Responses to Significant Comments Received on EPA's Revised Response to State and Tribal Recommendations for the 2015 Ozone National Ambient Air Quality Standards (NAAQS) Addressing El Paso County, Texas and Weld County, Colorado

Docket Number EPA-HQ-OAR-2017-0548
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List of Acronyms

CAA	Clean Air Act
CFR	Code of Federal Regulations
CSA	Combined Statistical Area
EGU	Electric Generating Unit
EPA	Environmental Protection Agency
FR	Federal Register
HYSPLIT	Hybrid Single Particle Lagrangian Integrated Trajectory Model
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standard
NEI	National Emissions Inventory
NFR	Notice of Final Rulemaking
NSPS	New Source Performance Standards
NSR	New Source Review
OAQPS	EPA Office of Air Quality Planning and Standards
OMB	Office of Management and Budget
OTR	Ozone Transport Region
PPB	Parts Per Billion
PPM	Parts Per Million
PSD	Prevention of Significant Deterioration
QA/QC	Quality Assurance/Quality Control
SIP	State Implementation Plan
TCEQ	Texas Commission on Environmental Quality
TPY	Tons per Year
TSD	Technical Support Document
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

1.0 Introduction

This document, together with the final rule and technical support documents, presents revised responses of the Environmental Protection Agency (EPA) to significant comments received on EPA's April 30, 2018 initial designations for certain counties remanded to EPA by the District of Columbia Circuit Court in *Clean Wisconsin v. EPA*, 964 F.3d 1145 (D.C. Cir. 2020). This Response to Comments document specifically addresses comments related to El Paso County, Texas and Weld County, Colorado and the nonattainment areas associated with these remanded counties.

2.0 Background

On October 1, 2015, the EPA promulgated revised primary and secondary ozone national ambient air quality standards (NAAQS (80 FR 6592, October 26, 2015)). In that action, the EPA strengthened both standards to a level of 0.070 parts per million (ppm), while retaining their indicators, averaging times, and forms. The EPA revised the ozone standards based on an integrated assessment of an extensive body of new scientific evidence, which substantially strengthens our knowledge regarding ozone-related health and welfare effects, the results of exposure and risk analyses, the advice of the Clean Air Scientific Advisory Committee and consideration of public comments.

Following promulgation of a new or revised NAAQS, the Clean Air Act (CAA) requires EPA to determine if areas in the country meet the new standards. Accordingly, EPA designated all areas of the country as to whether they met, or did not meet, the NAAQS. EPA designated areas for the 2015 Ozone NAAQS in 3 rounds, resulting in 52 nonattainment areas. These are described below:

- Round 1- November 6, 2017: EPA designated 2,646 counties, 2 separate tribal areas and 5 territories as Attainment/Unclassifiable. We also designated 1 Unclassifiable area.
- Round 2- April 30, 2018: EPA designated 51 Nonattainment areas, 1 Unclassifiable area, and all remaining areas as Attainment/Unclassifiable, except for the 8 counties in the San Antonio, TX area.
- Round 3- July 17, 2018: EPA designated 1 county in the San Antonio area as Nonattainment and the other 7 counties as Attainment/Unclassifiable.

Challenges to EPA's Designations

Multiple petitioners (*i.e.*, several environmental and public health advocacy groups, 3 local government agencies, and the state of Illinois) filed six petitions for review challenging the EPA's 2015 ozone NAAQS designations promulgated on April 30, 2018. The District of Columbia Circuit Court consolidated the petitions into a single case, *Clean Wisconsin v. EPA.*

- Collectively, the petitioners challenged aspects of EPA's decisions associated with 9 nonattainment areas, involving at least 17 counties.
- Petitioners primarily argued that EPA improperly designated counties (in whole or part) as attainment that should have been designated as nonattainment based on contributions to nearby counties with violating monitors.
- In its brief, EPA requested voluntary remand of the final designation decisions for 10 counties associated with 4 nonattainment areas to further review those designations.

Court Decision

On July 10, 2020, the District of Columbia Circuit Court issued its decision on the April 30, 2018, designations. The Court granted EPA's request for voluntary remand, as well as remanding a number of other areas to the Agency. In total, the Court remanded 16 counties with 9 nonattainment areas back to

EPA. The Court did not vacate the existing designations but required EPA to "issue revised designations as expeditiously as practicable."

