

The circumstances surrounding the wild fire occurring on January 8, 2008 in Polk County has been investigated by the Office of Agricultural Law Enforcement and an independent multi-agency review team empanelled by the Division of Forestry. The following is summary of information developed during the investigation.

**The Burn Plan, Authorization and Site Preparation:**

The FWC burn was authorized to be conducted in accordance with Chapter 590.125(3)(b). The statute has 7 elements which must be met to be deemed in accordance with the statute. Investigation determined requirements set forth in subsections 1, 2, 3, 4, 6 and 7 were met. The only element in question is subsection 5 which requires adequate firebreaks at the burn site and sufficient personnel and firefighting equipment for the control of a fire. While the burn authorization issued by the Division of Forestry was for a total of 50 acres, the actual burn plan called for two (2) ten acre plots to be burned. Only one of the two plots was ignited before the problems started to occur which resulted in the wildfire.

The burn plan called for control lines around the perimeter of each burn plot to be mineral soil 12 feet wide. It was substantiated by visual observation that such control lines did exist prior to the burn.

The burn plan identified a total number of six personnel to be onsite, including the Burn Manager. All six were identified and interviewed. All six were on site for the duration of the burn.

The burn plan identified equipment to be used to include: (1) 500 gallon brush truck, (1) 220 gallon truck, (1) tractor and disc, (3) ATV's, (1) 1000 gallon water tender with high pressure pump, and assorted hand tools. It was verified that this equipment was onsite at time of the burn.

The Burn Manger is an FWC employee and has been Certified by the Division of Forestry since 1990. Records show he has conducted 27 control burns prior to the burn occurring January 8, 2008. There are no infractions identified for any previous burn. The Burn Manager actually began planning for this burn on November 27, 2007.

On January 8, 2008, at 5:25 AM, the burn manager obtained a spot weather forecast through a web based computer program offered by the Division of Forestry. The purpose of the spot forecast is to give a projection of weather for the day in a specific location. The spot forecast showed the lowest predicted humidity for the day to be 60 percent, with winds to be from the East-Southeast and East. Wind speed was predicted to be between 5 and 12 mph.

Also obtained was a weather forecast issued by the National Weather Service at 4:09 AM January 8, 2008. This forecast covered a six county area including Polk County. The forecast called for Partly Cloudy skies with a minimum RH of 44 percent for that afternoon. Winds were predicted to be East at 6 MPH in the morning, and Southeast at 8

mph in the afternoon. Both forecasts showed the winds should carry smoke away from Interstate 4.

At approximately 07:30 AM, The Burn Manager called the Division of Forestry for a Burn Authorization. Because the burn was to be conducted in a Smoke Sensitive Area, the Authorization required approval from the local area supervisor for DOF.

Between 07:30 AM and 08:00 AM, The Burn Manager contacted the Forest Area Supervisor to discuss the proposed burn. During that conversation the FAS discussed line preparation, number of personnel, equipment and predicted weather for the proposed burn. As a result of that conversation, the Forest Area Supervisor gave his approval to allow the authorization to be issued.

### **The Burn and Wildfire:**

At approximately 10:00 AM, prior to the burn commencing, a field weather test was conducted by the Burn Manager at the burn site. The burn plan records a Relative Humidity to be 63 percent with a South-Southeast wind at 2 to 7 mph. Prior to commencing the actual burn, a test burn was conducted as required.

At approximately 10:15 AM the burn was started. FWC personnel stated the fire burned as expected against the wind. It was estimated that the fire had burned an estimated 40 to 45 minutes when problems started to occur. FWC personnel stated the fire had backed an estimated 15 feet to 30 yards before problems start to occur.

FWC personnel stated that at approximately 11:00 AM the weather began to change, with the winds picking up and changing direction and the humidity rapidly dropped. The fire began to burn erratically and a spot over occurred. FWC Personnel took suppression action on this spot over, when another spot over occurred about 50 yards away. Despite suppression efforts, they were unable to suppress the fire outside of the control lines. At approximately 11:30 AM the Burn Manager requested DOF to respond.

Rangers arriving on scene reported the fire to be 15 to 20 acres in overall size. From this point the fire grew.

At 1:00 PM the Burn Manager recorded another onsite field weather test conducted at the scene. The relative humidity was recorded at 29 percent, with winds SSE at 3 to 5 mph, gusting to 7 mph.

On January 8, 2008, The Division of Forestry notified FHP and DOT of the fire and the potential for Smoke on the highway. This is a normal practice so these agencies can take whatever actions are deemed necessary to alert the public of a potential problem, and close roads if necessary. Information obtained shows that warning signs were being put out at 5:40 PM by DOT.

On January 8, 2008 at 5:38 PM the National Weather Service issued an updated spot forecast for Polk County. The forecast stated that patchy dense fog was expected in the area. The forecast also increased the LVORI to a 10 and lowered the mixing height from 300 feet to 200 feet. This information showed the fog was expected to be at its worst in Polk County on the evening of January 8, 2008 and morning of January 9, 2008.

### **Weather Data:**

The National Weather Service was consulted during the investigation regarding weather predictions made prior to the fire and reported weather occurrences during the fire. The Meteorologist in charge of the Ruskin, Florida office was the primary point of contact.

A National Weather Service advisory predicted patchy dense fog and an air mixing height of 300 feet for the period from 1/7/2008 through 1/9/2008 for Polk County in the morning hours. The Low Visibility Occurrence Risk Index (LVORI) was predicted at 9, 10 being the most severe condition. The NWS stated that actual weather readings collected by the National Weather Service from observation stations confirmed these predictions to be correct.

Investigators discussed the Fire Weather Forecasts issued by the NWS for the area including Polk County for 1/8/2008. The forecast showed that the relative humidity was expected to drop to 44% in the afternoon hours with an East Southeast wind of 6 mph in the morning and 8 mph in the afternoon.

Investigators had obtained Weather observations from area weather stations closest to the burn. They included Davenport, Lake Alfred, and Polk City. These locations were closest to the burn and gave a triangulation view of the actual weather around the fire before and during the prescribed burn. Observations show that between 10 AM and 11:00 AM humidity's dropped from an average of 90 percent to about 53 percent. Weather data also shows that wind speeds increased to 10 mph with gusts as high as 16 mph, and were erratic. By 1:00 PM, Davenport recorded the relative humidity at 37 percent, and it dropped as low as 31 percent by 3:19 PM.

The meteorologist was told of the fire behavior described by personnel on the burn. He stated that as the fire burned it would have dried the air allowing the upper level air to drop down at that location. The sudden drop in humidity caused by the air dropping down could have created the erratic fire behavior as described by FWC Personnel on scene. He also explained the 29 percent humidity recorded on scene at 1:00 PM was due to the fire causing more of a drying effect on the air at that location, which was not detected at the weather stations.

Based upon eye witness information and weather data collected, evidence shows that weather elements not forecast by the National Weather Service or DOF Spot Weather Forecast is the primary cause of the spot over's that were exacerbated by gusty winds, which lead to the containment problems.

**Investigative Findings:**

1. The wildfire that occurred on January 8, 2008 was a result of a controlled burn that was being conducted FWC on their property.
2. The burn was authorized and conducted in accordance with Chapter 590.125(3)(b), as a Certified Burn.
3. Based upon all available facts and information the cause of the wildfire appears to be an unpredictable change in weather that caused the prescribed fire to burn erratically which resulted in spot fires outside of the established boundary lines of the prescribed burn.
4. Based upon all available facts and information there does not appear to be any evidence of criminal violations or gross negligence on behalf of the FWC Personnel involved in the burn.