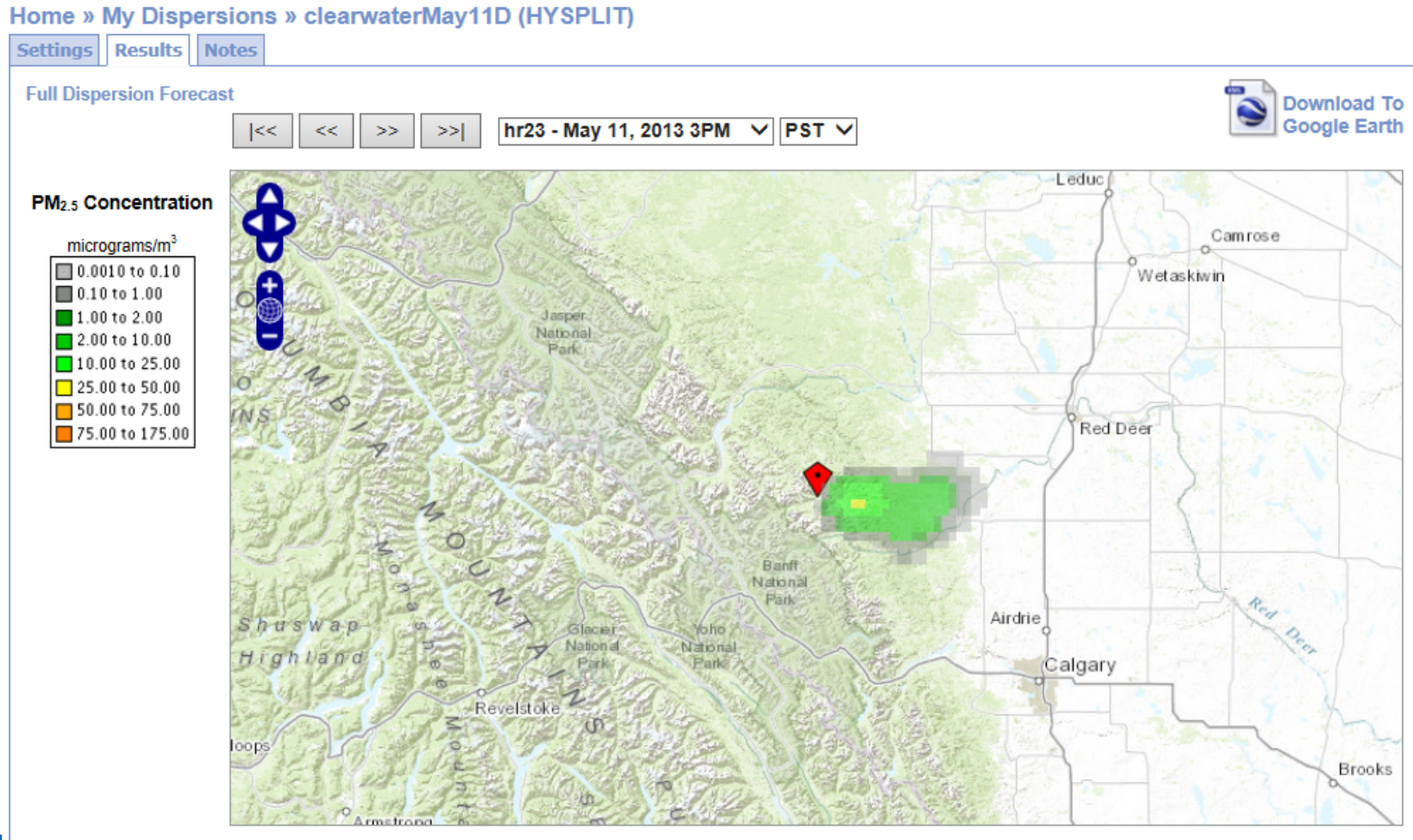


Canadian BlueSky Playground

Simulates prescribed burns(or wildfires) in order to estimate emissions and downwind pollutant concentrations



[Home](#) » [My Emissions](#) » test

Inputs

Latitude

Longitude

Target Size
 ha



Fuels Start Time [Fire Timing Info](#)

Fine Fuel Moisture Code Duff Moisture Code Drought Code
 Slope % Aspect deg Windspeed km/hr Wind Direction deg

[Discard Changes](#) [Apply](#) [Create Dispersion](#)

