

SOUTH TEXAS WEATHER MODIFICATION ASSOCIATION - Pleasanton, TEXAS

SEEDING REPORT - June 4, 2019

SYNOPTIC/MESOSCALE CONDITIONS:

Upper air analysis shows a trough of low pressure over the deep Southwest, a weak ridge of high pressure over parts of the Central Plains and the southeast with embedded disturbances. At the surface, multiple low pressure troughs/axes across the regions of Southwest and South Rockies with high pressure across East. The flow at upper levels is southwesterly with its light and variable at the surface. The current dew point temperature is in the low to mid 70's and environmental temperature in the mid to upper 70's with broken clouds to overcast skies and showers and thunderstorms to across parts of Uvalde and Bandera Counties. For today, the complex of thunderstorms will continue to move northeastward while decaying somewhat. This due to a low-level jet and upper troughing across to the deep southwest. After this, some possible sea breeze event may take into effect later this afternoon as a tropical wave gradually work its way up the along the eastern Mexico coast. With enough low-level moist east southeasterly to easterly flow, daytime heating coupled with moderate southwesterly flow aloft will generate scattered showers and thunderstorms across much our area this afternoon. Another complex of storms develops across the higher terrain of Mexico and moves eastward overnight impacting the western counties as the trough of low pressure draws night the Southern Plains. As the closed upper-level low approaches, the tropical disturbance over the gulf will be lifted into parts of Texas and Louisiana overnight through Wednesday. Expect showers and thunderstorms will continue overnight Wednesday across the western and eastern zones. This disturbance is forecast to move northeastward with much of the precipitation on the east side of it. The National Hurricane Center gives this system a 50% chance of becoming a Tropical Cyclone. Regardless of any developments, this system has a lot of tropical moisture associated with it; thus, flooding may be a concern to the far eastern counties Wednesday through Wednesday night. The precipitable water is progged to ranging between 2.0 to 2.5in from the central to eastern zone and around 1.5in over the western zone. Expect anywhere between 1 to 3in of rainfall across the western and eastern zone with .25 to 1.5in across the central zone. I will not be surprised if some areas get a trace or no precipitation as much of the activity will be confined towards the west and east through Wednesday night. The axis of the trough swings by on Thursday as the bulk of the energy will be to our far east. There may be a few wrap around showers during the day Thursday especially before the noon. The upper-level trough exits Texas a ridge of high pressure builds in on Friday. This high will bring hot and dry conditions on that day. Some areas may experience record-breaking highs by then. With that being said, the highs are forecast to be in the mid 80's to upper 90's with the lows in the low to mid 70's through the end of the forecast period.

LIFTING MECHANISM:

Upper-Level Dynamics, Shortwave, Sea-Breeze

THERMODYNAMIC INDICES (12Z KCRP)

Freezing Level (m)	4918.65	CAPE (J/Kg)	964.03
Precipitable Water (inches)	2.04	CINH (J/Kg)	43.91
LCL	727.82	LI (°C)	-2.21
CCL	846.32	PB	-2.21
CRP ICA	-17.20	Cloud Base Temp (°C)	27.1

Cloud Base (meters)	965.98		
Warm Cloud Depth (meters)	3952.67		

DISCUSSION:

Earlier in the day a complex of thunderstorms developed over the higher terrains of the northeastern Mexico and moved into the western counties of the target zone around noon time. However, due to flood warnings, operations were canceled until they were lifted. Later in the afternoon, the warnings expired and aircraft 57AA was launched across much of the target zone due to pilot shortage. The air was first launched across the Frio County but was unable to reach the cell that brought flooding to Uvalde County because the ceilings were pretty low and for the sake of not being trapped within the rapid development of clouds. 57AA then continued on to the Atascosa County and Wilson Counties where it seeded a couple cells from a sea-breeze event. Also, should mention that models did not do a good job with the complex of thunderstorms. The models had it moving away from the target zone before noon, however; the system turned into a Mesoscale Convective Vortex that unexpected pushed eastward during the day. The aircraft was able to seed part of a cell across the Wilson County but much of the seeding over the Atascosa County. There were very weak and shallow storms that moved over the McMullen and Bee Counties that were non seedable. Even when some of the cells made it to the Karnes and Wilson County, there were not enough inflow for seeding. 57AA was able to finally seed the big cell that continually moving eastward from Uvalde after three attempts. The aircraft had that twice time earlier but was unable to get sufficient inflow as well as the pilot reported that there were a two-layer clouds decks with this system. After seeding that cell, the aircraft headed south across the southern parts of the Atascosa County where it seeded a cell but not with the full dosages of seeding materials because it had to refuel after being in the air for so many hours. After refueling the aircraft return to the cell it was seeding across southwest Atascosa County, but at that time it was decaying. As conditions began to settle, 57AA head back to Uvalde with no intent to return to air for the evening.

WATCHES/WARNINGS:

Severe Thunderstorms and Flood

SEEDED CELL ID'S:

2206	2706	0	3208						
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FLIGHT INFORMATION:

TIME (Z)	Plane	Flare Location	County
18:23	57AA	In Air	
19:21	57AA	112° @ 10 nm	Atascosa
19:35	57AA	69° @ 13 nm	Wilson
19:38	57AA	72° @ 10 nm	Atascosa
19:40	57AA	68° @ 8 nm	Atascosa
19:48	57AA	47° @ 7 nm	Atascosa
20:19	57AA	98° @ 15 nm	Atascosa
20:21	57AA	89° @ 15 nm	Atascosa
20:55	57AA	233° @ 3 nm	Atascosa
21:01	57AA	239° @ 5 nm	Atascosa
21:02	57AA	262° @ 3 nm	Atascosa
21:05	57AA	272° @ 5 nm	Atascosa
21:32	57AA	217° @ 16 nm	Atascosa
21:33	57AA	219° @ 15 nm	Atascosa
21:48	57AA	Refuel	
23:02	57AA	In Air	

24:15	57AA	Landed	
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Seeding operations were conducted in Atascosa (24+0H) and Wilson (2+0H) Counties. 36 flares plus 0 hygroscopic flares were burned within 4 clouds. This is the 1st day for seeding in June and the 8th day for seeding during the season.