



Industrial-Enhanced Snowfall

Borger and Amarillo, Texas

National Weather Service Amarillo

2/10/2014

NWS Amarillo Weather Update





Event Summary

What happened?

- A cold and saturated air mass was already in place, with freezing fog and light flurries.
- Steam from several industrial power plants enhanced snowfall potential in narrow bands near Borger and Amarillo, Texas.
- Contributing atmospheric features –
 - A cold and saturated low-level layer was in place.
 - The industrial plants introduced steam/heat and condensation nuclei in the -10° to -15° C dendritic snow growth layer.
 - This enhanced snowfall potential in narrow corridors, resulting in localized accumulating snow.
 - This process was very similar to lake effect snows in the Midwest.





How Did This Happen?



3. Winds Blow Clouds and Snow Downwind



2. Clouds and Snow Crystals Form

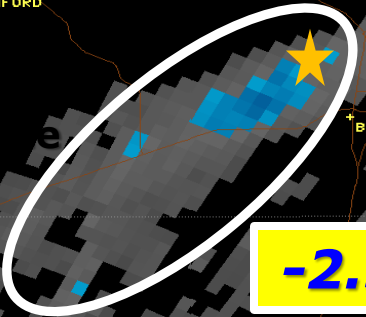
1. Heat and Steam (Moisture) Added to a Cold, Saturated Atmosphere



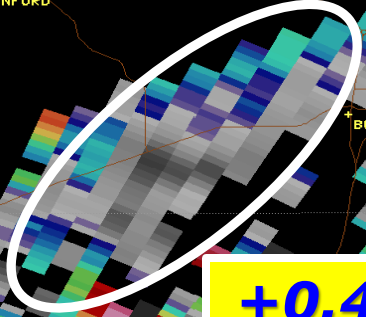
Industrial Plant

NWS Amarillo's Doppler Radar indicated dry snow falling downwind of a Borger-area power plant around 8:30 PM Sunday

