

# MIDDLE PECOS GROUNDWATER CONSERVATION DISTRICT

P.O. Box 1644 Fort Stockton, TX 79735 Phone (432)336-0698 Fax (432)336-3407

405 North Spring Drive Fort Stockton, Texas 79735

Email: [mpgcd@mpgcd.org](mailto:mpgcd@mpgcd.org) Website: [www.middlepecosgcd.org](http://www.middlepecosgcd.org)

## Directors

Jerry McGuairt, President Janet Groth, Vice President M. R. Gonzalez, Secretary/Treasurer  
Alvaro Mandujano, Jr. Vanessa Cardwell Ronald Cooper  
Weldon Blackwelder Allan Childs Jeff Sims Puja Boinpally Larry Drgac

## Employees

Ty Edwards, General Manager  
Office: Gail Reeves Field Technician: Anthony Bodnar

## MINUTES OF REGULAR BOARD MEETING

November 16, 2021

405 North Spring Drive, Fort Stockton, Texas

A quorum of the District's Board of Directors held its regular Board meeting in person with videoconference optional for the public and less than a quorum of the Board. Members of the public wishing to make public comment during the meeting were able to register by emailing [mpgcd@mpgcd.org](mailto:mpgcd@mpgcd.org) prior to 9:30 a.m. on November 16, 2021. A copy of the agenda packet was made available on the District's website at the time of the meeting.

On this the 16th of November 2021, a Regular Board Meeting was held by the Middle Pecos Groundwater Conservation District at the District's office at 405 North Spring Drive, Fort Stockton, Texas, with the following members present in person:

Jerry McGuairt	President, Precinct 1
Janet Groth	Vice President, Precinct 1
M.R. Gonzalez	Sec/Treasurer Precinct 2
Puja Boinpally	Precinct 2
Alvaro Mandujano, Jr	Precinct 4
Ronald Cooper	Precinct 4
Jeff Sims	City of Iraan
Vanessa Cardwell	City of Fort Stockton
Allan Childs	At Large

Quorum Present.

Members Absent: Weldon Blackwelder and Larry Dgrac.

District employees and consultants participating: Ty Edwards, Gail Reeves, Allan Standen, Vince Clause, Raymond Straub, Dr. Bill Hutchison, and Mike Gershon.

Others attending: Wayne Tinkler, Jonathan Jennings, Paula McGuairt, Ed McCarthy, Daniel Lupton, Ryan Reed, Brock Thompson, Gil Van Deventer, Glen Honaker, Zack Swick, Mel Riggs, Geoff Pike, Mike Thornhill, Mark Tisdale, Carson Barr, Rebecca Nunu, James Beach, Jason Hill, Darrell Peckham, and Mark Harral.

## REGULAR BOARD MEETING

- I Board Meeting called to order at 10:00 a.m. by President Jerry McGuairt.
- II Comments from **public and media**: No comments.
- III Consider and/or act to approve **Minutes of Regular Meeting on October 19, 2021**.

The draft Minutes were emailed to the Board prior to the meeting. Janet Groth made a motion to approve the Minutes for the meeting of October 19, 2021, as presented. Motion seconded by Ronald Copper.

Motion passed. Vote: 8 FOR -0- Oppose 2 Absent 1 Abstain

- IV Consider and/or act upon **Treasurer's Report for the Month Ending October 31, 2021**.

General Manager Ty Edwards presented the Treasurer's Report to the Board. Puja Boinpally made a motion to approve the Treasurer's Report for the month ending October 31, 2021, as presented. Motion seconded by Jeff Sims.

Motion passed. Vote: 9 FOR -0- Oppose 2 Absent 0 Abstain

- V Consider and/or act upon **2022 Meeting and Holiday Schedule**.

Allan Childs made a motion to approve the 2022 Meeting and Holiday schedule as presented. Motion seconded by Ronald Copper.

Motion passed. Vote: 9 FOR -0- Oppose 2 Absent 0 Abstain

- VI Update from **Trans-Pecos Weather Modification Association** on 2021 operations in Pecos County.

Jonathan Jennings and Wayne Tinkler gave an update on the cloud seeding project that took place in Pecos County for 2021. The presentation is attached to these minutes as Attachment A.

- VII Consider and/or act upon **subcontract for Texas Water Trade and MPGCD concerning services for TWDB Agricultural Water Conservation Program**.

General Manager Edwards presented the subcontract to the board. This subcontract is for the TWDB Conservation Grant awarded to the District for a metering program in Management Zone 1. Vanessa Cardwell made a motion to approve the subcontract as presented. Motion seconded by M.R. Gonzalez.

Motion passed. Vote: 8 FOR -1- Oppose 2 Absent 0 Abstain

VIII Consider and/or act on **future research and hydrogeological studies in Pecos County.**

The District Hydrogeologist and General Manager updated the board on the fiscal impacts from the studies. Janet Groth made a motion to approve the project schedule and scope of research for Pecos County as set forth in the "Estimated Project Schedule for Project Deliverables" by Allan R. Standen LLC, and to delegate to our Board President and General Manager authority to sign agreements to implement this schedule and scope of research. Motion seconded by Vanessa Cardwell.

Motion passed. Vote: 9 FOR -0- Oppose 2 Absent 0 Abstain

The approved deliverables are attached to these minutes as Attachment B.

IX Update on **San Andres well plugging initiative** and possible review and action on **well plugging agreement.**

General Manager Edwards updated the board on the discussion between the landowners and the District concerning plugging wells in the area of concern. A draft well plugging agreement has been completed that will need to be approved between landowners and the District before any work can be completed. Ronald Copper made a motion to approve the well plugging agreement as presented. Allan Childs seconded the motion.

Motion passed. Vote: 9 FOR -0- Oppose 2 Absent 0 Abstain

X Update and possible action regarding **US Fish and Wildlife Service's Draft Diamond Y Recovery Plan.**

US Fish and Wildlife Service has issued a draft recovery plan for Diamond Y Spring. Comments on the draft plan are due in early January. The District will submit comments and update the board on any upcoming events related to the spring.

XI Update on **Fort Stockton Holdings, L.P. (FSH)-MPGCD Joint Study and Implementation.**

FSH Threshold Well Dashboard was presented to the Board and discussed. Water levels are good in all the wells but MPGCD 334. A Rustler Monitor well was discussed for the Belding area.

XII Briefing and take action as necessary on **Cockrell Investment Partners, L.P. v. MPGCD and its Board President in his official capacity, FSH and Republic Water Company of Texas, L.P., Case No. 08-21-00017-CV (El Paso Court of Appeals) and/or Cockrell Investment Partners, L.P. v. MPGCD and its General Manager in his official capacity, and FSH, Case No. 08-21-00200-CV (El Paso Court of Appeals).**

Cockrell 1 is at the El Paso Court of Appeals and no announcement has been made from the Court of Appeals concerning oral argument.

Cockrell 2 has a final judgment signed by the parties noting that Cockrell Investment Partners has agreed to pay the mandatory awarded fees. Cockrell Investment Partners has appealed Judge Ables' decision to the El Paso Court of Appeals.

**XIII Progress Reports: Well Registrations, Production Permits, Drilling Permits, Data Loggers, Drought Monitor Map, Water Quality Analysis, and General Manager's Correspondence.**

- Total Well Registrations 3,313 Wells. 970 Non-Exempt and 2,343 Exempt Wells
- Clayton Kennedy is in the process of registering and permitting a water well in the Sheffield area for Public Supply and Industrial Use.
- Doug May has drilled his well. Pump test will be completed over the next couple weeks with a Production Permit Hearing more than likely in January.
- With the redistricting process completed and the new Texas House and Texas Senate maps finalized, it appears Pecos County and MPGCD will have different representation at the Texas Legislature. Pecos County is now part of a Texas Senate district that extends to and includes El Paso and no longer includes San Antonio. Because of the population distribution of the district, a person from El Paso is likely to serve as the Senator for this Senate district. The current State Senator for El Paso is Cesar Blanco and he recently announced he is running for re-election to his Senate seat. On the Texas House side, Pecos County is now part of House District No. 53 instead of House District No. 74. House District No. 53 does not include Eagle Pass where State Representative Eddie Morales lives. Representative Andrew Murr is the Representative from District No. 53. An eight generation Texan, he was raised on a ranch in Kimble County and attended school in Junction and currently lives in Junction on a cattle ranch.
- PCWCID#1 update on surveying and pipeline project.
- MPGCD 2022 Election posting for Website.
- Rig Data Report 11-12-2021.
- Texas Drought Map for Pecos County 11-09-2021. Pecos County is Abnormally Dry with half the county in Moderate drought.

XIV **Directors' Comments** and consider and/or act upon **agenda for next meeting**.

The next Board meeting is scheduled for January 18, 2022, at 10 am at the District's office.

XV **Adjourn** Board meeting.

Puja Boinpally made a motion to adjourn the meeting. Motion seconded by Allan Childs. Motion carried unanimously. The meeting adjourned at 11:52 a.m.

  
\_\_\_\_\_  
M. R. Gonzalez, Secretary/Treasurer

  
\_\_\_\_\_  
Jerry McGuairt, President

Date Approved 01-18-2122



Attachment A to MPPGCD Mintues for  
11-16-2021

# A Review of the 2021 Tran-Pecos Weather Modification Association Operational Season

**JONATHAN A. JENNINGS**

*Meteorologist, Texas Weather Modification Association  
San Angelo, TX*

**WAYNE TINKLER**

*Manager, Trans-Pecos Weather Modification Association  
Fort Stockton, TX*

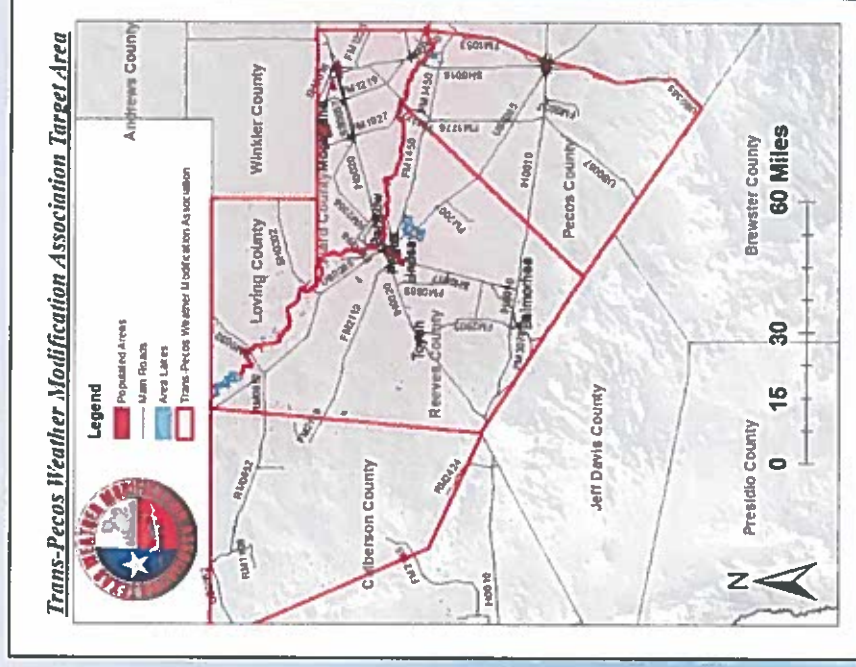
Middle Pecos Groundwater Conservation District Board Meeting – 16 November 2021 – Fort Stockton, TX



# Quick Review

## What is weather modification?

- Aircraft Operations using flares
  - Silver Iodide
  - Calcium Chloride
- Does it work?
  - 20 Years of Evaluation show an increase of 14.8% (1.3") of increased precipitation
  - Evaluation Mirrored by Rain Gauge Study





# Seasonal Data

## 2021 Seasonal Data

- Operational Days
  - 30
- Flights/Flight Hours
  - 34/65
- Flare Usage
  - 615
- Compared to 2020 (15 Op Days, 15 total flights, 28 hours, 248 flares)







# Pecos County Data

## 2021 Pecos County Data

- Operational Days
  - 29
- Flights/Flight Hours
  - 56.70
- Flare Usage
  - 456

## 2021 Eastern Pecos County Data

- Operational Days
  - 19
- Flights/Flight Hours
  - 35
- Flare Usage
  - 356



# Initial Thoughts on Eastern Pecos County

Year	A-F Increase	In. Increase	Season Precip.	% Increase
2013	123,900	0.23	4.32	6.60
2014	169,100	0.29	5.45	6.80
2015	N/A			
2016	265,800	0.43	9.36	4.70
2017	141,587	0.20	8.63	2.80
2018	137,200	0.21	9.28	2.70
2019	330,922	0.66	7.83	10.00
2020	340,199	0.52	4.12	13.20
Average	215,529	0.36	7.00	6.69

Precipitation Numbers are spread across the target area. With much of TPWMA rainfall being isolated storms and the target area so large, these numbers get skewed significantly. Focus on A-F increase.