3.0 Revised Responses to Significant Comments on the Proposed Designations for El Paso County, TX and Weld County, CO

In light of the Court decision, EPA is strengthening the technical record and revising the designations for the two counties associated with two nonattainment areas. EPA has evaluted our responses to significant comments received on those areas during the initial designations process. Comment summaries and revised responses are presented below. Comments are arranged by EPA Region, state, and nonattainment area. Additional detail for some nonattainment areas can be found in the revised technical support document (TSD) for that area. Commenters can find these TSDs in the electronic docket for this action (*www.regulations.gov*, docket number EPA-HQ-OAR-2017-0548) and at the EPA's Ozone Designations Web Page (*www.epa.gov/ozone-designations).*

3.1. Area-Specific Issues

3.1.1. Region VI

3.1.1.1 New Mexico – Doña Ana County, NM (the county under review is El Paso County, Texas)

HYSPLIT/METEOROLOGY/ISSUES WITH BACK-TRAJECTORIES

Comment: Commenter states that EPA used imprecise and incomplete technical analyses to reevaluate whether El Paso County potentially contributes to ambient ozone concentrations at the violating Desert View monitor.

EPA Response: In general EPA disagrees with this assertion and responds here and in other responses below to comments about the specifics of the HYSPLIT analysis and in responses to comments related to Emissions Data, Population Density and Degree of Urbanization, Traffic and VMT, Meteorology, and Geography/Topography. EPA disagrees that imprecise and incomplete technical analyses were used to re-evaluate whether El Paso County potentially contributes to ambient ozone concentrations at the violating Desert View monitor. EPA's technical analysis relied on the data available at the time of the April 2018 designations and evaluating the five factors recommended in the EPA's Guidance on the Area Designations for the 2015 Ozone NAAQS (hereafter "ozone designation guidance"), including air quality data, emissions and emissions-related data, meteorological data, geography/topography, and jurisdictional boundaries. In evaluating whether to modify a state's designation recommendation, EPA also considered those factors.

It is important to understand that HYSPLIT back trajectory analyses use archived meteorological modeling that includes actual observed data (surface, upper air, airplane data, etc.) and modeled meteorological fields to estimate the most likely route of an air parcel transported to a receptor at a specified time. The method essentially follows a parcel of air backward in hourly steps for a specified length of time (for designations, EPA typically looks at up to 24 hours back in time). HYSPLIT estimates the central path in both the vertical and horizontal planes. The central path represents the centerline with the understanding that there are areas on each side horizontally and vertically that also contribute to the end point at the monitor. The horizontal and vertical areas from the centerline grow wider the further back in time the trajectory goes. If a HYSPLIT centerline is in Mexico but runs closely parallel to the Texas/Mexico border, the horizontal spread of contributing areas may encompass areas in Texas.

EPA's analysis in the TSD indicated that HYSPLIT back trajectories that arrived at the Desert View monitor when ozone exceedances occurred passed through populated areas of El Paso County. Populated areas have emissions from on-road and nonroad emissions sources, area sources and point sources. Some emissions sources depend on population and the amount of traffic. EPA therefore used population, population density and vehicle miles traveled (VMT) as indicators of locations and magnitude of emissions, in addition to information on point source emissions and county-wide emissions numbers reported in the NEI. HYSPLIT back trajectories provided in EPA's TSD demonstrate that air parcels from areas of El Paso County with emissions did travel to the Desert View monitor when the monitor had 8-hour ozone exceedances of 71 ppb or greater on multiple days during the 2014-2016 analysis period.

Comment: Commenter indicate that EPA should consider the December 2020 TCEQ supplement analysis [resubmitted as an attachment to comment]. Commenter asserts that they used a more precise back-trajectory analysis that shows Mexico has a higher density of trajectory endpoints than Texas, which indicates that contribution to Doña Ana County is primarily from Mexico. Commenter also indicates that overall, the HYSPLIT analysis indicates that for high ozone days during 2014-2016, the potential impact of El Paso County on New Mexico is very limited. Therefore, EPA should not weigh the meteorology factor as supporting designating El Paso County as nonattainment. Commenter indicates that the meteorology factor provides weight to the conclusion that air parcels from Mexico, not El Paso County, cause the Sunland Park area ozone nonattainment.

EPA Response: EPA evaluated the December 2020 supplemental analysis that was performed by and included in comments submitted by the Texas Commission on Environmental Quality (TCEQ). EPA also reviewed the trajectory endpoint analysis that TCEQ provided in Figure 4 of their comments and the residence time analysis included in the main comments. TCEQ comments that they used 48-hour back trajectories in their HYSPLIT endpoint density analysis (which they also refer to as a residence time analysis) in Figure 4 of Attachment 1. For their endpoint density analysis, they compile all hourly endpoints, defined as the location of the air parcel at one-hour intervals over the 48-hour period. They then plot the number of hourly endpoints that occur at each location. EPA notes that a 48-hour trajectory may have a different "geographical origin" than a 24-hour trajectory, and also has twice the number of endpoints. Since a 48-hour back-trajectory follows the path of the air parcel over a longer period of time, it will generally result in an "origin" point that is further from the receptor than a 24-hour back-trajectory. This in turn, leads to less residence time and fewer back-trajectory hourly endpoints in local areas including El Paso County, Ciudad Juarez area, and Doña Ana County. TCEQ indicated that Mexico had a higher density of trajectory endpoints than Texas, from which they proffered that the contribution to Doña Ana County is primarily from Mexico. It should be noted, however, that the contributions of emissions to pollution within the air parcel are the result of the cumulative impact of the entire route of an air parcel. In addition, the air parcel mixes with surrounding air over time, so the impact of emissions from a particular point on the back-trajectory can be diluted over time. We therefore think that EPA's use of a 24-hour back trajectory is appropriate. It is thus reasonable to put more emphasis on the locations traversed in the final 24-hours of the trajectory than those traversed further back in time.

