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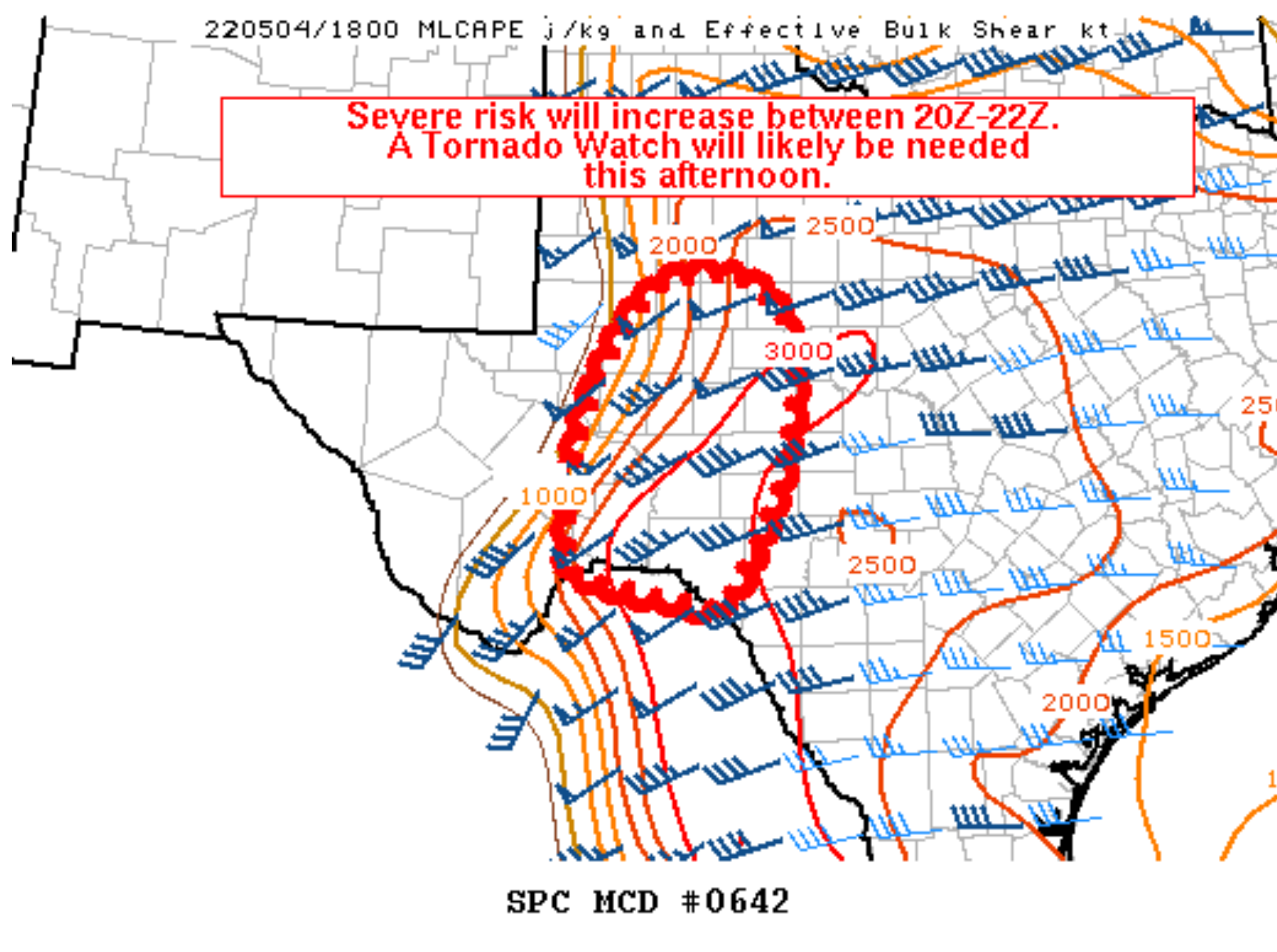
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## Mesoscale Discussion 642

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Mesoscale Discussion 0642  
 NWS Storm Prediction Center Norman OK  
 0135 PM CDT Wed May 04 2022

Areas affected...Parts of west and southwest TX

Concerning...Severe potential...Tornado Watch likely

Valid 041835Z - 042100Z

Probability of Watch Issuance...80 percent

SUMMARY...The risk of severe thunderstorms capable of a couple tornadoes, very large hail, and locally damaging gusts will increase between 20Z-22Z. A Tornado Watch will likely be needed this afternoon.

DISCUSSION...Latest surface analysis shows a dryline developing from the eastern TX Big Bend northward into the TX South Plains. West of the dryline, surface temperatures are climbing into the upper 80s F in conjunction with veering surface winds. As west-southwesterly midlevel flow continues to increase across the area, strengthening downslope flow impinging on deepening boundary-layer moisture (upper 60s/lower 70s surface dewpoints) over south-central TX will result in a deepening dryline circulation. RAP forecast soundings show south-southwesterly low-level flow parallel to the deepening dryline circulation, which should limit parcel detrainment and allow for isolated to widely scattered convective initiation amid weakening CINH.

Very steep midlevel lapse rates atop the aforementioned rich boundary-layer moisture east of the dryline is resulting in strong surface-based instability (2500-3000 J/kg MLCAPE), while effective bulk shear is around 45-50 kts. These factors, combined with deep-layer flow oriented perpendicular to the dryline should foster discrete supercells which should spread east-northeastward through the afternoon/early evening. Very large hail and damaging gusts are expected, and veering low-level flow (effective SRH near 100 m2/s2) will support a couple tornadoes with the longer-lived discrete supercells. A Tornado Watch will likely be issued this afternoon.

..Weinman/Smith.. 05/04/2022

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

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