

AEROJET UPDATE

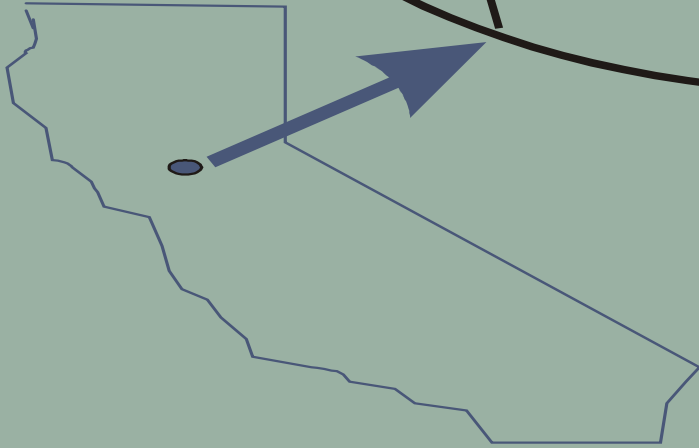
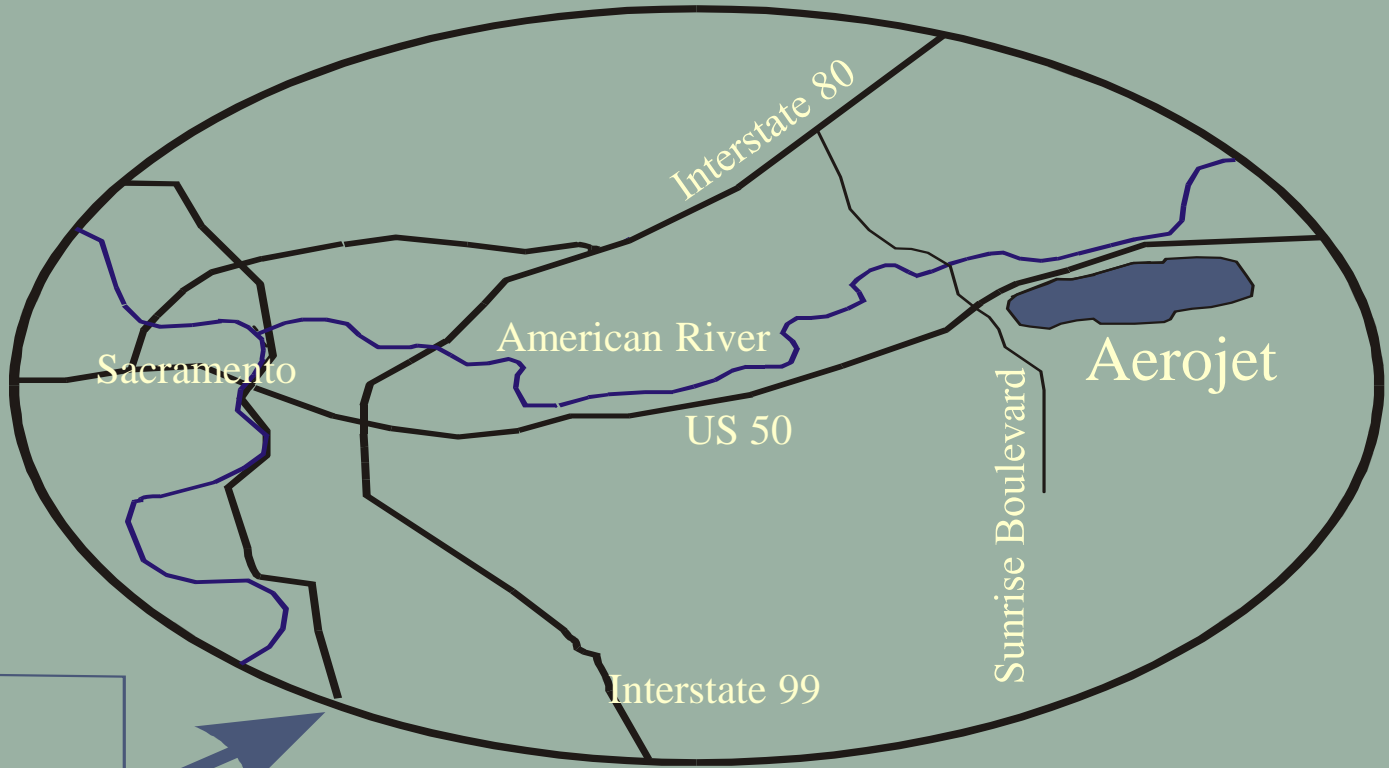