Furthermore, an endpoint density analysis provides only a partial picture of the back-trajectory path given the fact that it relies on data from discrete points in time. Due to the proximity of both El Paso County and parts of Mexico to the Desert View monitor it is possible for the back trajectory to have two subsequent endpoints in Mexico even though the line between two endpoints may traverse El Paso County and vice versa. In other words, many of the back-trajectories traverse the US-Mexico border multiple times which is clearly visible in the back-trajectory centerlines. In cases where the trajectories traverse the border more than once within an hour, the endpoint density analysis may not show the influence of cross-border locations that are visible when reviewing the centerline path. We refer to TCEQ's Attachment 2 which includes "Figure 1: HYSPLIT Results at 100 m AGL from 13 days in 2014 through 2016 that Exceeded the 2015 Eight-Hour Ozone NAAQS" (TCEQ Attachment 2 Figure 1). This

Figure 1 shows a few back trajectories that go through some part of El Paso County but only a small portion and depending upon where the hourly endpoint occurred in the trajectory the endpoint analysis may not indicate the trajectory traversed El Paso County (See TCEQ's Figure 1 trajectories for 2015-06-29-18 and 2014-05-29-19). The full centerline trajectory gives a better assessment for determining if the centerline traversed through part of El Paso County.

We note that in some cases the HYSPLIT back trajectory centerline was close enough to El Paso County that the horizontal spread of the area that contributed air parcels to the back trajectory could include parts of El Paso County. See discussion in our response above, about what the centerline in a back trajectory represents, that air parcels on either side of the centerline can be contributing areas, and that the further back in time from the monitor the wider the horizontal and vertical spread of areas that could contribute to the monitored exceedance. EPA's analysis focused on centerlines traversing part of El Paso County which potentially underestimates the number of days El Paso County emissions may have contributed given that there are a number of HYSPLIT centerlines that traverse Mexico locations close to the border.

TCEQ indicated that of the 13 trajectories, 8 were from Mexico, one was from just Texas and four were 'Unclassifiable' that crossed into different states or countries before reaching the Desert View Monitor. EPA's review of the TCEQ Attachment 2 Figure 1 indicates that these four 'Unclassifiable' HYSPLIT back trajectory centerlines went through parts of El Paso County in addition to traversing another state and/or country. In addition, it appears that TCEQ did not include the trajectory on June 29, 2015 as going through El Paso County (potentially because the endpoints are in Mexico), although it appears to cross into Texas near the border. TCEQ's comments and Attachment 2 Figure 1 indicate that 5 of the 13 trajectories (one for each exceedance monitored at Desert View monitor) traversed El Paso County and if they included the June 29, 2015 trajectory it would be 6 of 13 trajectories passed through some part of El Paso County. In comparison, EPA's EDAS 40 km 100 m AGL also had 6 of 13 trajectories that went through El Paso County, so EPA's original assessment with EDAS 40 km meteorology resulted in very similar results as TCEQ's HYSPLIT results with NAM 12 km meteorology. EPA has included plots of TCEQ and EPA's trajectories as Appendix A to this RTC.[1]

TCEQ's Attachment 2 includes a "Figure 2: HYSPLIT Results at 500 m AGL from 13 days in 2014 through 2016 that Exceeded the 2015 Eight-Hour Ozone NAAQS" (TCEQ Attachment 2 Figure 2). TCEQ Attachment 2 Figure 2 indicates 6 of the 13 trajectories pass through part of El Paso County. In comparison, EPA's EDAS 40 km 500 m AGL showed 7 of 13 trajectories that went through El Paso County, so EPA's original assessment with EDAS 40 km meteorology resulted in very similar results as TCEQ's HYSPLIT results with NAM 12 km meteorology.[2] See Appendix A to the RTC.

