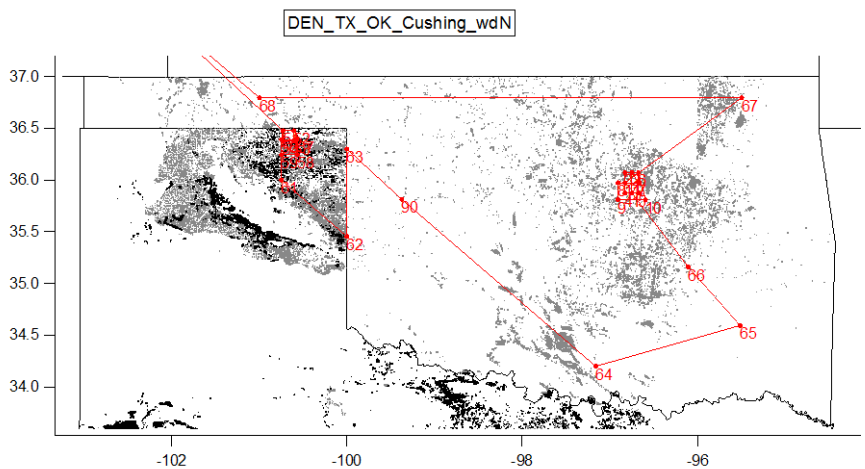
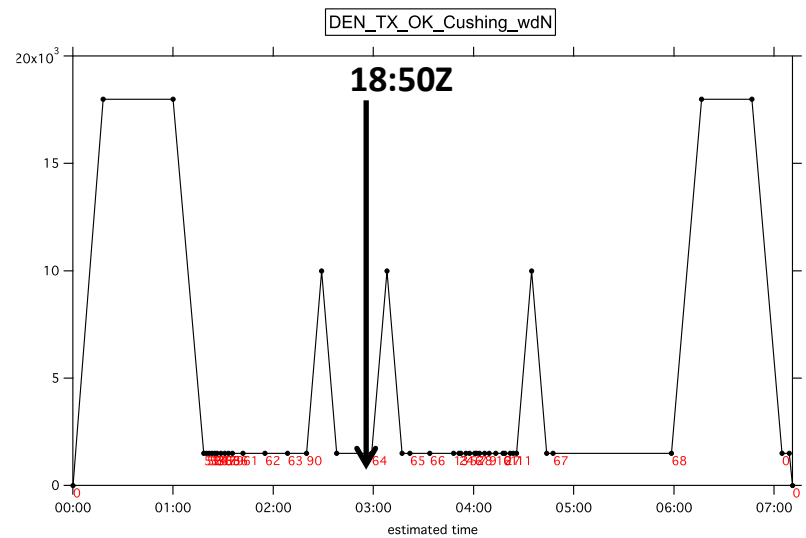
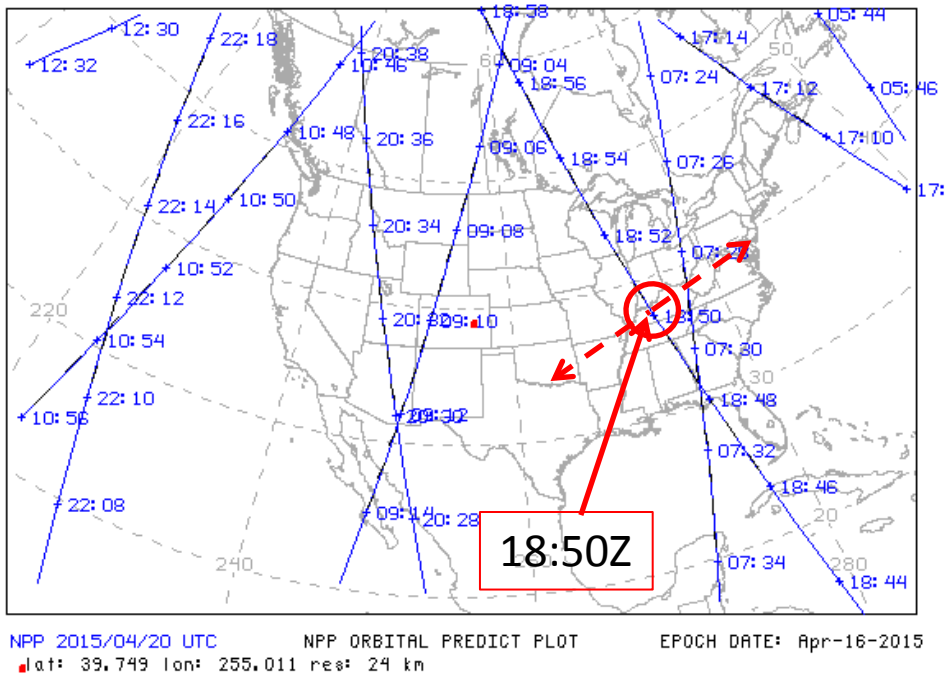
RAQMS 20150420 SONGNEX
30hr FX for 18Z April 20 (Cushing, OK), and 54hr FX for 18Z April 21(Haynesville or Bakken), 2015

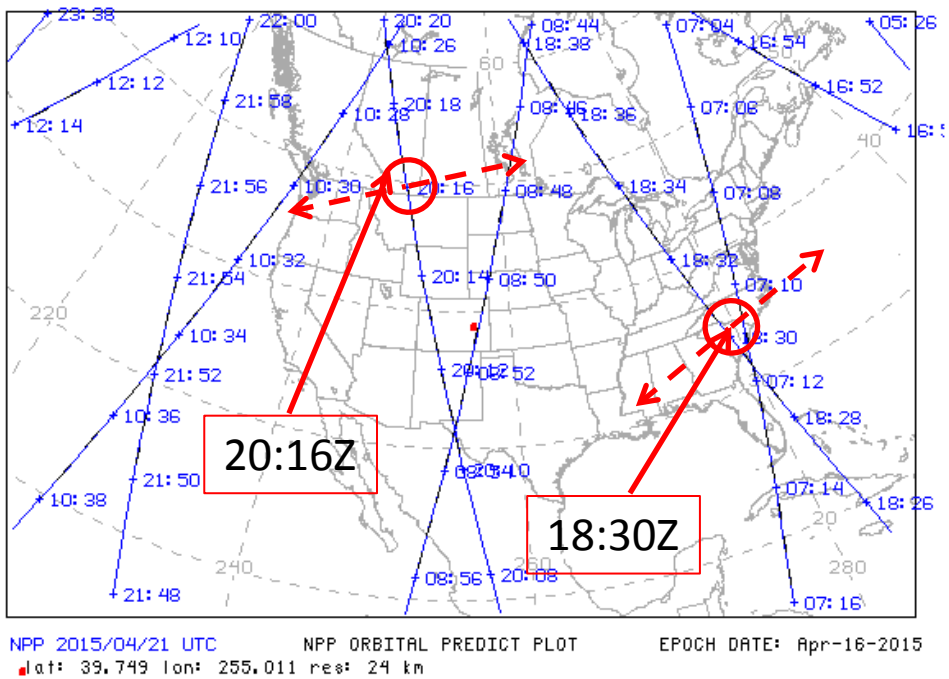




Assuming 10:00am Mountain Take-off

S-NPP (CrIS) overpass on 2015/04/20 and 2015/04/21
NUCAPS CO2, O3, CO, CH4 Validation Opportunity
<u>Western (20) and Eastern or Western (21) swath edge</u>