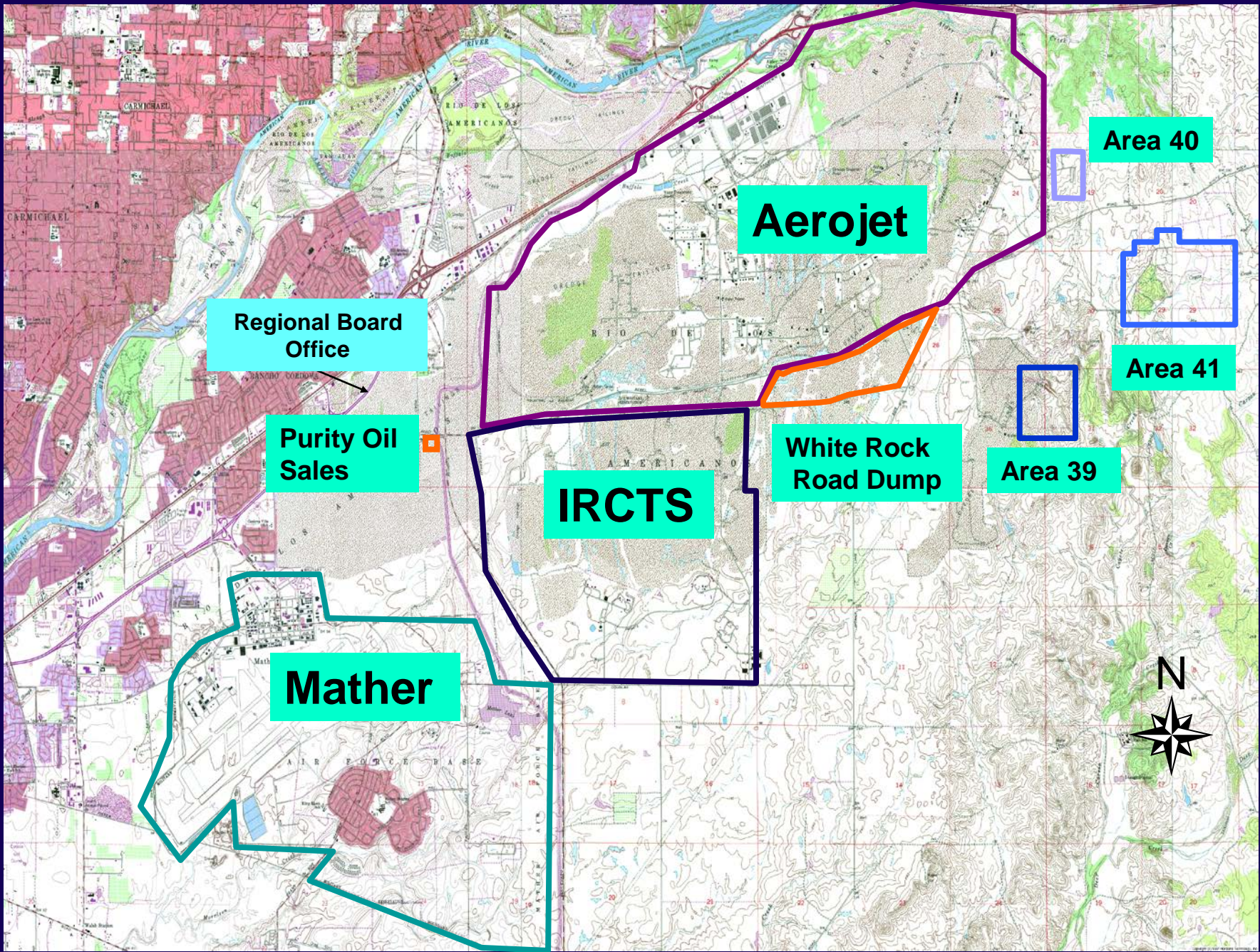
12 March 2014

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Aerojet

Regional Board Office

Purity Oil Sales

IRCTS

White Rock Road Dump

Mather

Area 40

Area 41

Area 39



Groundwater Flow

Sector C

Sector A

Sector D

Aerojet

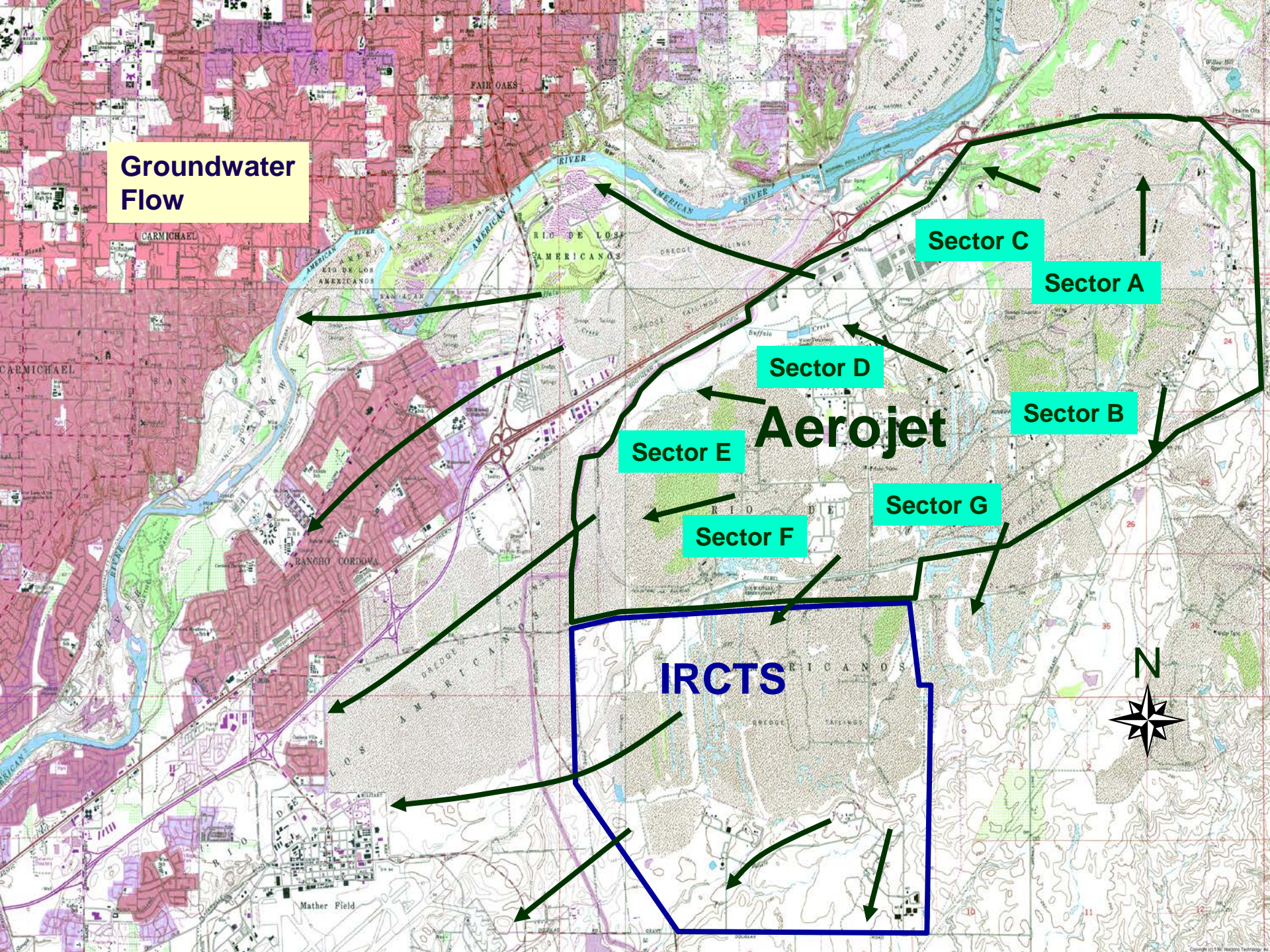
Sector B

Sector E

Sector G

Sector F

IRCTS



Contaminants of Concern



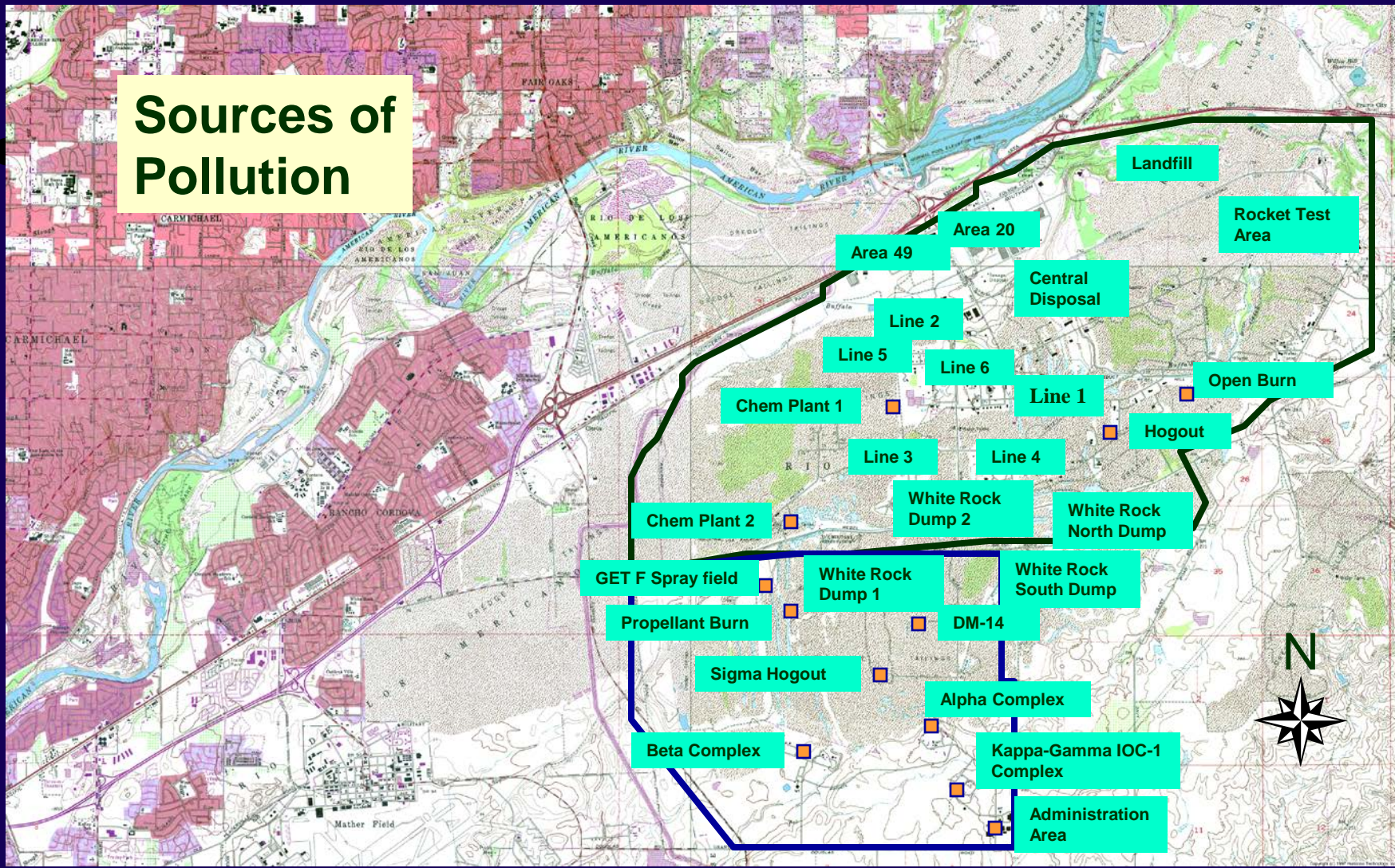
- Solvents - TCE, PCE, Freon, Chloroform
- Perchlorate – component of solid rocket propellant
- NDMA – associated with liquid rocket fuel
- Fuels – hydrazine-based, kerosene