Outputs

Fire Weather Index

Fine Fuel Moisture Code	90
Duff Moisture Code	70
Drought Code	300
Initial Spread Index	7.10
Buildup Index	88.42
Fire Weather Index	23.41

Fire Behavior Prediction

Rate of Spread	0.95	m/min
Surface Fuel Consumption	1.40	kg/m ²
Total Fuel Consumption	1.40	kg/m ²
Head Fire Intensity	398.38	kW/m

Emissions

PM _{2.5}	37.30	tonnes
PM ₁₀	44.02	tonnes
CO	440	tonnes
CO ₂	4747	tonnes
NO _x	5.19	tonnes
GHGs	5720	tonnes CO ₂ e

How can Playground output be validated on the ground?

Objective 1 – deploying and using E-BAM (Met One Instruments)







Objective 2: asses potential to validate Blue Sky Playground

May 2014 Deadwood PB and monitor locations



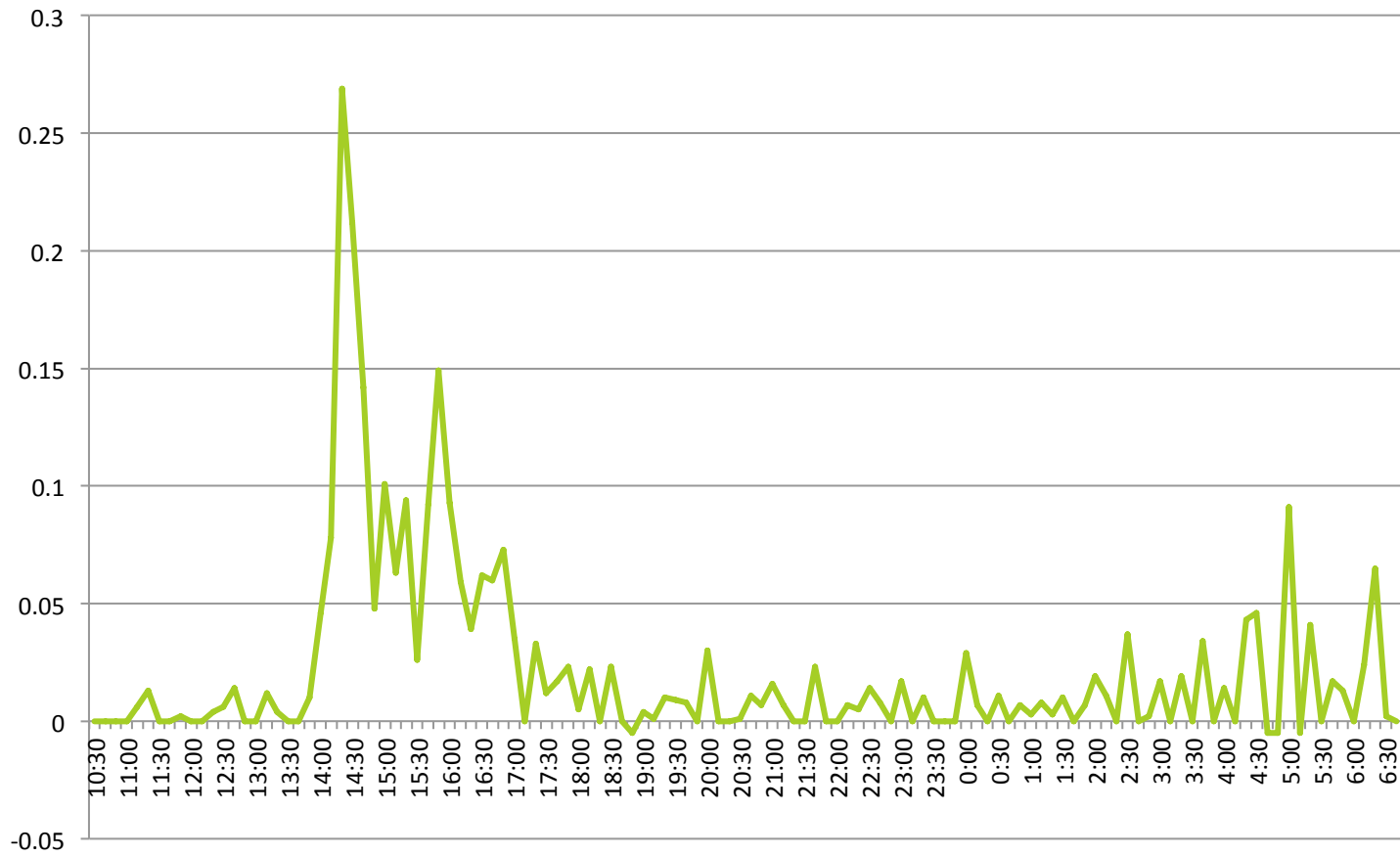
0 0.25 0.5 1 1.5 2 Kilometers



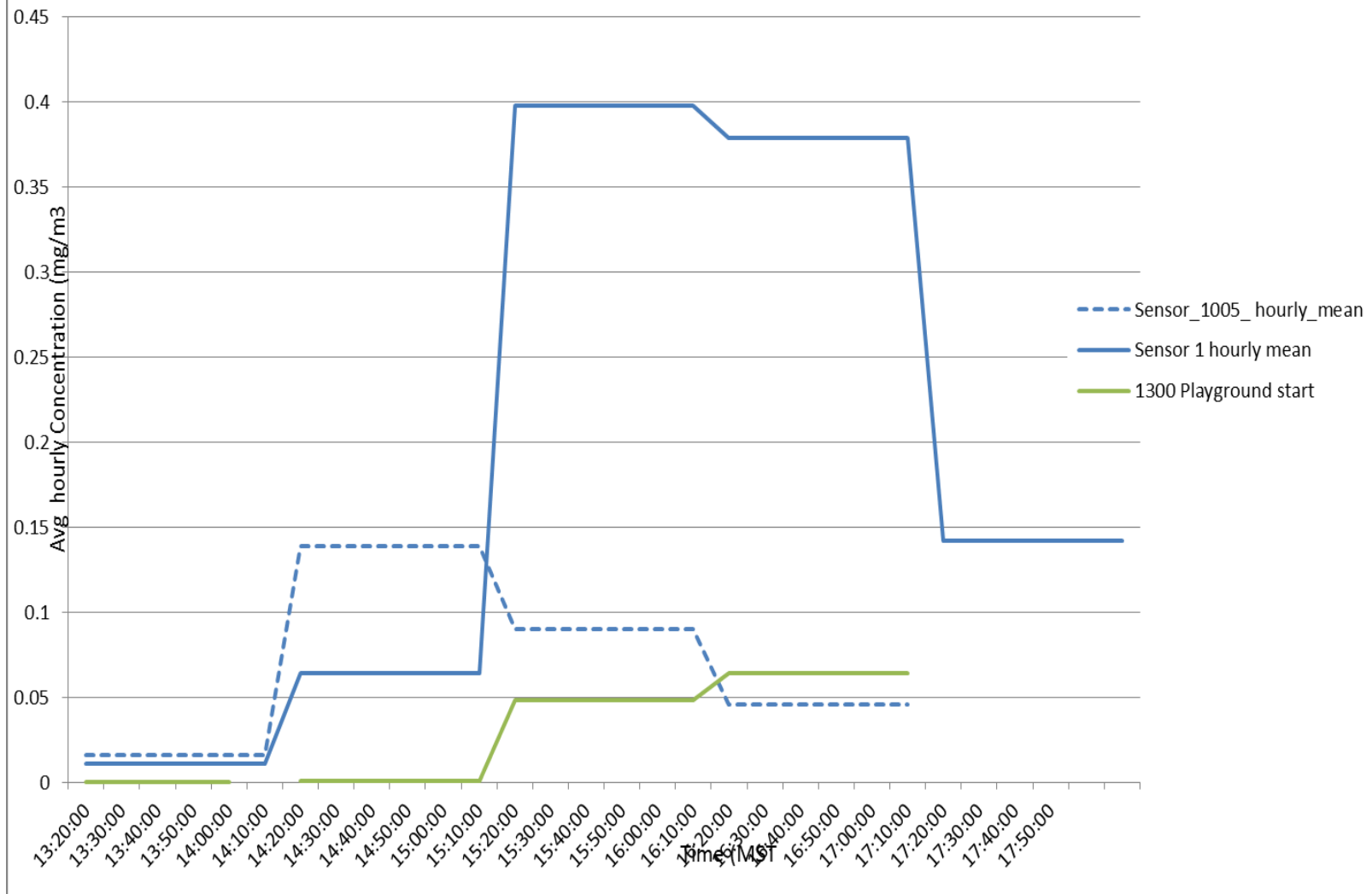




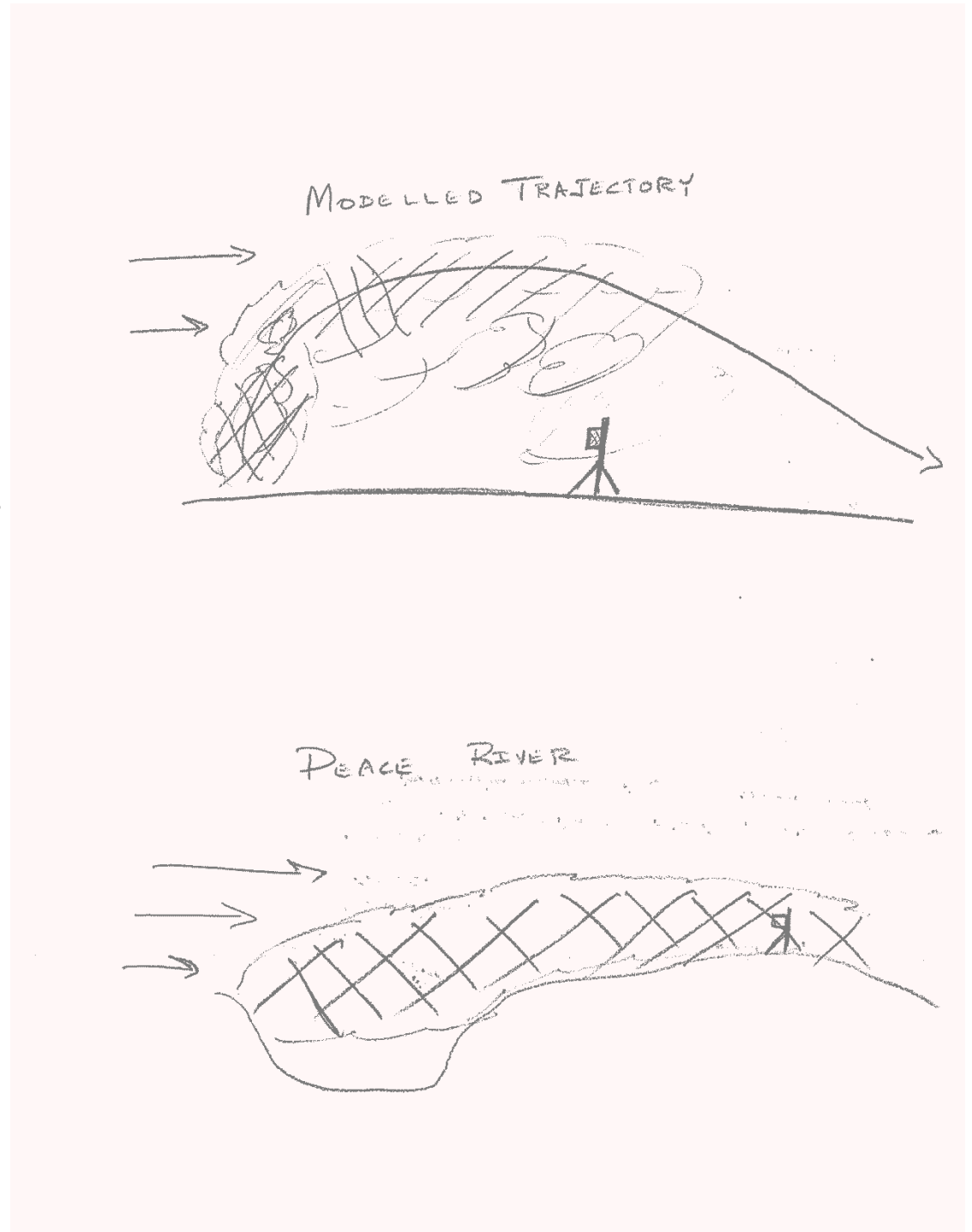
PM2.5 Concentration for Sensor_1005 Deadwood, May 10, 2014