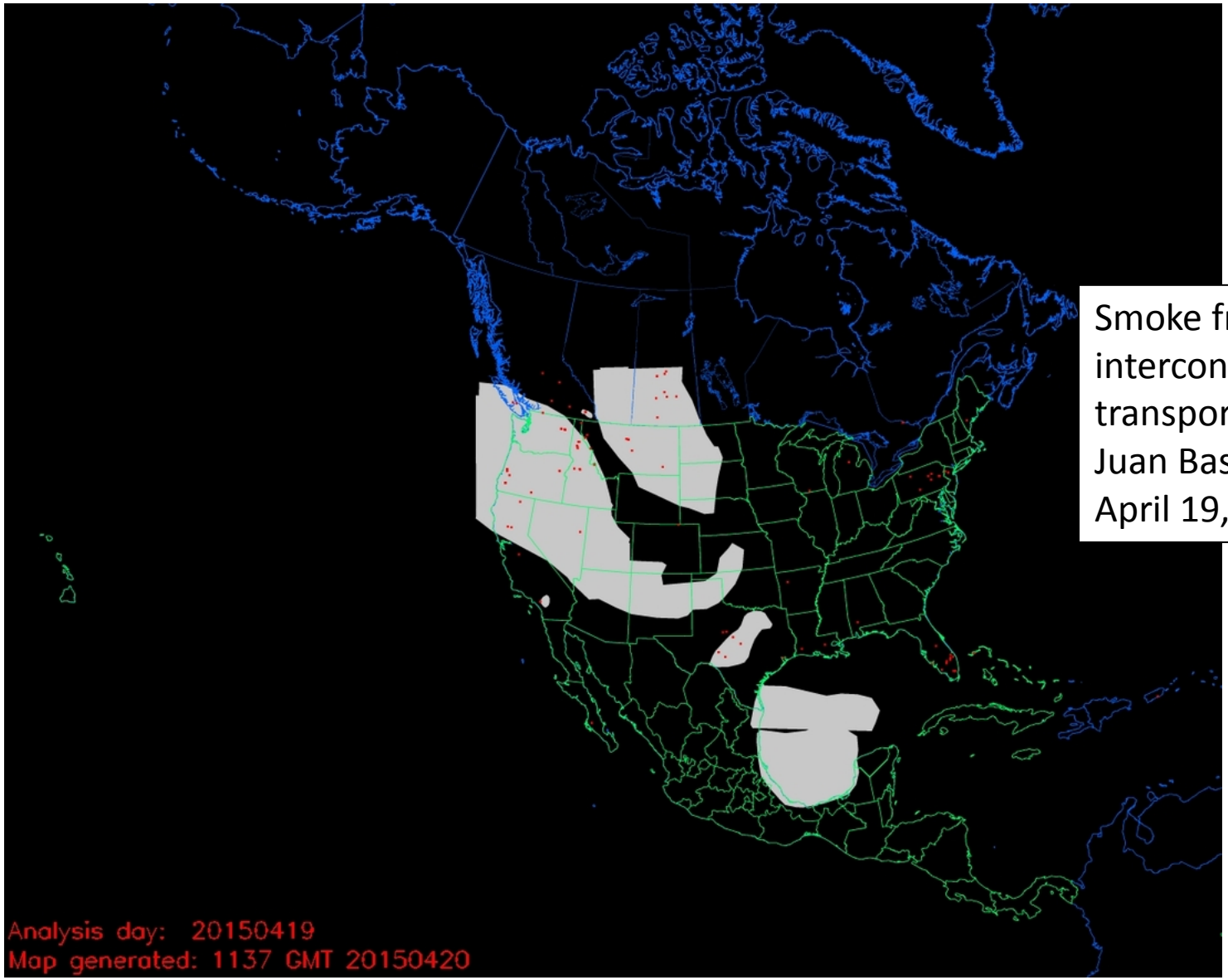




Approximate swath width

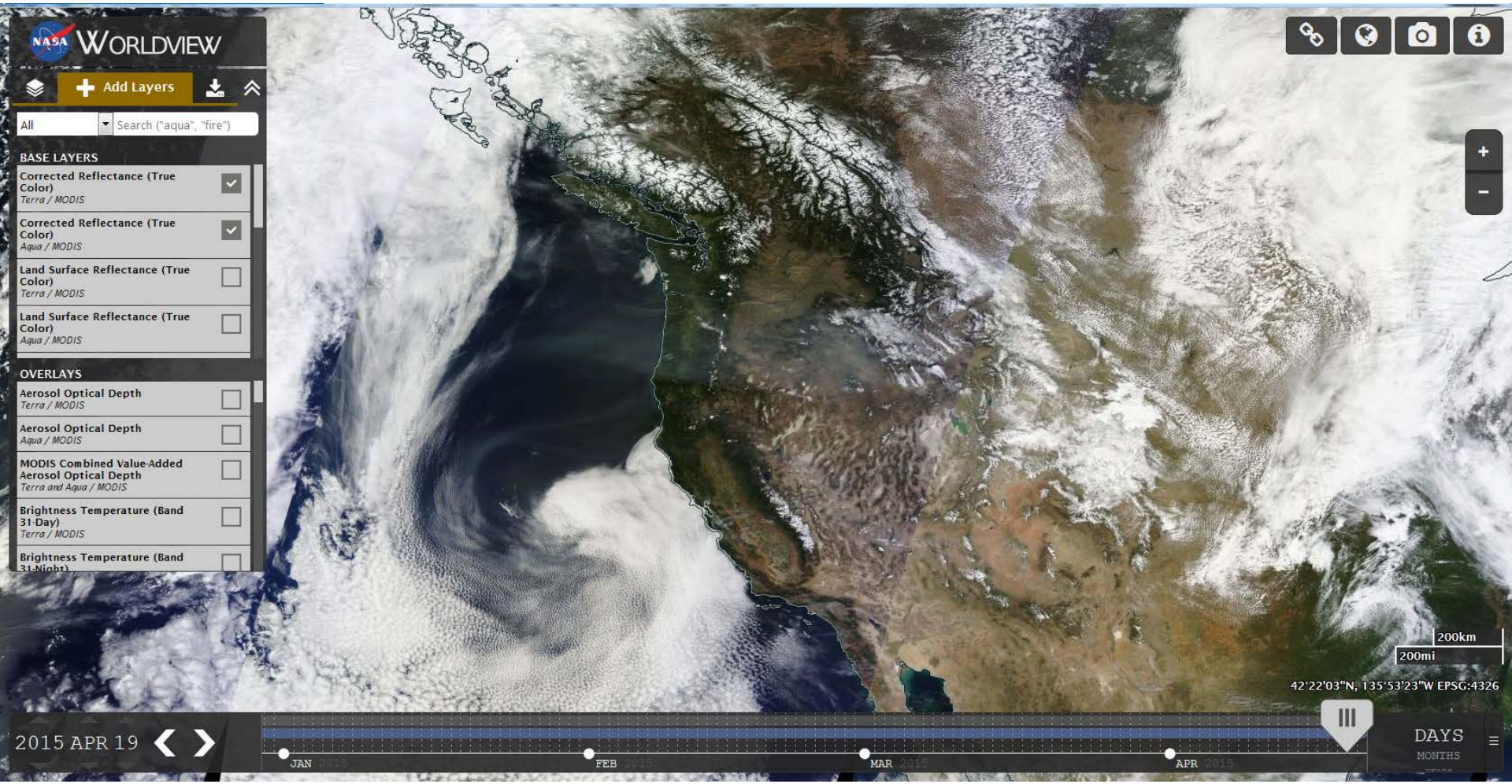
NESDIS Hazard Mapping System (HMS)