Brief Historical Overview



- WDRs First Adopted 1952
- Aerojet Manufactures and Tests Solid and Liquid Rocket Motors and Engines
- Chemical Manufacturing by Aerojet at two facilities
- McDonnell-Douglas and Aerojet perform rocket testing on the IRCTS property
- Aerojet Added to Superfund List in 1983
- 1989 Partial Consent Decree Signed

Sources of Pollution



Western Groundwater Operable Unit



- Remedial Investigation/Feasibility Study Completed in October 2000
- Record of Decision in July 2001
 - Cleanup Values of 4 ppb for perchlorate, 0.0013 ppb for NDMA, and 5.0 ppb for TCE
- Unilateral Administrative Order (UAO) Issued by EPA in August 2002
 - UAO Requires Design and Implementation of Remedy
 - Includes Contingency Plan for Replacement Water Supplies

Western Groundwater Operable Unit

Area 4

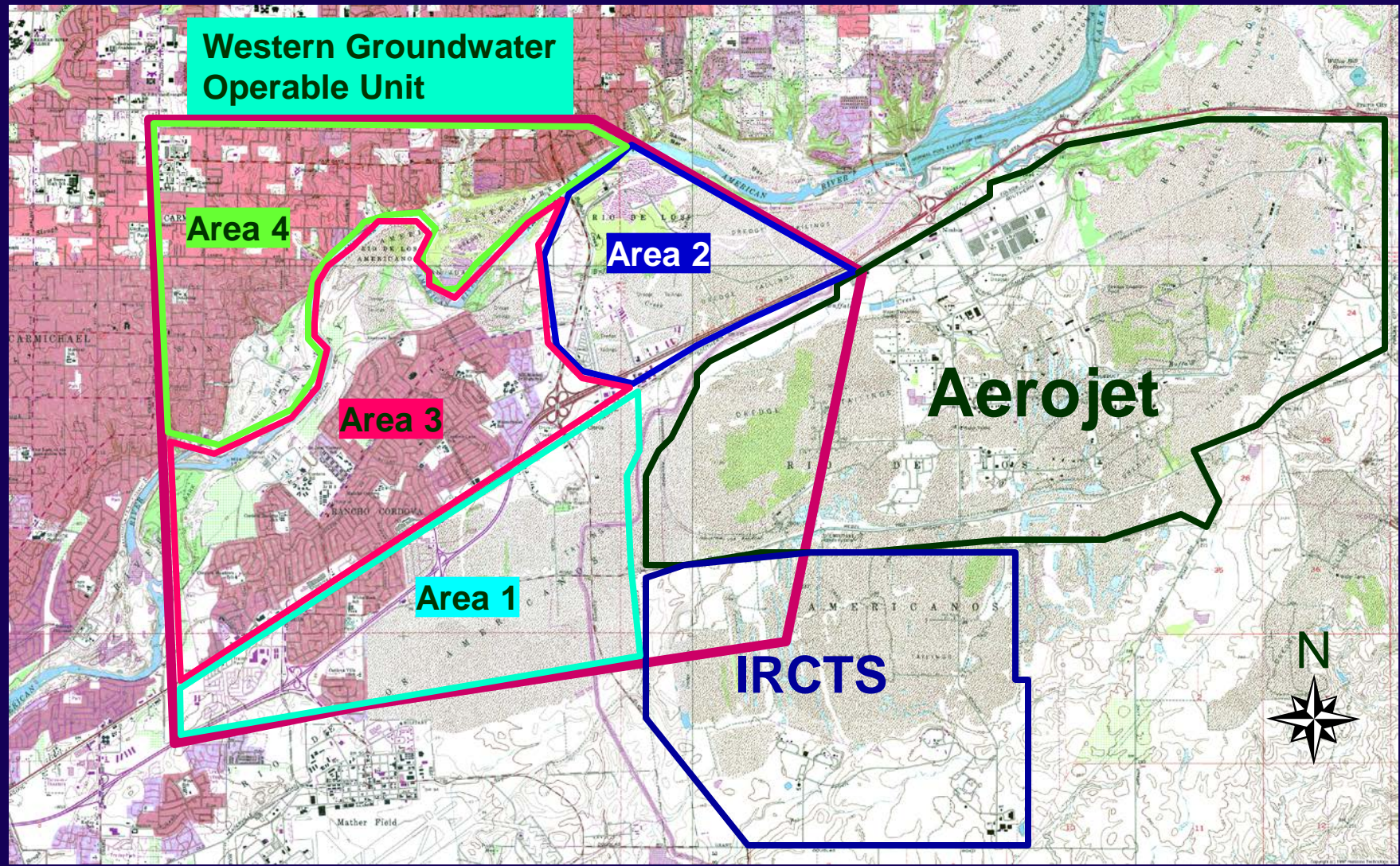
Area 2

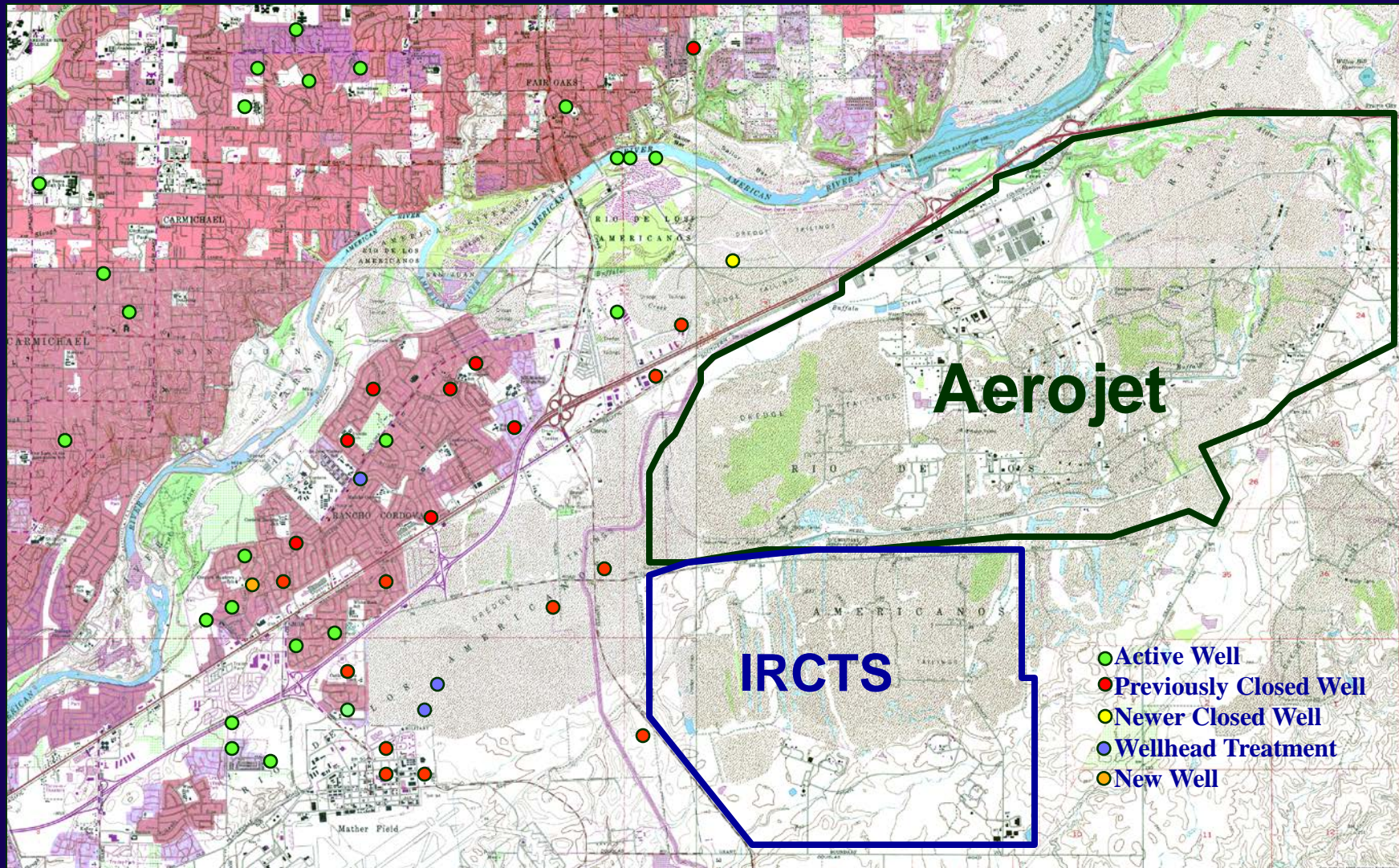
Area 3

Area 1

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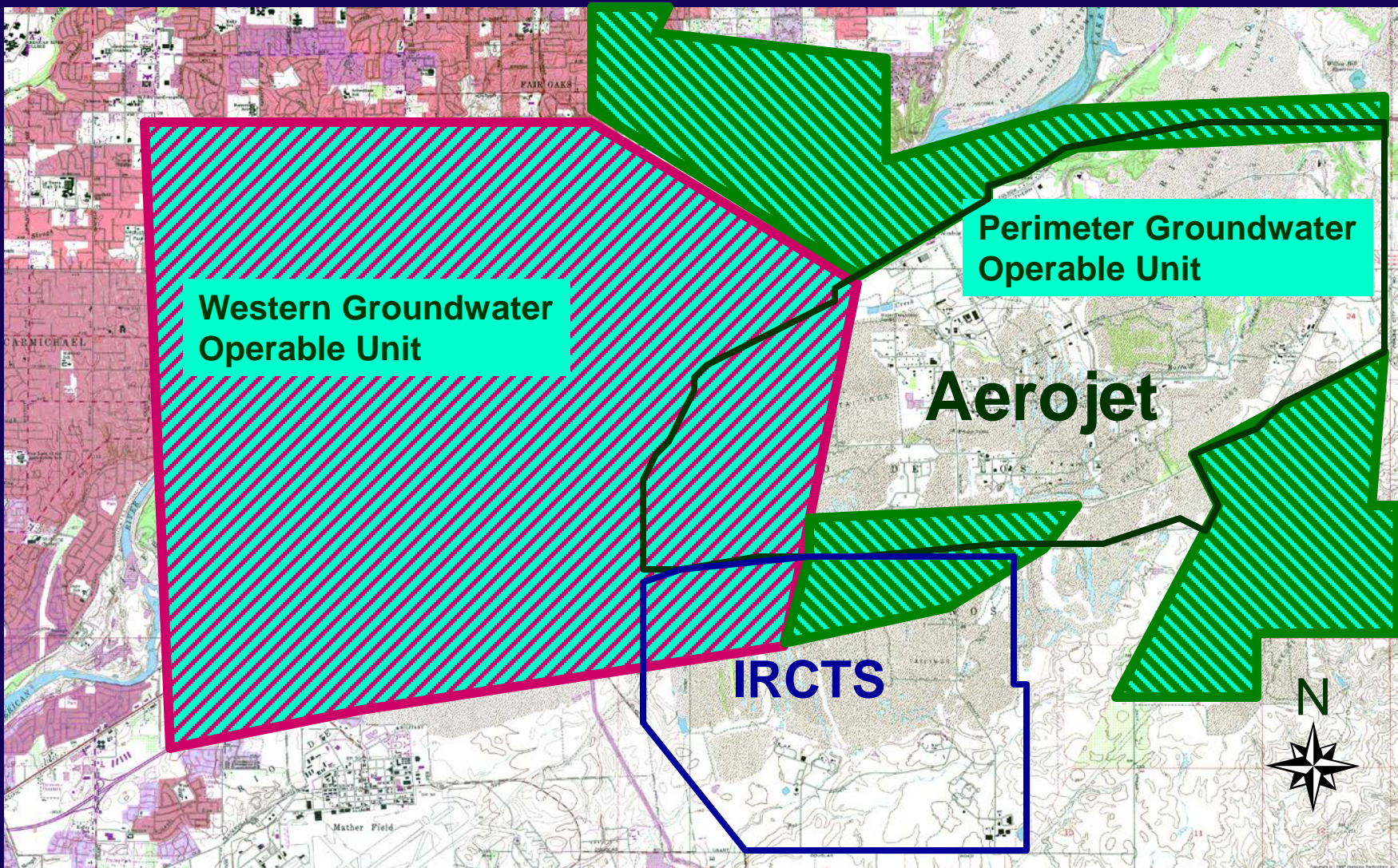




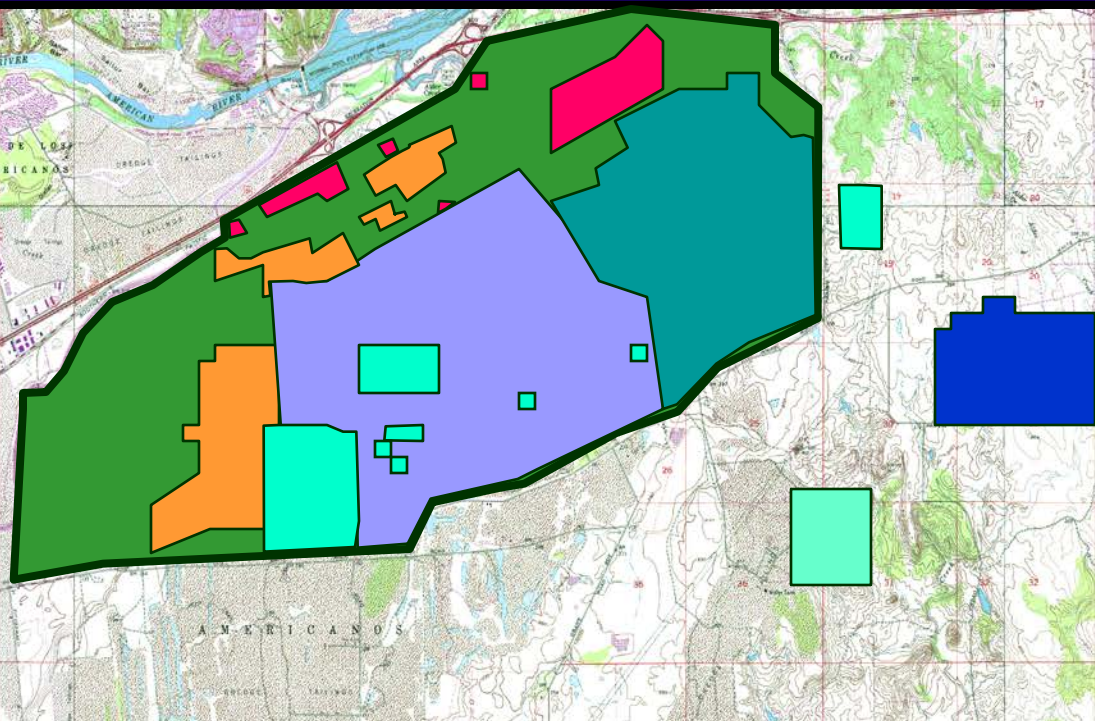
Perimeter Groundwater Operable Unit










- Remedial Investigation/Feasibility Study Completed in August 2008
- Record of Decision February 2011
- Unilateral Administrative Order (UAO) issued by EPA in September 2011
- Implementing Soil and Groundwater remedies