In response to other comments, EPA also performed additional HYPSLIT analysis with the NAM 12 km meteorological data set. We note that an 8-hour exceedance is composed of 8 sequential one-hour ozone values that average to be an 8-hour exceedance. As discussed further in another response to comment, EPA did perform eight HYSPLITs with a start time that corresponded with the eight individual hours that made up an 8-hour ozone exceedance at the Desert View monitor for all 13 exceedances at the Desert View monitor for the 2014-2016 period. Additionally, EPA performed each HYSPLIT run for each of three vertical heights (100 m, 500 m, and 1000 m) resulting in a total of over 300 HYSPLIT back trajectories for the Desert View monitor. Figures of these HYPSLITs can be found in Appendix A to this RTC.[3] For these additional HYSPLIT simulations with a 100 m AGL start height, 8 of the 13 exceedance days had some HYSPLITs for which the centerline traversed a location within El Paso County that has some emissions (on-road, nonroad, area, point, etc.). In addition, 2 other days had some centerlines that

[1] RTC Appendix A- EPA and TCEQ HYSPLIT Plots Docket ID EPA–HQ–OAR–2017–0548.
[2] RTC Appendix A - EPA and TCEQ HYSPLIT Plots Docket ID EPA–HQ–OAR–2017–0548.
[3] RTC Appendix A - EPA and TCEQ HYSPLIT Plots Docket ID EPA–HQ–OAR–2017–0548.

were just on the Mexico side of the border but the horizontal span area on either side of the HYSPLIT centerline could have also included parts of El Paso County with some emissions. For these additional HYSPLIT simulations with a 500 m AGL start height, 6 of the 13 exceedance days had some HYSPLITs for which the centerline traversed some part of El Paso County that has some emissions (on-road, nonroad, area, point, etc.). In addition, 4 other days had some centerlines that were just on the Mexico side of the border but the horizontal span area on either side of the HYSPLIT centerline could have also included parts of El Paso County with some emissions. For these additional HYSPLIT simulations with a 1000 m AGL start height, 9 of the 13 exceedance days had some HYSPLITs for which the centerline traversed some part of El Paso County that has some emissions (on-road, nonroad, area, point, etc.). In addition, one other day had some centerlines that were just on the Mexico side of the border but the horizontal span area on either side of the HYSPLIT centerline could have also included parts of El Paso County with some emissions.

Overall, 10 of the 13 days had some HYSPLIT centerlines passing through El Paso County for at least one of the three starting heights (100 m, 500 m, and 1000 m). On 7 of the 10 days there are some HYSPLIT centerlines through El Paso County in all three starting heights (100 m, 500 m, and 1000 m).

EPA's previous HYSPLIT analysis included in the El Paso-Las Cruces TSD that used EDAS 40 km meteorology indicated that HYSPLIT back trajectories centerlines passed through parts of El Paso County on 8 of the 13 exceedance days at the Desert View monitor. To assess comments received, these additional HYSPLITs that EPA has generated using NAM 12 km meteorology indicate the HYSPLIT centerlines went through some part of El Paso County 10 of the 13 days at least one vertical start height and on 7 of the 13 days some HYSPLIT centerlines from all three start heights passed through El Paso County confirm conclusions of EPA's previous HYPSLIT analysis using EDAS 40 km meteorology and also support that air parcels from El Paso County with some emissions are transported to the Desert View monitor when 8-hour Ozone exceedances were observed. Taken together, the above information indicates that the meteorology analyses both from EPA in review of TCEQ's analysis and TCEQ's analysis both support EPA's original conclusion (HYSPLITS with EDAS 40 km) local meteorology does transport El Paso County air parcels that contribute to the ozone exceedances and violation at the Desert View monitor.

Comment: Commenter state that TCEQ's meteorological trajectories are more accurate than EPA's analysis. Commenters state that the December 21, 2020 TCEQ HYSPLIT analyses are based on meteorology with a 12 km grid, a more accurate approach than EPA's HYSPLIT analyses using a coarser 40 km grid meteorology. Commenters state that EPA's revised TSD did not explain or discuss why EPA's use of 40 km grid meteorology versus the more precise 12 km gird meteorology better represents the area. Commenters state that EPA's own guidance notes the importance of grid size: "It is important to observe the overall size of the plot, its width and length in kilometers, and consider the size of an individual grid cell in the input meteorological data set."

EPA Response: EPA's ozone designation guidance does indicate that "It is important to observe the overall size of the plot, its width and length in kilometers, and consider the size of an individual grid cell in the input meteorological data set." It is true that the NAM 12 km is a finer resolution model, and a more spatially resolved model than the EDAS 40 km data that EPA used to create the trajectories in the mapping tool that were included in the TSD. However, as noted in our TSD, EPA is relying on data available at the time of the April 2018 designations, which includes the HYSPLIT trajectories using EDAS 40 km data. We believe that EDAS 40 km is a reasonable dataset, is consistent with EPA's HYPLIT grid cell size used to analyze contribution potential for designations across the country and is sufficient for producing credible back-trajectories for the purpose of this designations process. Both EDAS 40 km and NAM 12 km HYSPLIT input datasets are generated with the same meteorological model and the only major difference is the horizontal size of the grid cells. EDAS 40 km dataset has been