http://www.ospo.noaa.gov/data/land/fire/currenthms.jpg

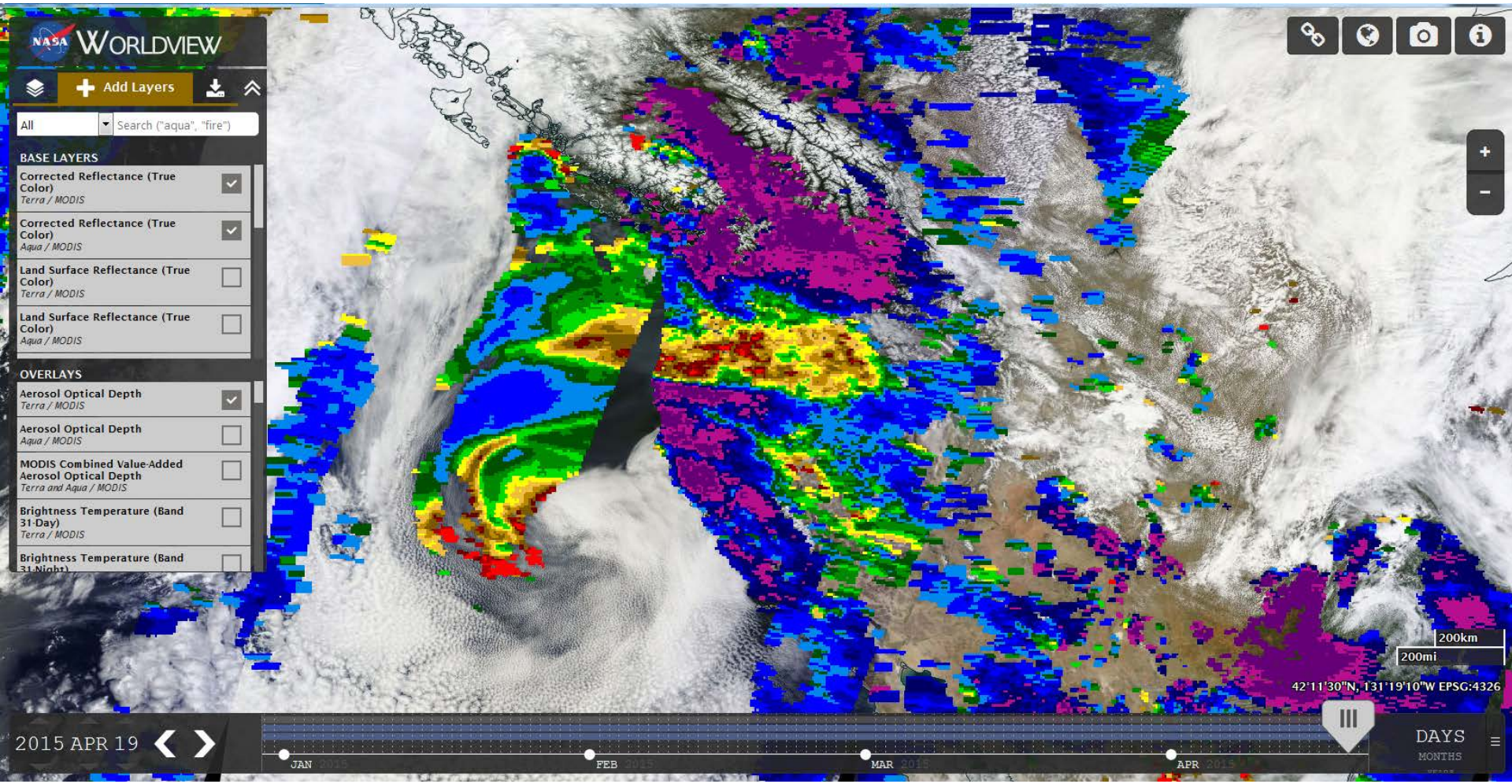


Smoke from intercontinental transport over San Juan Basin on April 19, 2015

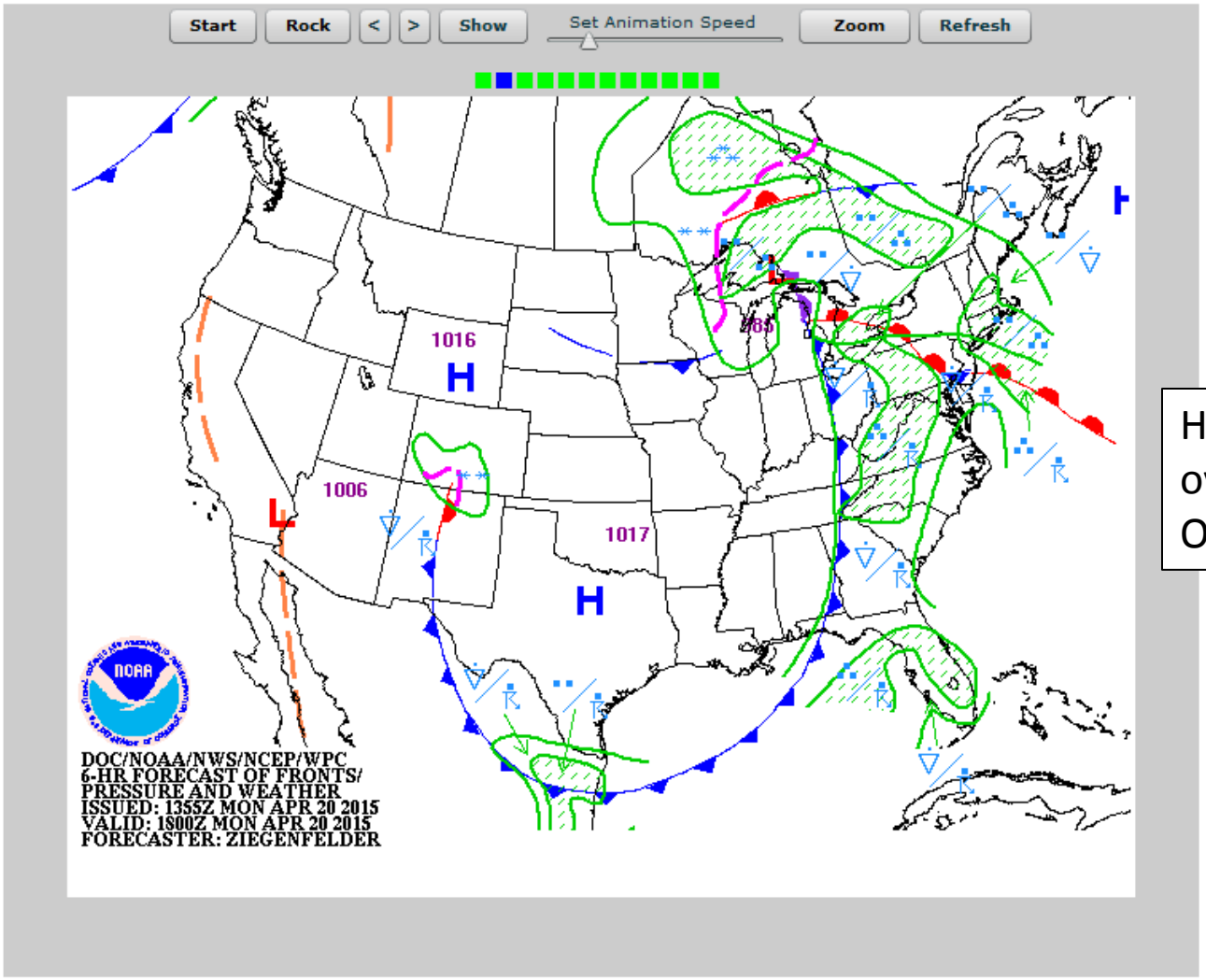
NASA Worldview MODIS True Color image



NASA Worldview MODIS AOD



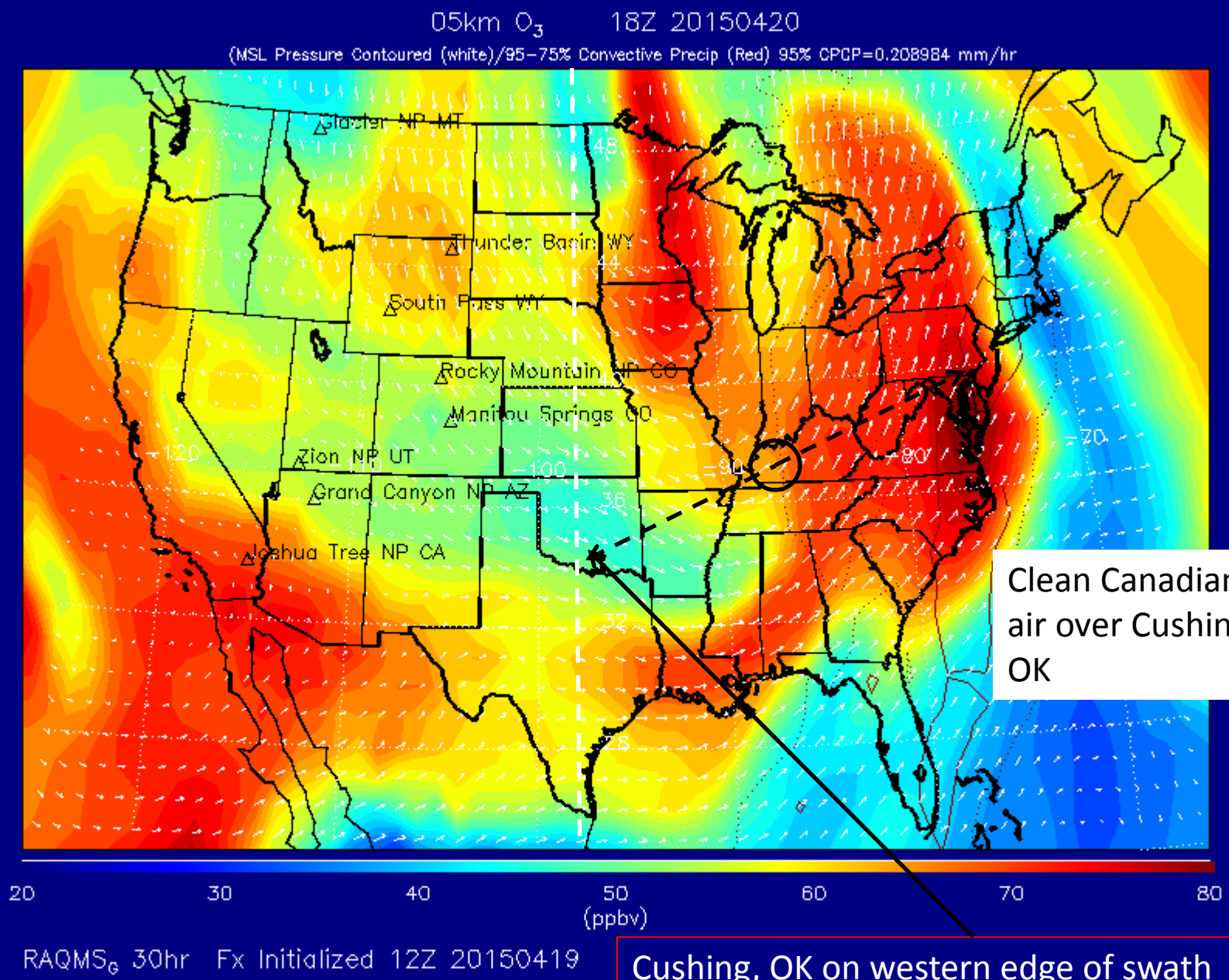
6hr NCEP/WPC forecast valid 18Z 04/20/2015