Industrial Plant

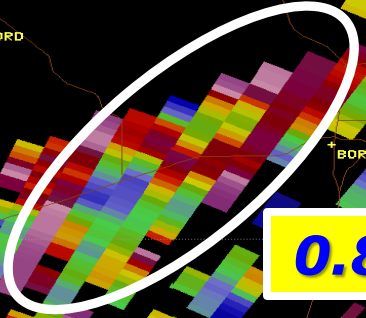


-2.5 to +14 dBZ



+0.42 to 3.67 dB

DRY SNOW



0.84 to 0.99

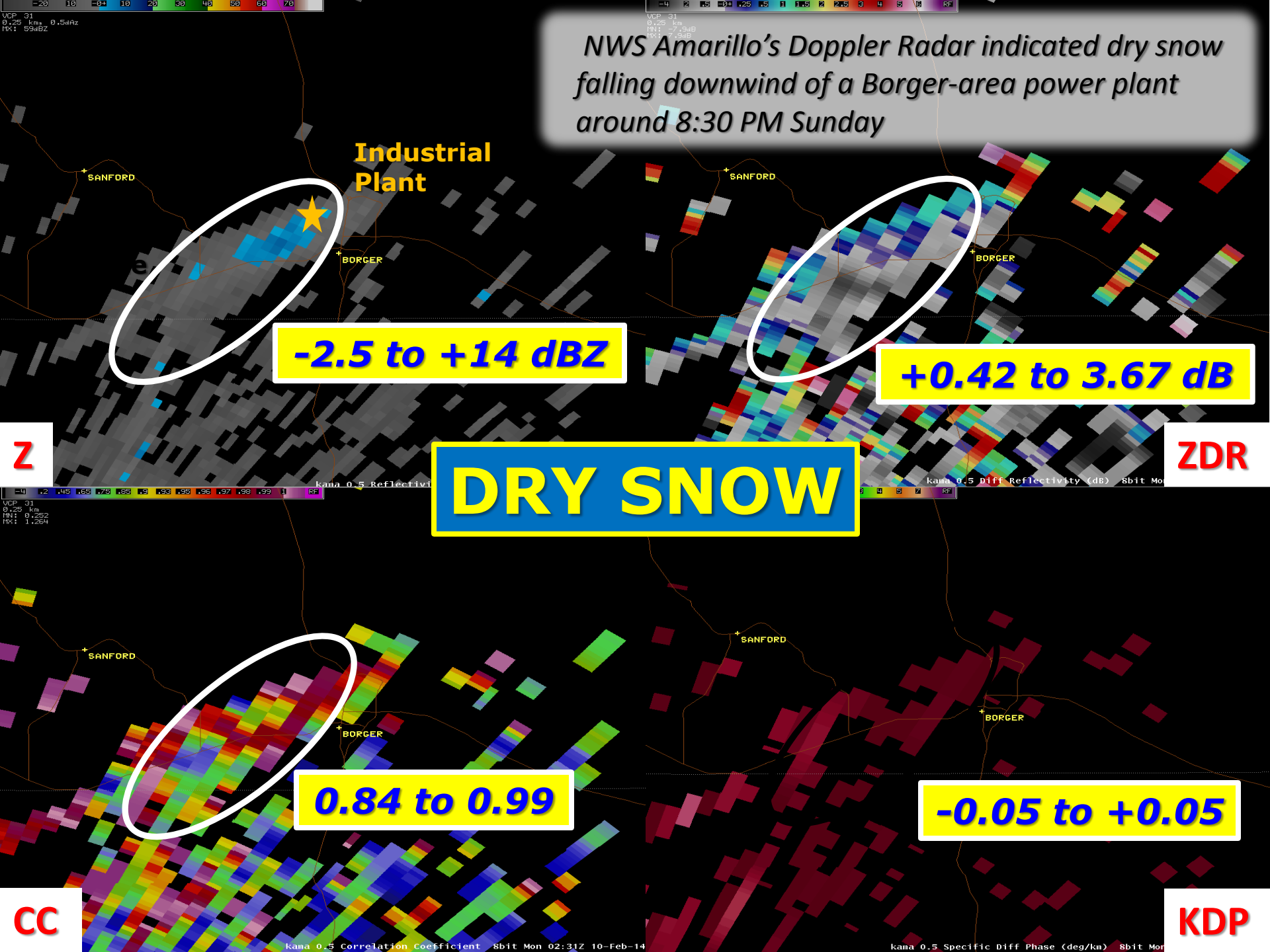
-0.05 to +0.05

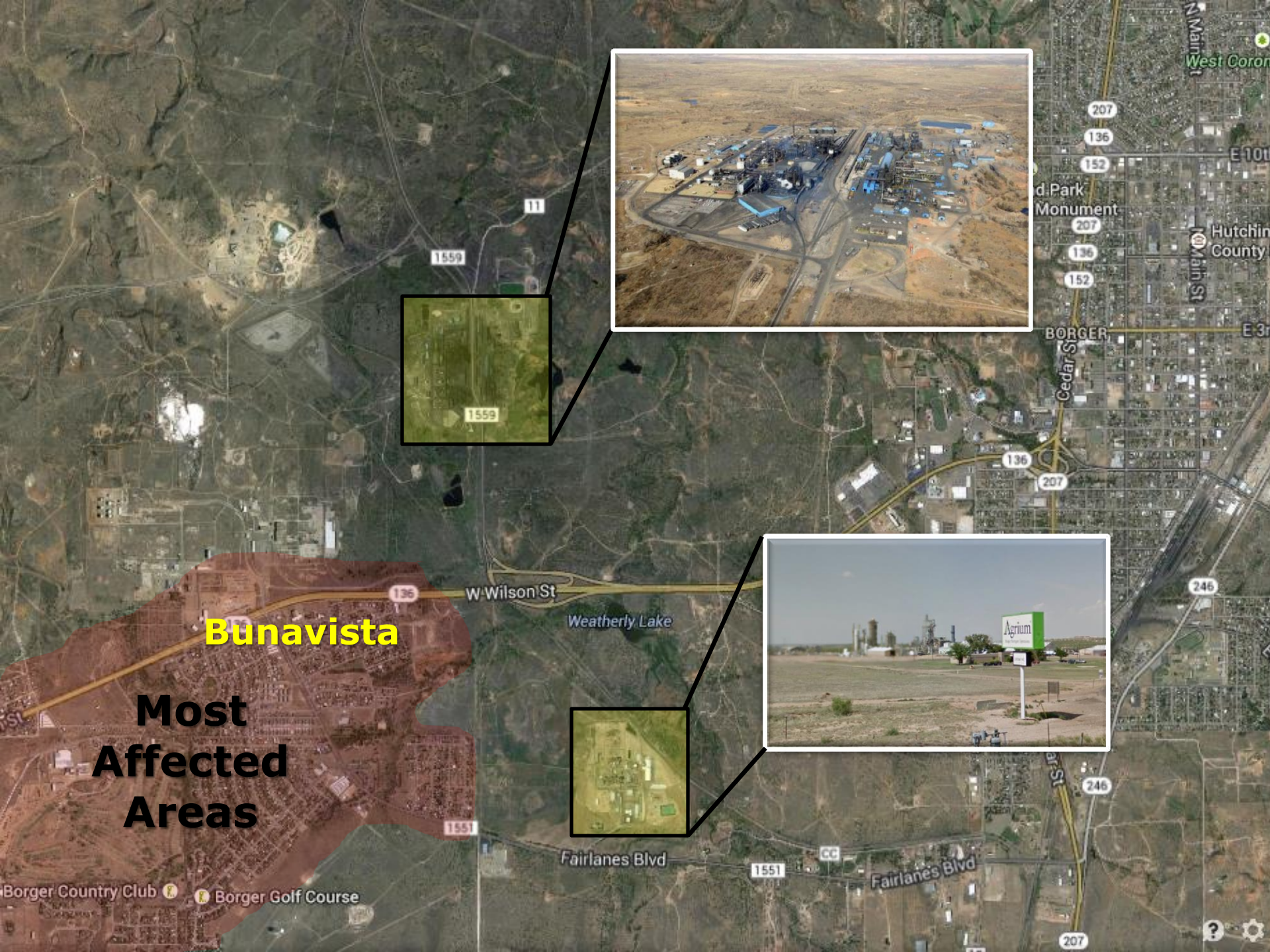
Z

ZDR

CC

KDP





Bunavista

**Most
Affected
Areas**