Operating throughout all of Pecos County produced much more opportunities than in years past.

Clouds were receptive to seeding in most cases from an on-radar point of view (evaluation will tell full story).

Did not take away from other portions of target area as aircraft was efficient in its use.



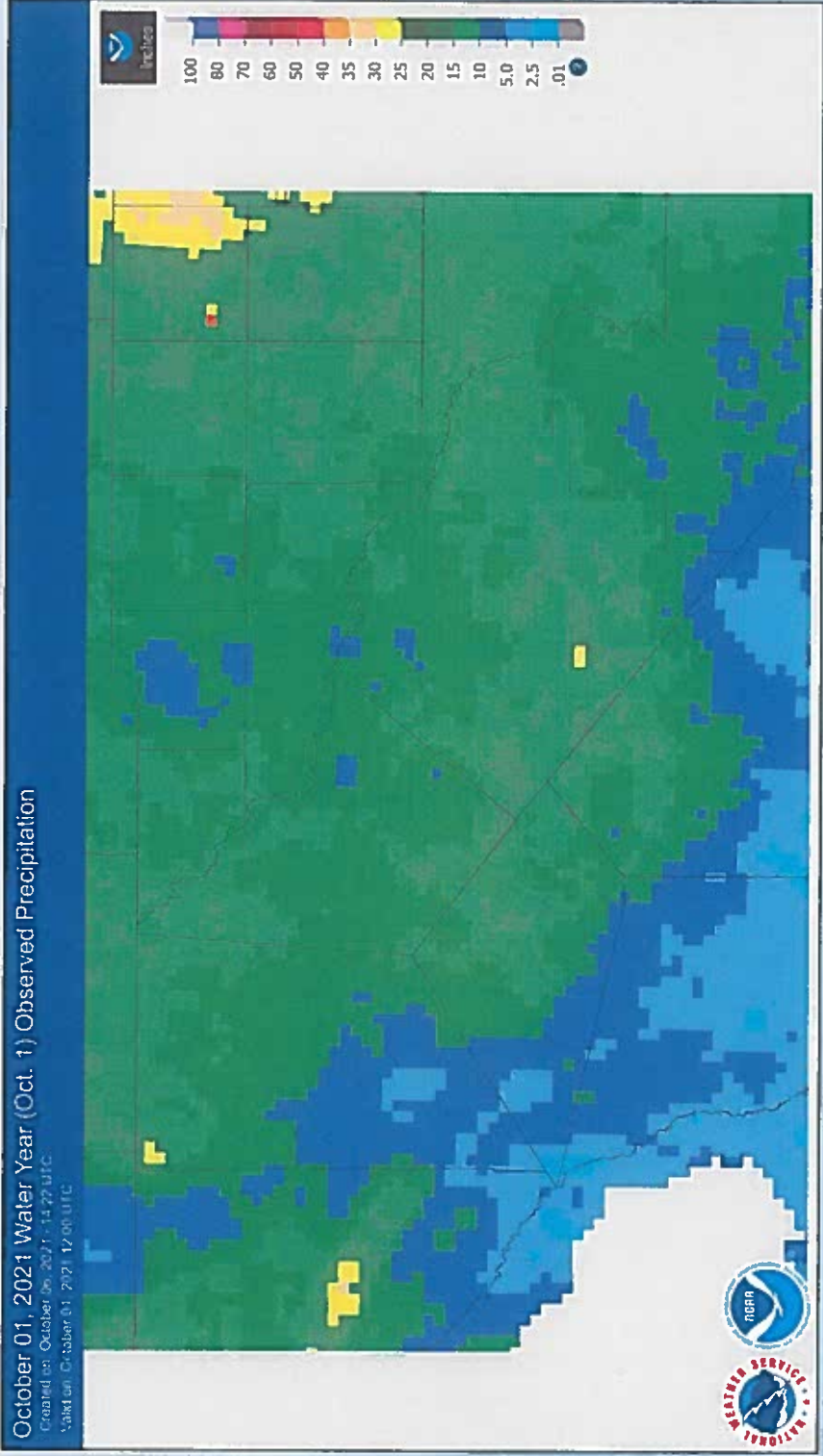
# Precipitation Data

City	County	Recording Site	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
Pine Springs	Culberson	TTU	0.19	0.13	0.00	0.40	1.05	3.69	3.20	9.93	1.55	20.14
Van Horn 48.6 NNE	Culberson	COC	0.03	0.11	0.00	0.00	1.17	2.76	1.70	5.37	0.84	11.98
Van Horn 6ENE	Culberson	COC	0.15	0.00	0.00	0.01	0.45	2.04	0.35	3.04	1.29	7.33
Van Horn 3ENE	Culberson	TTU	0.11	0.26	0.00	0.04	0.26	1.91	1.25	3.50	0.31	7.64
Coyanosa	Pecos	TTU	0.50	0.70	0.07	0.42	0.51	2.75	0.42	2.62	0.10	8.09
Fort Stockton	Pecos	NWS-MAF	0.41	0.14	0.00	0.74	0.64	3.51	0.58	2.00	0.22	8.24
Pecos	Reeves	NWS-MAF	0.13	0.11	0.03	0.14	0.94	1.81	0.83	2.19	0.77	6.95
Balморhea	Reeves	NWS-MAF	0.79	0.55	0.00	0.00	1.37	4.54	3.34	3.52	0.00	14.11
Monahans 6ENE	Ward	SCAICIS	0.30	0.76	0.01	0.40	0.92	3.47	0.21	1.66	0.26	7.99
Balморhea 2.1 SW	Reeves	COC	0.43	0.40	0.00	0.00	0.59	2.96	2.51	2.23	0.01	9.13
Fort Stockton 38SE	Pecos	NWS-MAF	0.96	0.25	0.10	0.10	1.62	3.97	0.11	1.40	0.93	9.44
Average			0.36	0.31	0.02	0.20	0.87	3.04	1.32	3.41	0.57	10.09

2021 May-Sep Average: 9.02" / 2020 May-Sep Average: 4.12" / 2019 May-Sep Total: 7.83" / 2018 May-Sep Total: 7.16"



# Observed Precipitation



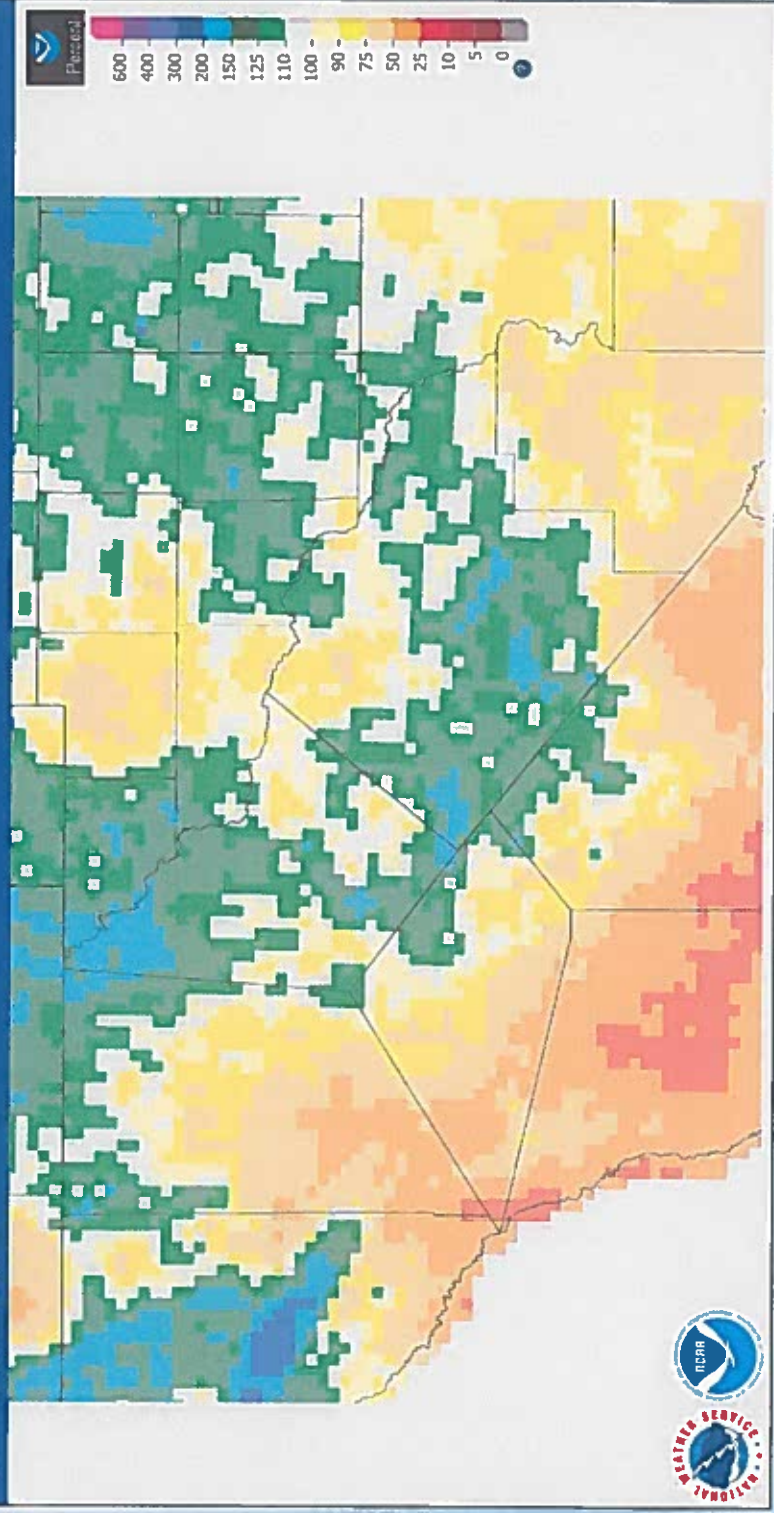


# Percent of Normal Precipitation

October 01, 2021 Water Year (Oct. 1) Percent Precipitation

Created on October 06, 2021 11:24 UTC

Updated on October 01, 2021 12:00 UTC





# Case Study – May 15

**38 Total Flares in 2 flights with a flight time of 4.25 Hours.**

**Dryline Fired up Storms along the Pecos/Reeves County line.**

**Cross Sectional Analysis showed storms had good cores at or just above the freezing level (indicator of plentiful super cooled water)**