High pressure over Cushing, OK

http://www.hpc.ncep.noaa.gov/basicwx/day0-7loop.html

http://raqms.ssec.wisc.edu/forecast/view/20150419

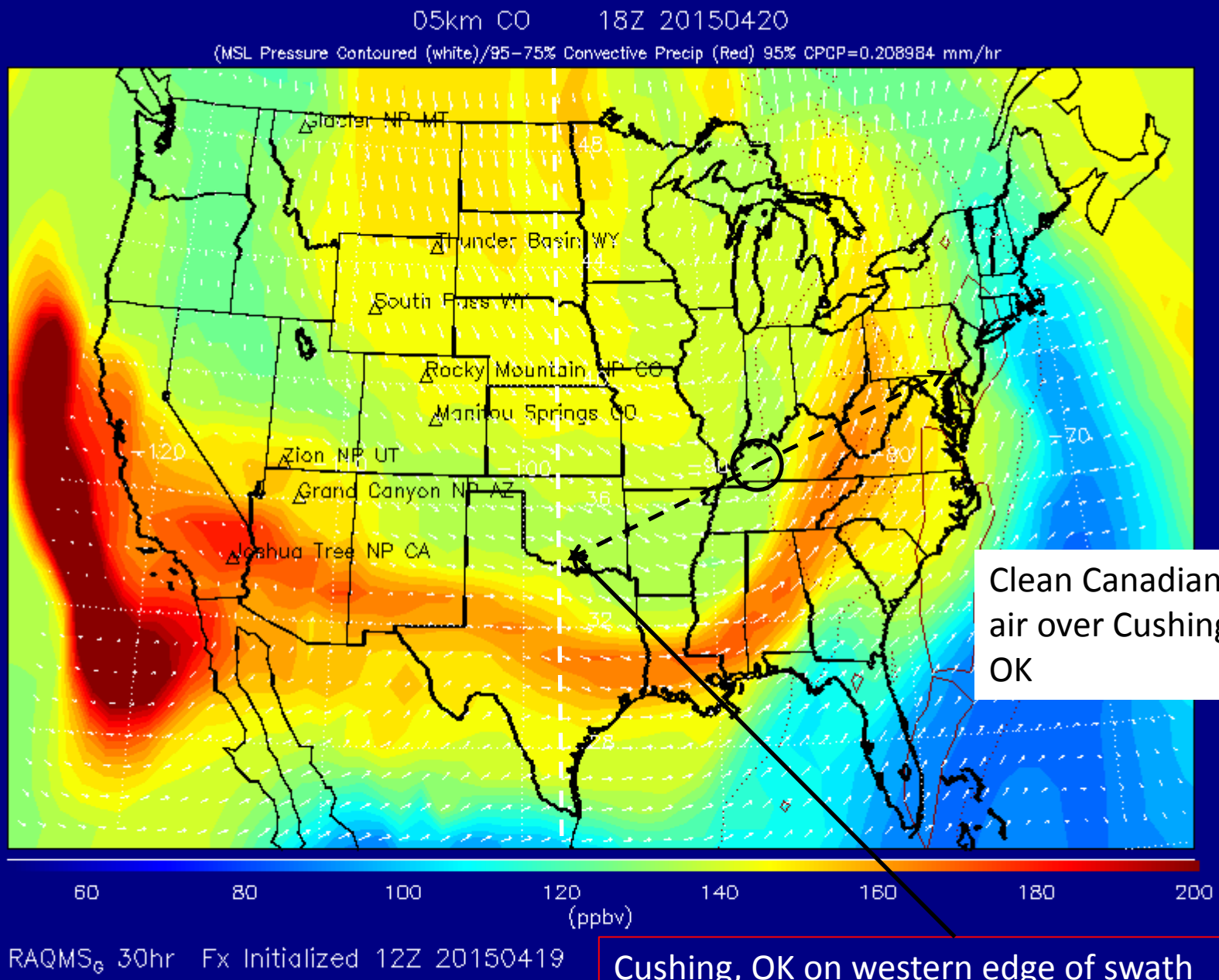


Clean Canadian air over Cushing, OK

Cushing, OK on western edge of swath

Approximate swath width

http://raqms.ssec.wisc.edu/forecast/view/20150419

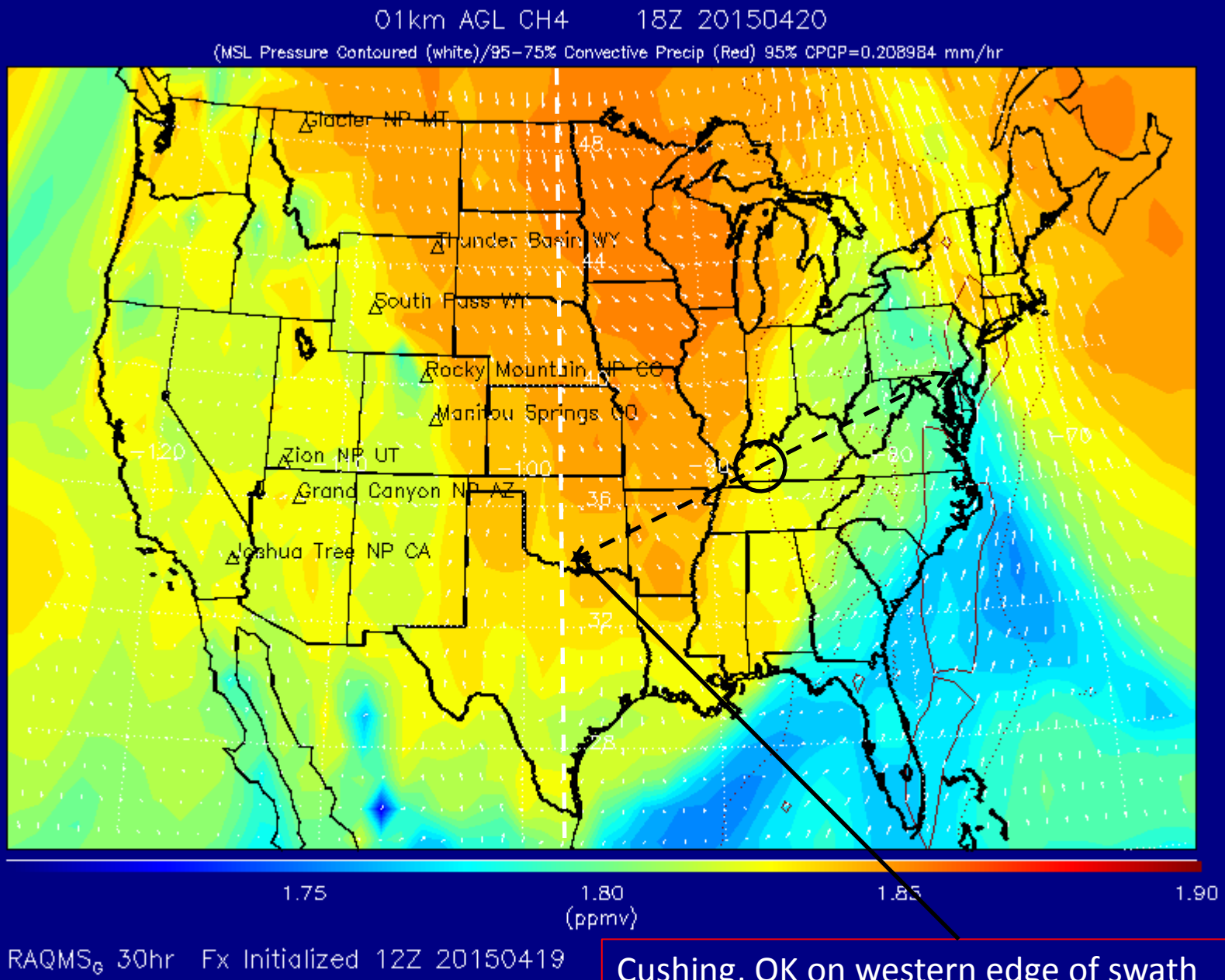


Clean Canadian air over Cushing, OK

Cushing, OK on western edge of swath

Approximate swath width

http://raqms.ssec.wisc.edu/forecast/view/20150419

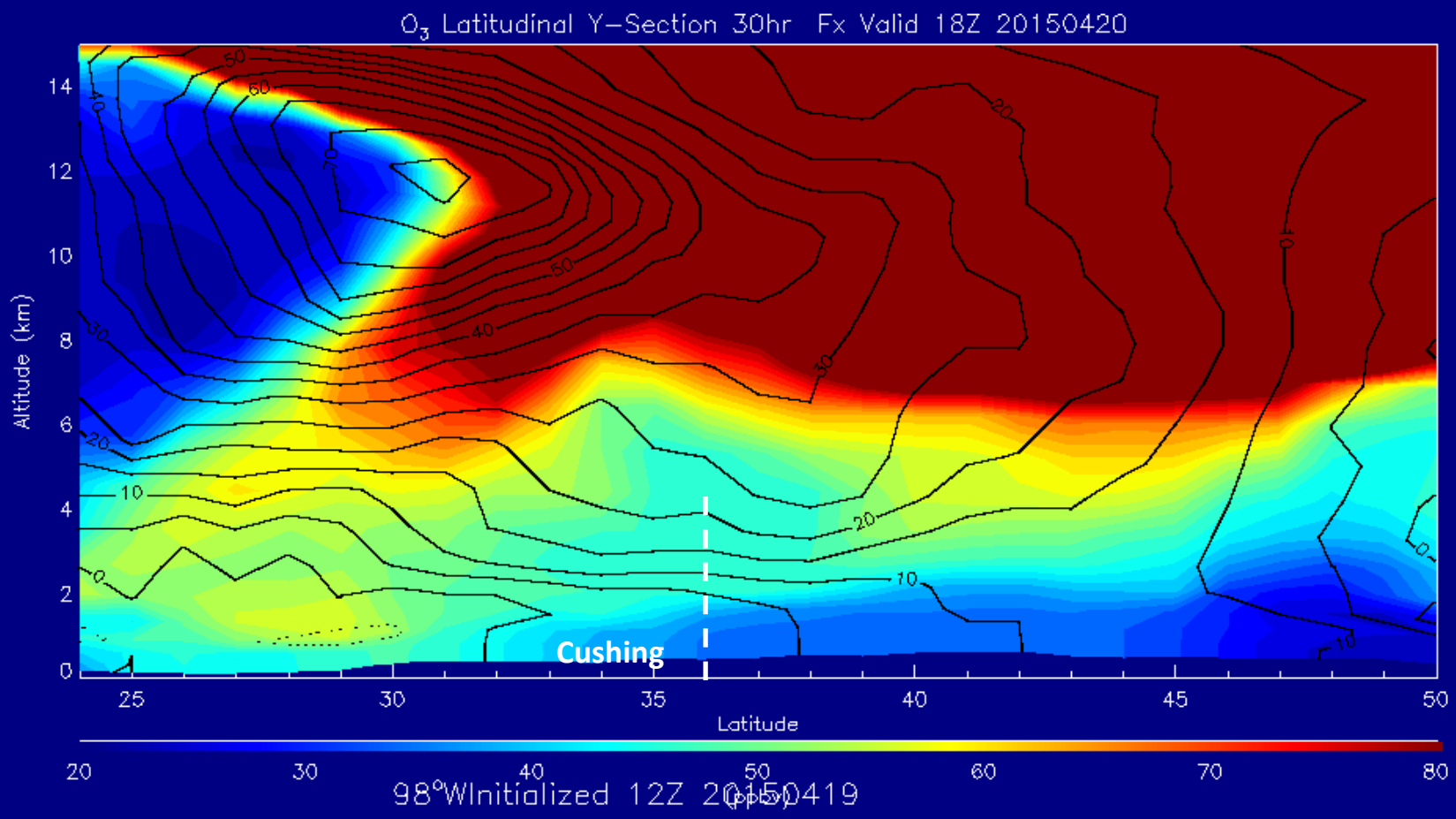


Cushing, OK on western edge of swath

RAQMS surface CH4 constrained with 1990 mixing ratio – introduces ~0.1ppmv low bias