BlueSky Playground Evaluation for Deadwood Prescribed Fire May 10, 2014

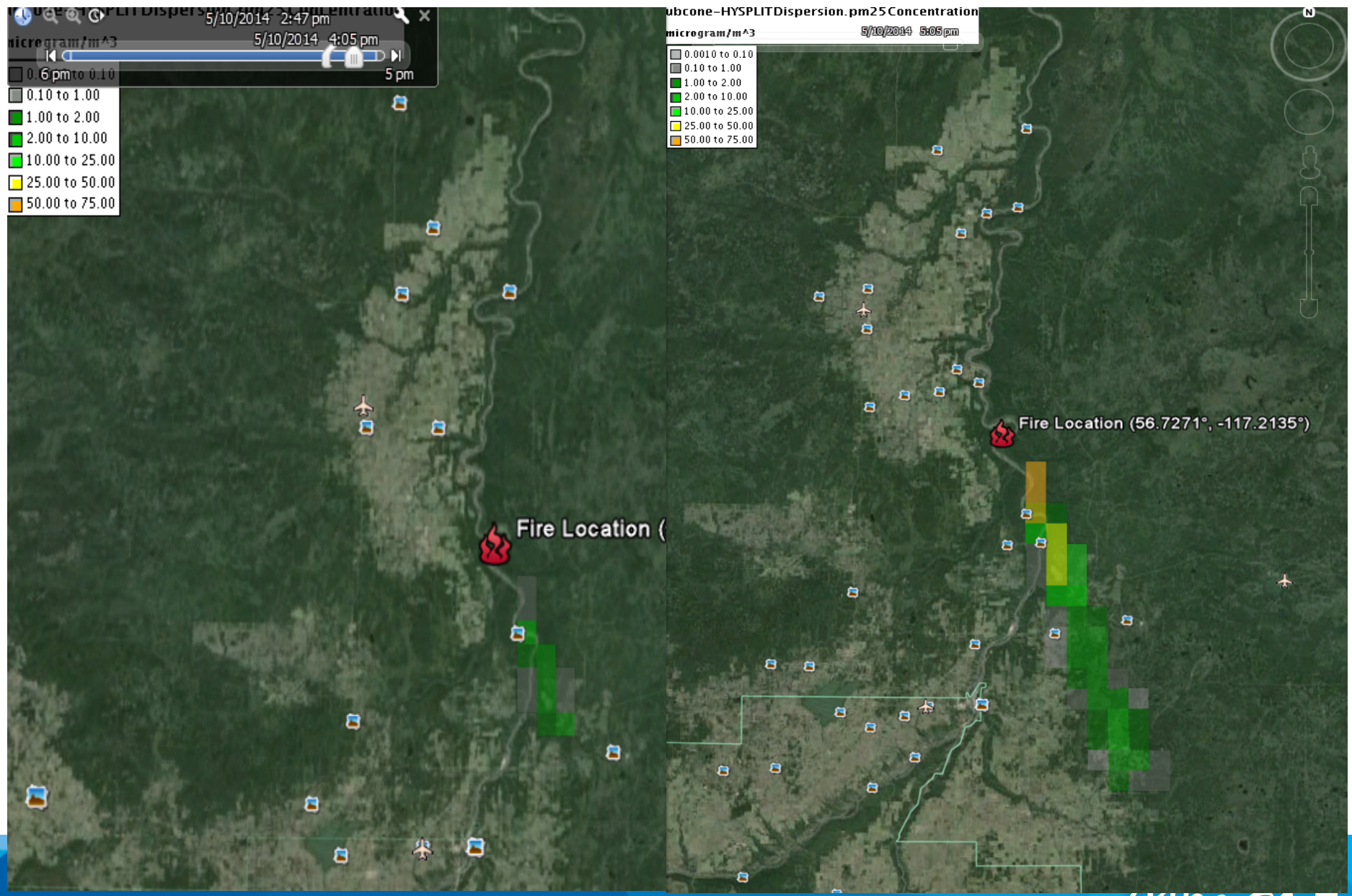


Sensors too close to the fire - attempt to use playground to identify spots didn't work



EBAM good, but not ideal

- Needs a generator or line power (solar is an option)
- Portable, but not compact
- Single point represents 16km²
- 20 min set up, satellite data upload in place



BlueSky Playground:

- plume direction matched observations, although river gorge terrain effects too fine for model.
- pm 2.5 concentration forecast matched observations: relatively higher adjacent to the fire and rapidly decreasing.

Next steps

Seeking funding to make Playground improvements:

- Unlimited burn window
- Better output (i.e., Not formatted for Google Earth) and different dispersion model (more sensitive to terrain)