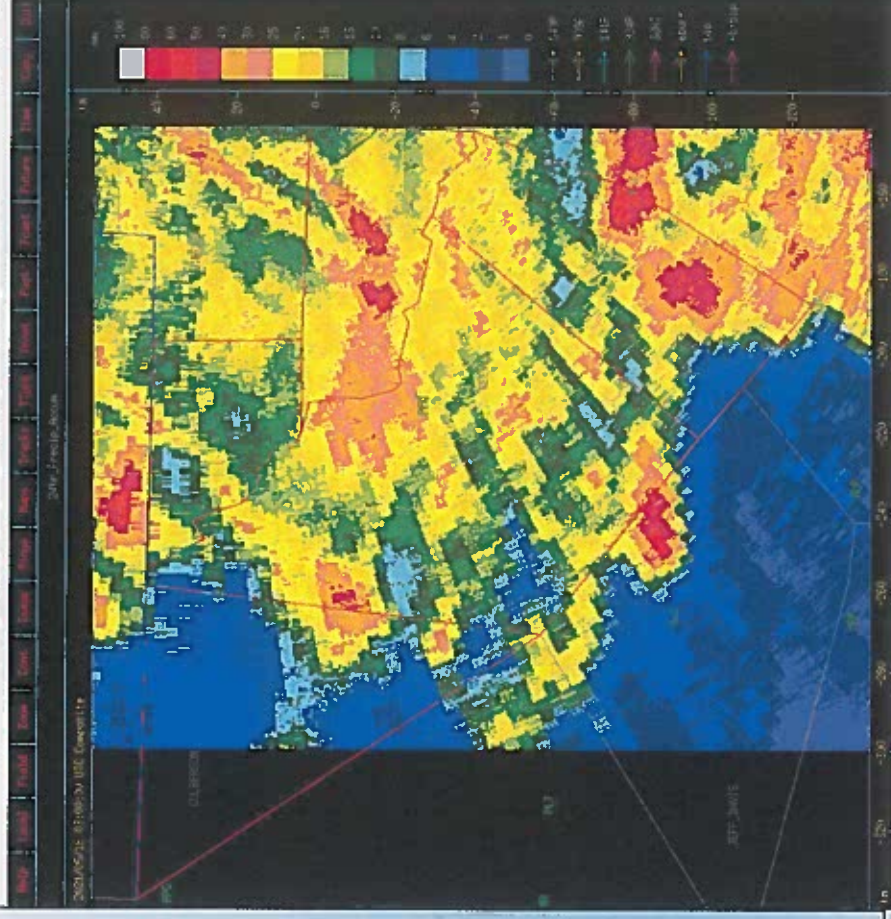
**Index of Coalescence Activity numbers were +2.04 which suggest collision and coalescence is not actively occurring (too much dry air, droplet size too small, not enough low-level instability)**

**Seeding with glaciogenic flares (silver iodide) helped nucleate ice becoming heavy enough to precipitate.**

**Areas to the W and SWS of Fort Stockton received very beneficial rainfall.**

**Seeding also occurred in Reeves County near Pecos and Culberson County near the Reeves County line.**

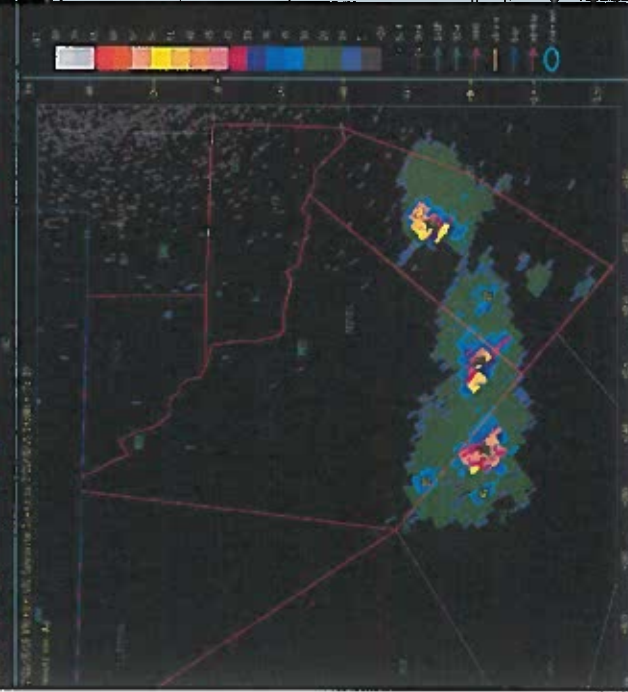
29.6 mm (-1.6059, -0.11)km (31.5608N, 102.9590W) 2:59PM 87mm



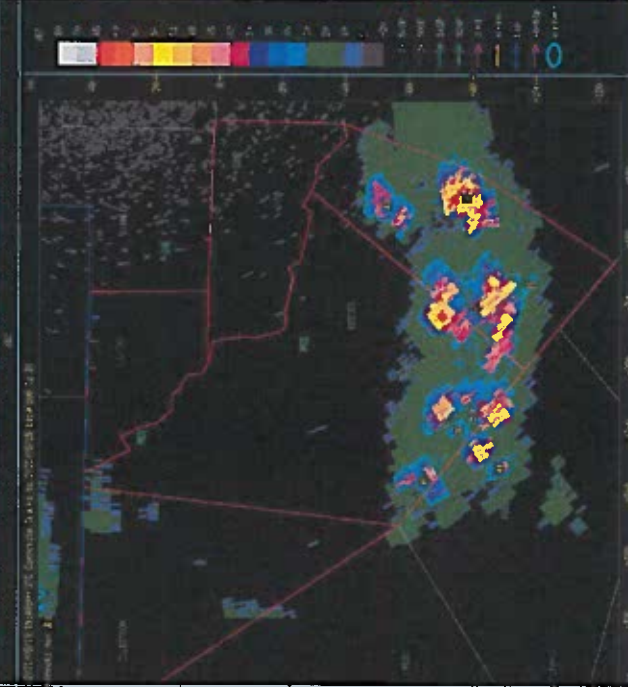


# Case Study – May 15

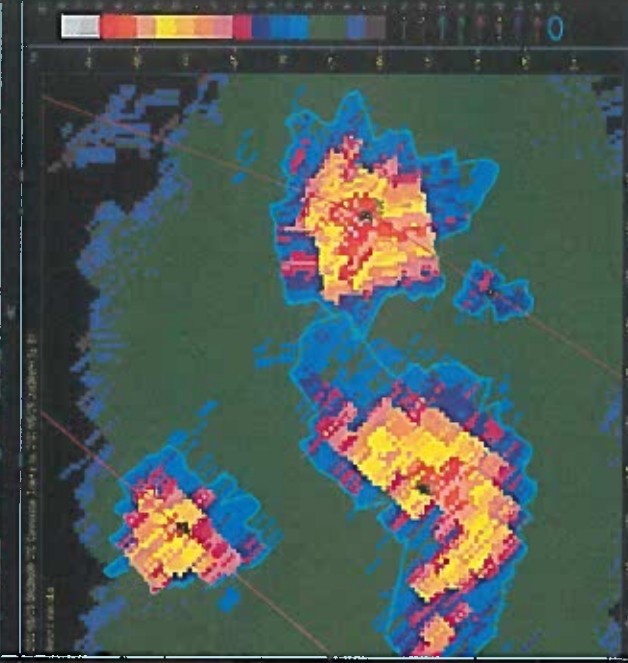
(-131.61, -17.67)/mm (51.4787N, 102.4521W) 254M 72mm



(-134.16, -13.82)/mm (51.5127N, 102.7010W) 256M 74mm

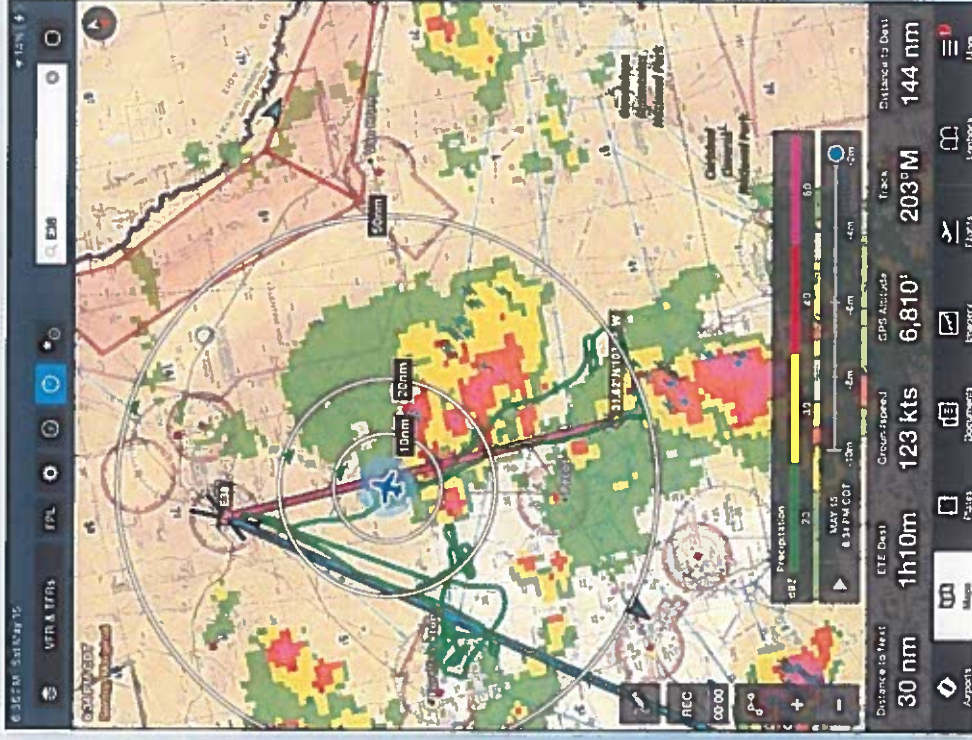
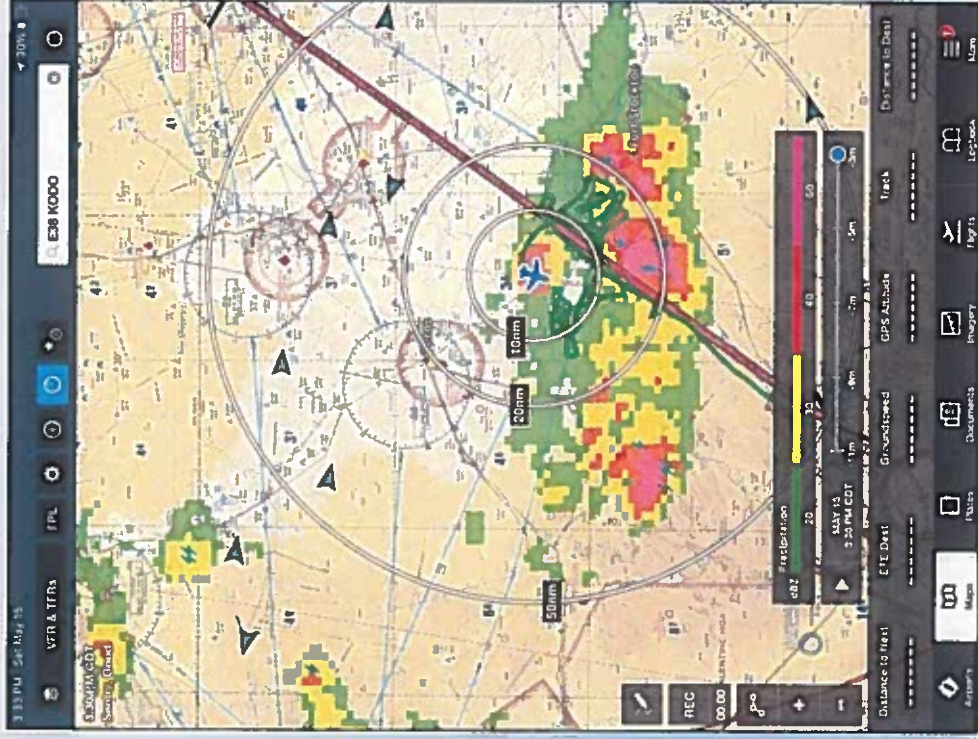