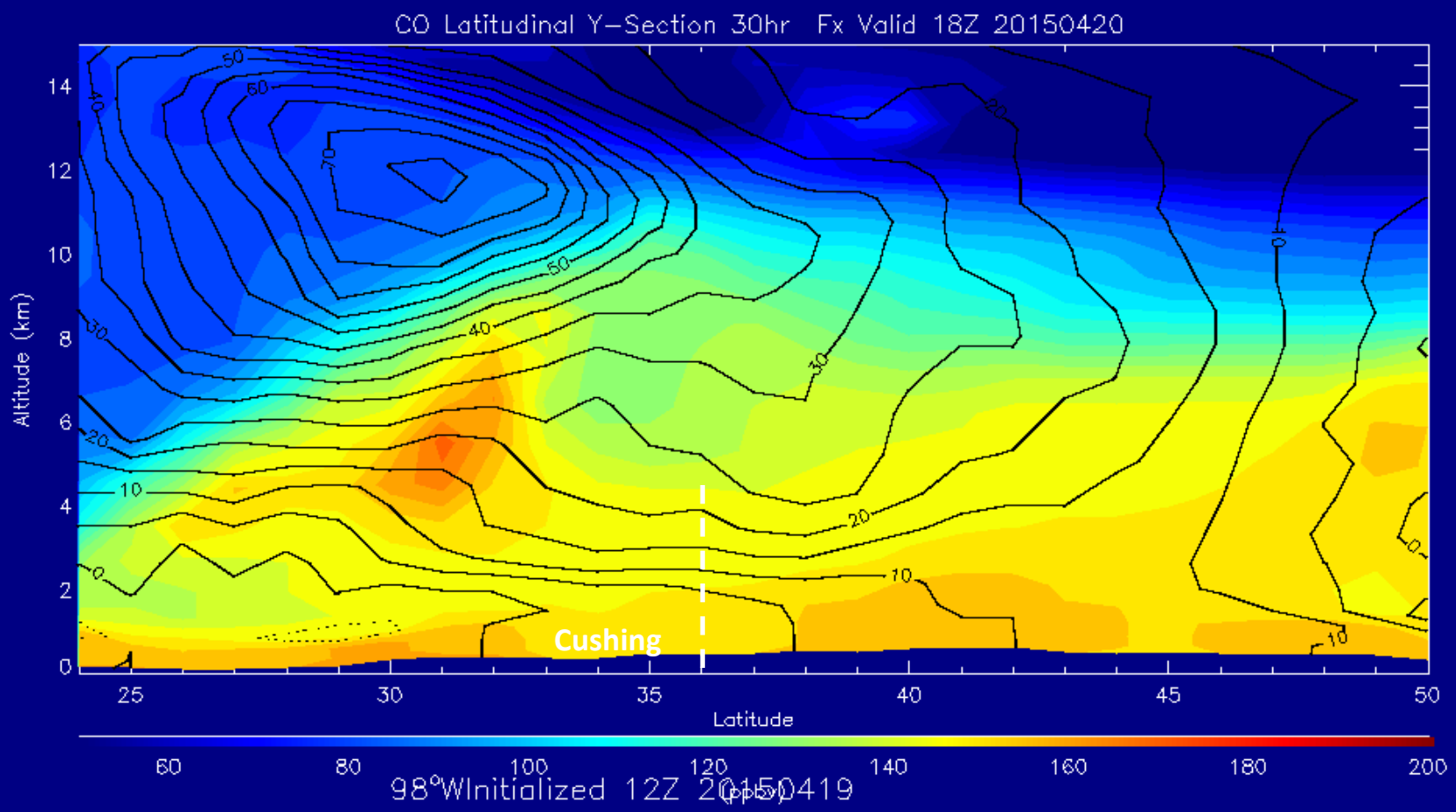
http://raqms.ssec.wisc.edu/forecast/view/20150419

RAQMS 30hr FX O3 Cross-section at 98W
(Cushing, OK)



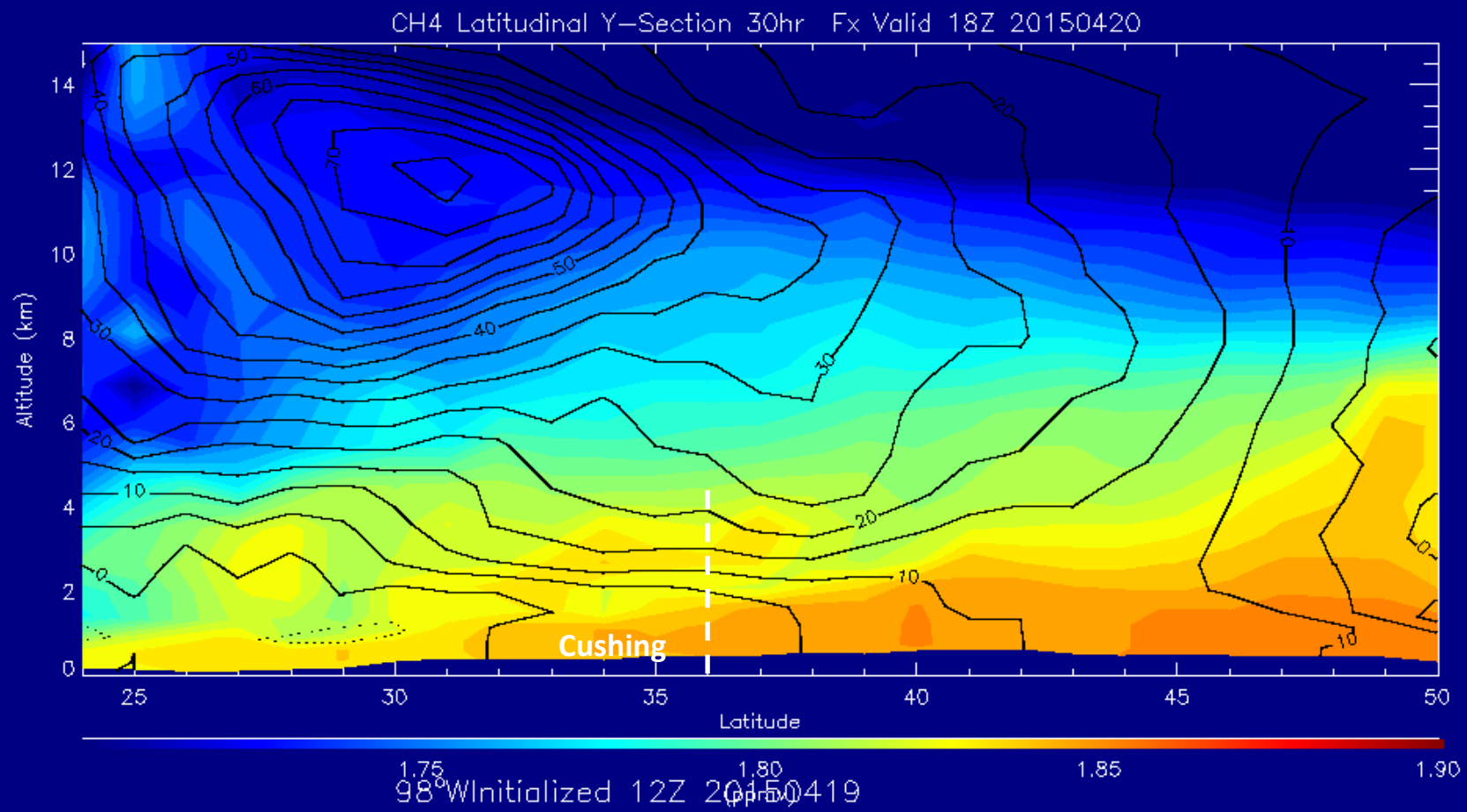
http://raqms.ssec.wisc.edu/forecast/view/20150419

RAQMS 30hr FX CO Cross-section at 98W
(Cushing, OK)