Borger Country Club Borger Golf Course

West Coron
E 101
Hutchin
County
N Main St
100 Main St
E 3r
BORGER
Cedar St
136
207
246
1551
CC
Fairlanes Blvd
207



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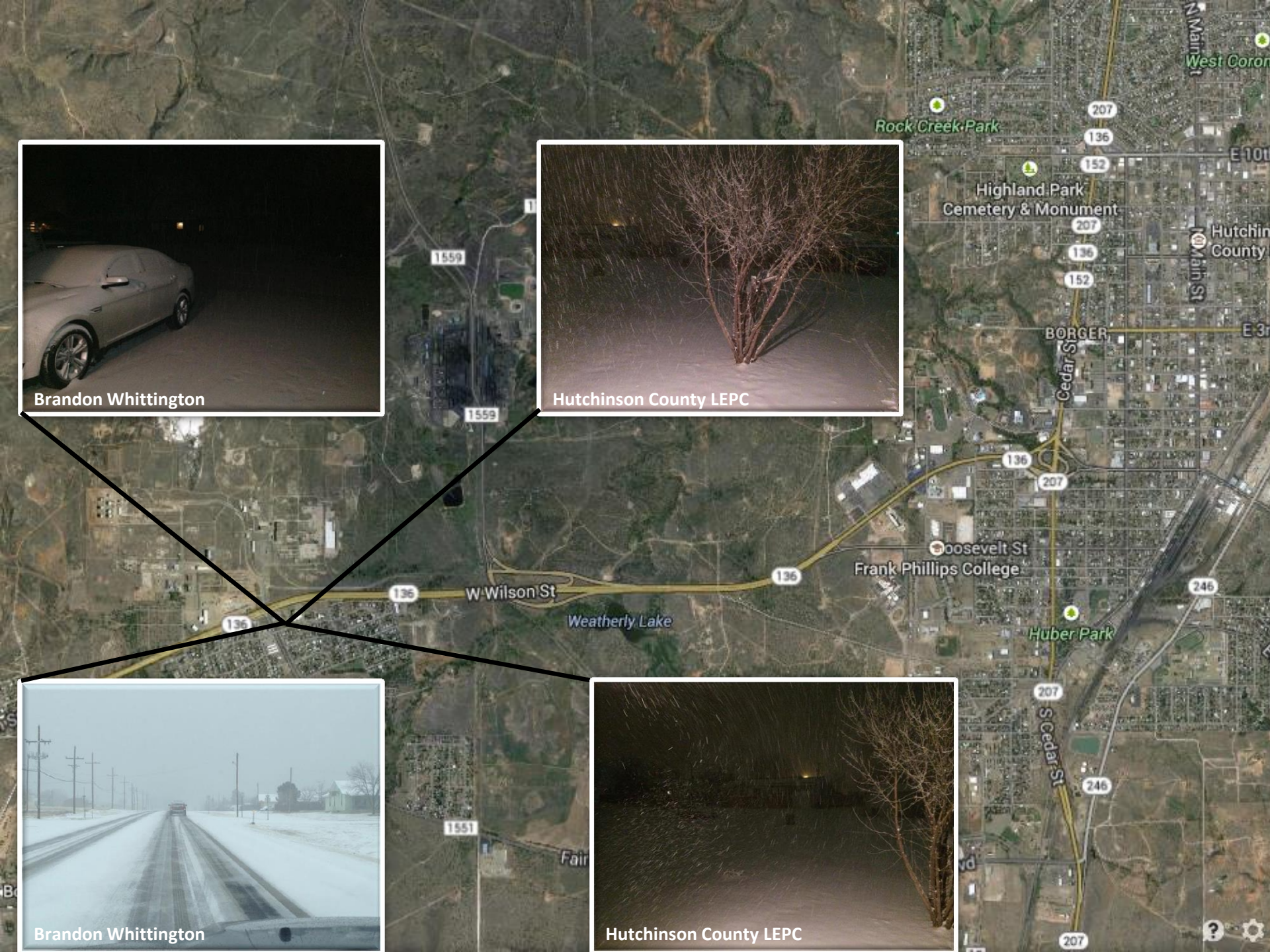
Hutchinson County LEPC