(-50.5482, -144.00, -61.73)/mm (51.0814N, 102.78327W) 230M 85mm





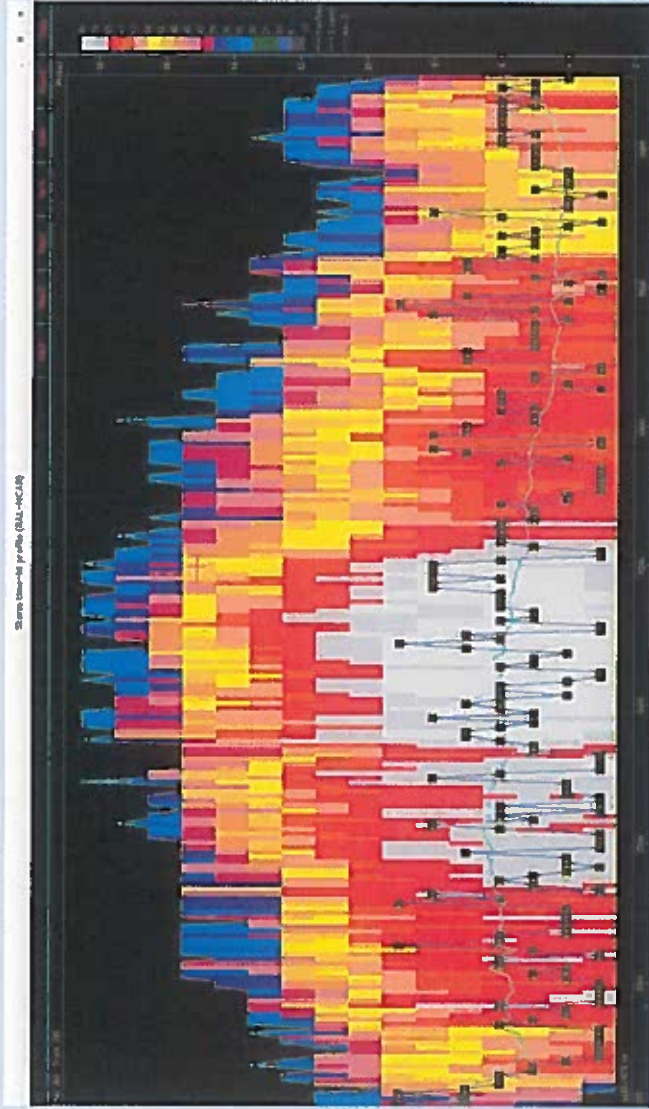
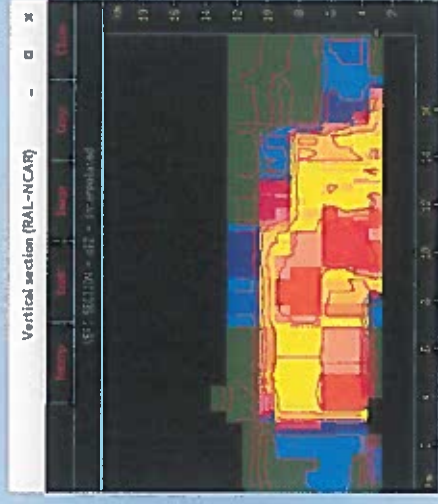
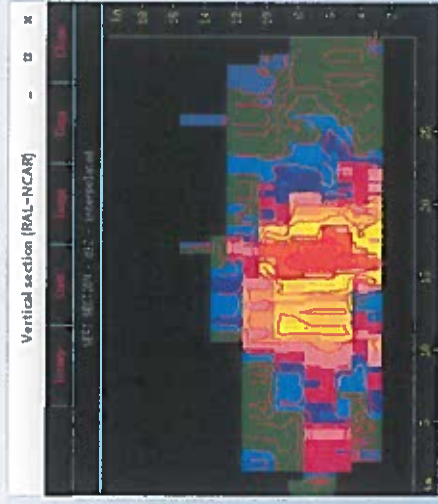
# Case Study – May 15





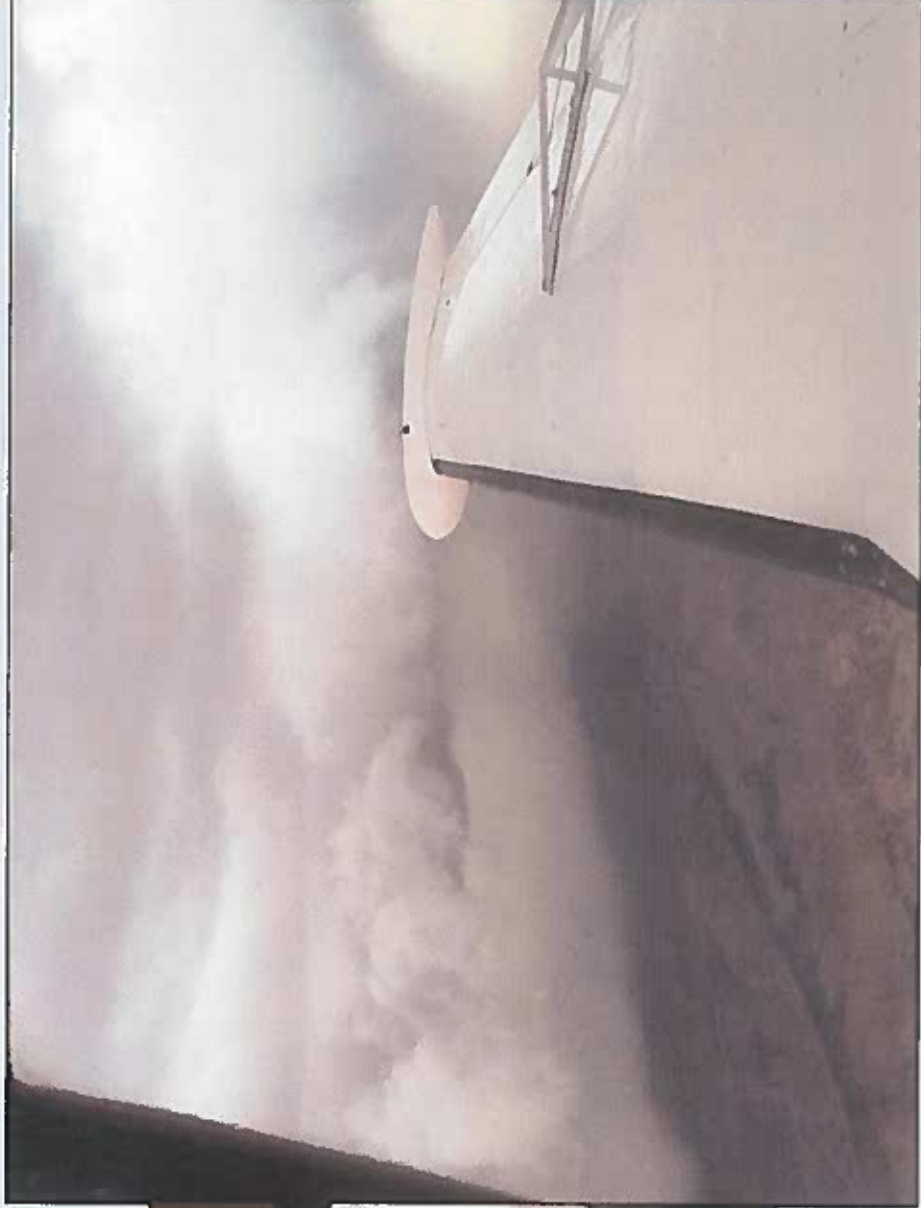
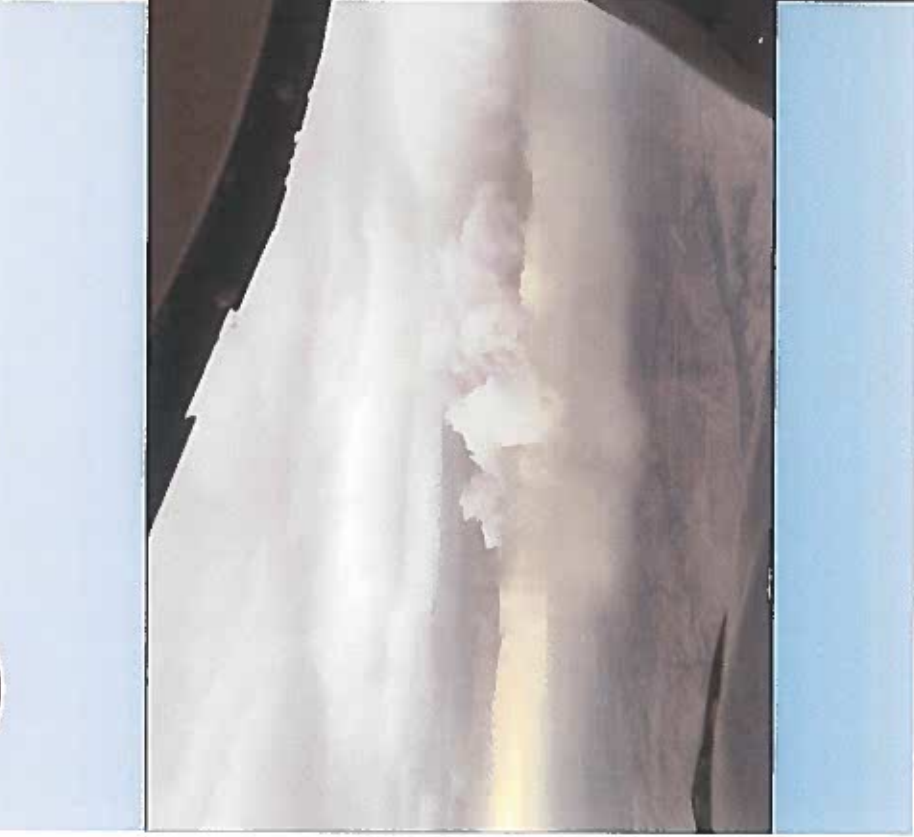


# Case Study – May 15





# Case Study – May 15





# Case Study – July 23

**30 Total Flares in 1 flight with a flight time of 1.5 Hours.**

**Strong Upper-Level Low provided sufficient dynamical forcing.**

**Cloud bases were very high (11kft) with thin warm cloud depths. This suggests collision and coalescence is not efficient.**

