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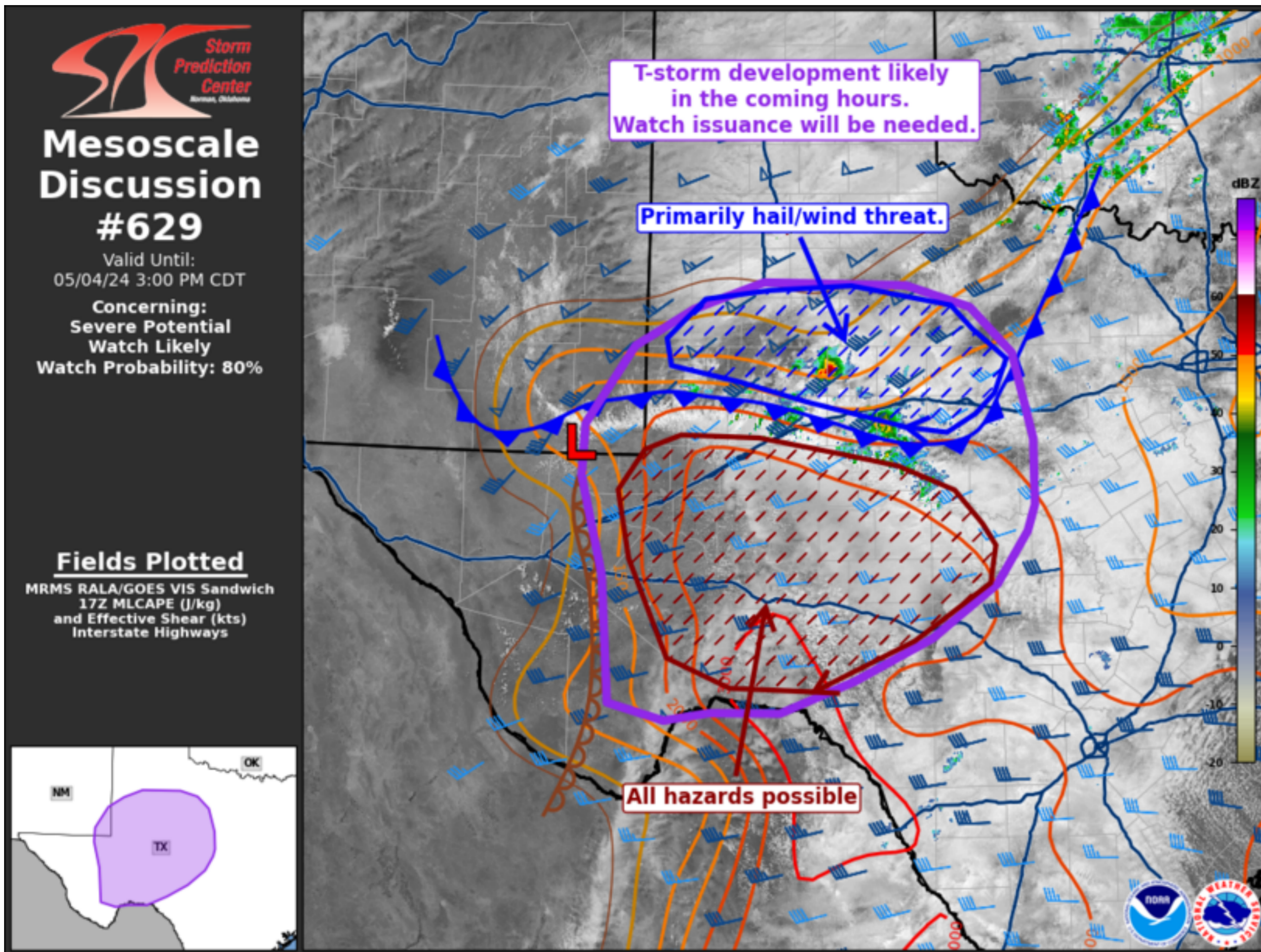
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Mesoscale Discussion 629

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Mesoscale Discussion 0629
 NWS Storm Prediction Center Norman OK
 1236 PM CDT Sat May 04 2024

Areas affected...West to southwest Texas

Concerning...Severe potential...Watch likely

Valid 041736Z - 042000Z

Probability of Watch Issuance...80 percent

SUMMARY...Thunderstorm development along a southward-surging cold front is likely within the next 1-2 hours with additional convection expected later this afternoon across southwest TX. Given a favorable environment for organized severe convection, one or more watches will likely be needed in the coming hours.

DISCUSSION...Transient convection, along with a more robust cell near Snyder, TX, is noted along and just behind a surface cold front per regional radar and GOES visible/IR imagery at around 17:30 UTC. Aside from the Snyder, TX cell, this convection has been short-lived so far, likely owing to rapid displacement of initial updrafts onto the cool side of the boundary. The development of additional deep/robust convection is probable in the next couple of hours as the downstream air mass continues to destabilize. Initial cells will continue to be displaced along/behind the boundary given boundary-parallel mean flow and post-frontal deep-layer shear vectors. However, MUCAPE within the post-frontal air mass coupled with elongated hodographs should support a few more intense storms capable of large to very large hail.

Further south ahead of the cold front, RAP mesoanalyses suggests MLCIN is slowly eroding. However, convective initiation appears less imminent based on latest visible imagery trends. Morning CAM guidance suggests thunderstorm development along/ahead of the dryline is most probable during the 18-21 UTC period closer to peak diurnal heating and as modest ascent ahead of an approaching upper wave overspreads the region. Thunderstorms developing within the warm sector (most likely off the Davis Mountains where shallow cumulus is beginning to develop) will likely evolve into high-based supercells with a risk for large to very large hail. The tornado risk is expected to increase through late afternoon and early evening as cells migrate eastward into an increasingly moist air mass with strengthening southeasterly winds (which should bolster effective SRH to around 150 m²/s²).

Given these two regimes, a severe thunderstorm watch will likely be needed for locations north of the cold front with a tornado watch required for areas south of the boundary. Convective trends along the cold front and dryline/higher terrain will continue to be monitored to determine exact timing of either watch issuance.

..Moore/Smith.. 05/04/2024

...Please see www.spc.noaa.gov for graphic product...

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