Soil Portions of Operable Units



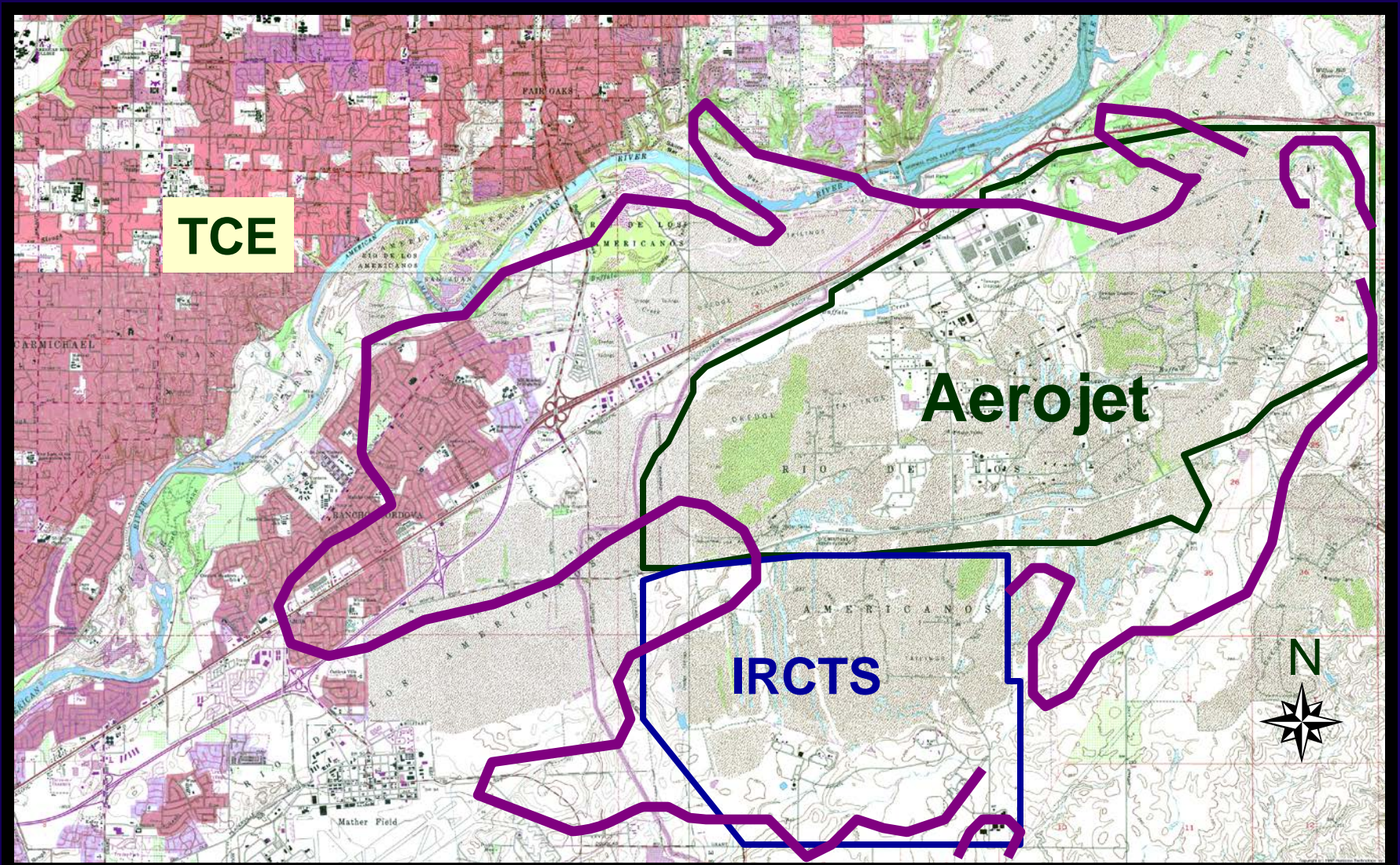
-  Carve-out Land
-  OU-5 – Perimeter Groundwater
-  Boundary OU
-  Central OU
-  Island OU
-  Eastern OU
-  Cavitt Ranch



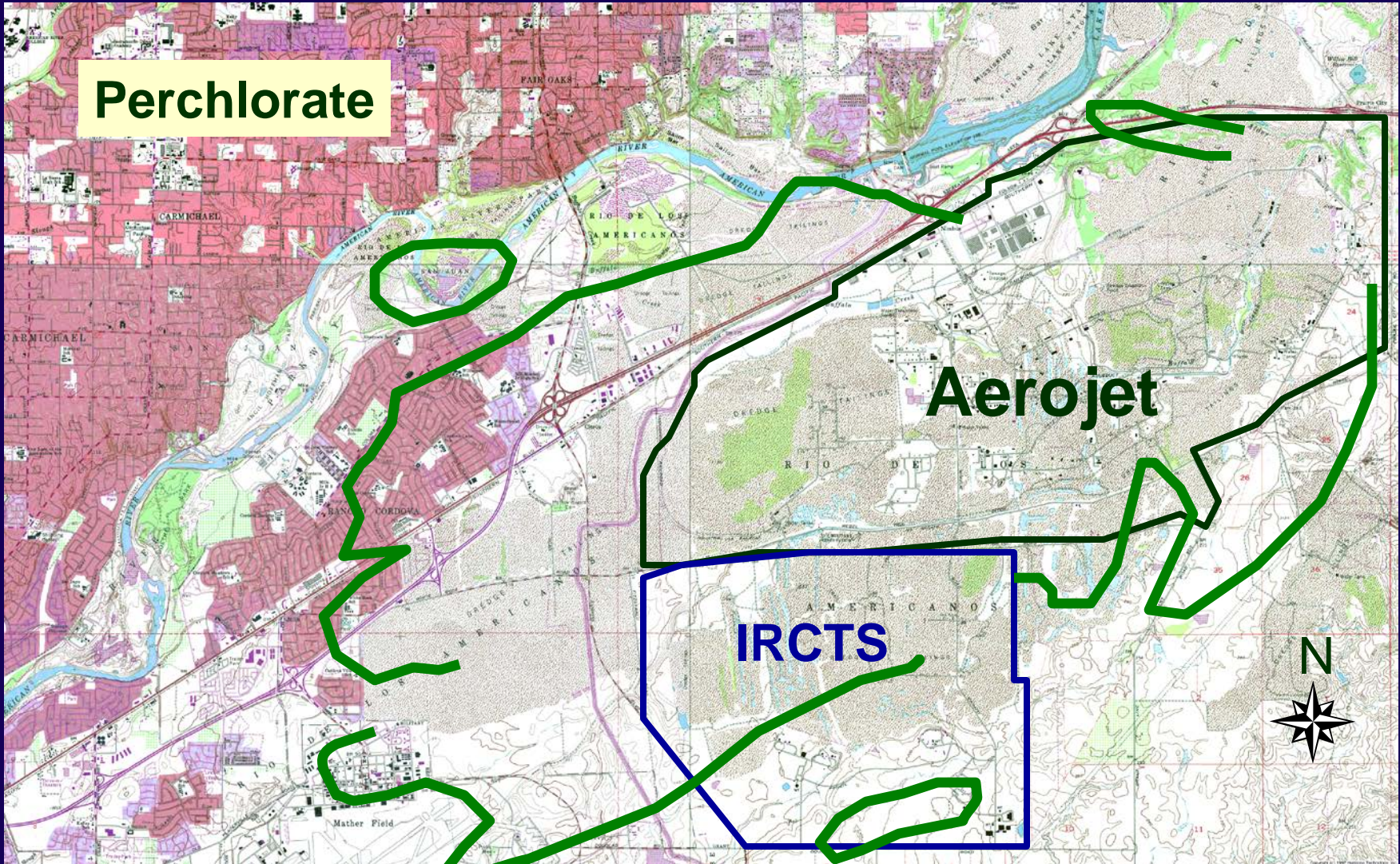
Boundary Operable Unit and Beyond



- BOU Remedial Investigation/Feasibility Study Completed in 2012
- Record of Decision – Spring 2014?
- Island OU – Working on Feasibility Study and Ecological Risk Evaluation
- Eastern OU RI report being prepared in 2014
- Central OU will follow Eastern OU