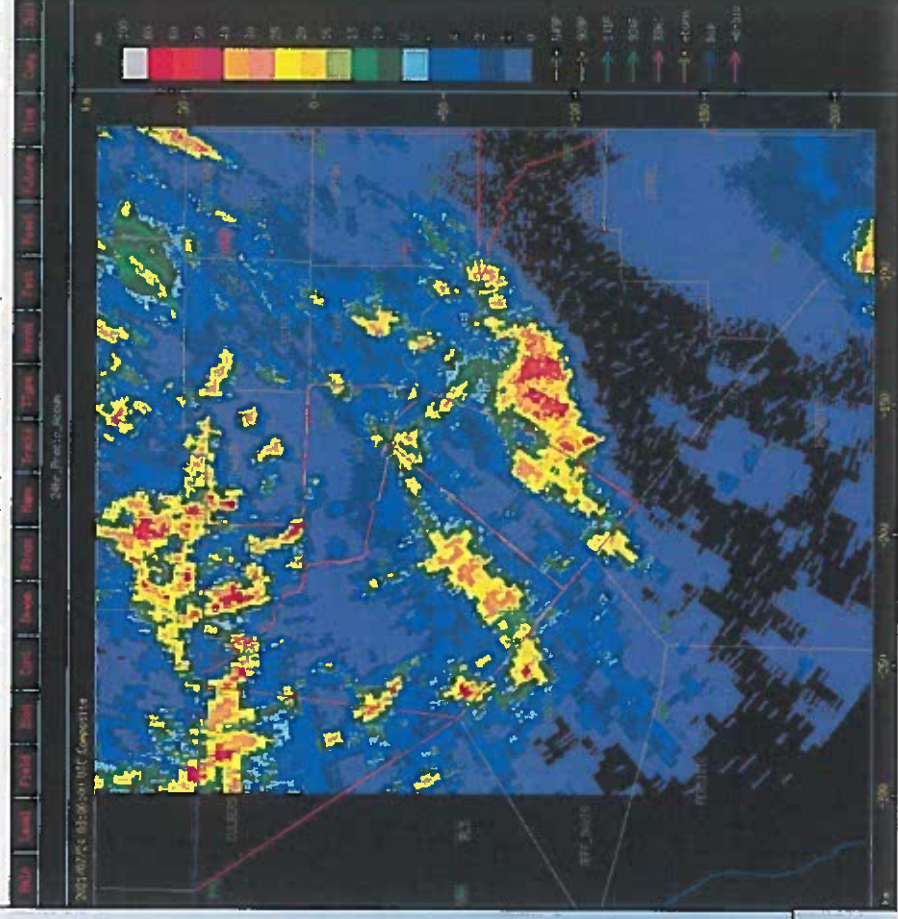
**Cross sectional analysis favored glaciogenic seeding with a core of higher dbz just above the freezing level.**

**Seeding with glaciogenic flares (silver iodide) helped nucleate ice becoming heavy enough to precipitate.**

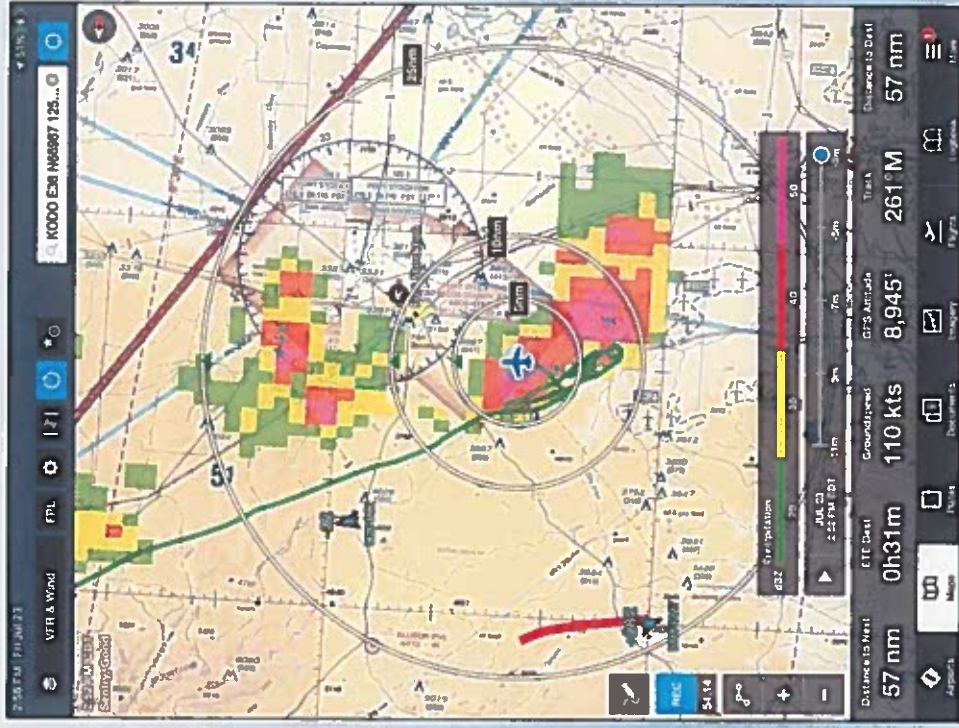
**Areas along and south of I-10 from Fort Stockton to Bakersfield saw biggest impacts.**

**Seeding also occurred in Reeves County near Balmorhea.**

1.1 mm (-91.80, -35.42)km (31.3232N, 102.2313W) 24 1M 53mm



# Case Study – July 23





## Case Study – July 24

**28 Total Flares in 1 flight with a flight time of 1.5 Hours.**

Upper-Level Low continued to provide sufficient dynamical forcing but was also aided by temperatures reaching the convective temperature.

Cloud bases were lower than on the 23rd indicating more efficient clouds.

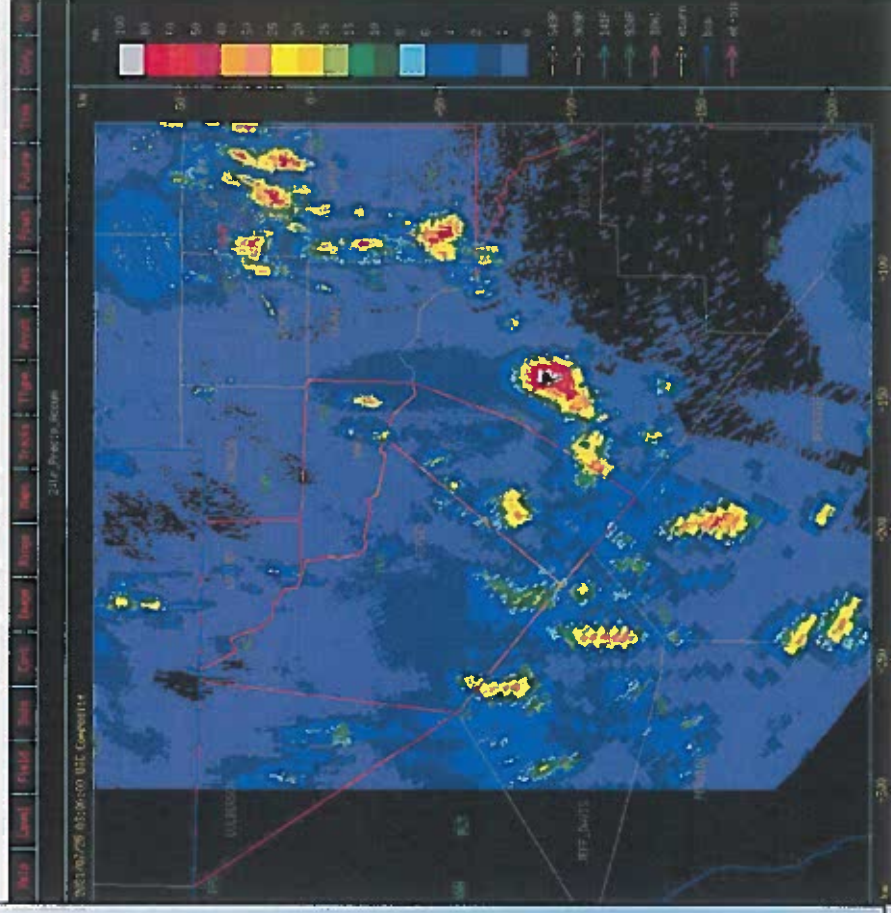
Strong and consistent inflow was found by pilot resulting in a quick dosage of flares into the cloud (over 1,000 ft/min at times).

Radar response was obvious, and pilot reported intense rain shafts just east of Fort Stockton.

Areas along and east of I-10 from just east of Fort Stockton saw biggest impacts.

Seeding also occurred in western Pecos County west of Fort Stockton.

13.4 mm (-0.710, -19.33)km (31.2663N, 102.1615W) 230M 52mm



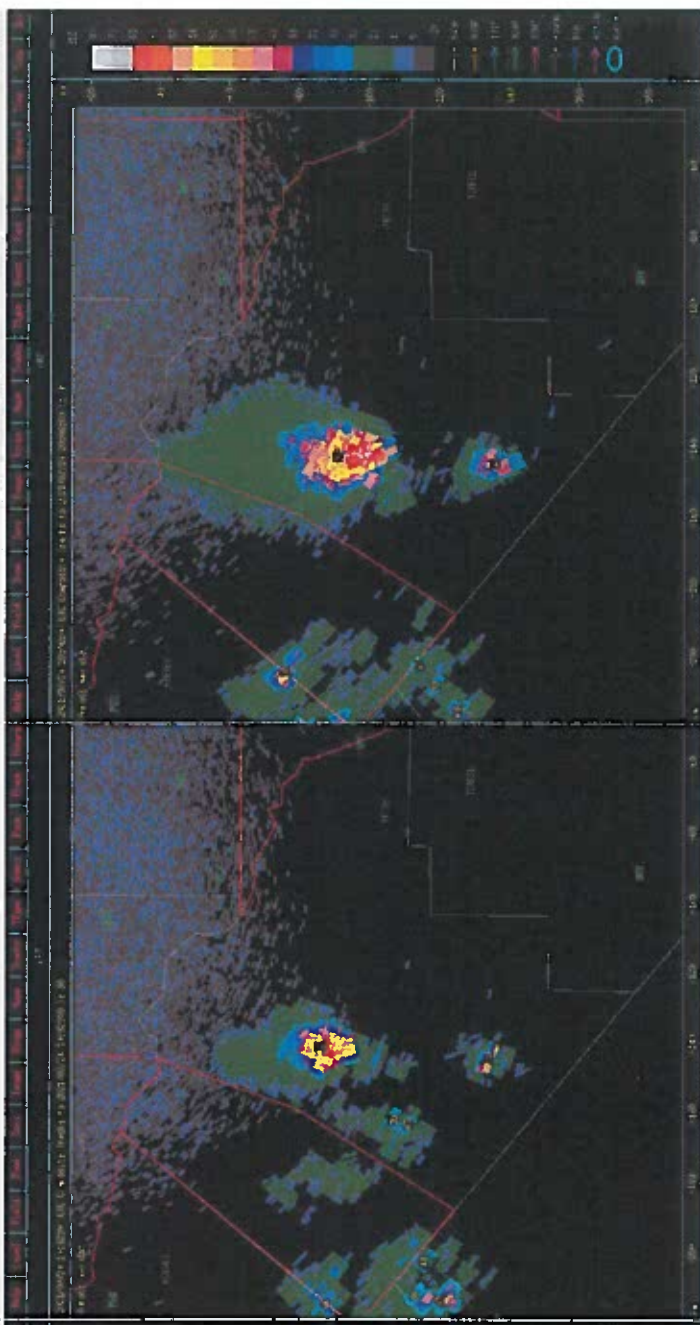
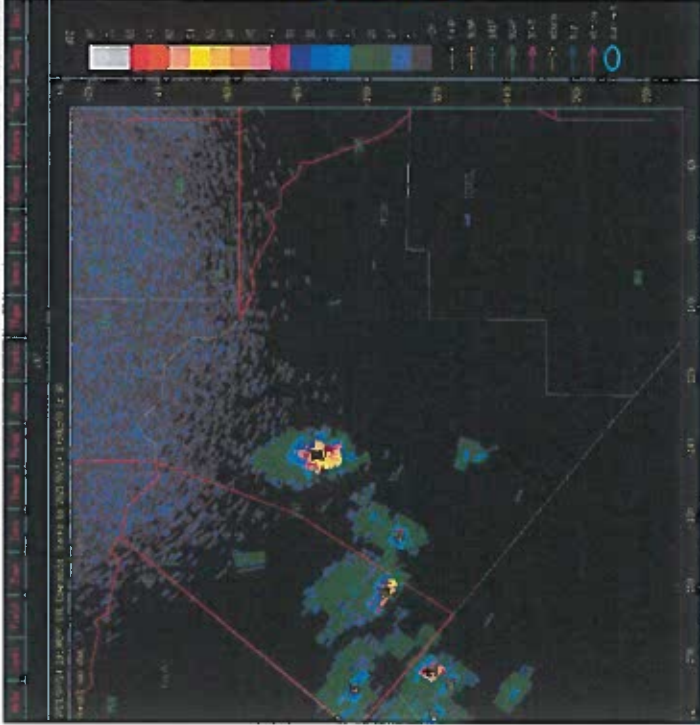