the dataset that EPA has used for HYSPLIT analyses in a number of designations.[4] The decision to use EDAS 40 km dataset was based on using information previously in the record for the designation of the area. The decision to use EDAS 40 km was also based in part on the increase in computational time and storage that comes with using a finer-resolution meteorological model to create thousands of trajectories for the mapping tool. Since trajectories are not determinative by themselves, and are part of a five-factor analysis, EPA decided it was reasonable to use EDAS 40 km. As discussed in other responses our review and analyses of EPA's HYSPLITs of using EDAS 40 km, TCEQ's limited NAM 12 km HYSPLIT trajectories and additional EPA HYSPLIT trajectories for all hours that make up the 8-hour exceedance using NAM 12 km data all indicate that a similar number of back trajectories pass through El Paso County when compared to results produced using the EDAS 40km dataset. In summary, HYSPLIT trajectories created using the NAM 12km datasets as well as HYSPLIT trajectories created using the EDAS 40 km dataset both support a conclusion that emissions in El Paso County are transported often to the Desert View monitor when ozone exceedances occur.

Comment: Commenters indicate that TCEQ modeled the HYSPLIT back-trajectories from the actual time of peak one-hour ozone concentrations at the Desert View monitor and assert that this approach is a more accurate than the uniform time of-day start-time that EPA used in its trajectories. TCEQ indicates that EPA's approach misrepresents the air parcels that affected the peak monitor measurements.

EPA Response: TCEQ did use the actual time of peak 1-hour ozone as the start time for each trajectory. EPA started every trajectory at 1800 LST (6 p.m.) which should capture either peak ozone or near-peak ozone while being mindful of computational and staff time associated with determining and applying a different start time for each one of thousands of trajectories that were completed for the numerous areas that EPA analyzed as part of the designation process. As discussed in another response to comment the TCEQ's HYSPLIT trajectories using the actual time of peak 1-hour ozone as the start time only resulted in slight difference in the number of trajectories that passed through El Paso County when compared to EPA's HYPSPLIT trajectories that had a standard start time of 1800 LST (6 p.m.).

To explore this issue further in response to comments received, EPA performed additional HYSPLIT simulations.[5] We note that an 8-hour exceedance is composed of 8 sequential one-hour ozone values that average to be an 8-hour exceedance. As discussed further in another response to comment, EPA performed eight HYSPLIT simulations with a start time that corresponded with the eight individual hours that made up an 8-hour ozone exceedance at the Desert View monitor for all 13 exceedances at the Desert View monitor for the 2014-2016 period. These additional HYSPLIT trajectories result in similar estimates of the number of days for which the Desert View monitor was impacted by air transported over El Paso County when compared to estimates based on the original EPA trajectories. HYSPLIT trajectories created using either assumption for start-time both support that conclusion that air parcels from El Paso County are transported to the Desert View monitor when 8-hour Ozone exceedances were observed.

Comment: Commenters indicate that TCEQ's analyses use 100 and 500 m height trajectories that they asserted better represented the area with human activity, compared to higher elevation trajectories included in EPA's analyses. They asserted that the 1,000 m trajectories included in the EPA analyses represent local mountaintops with little if any emissions generation.

EPA Response: EPA also used elevations of 100 m Above Ground Layer (AGL) and 500 m AGL height trajectories, as well as 1000 m AGL. The trajectory heights were clearly color-coded in the mapping tool

[4] In addition to the EPA's air quality designations for the 2015 ozone NAAQS in this docket (EPA-HQ-OAR-2017-0548), see EPA's air quality designations for the 2008 ozone NAAQS, 77 FR 30088 (May 21, 2012).
[5] As noted earlier, these HYSPLIT runs are in Appendix A to this TSD.

and in our TSD. Analysts may refer to a single height or any combination of heights when conducting the five-factor analysis. We note that the mixing layer height is often above 1000 m AGL in the area during the summertime when ozone exceedances are monitored and using 1000 m AGL (at the Desert View monitor's Latitude and Longitude) as one of the elevations for the HYSPLIT is consistent with the contribution analyses EPA completed for other areas around the country for previous ozone designations actions as well as 1-Hour SO_2 designations. We note that the number of trajectories with a 1000 m AGL at the Desert View monitor in our TSD did not impact the conclusion that El Paso County was a contributing area as we also had the results from the trajectories with 100 m AGL and 500 m AGL at the Desert View monitor Lat/Long).

Comment: Commenter states that NOAA cautions that HYSPLIT does not incorporate the effects of complex terrain, which exists in this area.