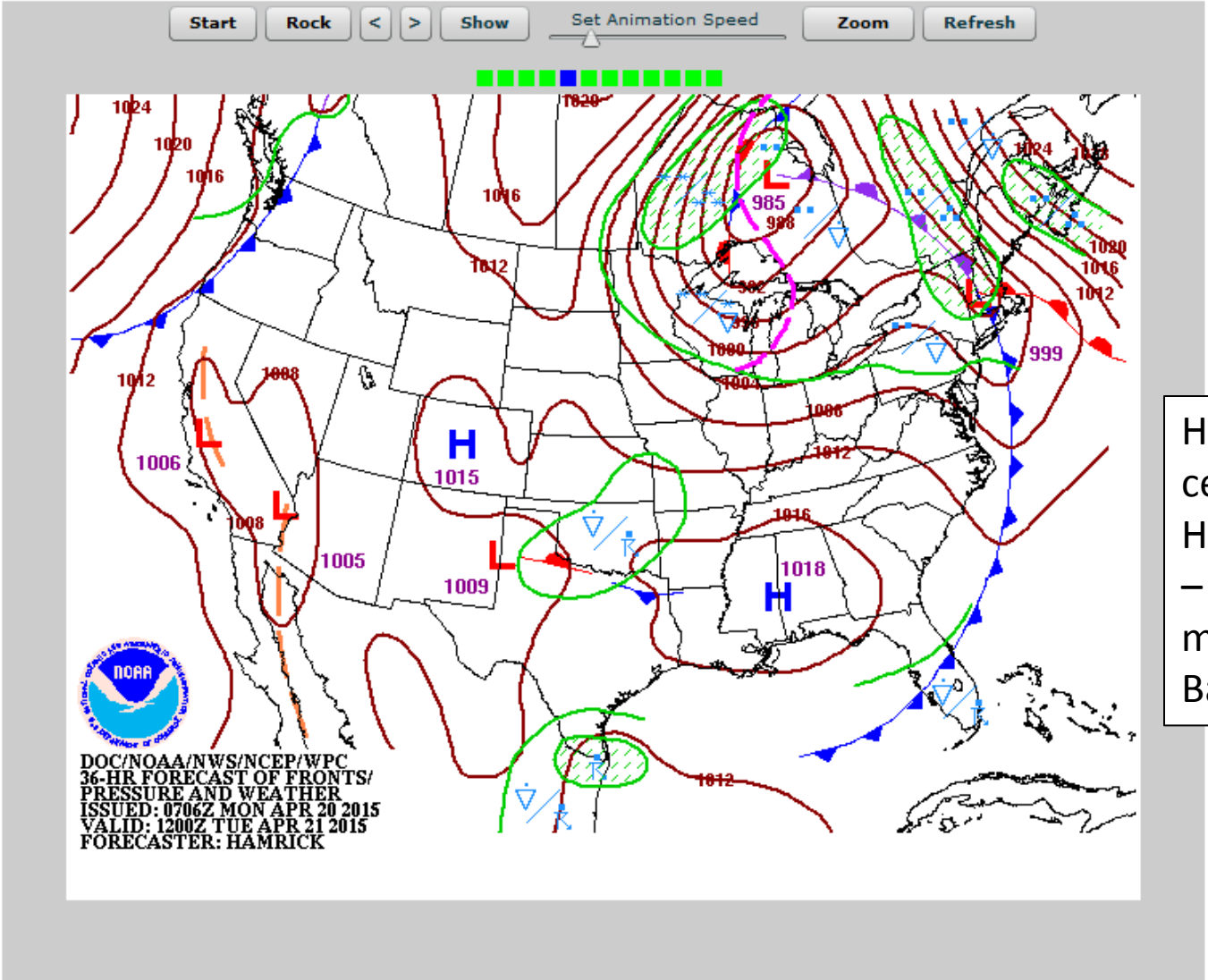
http://raqms.ssec.wisc.edu/forecast/view/20150419

RAQMS 30hr FX CH4 Cross-section at 98W (Cushing, OK)



RAQMS surface CH4 constrained with 1990 mixing ratio – introduces ~0.1ppmv low bias

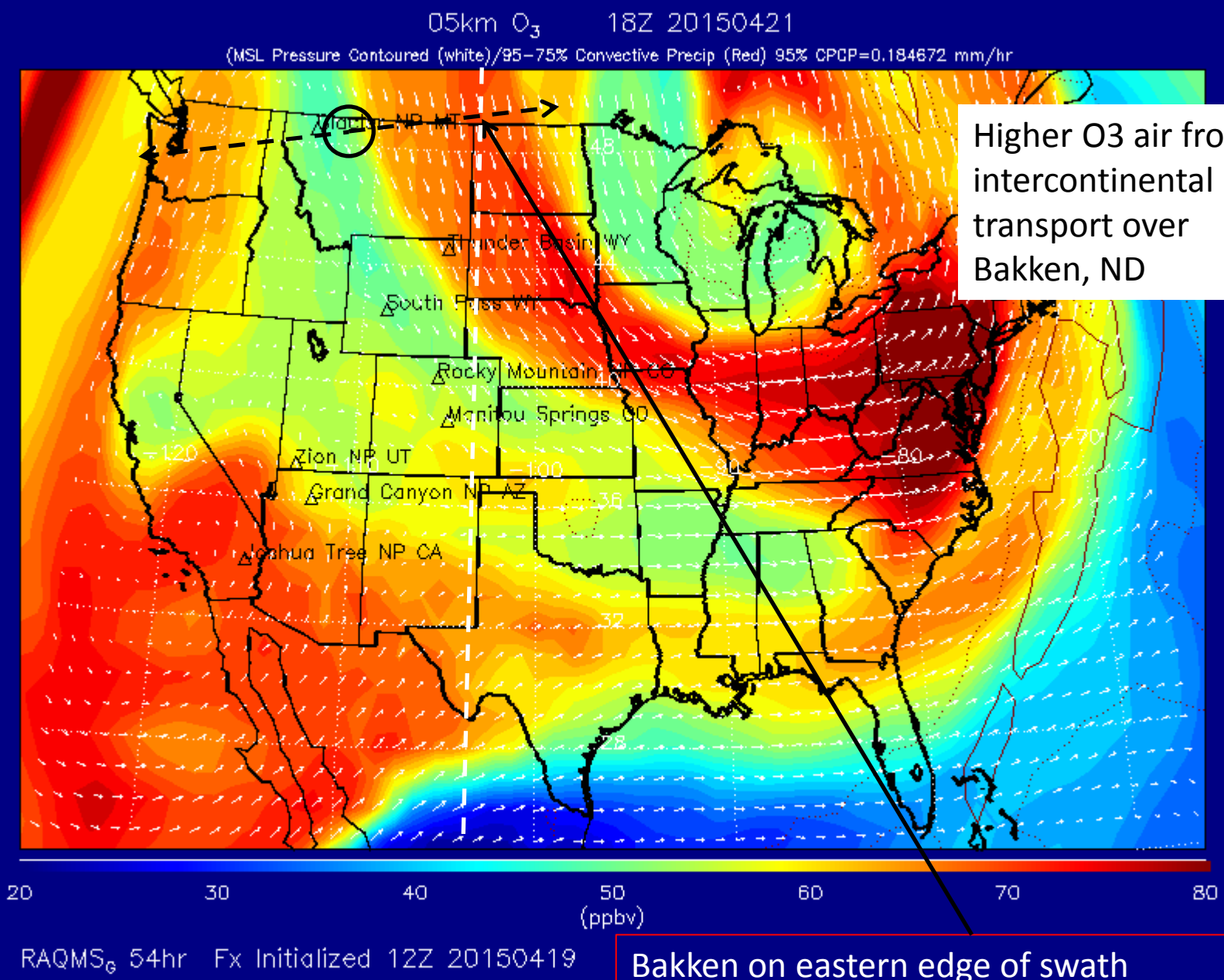
36hr NCEP/WPC forecast valid 12Z 04/21/2015