# Case Study – July 24

(-38.28, -55.09)km (31.1495N, 101.8675W) 207M 36mm

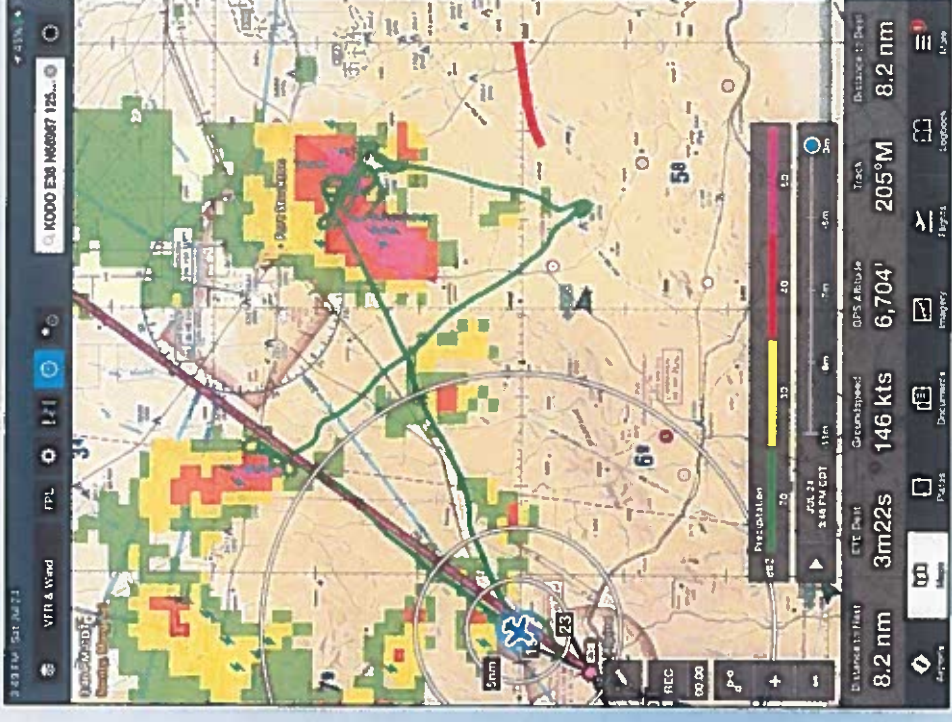
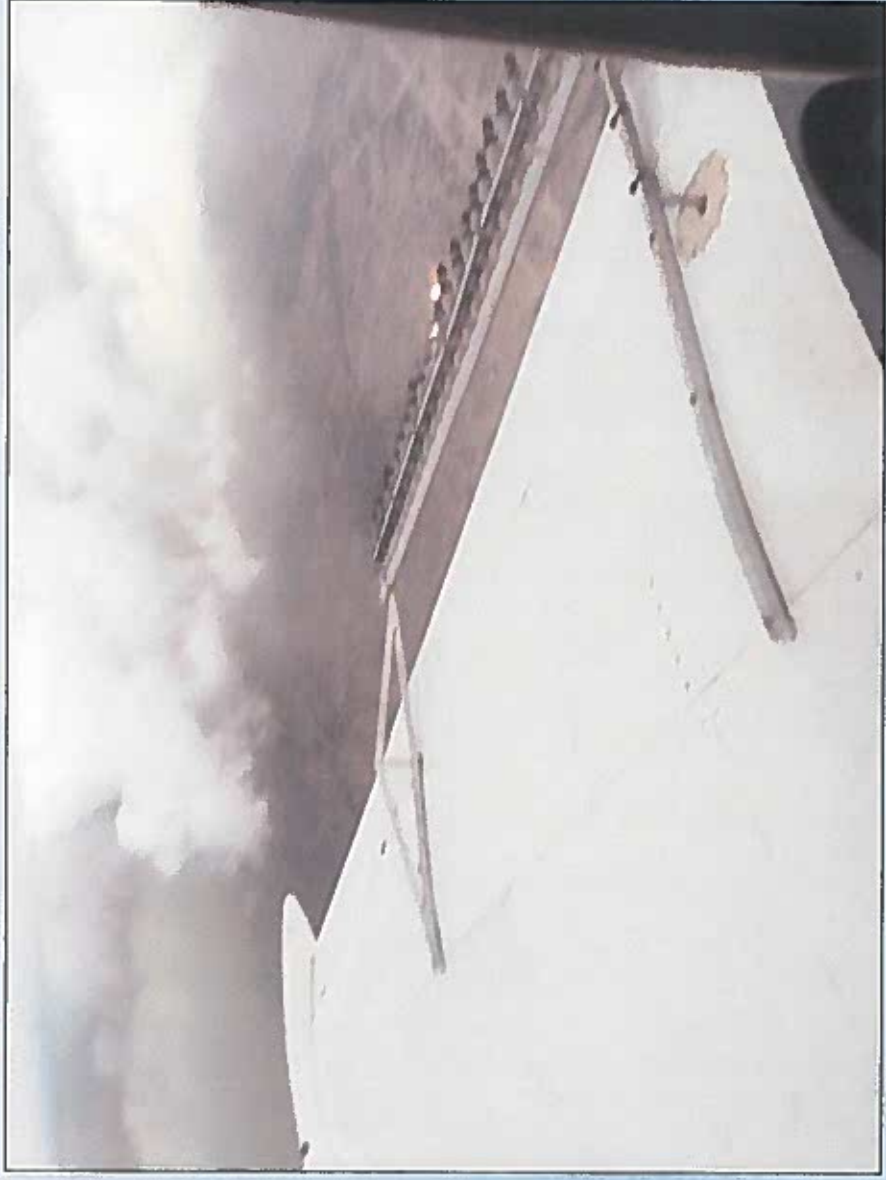
TITAN (RAL-MCAM)

-38.1 (82 (-59 23, -71.23))km (31.0037N, 101.8666W) 213M 50mm



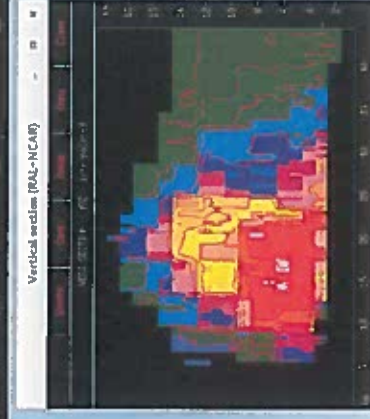
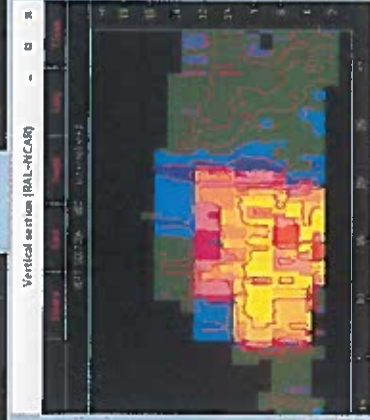
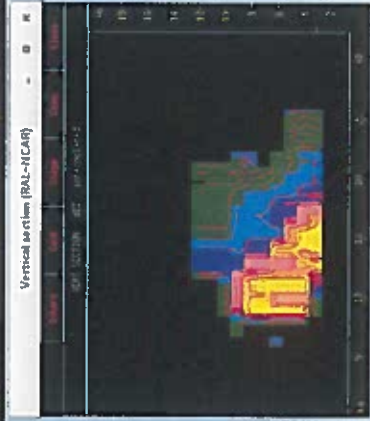
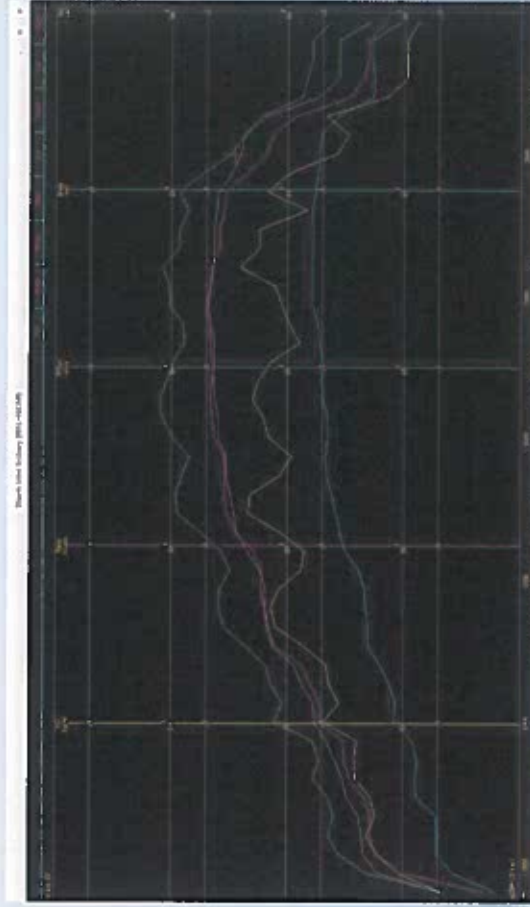


