ACTUAL	VALUE_ASSESS	
13758	R0163094	MC2 10	ROYAL PARK BUSINES	13308 OAK CLIFF	OKLAHOM	OK	73120				500.00	60.00	
13759	R0161568	MC2 10	ROYAL PARK BUSINES	13308 OAK CLIFF	OKLAHOM	OK	73120				500.00	60.00	
13760	R0135739	MC2 10	ALDI INC	DIR. O 2500 WEST	DENTON	TX	76207				1,000.00	120.00	
13761	R0153062	MC2 RORS	ROYAL PARK BUSINES	13308 OAK CLIFF	OKLAHOM	OK	73120				1,000.00	120.00	
13762	R0153060	MC2 RORS	BANCFIRST	PO BOX 26788	OKLAHOM	OK	73126	701 SW 19			1,157,077.00	138,849.24	
13763	R0153061	MC2 RORS	ROYAL PARK OF MOO	13308 OAK CLIFF	OKLAHOM	OK	73120	651 SW 19			484,703.00	58,164.36	
13764	R0163099	MC2 RORS	ROYAL PARK BUSINES	13308 OAK CLIFF	OKLAHOM	OK	73120	SW 119TH			117,612.00	14,113.44	
13765	R0163098	MC2 RORS	ROYAL PARK BUSINES	13308 OAK CLIFF	OKLAHOM	OK	73120	SW 119TH			239,144.00	28,697.28	
13766	R0163097	MC2 RORS	ROYAL PARK BUSINES	13308 OAK CLIFF	OKLAHOM	OK	73120	SW 119TH			151,589.00	18,190.68	
13767	R0163096	MC2 RORS	DBMC RESTAURANTS	16851 JEFFERSON	BATON RC	LA	70817	SW 119TH			229,997.00	27,599.64	
13768	R0161569	MC2 ROYF	ROYAL ROCK I, LLC	13308 OAK CLIFF	OKLAHOM	OK	73120	631 SW 19			940,854.00	112,902.48	
13769	R0158197	MC2 RORS	NSC PROPERTIES, LP	6 WINDMILL	MINERAL	TX	76068	625 SW 19			673,591.00	80,830.92	
13770	R0135740	MC2 RPBD	ALDI INC	DIR. O 2500 WEST	DENTON	TX	76207	601 SW 19			1,040,831.00	124,899.72	
13771	R0120911	MC2 10	CITY OF MOORE	301 N BROADWA	MOORE	OK	73160	1 ASSESSC			0.00	0.00	
13772	R0120565	MC2 ROYP	CITY OF MOORE	301 N BROADWA	MOORE	OK	73160	1 ASSESSC			0.00	0.00	
13773											0.00	0.00	
13774											0.00	0.00	
13775											0.00	0.00	
13776											209,050,615.03		

Estimated Damage: Over \$200 Million



Other Uses for CAMEO:

- Map all fire hydrants, tin horns in MARPLOT, use CAMEO Facilities records to track maintenance schedule.
- Search and Rescue: Use MARPLOT to mark of searched areas

HTTP://WWW2.EPA.GOV/CAMEO



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