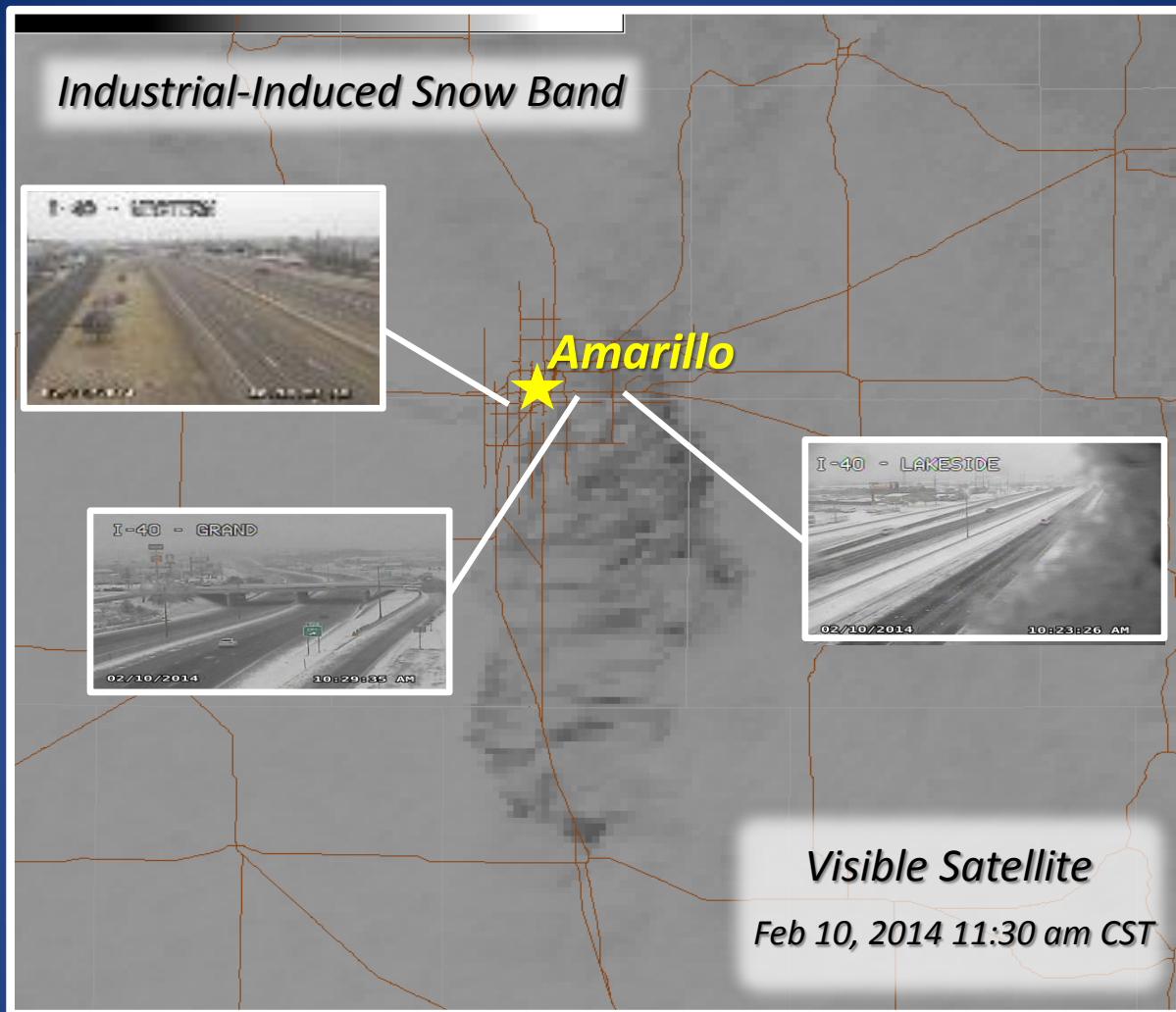


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Hutchinson County LEPC





Visible satellite image shows the enhanced clouds downwind of an industrial plant northeast of Amarillo and streaming southward. One to two inch accumulations were common under the plume as indicated by the TXDOT traffic webcam insets.