# Case Study – July 24





# Case Study – July 24







# Case Study – August 12

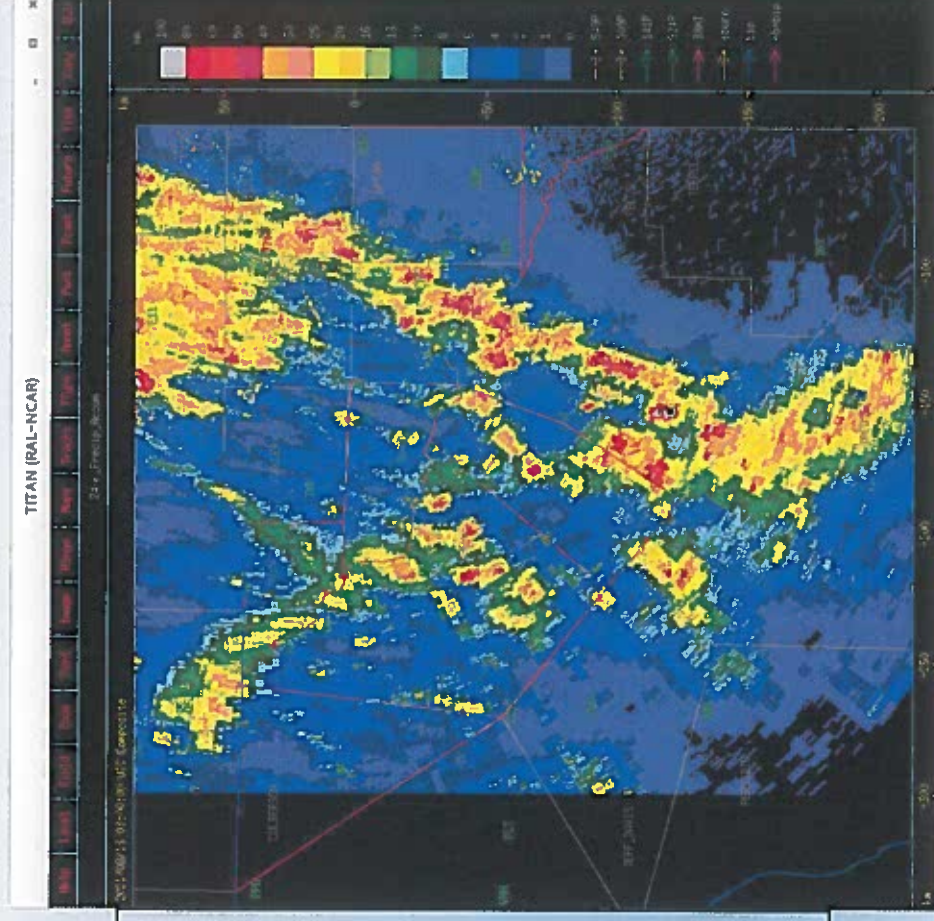
**30 Total Flares in 1 flight with a flight time of 3 Hours.**

**Monsoonal flow gliding over the higher terrain allowed for numerous showers and storms to fire up across the region.**

**Cloud bases were near average but had very warm cloud base temperatures, good for sufficient droplet growth in the warm cloud layer.**

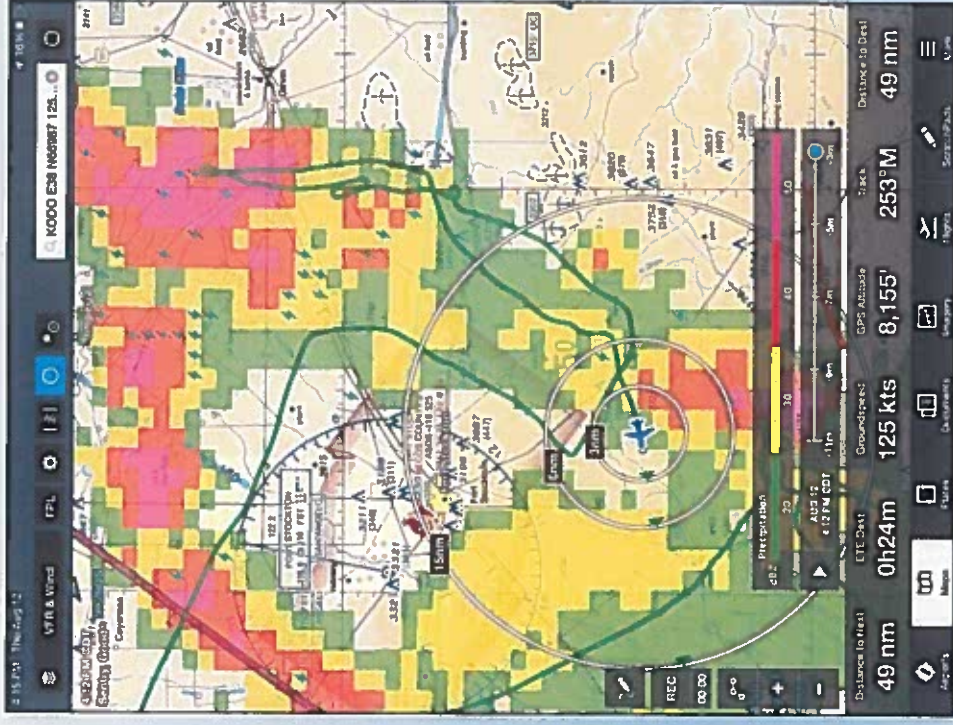
**Clouds lined up in a bit of a squall line along and east of a Imperial to Fort Stockton line.**

**Pilot stayed on the leading edge and found consistent inflow.**





# Case Study – August 12





## Looking ahead...

- Full evaluation should be coming late winter from Dr. Ruiz.
- Continuing seeding in eastern Pecos County will help solidify the Trans-Pecos Weather Modification Association.
- Cloud targets will help compared to years past and result in the connection of the TPWMA and WTWMA.
- With more cloud targets, more widespread benefits from weather modification will be realized not just in the area, but regionally.
- The use of hygroscopic flares in 2022 will also increase targeting but also help increase water production numbers.
- The TWMA state association is working with legislative leaders to try to secure state match funding during the next legislative session.

Jonathan Jennings / Wayne Tinkler – Trans-Pecos Weather Modification Association

**Attachment B to MPGCD minutes 11-16-2021**  
**MPGCD FY22 – Proposed Research Projects (Allan R. Standen LLC)**  
**Estimated Project Schedule for Project Deliverable**

**Project Summary by Fiscal Year**

**2021 – 2022, Projects 1 - 7, \$12,500, \$15,000, \$5,000, \$7,500, \$20,000, \$20,000, \$7,500 = \$87,500**

**2022 – 2023, Projects 4 – 7, \$37,500, \$20,000, \$20,000, \$7,500 = \$85,000**

**Project #1 - Rustler Monitor Well Recommendations (\$12,500)**

**Goal:** Identify existing Rustler water wells that can be converted into monitor wells and site new monitor well locations.

**Study Area:** (a) Management Zone 1 – Rustler Monitor Well Recommendation (FSH Joint Study)  
(b) Pecos County

**Tasks: Tasks 1, 2 and 3 to be completed by June 2022, (\$10,000)**

1. Identify and inventory Rustler water wells in the MPGCD water well database, TWDB Groundwater Database, Bulletin 6106 (Armstrong and McMillion, 1961) and TDLR Driller Report database.
2. Evaluate existing Rustler water wells and determine if any are suitable for conversion to a monitor well.
3. Assign a monitor well suitability rank to existing Rustler water wells.

***Task 4 to be completed as needed or before September 2022 (\$2,500)***

4. Evaluate the spatial distribution of Rustler pumping and monitor wells and site new monitor well locations based on areas of concern, need and geologic structure within study area (a) and (b).

**Deliverables:** Technical memorandum accompanied by figure with recommended Rustler monitor well locations.

**Project #2 - Pecos County Flowing Well Inventory (\$15,000)**

**Goal:** Identify and inventory current, historic, and abandoned flowing wells in Pecos County and investigate possible water quality and subsidence issues.

**Study Area:** Pecos County (excluding imperial flowing well area – already inventoried)

**Tasks: Tasks 1, 2 and 3 to be completed by June 2022, (\$12,000)**

1. Identify and inventory current, historic and abandoned flowing wells using USGS topo maps, TWDB Groundwater Database remarks, TBWE Bulletin 6106 (Armstrong and McMillion, 1961), TBWE M208 (Dante, 1947) and TBWE M209 (Audsley, 1956).
2. Create a database for flowing water wells
3. Investigate possible contamination/comingling from abandoned/historic flowing wells using the MPGCD water chemistry dataset.

***Task 4 to be completed before September 2022 (\$3,000)***

4. Investigate possible subsidence around abandoned/historic flowing wells using USGS West Texas LiDAR.

**Deliverables:** Letter report with findings. Figure(s) that illustrate flowing well locations, water chemistry concerns and possible areas of subsidence.

***Project #3 - Locate unregistered water wells and update registered well construction (\$5,000)***

**Goal:** Identify unregistered water wells within the TDLR and TWDB Groundwater database and update registered well construction.

**Study Area:** Pecos County

**Tasks:** : *Tasks 1 and 2 to be completed by November 2021, (\$5,000)*

1. Identify wells within the TDLR and TWDB Groundwater database that are currently not registered within the MPGCD water well database.
2. Update well construction in the MPGCD water well database when missing information is identified through Task 1.

32.5K

**Deliverables:** Excel table and GIS shapefile with unregistered wells. Excel table with registered well construction updates.

***Project #4 - Investigate Belding Area Recharge (Total \$45,000 – Analysis \$30,000 + Field Work \$15,000)***

**Goal:** Identify groundwater recharge features (e.g. losing stream segments, karst, fractures) within and south of Belding that will improve the MPGCD understanding of groundwater-surface water interactions within Management Zone 1. This information can be used to fine tune groundwater recharge estimates, identify sensitive recharge areas, and provide insights into local water chemistry trends.

**Study Area:** I-10/Belding area (north), Acebuche Draw (west), Belding Draw (east) and see figure (south).

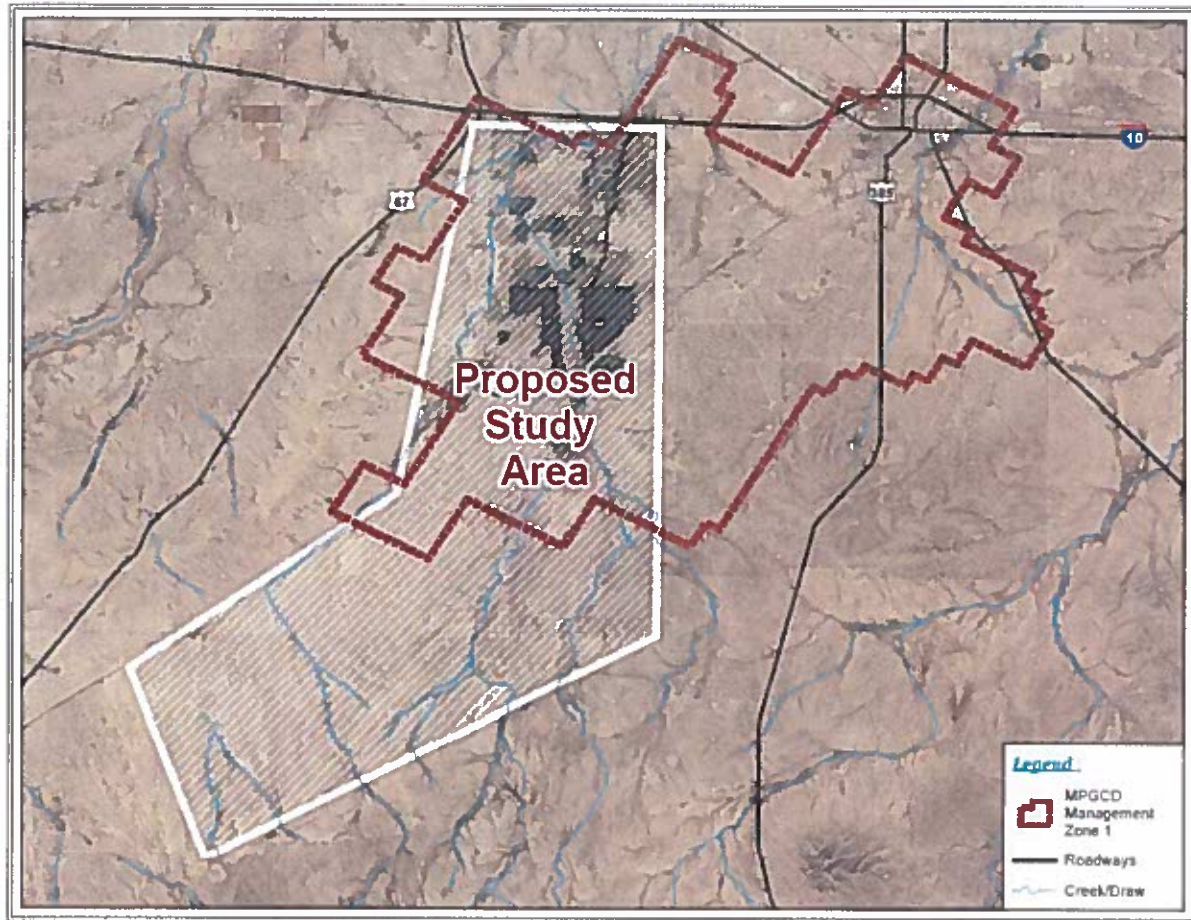
**Tasks:** *Task 1 to be completed before September, 2022, (\$7,500)*

1. Identify possible recharge areas with remote sensing techniques, using Belding pre-development aerial imagery, LiDAR elevation data, vegetation index models.