High pressure center over Haynesville Shale – high pressure moving into Bakken

http://www.hpc.ncep.noaa.gov/basicwx/day0-7loop.html

http://raqms.ssec.wisc.edu/forecast/view/20150419

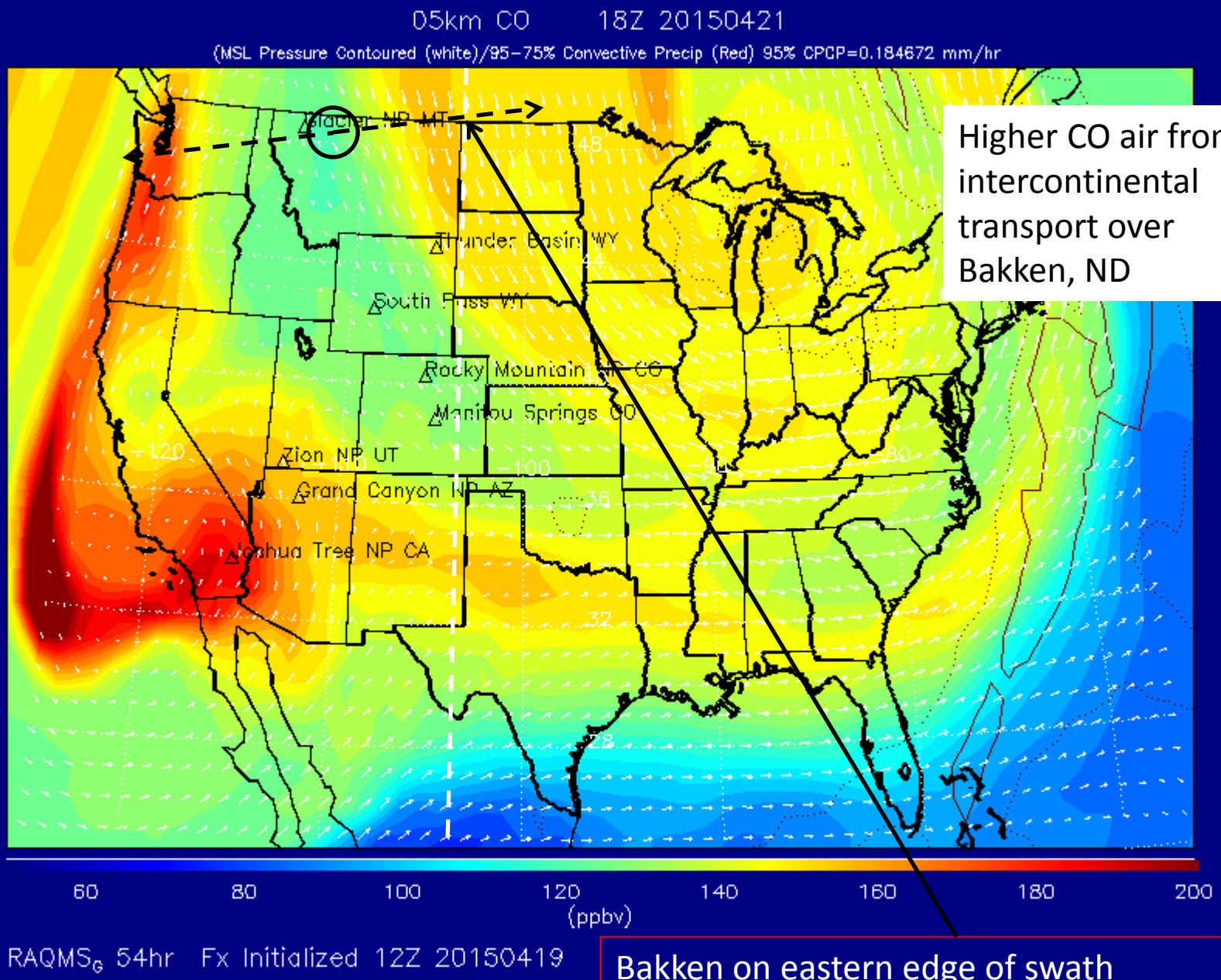


Higher O3 air from intercontinental transport over Bakken, ND

Bakken on eastern edge of swath

Approximate swath width

http://raqms.ssec.wisc.edu/forecast/view/20150419

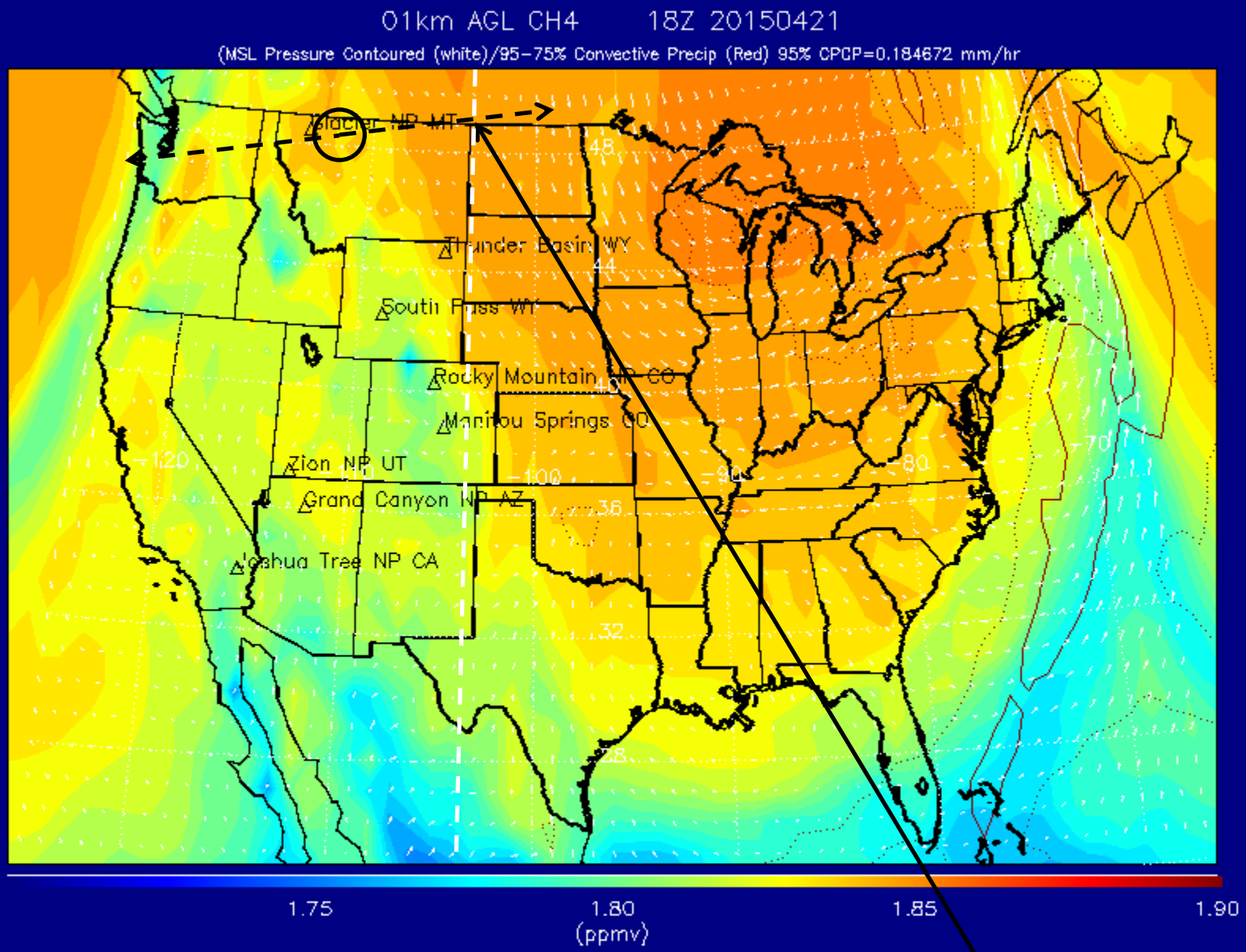


Higher CO air from intercontinental transport over Bakken, ND

Bakken on eastern edge of swath

Approximate swath width

http://raqms.ssec.wisc.edu/forecast/view/20150419

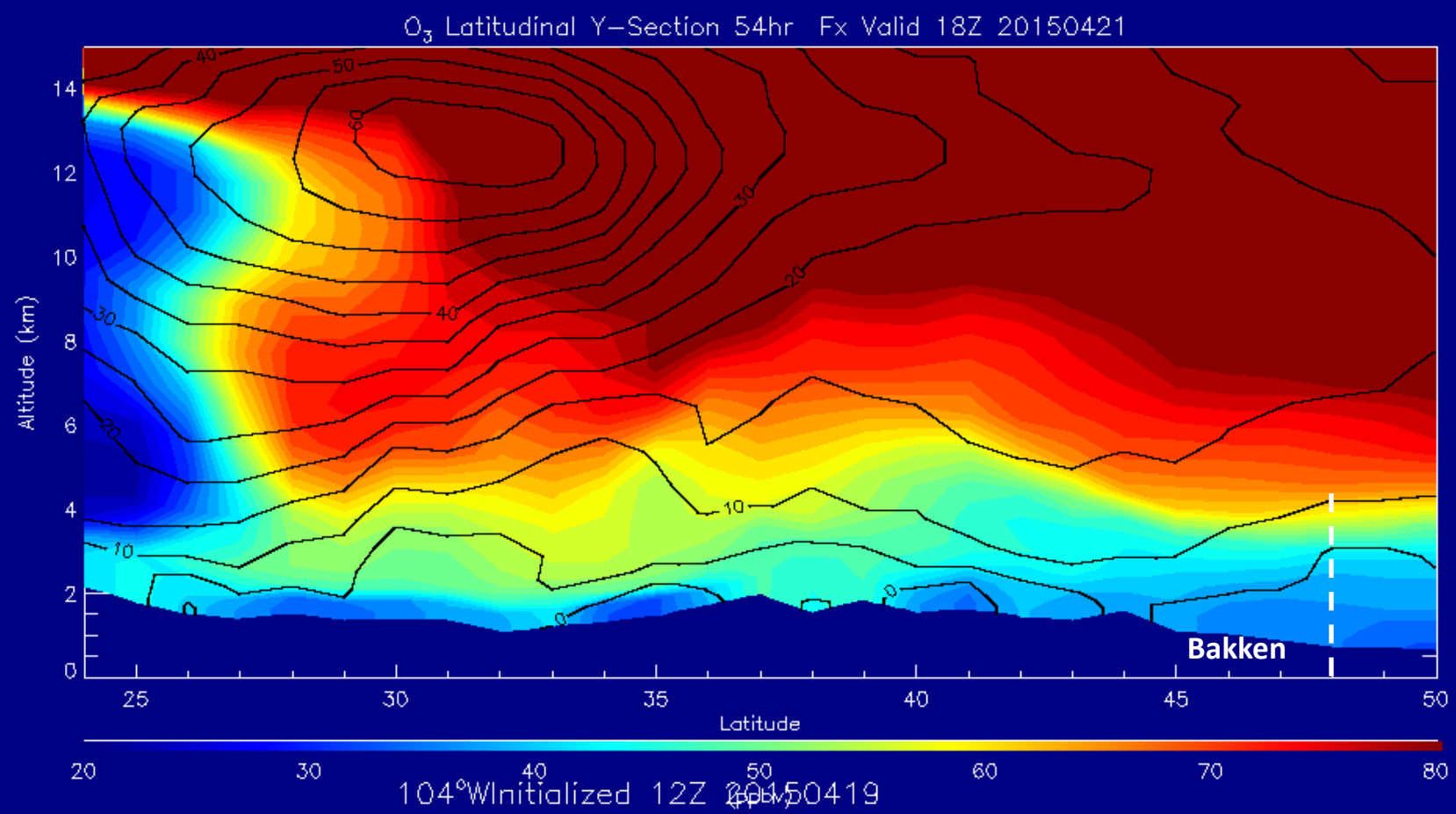


Bakken on eastern edge of swath

RAQMS surface CH4 constrained with 1990 mixing ratio – introduces ~0.1ppmv low bias