Perchlorate



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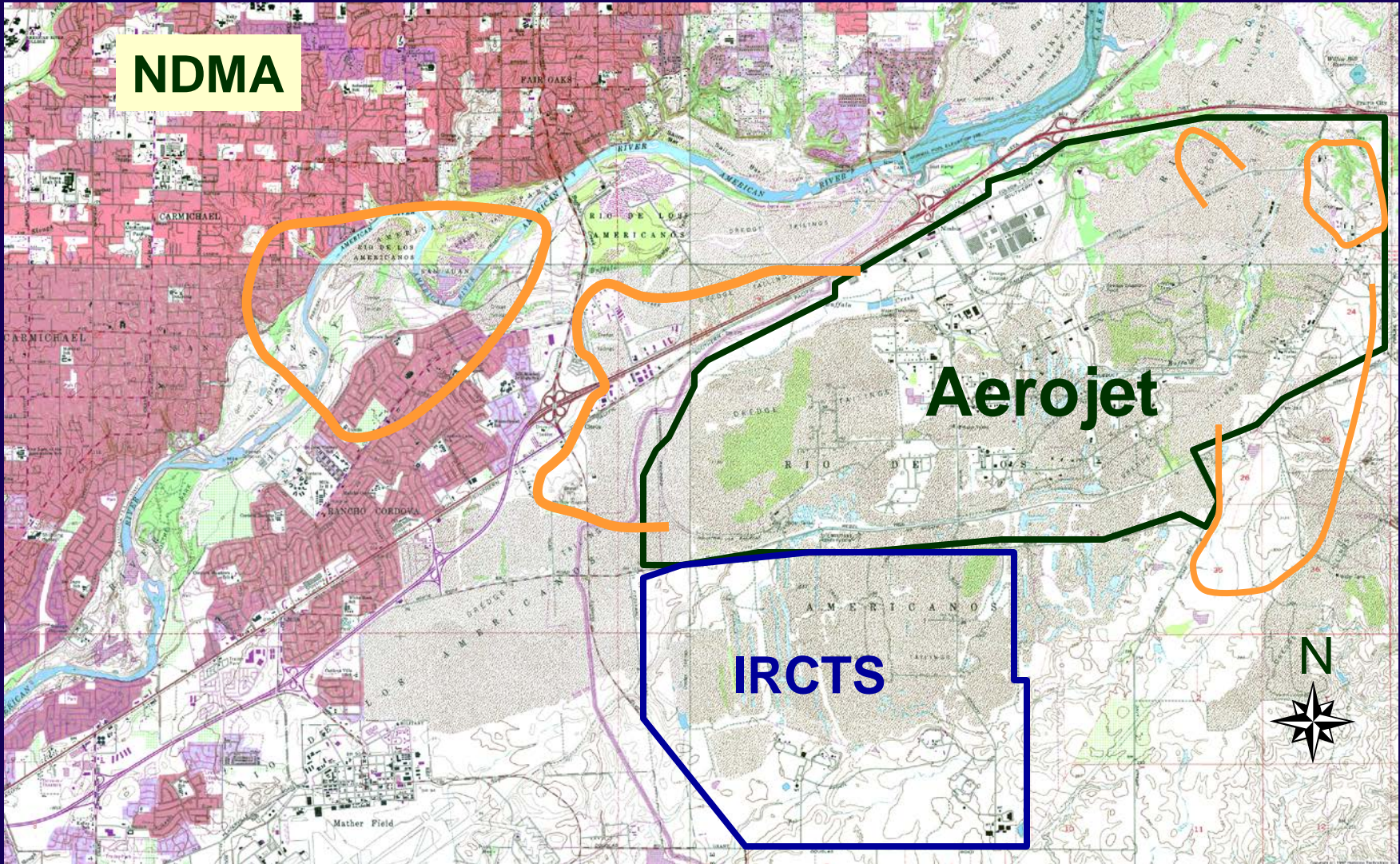
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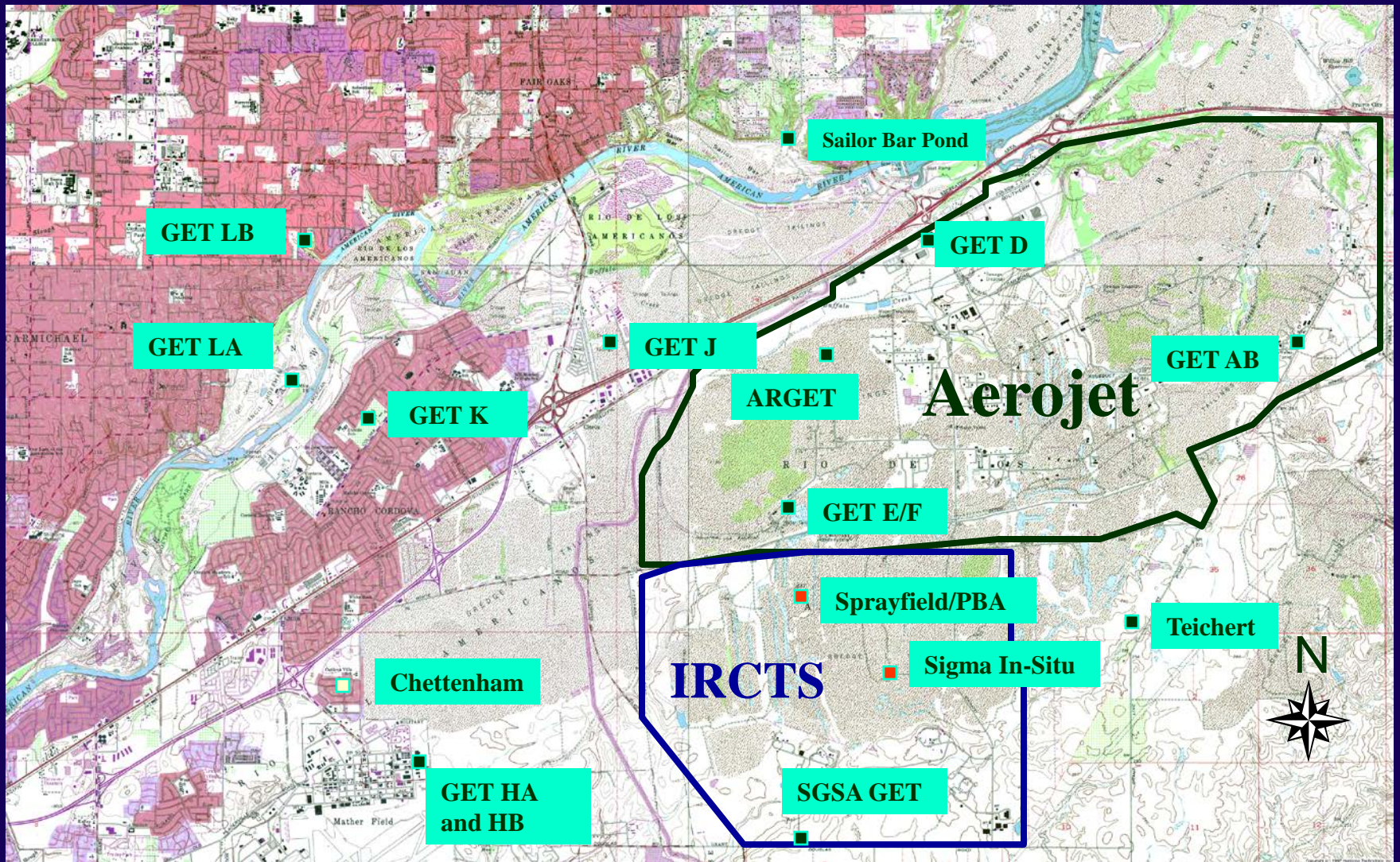