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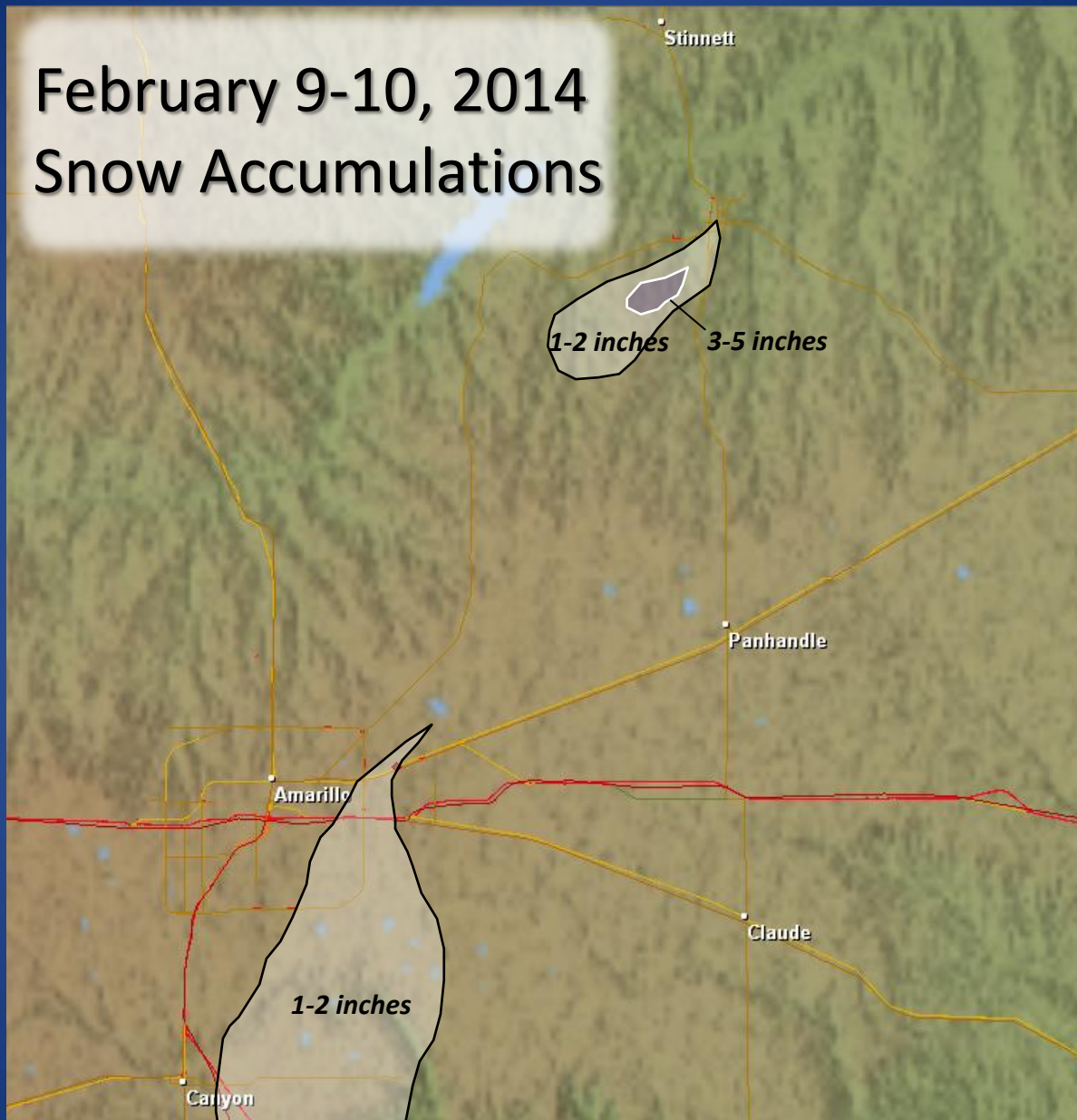
Pictures from Amarillo

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February 9-10, 2014 Snow Accumulations



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