

Panhandle Groundwater Conservation District

SEEDING REPORT - June 03, 2024

SYNOPTIC/MESOSCALE CONDITIONS:

Another shortwave will move through the region for today; however, this one appears to be weaker than previous ones. Either way, isolated convection is still possible this afternoon near the dryline from about Pampa east and southward. With large amounts of instability (MLCAPE values exceeding 4,000 J/kg) and dew points into the 60s and lower 70s, severe weather will again be a possibility, with large hail the main risk. A tornado or two cannot be ruled out given shear between 30-35 kts. The SPC does have Gray, Wheeler, and Roberts in a slight risk. It looks like pulse activity may develop first before stronger convection this evening near 23Z. Models have trended a bit more south with the stronger activity with it just south of the district line. If the pulse activity can become somewhat sustained, operations may be possible. It is also important to note that the recent HRRR run has almost no activity now in the district. This may be due to not only the weak forcing in place, but also because of a cap that may be present.

LIFTING MECHANISM:

Shortwave/Dryline

THERMODYNAMIC INDICES (12Z NAM valid at 21Z KAMA)

| | | | |
|-------------------------|------|----------------|------|
| Freezing Level (m,MSL) | 4663 | LCL (m,MSL) | 3566 |
| -5°C Height (m,MSL) | 5212 | CCL (m,MSL) | 3840 |
| -10°C Height (m,MSL) | 6005 | ML CAPE (J/kg) | 1782 |
| Cloud Base (m,MSL) | 3048 | SB CAPE (J/kg) | 2702 |
| Warm Cloud Depth (m) | 1615 | CINH (J/kg) | 0 |
| Cloud Base Temp (°C) | 10 | LI (°C) | -6 |
| Precipitable Water (in) | 0.66 | Shear 0-6 km | 21 |

Seeding Operations:

Pulse activity started near White Deer at 22Z. For this reason, N5359P was put on alert. Then, at 2312Z, cells started to break through the cap, so the aircraft was launched to the west of Clarendon where a stronger storm was forming. At 2323Z, the aircraft was airborne from TDW. On approach, the pilot reported no workable bases. The pilot then reported strong inflow (800 fpm) within one mile of the storm. Even though the aircraft was not under a base, it was decided to commence seeding since the material would likely still be ingested into the storm. Therefore, two bips and 1 hygro were used at 2358Z with two more bips at 00Z. Activity overall then appeared to be weakening according to TITAN so no additional seeding took place. However, the pilot reported that rain was increasing near the seeded location at 0015Z. At 0040Z, the pilot was redirected to the north to investigate a target over central Roberts County. This cell quickly weakened before the aircraft arrived. Due to no targets left in the district, the aircraft RTB at 0111Z and landed at TDW at 0125Z.

WATCHES/WARNINGS:

Severe Thunderstorm Watch- Gray, Roberts, Wheeler
Severe Thunderstorm Warning- Donley, Potter,

SEEDED CELL IDS:

| |
|---|
| 9 |
|---|

FLIGHT INFORMATION:

| TIME (Z) | Plane | Flare Location | County |
|-----------------|--------------|-----------------------|---------------|
| 2323 | N5359P | IN AIR | |
| 2358 | N5359P | 99° @ 40 nm | Donley |
| 0000 | N5359P | 101° @ 40 nm | Donley |
| 0111 | N5359P | RTB | |

Panhandle Groundwater Conservation District

SEEDING REPORT - June 04, 2024

SYNOPTIC/MESOSCALE CONDITIONS:

Another shortwave will move through this afternoon, bringing an increase in PVA and forcing. At the surface, a low pressure system will also impact the Panhandle. This will drag a cold front through from north to south. Along this boundary, isolated convection may develop. While this possibility is low, it is still there. With MLCAPE values exceeding 3,000 J/kg and dewpoints in the mid-60s east and south of Amarillo, severe weather may present itself. Most of the district, except for Potter County, is in a marginal risk with eastern Wheeler in a slight risk, with the main hazard being large hail. Due to relatively weak shear, the tornado threat, while not zero, is low. One complicating factor is the potential cap in the low and mid-levels. As the ridge continues to build into the area, subsidence may inhibit deep, long lived convection. Soundings show this inversion near 800 mb. Therefore, conditions may be similar to yesterday where storms (if they develop) may become strong for a brief period of time before weakening. Timing appears to be after 21Z, mainly east of Potter County.