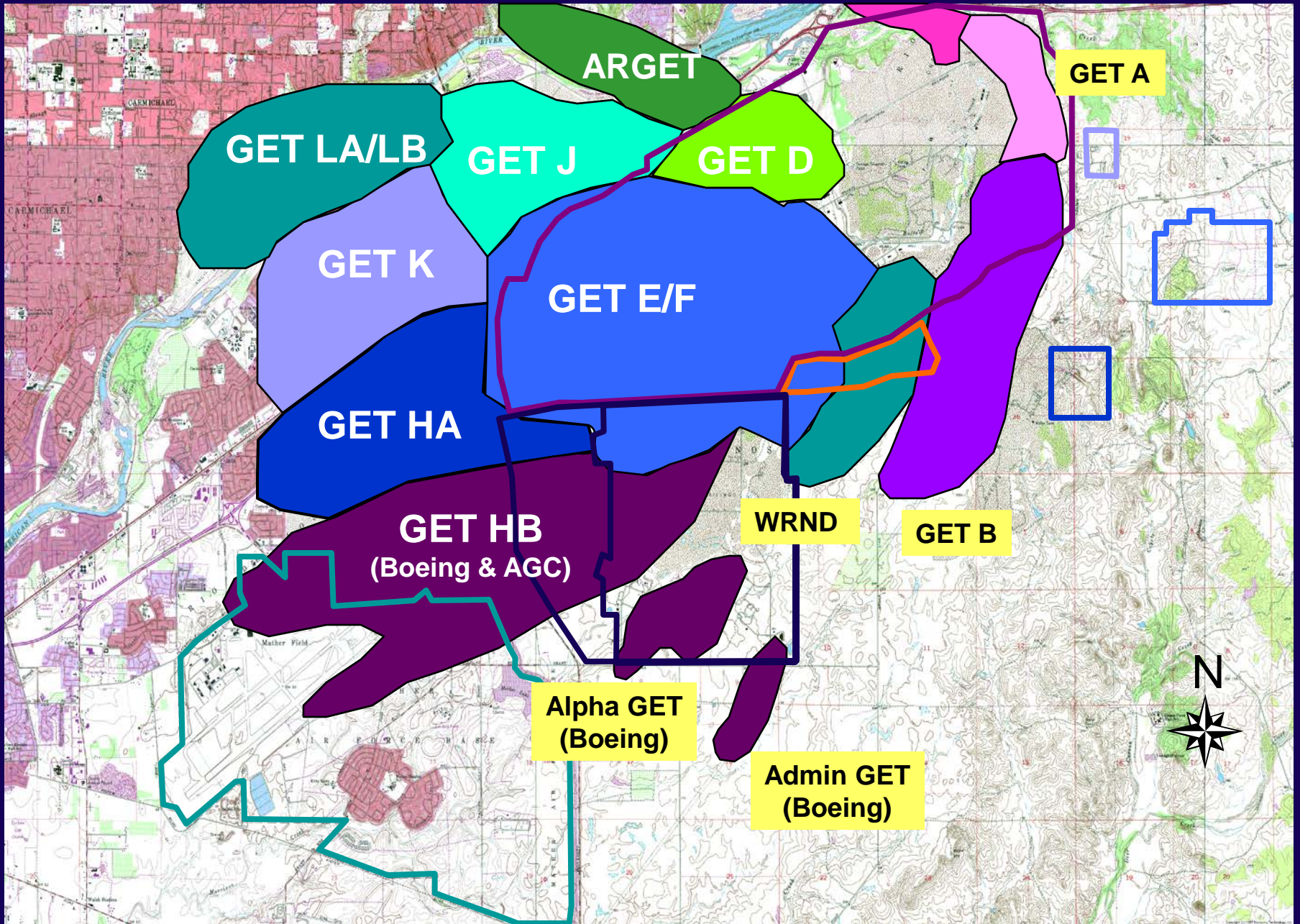
NDMA

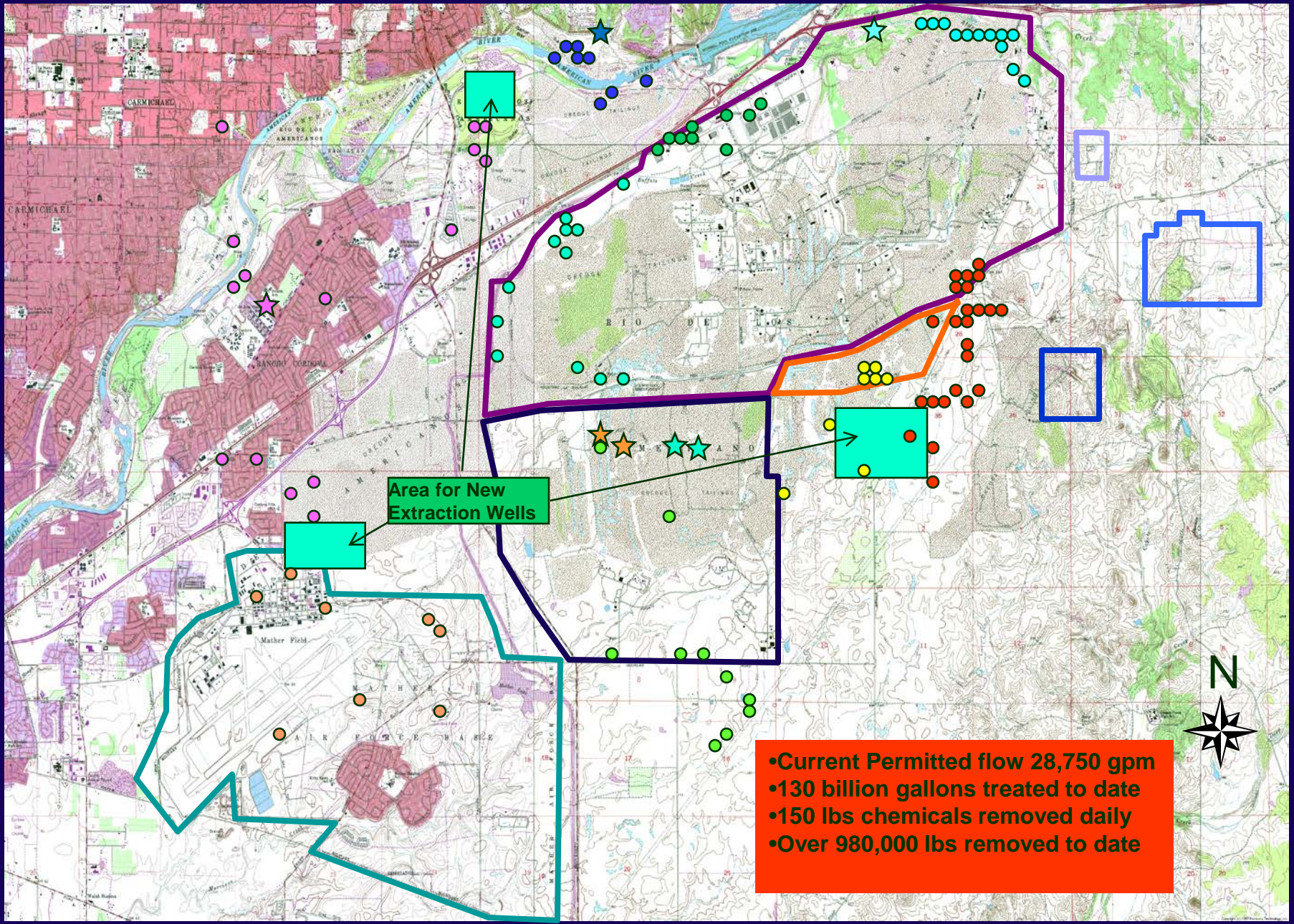
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Area for New
Extraction Wells