EPA Response: EPA uses different trajectory heights to at least partially account for possible effects of terrain. We are confident the terrain in this area does not invalidate the trajectories. As discussed elsewhere in other responses the meteorological model used to generate the EDAS 40 km and NAM 12 km data incorporates local surface and upper air monitoring data as well as terrain features such as the Franklin Mountains in the generation of the meteorological datasets used in the HYSPLIT analyses. We note that Terrain and its possible effects are considered as one of the five factors, so this issue is considered in every designation. As discussed in response to another comment EPA also evaluated the terrain features in Figure 6 of our Intended TSD in making our conclusions that the Franklin Mountains does not block much of the flow from areas of El Paso County with emissions and in some cases the air and emissions from areas to the east of the Franklin Mountains can flow around the southern part of the Franklin Mountains and towards the Desert View monitor. As discussed in another response, EPA's EDAS 40km HYSPLITs, TCEQ's NAM 12 km HYSPLITs (which TCEQ did not specifically indicate that terrain invalidated their HYSPLITs), and EPA's additional HYSPLITs using NAM 12 km all indicate that transport from El Paso County area occurs for a number of days (5-10 of 13 exceedance days) that the Desert View monitor monitored 8-hour ozone exceedances.

Comment: Commenter compares Ozone Maximum Daily 8-hr Average (MDA8) values at the Desert View monitor and the highest reading from the El Paso monitor and the TCEQ HYSPLIT results for the 13 ozone exceedance dates in 2014-2016 (see Table 1 in the El Paso Chamber comments). Commenter states that using TCEQ's HYSPLIT analyses, on nine of the thirteen Desert View monitor exceedance days, the back trajectory from Desert View monitor does not transit El Paso and that El Paso did not contribute to the Desert View monitor air quality on those days. Commenter also states that on two of the remaining four days, El Paso's MDA8 at its highest reading monitor, located just 8 km from the non-attaining Desert View monitor, was below the level of the standard by 4 ppb and was 5-6 ppb below the MDA8 at the Desert View monitor. For these two days, the commenter asserts that El Paso likely did not contribute to the nonattaining Desert View monitor air quality. Commenter indicates that on the remaining two days, EPA has identified no information to support the conclusion that El Paso emissions contributed to the Desert View monitor air quality. Commenter indicates that it is unclear where these trajectories transited before reaching El Paso or whether they were affected by wildfires. Commenter concludes that for this small number of days, no clear conclusion can be drawn from the information presented in the TSD.

EPA Response: EPA considers upwind air quality concentrations as a part of the five-factor analysis. El Paso County monitors have had MDA8 values above the 2015 8-hour Ozone NAAQS (70 ppb) based on data in the commenter's Table 1 and data in EPA's Air Quality System (AQS). EPA notes that for the four days that the commenter indicated TCEQ's HYSPLIT results indicated some transport through El Paso the highest value in El Paso for each of the four days were 66 ppb, 66 ppb, 74 ppb, and 75 ppb. All four of these values are elevated ozone levels with two near the standard and two exceeding the standard.

Of these four days, the 75 ppb day at the El Paso monitor was also noted as a day for which transport to the Desert View monitor (72 ppb exceedance) occurred from El Paso County and not from Mexico. On the other three days the HYSPLIT trajectories indicated that transport to the Desert View monitor included transport from El Paso County as well as from other areas. From the HYSPLIT analysis and monitoring analysis provided by the commenter it is clear that ozone levels are near or above the standard in El Paso County when the Desert View monitor had an exceedance. An area does not have to be violating the standard to be part of a nonattainment area. Based on the meteorology and monitoring data it is clear that ozone precursor emissions and ozone were transported from El Paso County to the Desert View monitor on days when ozone exceedances were monitored at the Desert View monitor. It is well established that emissions of ozone precursors continue to react and form ozone as an air mass travels downwind. The result of this is that ozone concentrations are often higher downwind of major emissions source regions than they are in the emissions center itself.[6] Emissions from El Paso can still contribute to violations at nearby downwind monitors such as the Desert View monitor even when El Paso monitors do not record violating ozone concentrations themselves. In the data cited by this commenter, there are several days for which HYSPLIT trajectories show transport from El Paso to the Desert View monitor for which the ozone level in El Paso was just below the 2015 8-Hour Ozone NAAQS in El Paso. On these days, ozone formed over El Paso along with ozone precursor emissions present in the air can both contribute to the monitored downwind violation at the Desert View monitor. Consequently, presence of elevated ozone near or above the standard and the emissions from El Paso County when air transports from El Paso County to the Desert View monitor when it has exceedances is evidence of contribution. Both TCEQ and EPA's analysis confirms that the Desert View monitor is downwind of El Paso on some days for which ozone exceedances are monitored at the Desert View monitor. TCEQ's 12 km NAM analysis indicated that El Paso County was a contributing area on 5 of 13 exceedance days (Desert View monitor), EPA's analysis with EDAS 40 km meteorological data indicated El Paso County is a contributing area on 8 of 13 exceedance days (Desert View monitor) and EPA's HYSPLITs with 12 km NAM indicate that El Paso County is a contributing area on 10 of 13 exceedance days (Desert View monitor) for at least one start height and El Paso County is a contributing area on 7 of 13 exceedance days (Desert View monitor) for all three start heights.