***Tasks 2, 3, 4 and 5 to be completed by June 2023, next fiscal year, (\$37,500)***

2. Conduct pre- and post- storm event field research to characterize and observe recharge features (field work)
3. Evaluate MPGCD water chemistry dataset with respect to recharge features.
4. Review rainfall and water level data to identify threshold rainfall events and contribution areas.
5. Provide recommendations for additional water chemistry measurements, rainfall/streamflow monitor stations and monitor well locations.

**Deliverables:** Technical report with findings. Figure(s) that illustrate recharge features/areas, water chemistry, threshold event analysis and recommendations.



***Project #5 - Fine Tune Hydrostratigraphy and Fault Structure in Management Zone 3 (\$45,000)***

***Goal:*** Fine tune shallow hydrostratigraphy, Pecos Valley Aquifer thickness and faults within Management Zone 3.

***Study Area:*** Management Zone 3 with a 3-mile buffer (inclusive to Pecos and Reeves County)

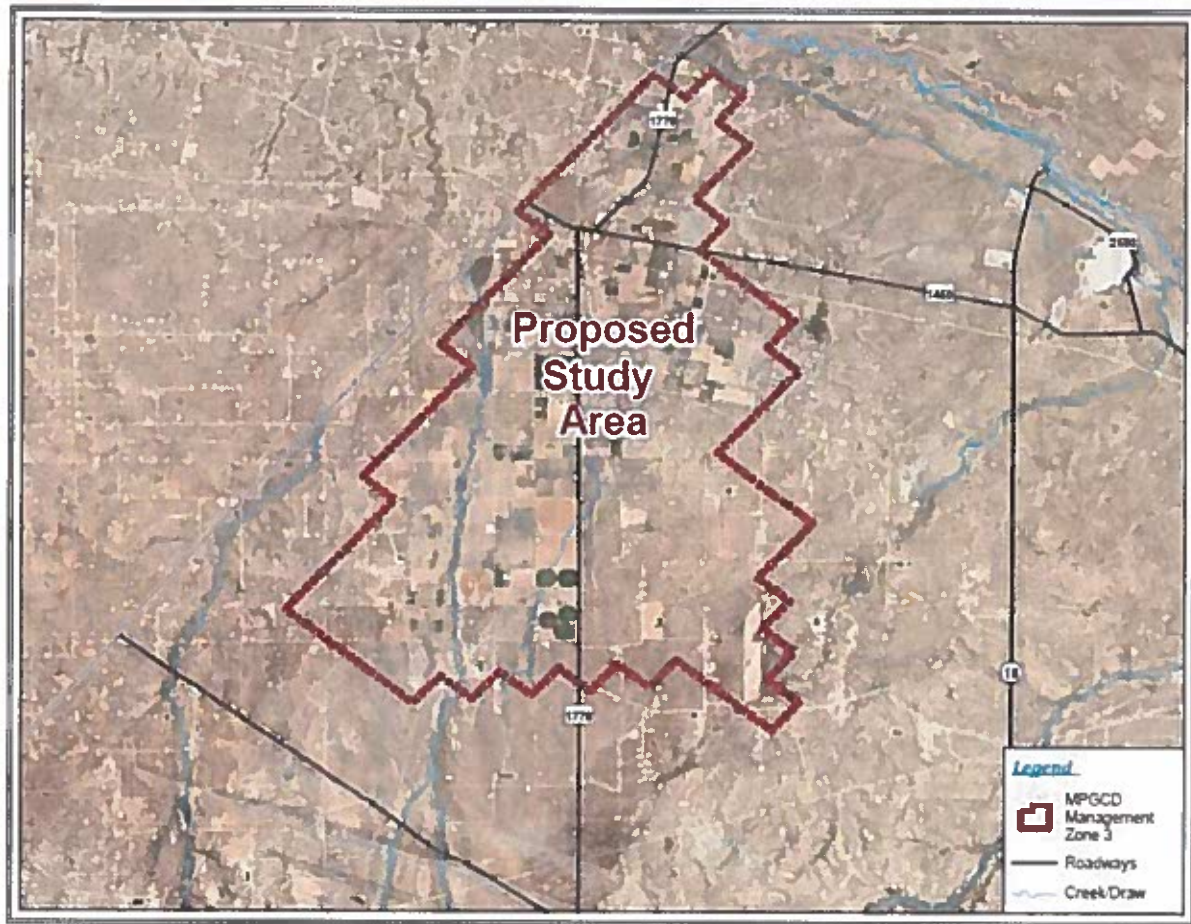
***Tasks: Tasks 1 and 2 to be completed by September 2022, (\$20,000)***

1. Locate and evaluate a minimum of 90 geophysical logs within the study area.
2. Interpret geophysical logs and assign stratigraphic picks for Salado through Pecos Valley formations.

***Task 3 to be completed by January 2023, next fiscal year (\$25,000)***

3. Develop a new 3D model that includes MZ3 Study Area.

***Deliverables:*** 3D Model for MZ3 Study Area. GIS Shapefiles for new well control and update fault structure. Letter report that describes methodology.



***Project #6 - Fine Tune Hydrostratigraphy and Fault Structure in Management Zone 2 (\$40,000)***

***Goal:*** Fine tune shallow hydrostratigraphy, and faults within Management Zone 2.

***Study Area:*** Management Zone 2 with a 3-mile buffer (inclusive to Pecos County)

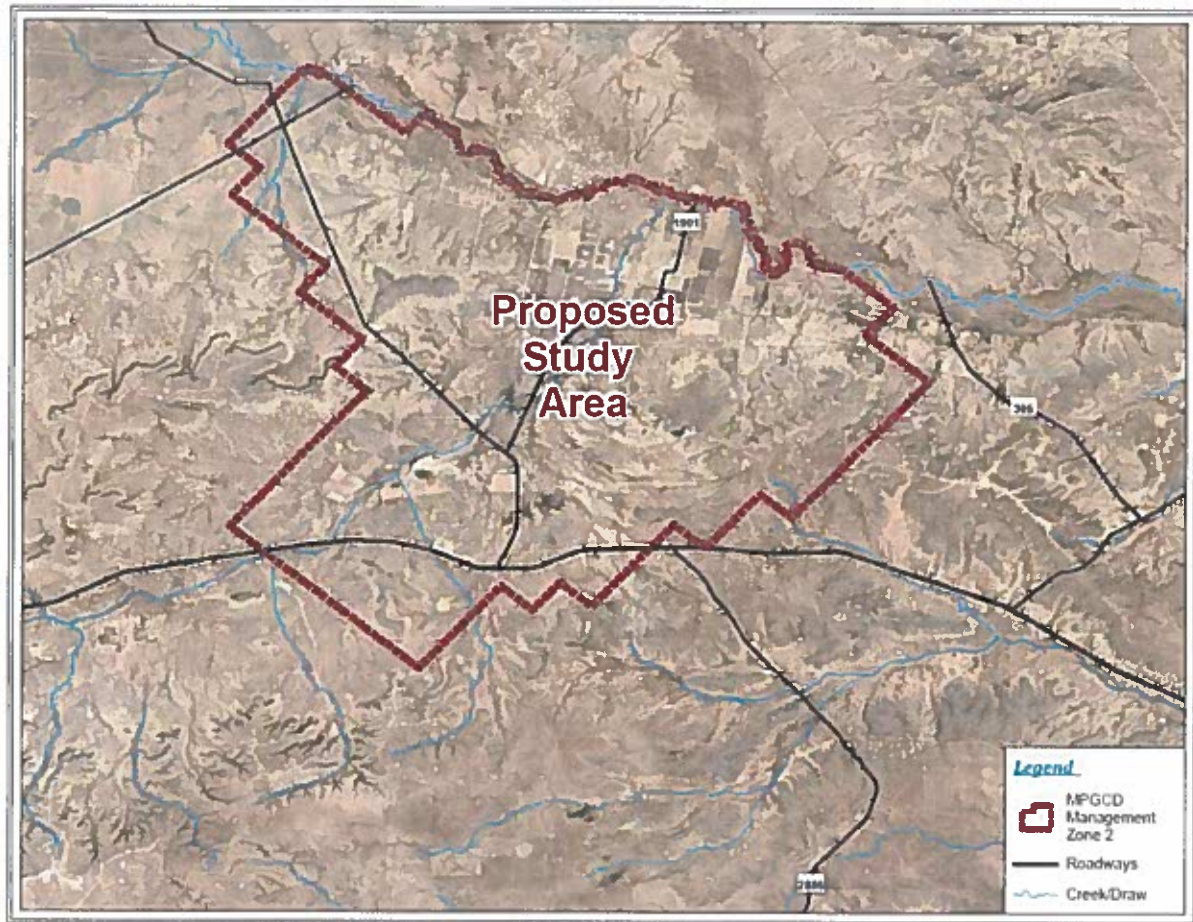
***Tasks: Tasks 1 and 2 to be completed by September 2022, (\$20,000)***

1. Locate and evaluate a minimum of 60 geophysical logs within the study area.
2. Interpret geophysical logs and assign stratigraphic picks for Salado through Edwards-Trinity.

***Task 3 to be completed by March 2023, next fiscal year, (\$20,000)***

3. Develop a new 3D model that includes MZ2 Study Area.

***Deliverables:*** 3D Model for MZ2 Study Area. GIS Shapefiles for new well control and update fault structure. Letter report that describes methodology.



***Project #7 - Update Stratigraphy and Fault Structure at West of Diamond Y Study Area (\$15,000)***

**Goal:** Identify fault structure west of Diamond Y and North of management zone 1 study areas to better understand the connection between study area(s) fault structure.

**Study Area:** (a) ~50 square mile area west of Diamond Y Study and north of MZ1 Study.  
(b) ~9 square mile area SW of Diamond Y Study Area near

**Tasks:** *Tasks 1 and 2 to be completed by June, 2022, (\$7,500)*

1. Locate and evaluate up to a total of 50 geophysical logs within study area (a) and (b).
2. Interpret geophysical logs and assign stratigraphic picks to 3D Model intervals.

**Task 3 to be completed by November, 2022, next fiscal year, (\$7,500)**

3. Develop a new 3D model that includes MZ1 Study, Diamond Y Springs Study, and study area (a) and (b).

**Deliverables:** Updated 3D Model that includes MZ1 Study, Diamond Y Springs Study, and study area (a) and (b). GIS Shapefiles for new well control and update fault structure. Letter report that describes methodology.