LIFTING MECHANISM:

Shortwave/low pressure

THERMODYNAMIC INDICES (12Z NAM valid at 21Z KAMA)

| | | | |
|-------------------------|------|----------------|------|
| Freezing Level (m,MSL) | 4724 | LCL (m,MSL) | 4267 |
| -5°C Height (m,MSL) | 5486 | CCL (m,MSL) | 4359 |
| -10°C Height (m,MSL) | 6096 | ML CAPE (J/kg) | 767 |
| Cloud Base (m,MSL) | 2083 | SB CAPE (J/kg) | 1339 |
| Warm Cloud Depth (m) | 2641 | CINH (J/kg) | 0 |
| Cloud Base Temp (°C) | 17 | LI (°C) | -4 |
| Precipitable Water (in) | 1.03 | Shear 0-6 km | 21 |

Seeding Operations:

Convection started developing near Dumas so N5359P was put on alert at 2124Z. Shortly after, an additional and stronger storm formed north of Borger moving south. Therefore, at 2218Z, the aircraft was launched. The aircraft was then airborne from TDW at 2222Z en route to the southwest of Borger. On approach, the pilot reported a good, workable base with strong inflow (500 fpm). The first two bips were ignited at 2238Z with two more one minute later. Four more bips and one hygro were then used between 2244Z-2246Z. At 2250Z, the pilot reported rain intensifying in the seeded location with heavy rain just a few minutes later. This was further confirmed via TITAN at 2252Z. Due to consistent inflow, four more bips and another hygro were used between 2255Z-2257Z. Inflow also increased to 1,000 fpm during this time. The base then filled in with rain, so the pilot was redirected to the northwest of Miami where a broken line of strong cells was quickly forming. Ten bips were used at this location between 2319Z-2330Z. At 2324Z, the pilot reported rain falling out of the seeded base with very heavy rain by 2331Z. Once the base filled completely with rain (2332Z), the pilot switched to recon. No additional bases were found along this line, so the aircraft was redirected south towards Clarendon. Unfortunately, the target in this area started to exit the district so the aircraft RTB at 0007Z. At this time, all the cells weakened, and no additional targets were observed in the district. N5359P landed at TDW at 0030Z.

WATCHES/WARNINGS:

Severe Thunderstorm Warning- Carson, Gray, Hutchinson, Roberts

SEEDED CELL IDS:

| | |
|---------|---------|
| 890/910 | 890/919 |
|---------|---------|

FLIGHT INFORMATION:

| TIME (Z) | Plane | Flare Location | County |
|-----------------|--------------|-----------------------|---------------|
| 2222 | N5359P | IN AIR | |
| 2238 | N5359P | 19° @ 24 nm | Carson |
| 2239 | N5359P | 18° @ 23 nm | Carson |
| 2244 | N5359P | 22° @ 23 nm | Carson |
| 2246 | N5359P | 23° @ 21 nm | Carson |
| 2255 | N5359P | 30° @ 22 nm | Carson |
| 2257 | N5359P | 31° @ 22 nm | Carson |
| 2319 | N5359P | 45° @ 49 nm | Roberts |
| 2321 | N5359P | 44° @ 50 nm | Roberts |
| 2323 | N5359P | 45° @ 50 nm | Roberts |
| 2327 | N5359P | 45° @ 49 nm | Roberts |
| 2330 | N5359P | 46° @ 48 nm | Roberts |
| 0007 | N5359P | RTB | |