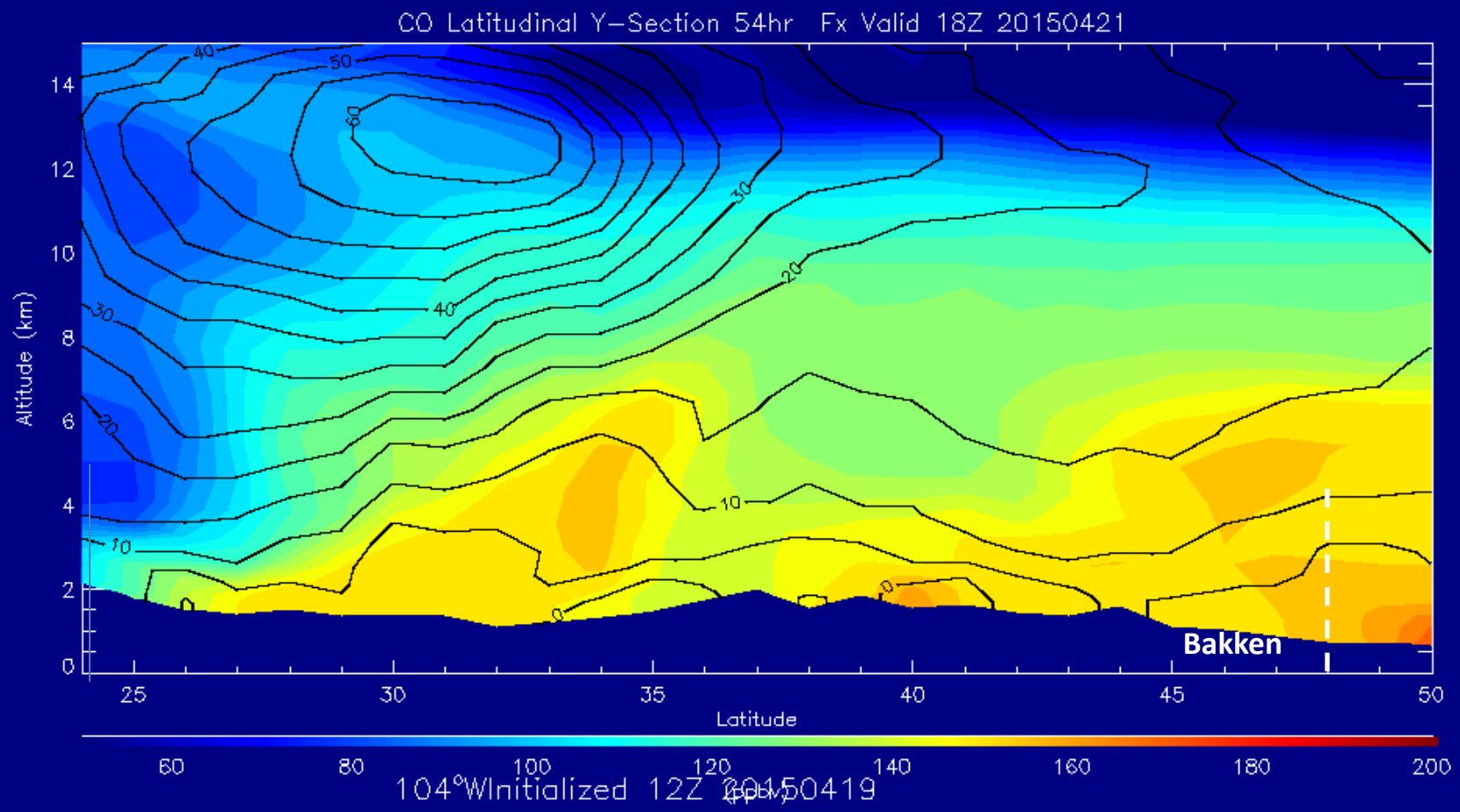
http://raqms.ssec.wisc.edu/forecast/view/20150419

RAQMS 54hr FX O3 Cross-section at 104W (Bakken Basin)



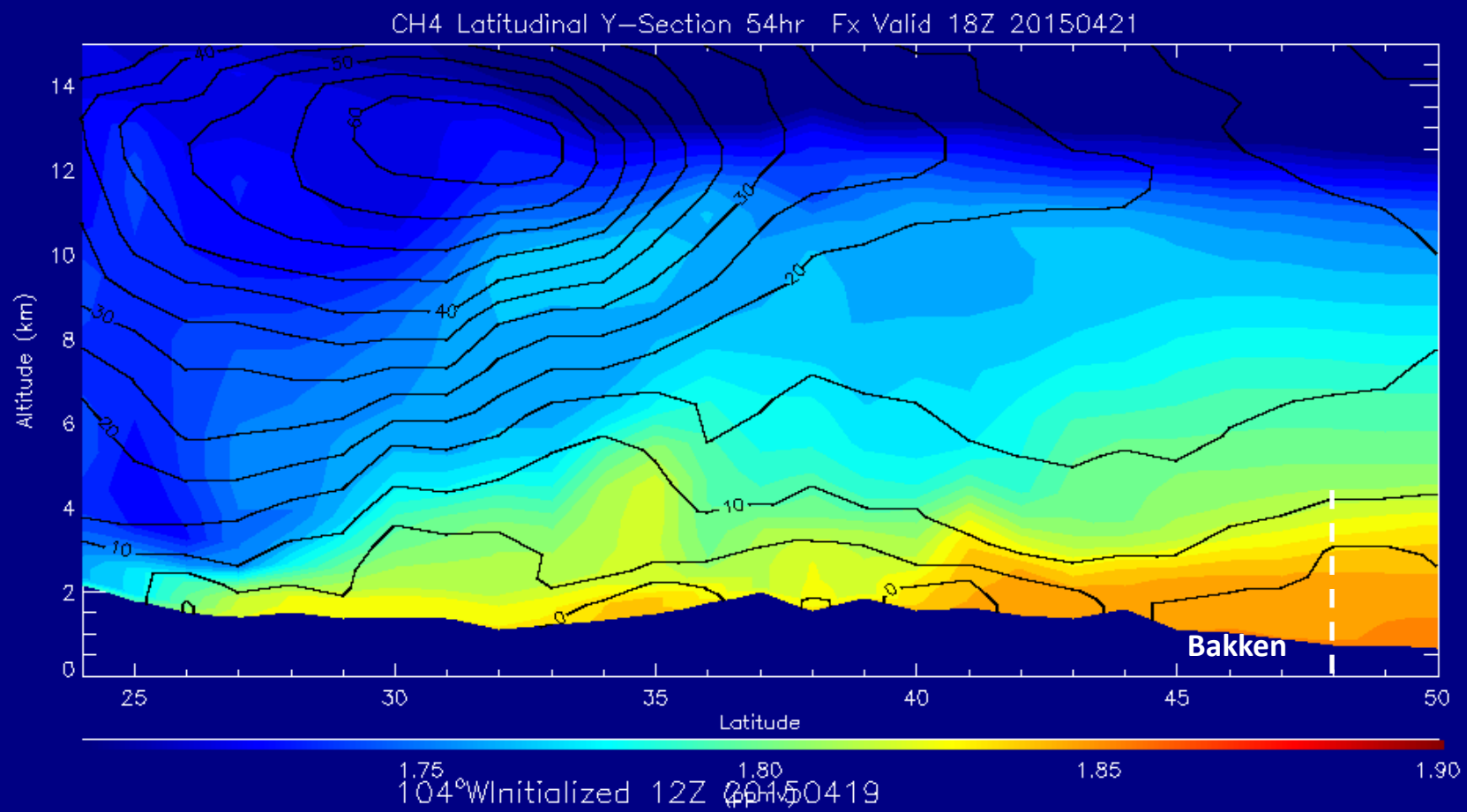
http://raqms.ssec.wisc.edu/forecast/view/20150419

RAQMS 54hr FX CO Cross-section at 104W
(Bakken Basin)



http://raqms.ssec.wisc.edu/forecast/view/20150419

RAQMS 54hr FX CH4 Cross-section at 104W (Bakken Basin)



RAQMS surface CH4 constrained with 1990 mixing ratio – introduces ~0.1ppmv low bias