Comment: Commenter indicates that based on TCEQ back trajectories, Table 2 (Table 2 in El Paso Chamber comments) shows that the Desert View monitor would attain the standard but for the dates where the trajectory transited only Mexico. Commenter states that excluding the Mexico-only transit days (shaded gray) results in a lower value for the fourth high each year (shaded yellow), indicated as the "modified 4th high" for each year. Commenter states that based on the modified 4th highs, the design value for the 3-year period would have been 69 ppb, below the standard. Commenter states that this approach is conservative in considering only days with Mexico-only trajectories; removing all days with trajectories that did not transit El Paso would result in an even lower modified design value.

EPA Response: EPA does not drop monitored exceedances if part or all of the HYSPLIT back trajectory transects a foreign country. The proposed dropping of days that Mexico may have contributed to ozone levels at the Desert View monitor is not appropriate. As discussed elsewhere in this RTC, areas that are impacted by transport of international emissions and ozone concentrations can consider pursuing relief under section 179B of the Clean Air Act (CAA). We discuss CAA section 179B in more detail below.

[6] For instance, according the EPA's official 2016 ozone DVs used for designations: The monitor with the highest ozone DV in the Los Angeles-South Coast Air Basin nonattainment area occurred downwind at the Crestline monitor in San Bernardino County; the monitor with the highest ozone DV in the Chicago IL-IN-WI nonattainment area occurred downwind in Kenosha, WI; and the monitor with the highest ozone DV in the New York-Northern New Jersey-Long Island, NY-NJ-CT nonattainment area occurred downwind in Fairfield County, CT.

AIR QUALITY DATA

Comment: Commenter states that El Paso County should be designated as attainment for the 2015 eight-hour ozone NAAQS based on 2014 through 2016 monitoring data from the existing record showing attainment of the NAAQS.

EPA Response: Section 107(d)(1) of the CAA directs the EPA to designate an area as nonattainment if it is violating the NAAQS or if it is contributing to a violation of the NAAQS in a nearby area. The EPA agrees that the El Paso monitors' design values for 2014-2016 showed attainment of the 2015 ozone NAAQS. However, EPA is not designating El Paso County based on design values at El Paso monitors. Rather, EPA is designating El Paso County based on its contribution to a violation of the 2015 ozone NAAQS at the nearby Desert View monitor. As described in EPA's ozone designation guidance, after identifying each monitor indicating a violation of the ozone NAAQS, EPA analyzes those nearby areas with emissions potentially contributing to the violating monitor. EPA's ozone designation guidance provided that using the Core Based Statistical Area (CBSA) or Combined Statistical Area (CSA) as a starting point for the contribution analysis is a reasonable approach to ensure that the nearby areas most likely to contribute to a violating area are evaluated. El Paso County, TX is part of the El Paso-Las Cruces TX-NM CSA and therefore, EPA analyzed El Paso County for its potential to contribute to the violation of the 2015 ozone NAAQS at the nearby monitor in NM. EPA's ozone designation guidance identifies a five-factor analysis that EPA uses to evaluate whether an area is violating the NAAQS and whether areas nearby are contributing to such violation(s). These factors are air quality data, emissions and emissions-related data, meteorology, geography and topography, and jurisdictional boundaries. Consistent with the ozone designation guidance, EPA's designation decisions are based on consideration of all five factors. As described in the final TSD for the El Paso-Las Cruces TX-NM area: 1) The Desert View monitor in NM is violating the 2015 ozone NAAQS using 2014-2016 certified DV data. 2) Emissions of NOx in El Paso County (18,391 tons per year or tpy) are approximately 71 percent greater than emissions of NOx in Doña Ana County (10,729 tpy); emissions of VOC in El Paso County (13,912 tpy) are approximately 128 percent greater than emissions of VOC in Doña Ana County (6,096 tpy); the population of El Paso County is approximately 290 percent greater than the population of Doña Ana County and the population density of El Paso is approximately 1373 percent greater than the population density of Doña Ana County; and the VMT in El Paso County is 194 percent higher than the VMT in Doña Ana County. 3) Back trajectory analyses provided by EPA and TCEQ show transport from El Paso County to the violating Desert View monitor, and the HYSPLIT analysis using EDAS 40 km data shows that on 8 of the 13 exceedance days at the violating monitor back trajectories flowed through El Paso county. 4) The Franklin Mountains in El Paso County don't prevent air movement, as the HYSPLIT analysis shows air movement from east to west at the south end of these mountains in El Paso County. 5) El Paso County is a clearly defined jurisdictional boundary. Collectively, our analysis of these five factors provides demonstrable evidence that El Paso County sufficiently contributes to the violating monitor. *See Catawba County, NC v. EPA*, 571 F.3d 20 (D.C. Circuit, 2009).