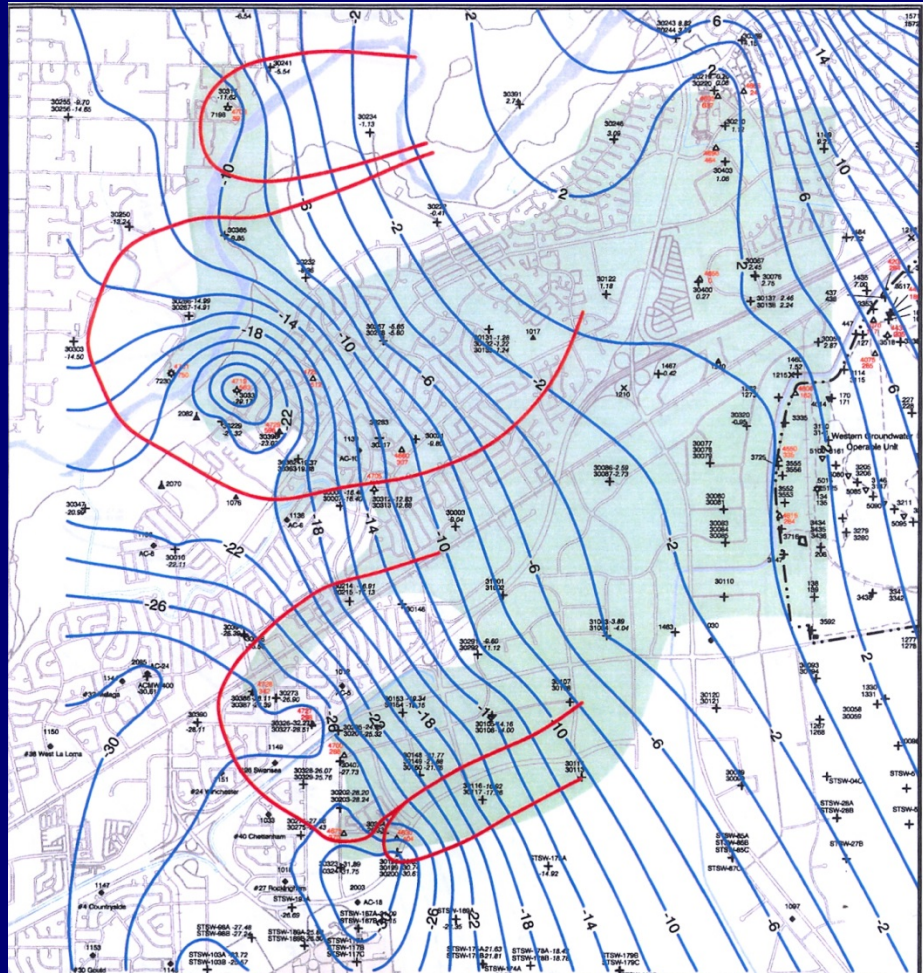
- Current Permitted flow 28,750 gpm
- 130 billion gallons treated to date
- 150 lbs chemicals removed daily
- Over 980,000 lbs removed to date



Changes in Extraction and Treatment



- GET A and GET B have been combined and GET AB is being expanded
- GET EF is being expanded
- GET D is gone and GET D well water going to an expanded ARGET facility with added perchlorate treatment
- Added Ion Exchange vessels at GET H
- Increased pumping at Sailor Bar extraction well
- AC-6 Pumping Full-Time with IX units
- AC-12 converted to extraction well for GET K



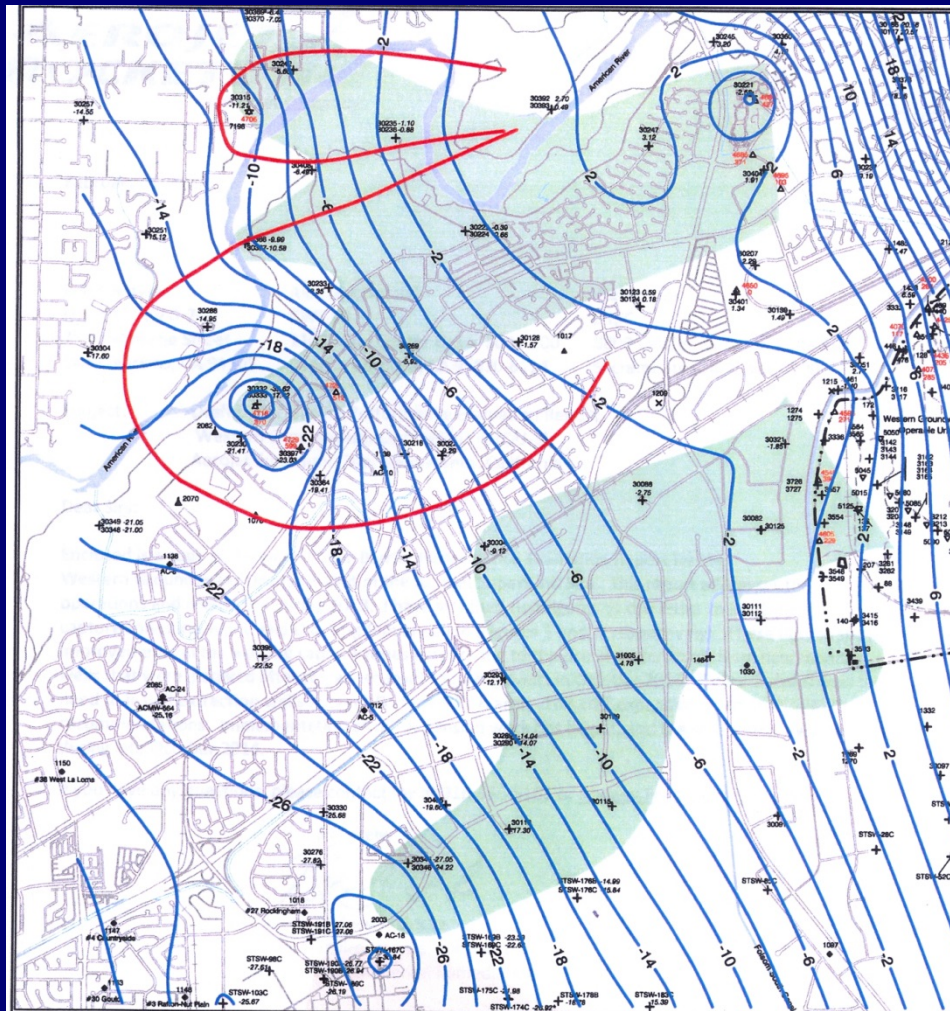
EXPLANATION	1479	Well Number
WELL TYPES	+	Groundwater Elevation (ft. MSL); Avg Flow Rate 1/16 - 1/31/14 (GPM), NA - Not Active
+	12.50*	(*anomalous data not used for contouring)
△	50	Interpreted Capture Zone
▽		Target Capture Zone
×		IRCTS Perchlorate Plume, Montgomery and Associates, 2013
◆		
▲		
---		Aerojet Property Boundary
50		Groundwater Elevation Contour (ft. MSL)

Scale: 1" = 3,000'

0 1,500 3,000

FIGURE 1
Potentiometric Surface Map
Layer C
Western Groundwater Operable Unit (OU-3)
January 2014

FIGURE 1



EXPLANATION	1479	Well Number
WELL TYPES	+ 12.50*	Groundwater Elevation (ft. MSL); Avg Flow Rate 1/16 - 1/31/14 (GPM), NA - Not Active
+	50	(*anomalous data not used for contouring)
△	—	Interpreted Capture Zone
▽	—	Target Capture Zone
×		IRCTS Perchlorate Plume, Montgomery and Associates, 2013
◆		
▲		
— · — · —		Aerojet Property Boundary
—50—		Groundwater Elevation Contour (ft. MSL)

Scale: 1" = 3,000'

FIGURE 2
Potentiometric Surface Map
Layer D
Western Groundwater Operable Unit (OU-3)
January 2014

Reuse of Treated Groundwater



- Supplied to Teichert for use at Grant Line Road Facility and Future Scott Road
- Replacing Aerojet's 2000 gpm Industrial Supply from Folsom
- Working with Golden State and Carmichael to bring back water discharged to the American River

QUESTIONS?



