



September 15, 2014

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1630 West Hillsboro Blvd.
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RE: Case No. CACE13-023689 (13)
Location of Interest: 1440 N. Federal Hwy, Fort Lauderdale, FL
Time Period of Interest: April 21, 2013; 3:30 AM – 11:30 AM LDT

To Whom It May Concern:

Included with this letter you will find information you requested from our office concerning weather observations for the area of Fort Lauderdale, Florida. Hourly observations provided were taken from the Automated Surface Observing System (ASOS) stations located at the Fort Lauderdale Executive Airport, Fort Lauderdale International Airport, and the Pompano Beach Airpark, which are approximately 5, 6 and 8 miles from the location of interest, respectively. Data provided for this report are from April 21, 2013. Also attached is a list of conversions and meteorological identifiers that will help you decipher the information. A map of the area, courtesy of Google Maps, has also been included. Note the locations of the stations and area of interest, marked by either yellow push-pins or other identifiers.

The ASOS system serves as the nation's primary surface weather observing network and is designed to support weather forecast activities and aviation operations and, at the same time, support the needs of the meteorological, hydrological, and climatological research communities. ASOS detects significant changes, disseminating hourly and special observations. These observations are on archive and were provided by the National Climate Data Center (NCDC).

Observations from Fort Lauderdale International Airport during the time period of interest, in which either wind gusts or rain/thunderstorms were present, are summarized for the three dates of interest. These observations are listed below:

Date	Time	Visibility	Temp	Dew Point	Relative Humidity	Wind	Wind Gust	Pressure	Present Weather	Report Type
21	0353	10 miles	74°F	71°F	90 %	Calm	--	29.99"	None	Auto
21	0453	10 miles	74°F	72°F	94%	N 3 mph	--	29.99"	None	Auto
21	0553	10 miles	74°F	72°F	94%	N 8 mph	--	30.03"	None	Auto
21	0604	10 miles	73°F	72°F	97%	N 8 mph	--	30.04"	None	Special
21	0653	9 miles	74°F	72°F	94%	N 7 mph	--	30.04"	None	Auto



Date	Time	Visibility	Temp	Dew Point	Relative Humidity	Wind	Wind Gust	Pressure	Present Weather	Report Type
21	0703	9 miles	73°F	72°F	97%	NW 6 mph	--	30.05"	None	Special
21	0725	10 miles	73°F	72°F	97%	NNW 8 mph	--	30.06"	None	Special
21	0753	10 miles	74°F	71°F	90%	Calm	--	30.06"	None	Auto
21	0811	10 miles	75°F	72°F	90%	Calm	--	30.06"	None	Special
21	0818	10 miles	75°F	72°F	90%	NNE 5 mph	--	30.06"	None	Special
21	0828	10 miles	77°F	72°F	85%	N 8 mph	--	30.07"	None	Special
21	0853	10 miles	79°F	73°F	82%	NNE 9 mph	--	30.07"	Light Rain	Auto
21	0953	10 miles	79°F	71°F	77%	E 17 mph	--	30.08"	None	Auto
21	1053	10 miles	81°F	69°F	67%	ESE 13 mph	--	30.08"	None	Auto
21	1153	10 miles	81°F	73°F	77%	ESE 16 mph	25 mph	30.07"	None	Auto

Observations from Fort Lauderdale Executive Airport during the time period of interest, in which either gusty winds or rain/thunderstorms were present, are summarized for the three dates of interest. These observations are listed below:

Date	Time	Visibility	Temp	Dew Point	Relative Humidity	Wind	Wind Gust	Pressure	Present Weather	Report Type
21	0353	10 miles	71°F	71°F	100%	Calm	--	30.00"	None	Auto
21	0453	10 miles	71°F	71°F	100%	Calm	--	30.00"	None	Auto
21	0533	10 miles	72°F	72°F	100%	NNW 6 mph	--	30.02"	None	Special
21	0541	10 miles	72°F	72°F	100%	N 6 mph	--	30.02"	None	Special
21	0551	10 miles	72°F	72°F	100%	NNW 7 mph	--	30.03"	None	Special
21	0553	10 miles	71°F	71°F	100%	NNW 6 mph	--	30.03"	None	Auto
21	0602	10 miles	72°F	72°F	100%	NNW 7 mph	--	30.05"	None	Special
21	0627	10 miles	72°F	72°F	100%	N 8 mph	--	30.06"	None	Special
21	0651	10 miles	72°F	70°F	93%	Calm	--	30.05"	Light Rain	Special
21	0653	10 miles	72°F	70°F	93%	N 3 mph	--	30.05"	None	Auto
21	0700	10 miles	72°F	70°F	93%	NW 3 mph	--	30.05"	None	Special
21	0753	10 miles	75°F	71°F	87%	NNW 6 mph	--	30.06"	None	Auto

Date	Time	Visibility	Temp	Dew Point	Relative Humidity	Wind	Wind Gust	Pressure	Present Weather	Report Type
21	0853	10 miles	77°F	71°F	82%	ENE 8 mph	--	30.08"	None	Auto
21	0953	10 miles	77°F	70°F	79%	ESE 14 mph	--	30.09"	None	Auto
21	1053	10 miles	79°F	65°F	62%	E 16 mph	--	30.08"	None	Auto
21	1153	10 miles	79°F	71°F	77%	E 17 mph	--	30.08"	None	Auto

Observations from Pompano Beach Airpark during the time period of interest, in which either gusty winds or rain/thunderstorms were present, are summarized for the three dates of interest. These observations are listed below:

Date	Time	Visibility	Temp	Dew Point	Relative Humidity	Wind	Wind Gust	Pressure	Present Weather	Report Type
21	0353	10 miles	73°F	72°F	97%	N 5 mph	--	30.03"	None	Auto
21	0453	10 miles	73°F	72°F	97%	N 3 mph	--	29.99"	None	Auto
21	0525	10 miles	73°F	73°F	100%	N 9 mph	--	30.01"	None	Special
21	0542	10 miles	73°F	73°F	100%	N 10 mph	--	30.02"	None	Special
21	0553	10 miles	73°F	73°F	100%	NNW 10 mph	--	30.03"	None	Auto
21	0601	10 miles	73°F	73°F	100%	NNW 11 mph	--	30.04"	None	Special
21	0638	10 miles	73°F	72°F	97%	N 9 mph	--	30.04"	Light Rain	Special
21	0653	8 miles	73°F	72°F	97%	N 8 mph	--	30.04"	Light Rain	Auto
21	0753	10 miles	76°F	72°F	87%	N 7 mph	--	30.05"	None	Auto
21	0853	10 miles	78°F	74°F	88%	ENE 8 mph	--	30.07"	None	Auto
21	0953	10 miles	78°F	72°F	82%	ESE 14 mph	--	30.08"	None	Auto
21	1053	10 miles	80°F	70°F	72%	ESE 15 mph	--	30.08"	None	Auto
21	1153	10 miles	81°F	73F	77%	ESE 15 mph	23 mph	30.07"	None	Auto

Hourly observations from all three airports indicate that light rain fell in the area, during the time prior to the time of incident, on the 21st.

In addition to the data from the airports, observations of daily precipitation totals were taken from COOP stations surrounding the area of interest (previously mentioned above). These COOP stations are sites where observations are taken or other services rendered by volunteers or contractors. Observers record temperature and precipitation daily and send those reports monthly to NCDC and a NWS office. The COOP stations vary in the times that they report the weather information they've collected, so these totals are for the 24-hour period, usually beginning/ending between 7:00AM and 9:00 AM, though some stations report outside of that time window. For example, daily data are collected by the COOP station and reported from 2pm to 2pm, which means rain that fell on a particular day (example: 04/20/13) could be reported the following day (example: 04/21/13). Daily values of temperatures and precipitation from each station are included with this report. Any variable listed as -999 represents a missing value for the day.

Station	NWS COOP ID	Time of Observation	Rainfall Total 04/20/2013	Rainfall Total 04/21/2013	Rainfall Total 04/22/2013
Fort Lauderdale	083163	0700	0.26"	0.72"	0.04"
Fort Lauderdale Beach	083168	0700	0.03"	0.34"	0.15"
Hollywood	084050	0700	0.15"	0.61"	0.41"

Also included with this letter are official paper copies of requested radar images, provided by NCDC, for certain times during the event. The images provided are known as Base Reflectivity Images, which display echo intensity measured in dBZ (decibels of Z, where Z represents the energy reflected back to the radar). The scale of dBZ values is also related to the intensity of rainfall. Dates and times are located on the right hand side of each image (year/month/date/time are given in GMT). Since time is given in GMT, the date on the first image reflects being taken at 07:31 GMT on the 21st, which corresponds to 3:31 AM EDT on the 21st.

The provided images were taken from the radar site located in Miami/Dade County, located near the Kendall-Tamiami airport and the approximate location of interested is noted on each image. You will notice an abundance of DBZ values between 5 and 15 dBZs, especially between the hours of 09:42 GMT (5:42 AM EDT) and 11:13 GMT (7:13 AM EDT), mainly due to ground clutter and backscatter from clouds, smoke, fog, and temperature inversions; even buildings and antenna towers can reflect small amounts of radar energy during a radar sweep. Typically, light rain is occurring when the dBZ value reaches 20, and values of 45-50 dBZ usually indicate moderate to heavy rainfall. Depending on the type of weather occurring and the area of the U.S., forecasters use a set of rain-rates, which correspond to the dBZ values.

At 11:13 GMT (7:13 AM EDT), there are some small clusters of shower activity (values of 20+ dBZ) near the location of interest, indicating that there was the potentially light rain falling. The intensity of these values increases from 11:18 GMT (7:18 AM EDT) until 11:57 GMT (7:57 AM EDT), when the line of moderate to heavy rain moves off to the southwest of the area of interest. Thunderstorms are seen to the southwest of the location at 12:10 GMT (8:10 AM EDT), and an outflow boundary is seen developing on the radar images 12:14 GMT (8:14 AM EDT) and 12:18 GMT (8:18 AM EDT). By 12:27 GMT (8:27 AM EDT), the outflow boundary has moved onshore, just to the southwest of the location, This storm dissipates by 13:10 GMT (9:10 AM EDT), but another small area of light shower activity forms over the location at 13:19 GMT (9:19 AM EDT) and lingers until around 14:02 GMT (10:02 AM EDT).

Based on the data provided to us, stations surrounding the area of interest reported rainfall and radar images indicate that light to moderate rain fell briefly over the location of interest.

I hereby certify that the data provided are true copies of the specified records and/or publications for the times and places indicated thereon on file at the National Climatic Data Center in Asheville, NC, and the Southeast Regional Climate Center in Chapel Hill, NC.

Sincerely,

David F. Zierden
Florida Climate Center
The Florida State University
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