Comment: Commenter states that EPA can and should consider the excluded (exceptional event) data as part of the contribution analysis. See 42 U.S.C. § 7619(b)(3)(B) (providing for exclusion, in certain circumstances, of "air quality monitoring data that is directly due to exceptional events from use in determinations by the Administrator with respect to exceedances or violations of the national ambient air quality standards", but not providing for the exclusion of this data for the purposes of determining whether a contribution exists). Air passing through El Paso to Sunland Park on high ozone days is likely to contain ozone pollution.

EPA Response: Commenter asks EPA to take into consideration the exclusion of event-influenced data at the UTEP monitor when evaluating whether El Paso County potentially contributed to the violation of the NAAQS at the Desert View monitor in NM. The excluded event-influenced data to which commenter

refers represented a daily maximum 8-hour average ozone concentration of 77 ppb on June 21, 2015 at the UTEP monitor in El Paso County.[7] Also on June 21, 2015, the Desert View monitor in NM exceeded the NAAQS, recording a daily maximum 8-hour average ozone concentration of 74 ppb. We note that the New Mexico Environment Department (NMED) did not submit an exceptional events demonstration for the June 21, 2015 exceedance at Desert View monitor, so that exceedance still counts for regulatory purposes. Data submitted by the NMED on September 22, 2016[8] shows back trajectories at the Desert View monitor flowing from the south and west for the near surface start height on June 21, 2015, while the wind rose for that day indicates potentially some flow from El Paso County. EPA's HYSPLITs with 40 km EDAS that were included in the intended designation docket include a near surface start height of 100 meters (m) and start heights of 500 and 1000 m. EPA's 100 and 500 m start height HYSPLITs did not have a centerline that went through El Paso County (although the 500 m skirts the border), but the 1000 m start height HYSPLIT did traverse El Paso County. EPA did additional HYSPLITs in response to comments using a different meteorological data set (12 km NAM) and these indicated the same results as the HYSPLITs using EDAS 40 km meteorological data in our intended designation (the 100 and 500 m start heights did not traverse El Paso County and the 1000 m start height back trajectory did traverse El Paso County). While EPA approved the exceptional events demonstration for the monitored exceedance at the UTEP monitor on June 21, 2015, that does not prevent El Paso County being evaluated for contribution to a downwind exceedance at the Desert View monitor. The EPA back trajectories and NMED's surface wind rose provide an indication that El Paso County was contributing to the exceedance monitored at the Desert View monitor on June 21, 2015. It is important to keep this one day in context that there are many other days that EPA's HYSPLITs also indicate that El Paso County is a contributing upwind area to monitored exceedances at the Desert View monitor and not including this one day would not change EPA's designation decision.

EMISSIONS DATA

Comment: Commenter states that ozone precursor emissions are higher in El Paso County than in Doña Ana County, but this is not an indication that El Paso County actually contributes to ozone exceedances at the Desert View monitor. Commenter states that tying El Paso County emissions to exceedances at the Desert View monitor requires rigorous technical analysis, such as detailed back-trajectory and residence time analysis, which the EPA has not conducted. Commenter states that EPA has decided not to consider whether emissions contributions from the rest of New Mexico are contributing to nonattainment in Sunland Park. Commenter also states that the significant emissions contribution to the proposed El Paso-Las Cruces ozone nonattainment area's airshed comes from Juarez, Mexico.

EPA Response: EPA's analysis followed the ozone designation guidance, which includes a five-factor analysis that is used to evaluate whether an area is violating the NAAQS and whether areas nearby to the violating monitor(s) are contributing to such violation(s). The weight of evidence approach taken in the ozone designation guidance has been upheld by the D.C. Circuit in *Mississippi Comm'n v. EPA*, 790 F.3d 138 (D.C. Cir. 2015). As stated in the ozone designation guidance, the CAA does not require that EPA identify whether an area "actually contributes" to an ozone exceedance, nor does it require a detailed

[7] On September 27, 2016, Texas submitted an exceptional events demonstration for the June 21, 2015 exceedance of the 2015 ozone standard at the ozone monitor known as the "UTEP" monitor in El Paso County. On December 15, 2017, the EPA concurred on the exceptional events demonstration submitted by Texas for the UTEP monitor. The EPA agreed that an exceptional event occurred at the UTEP monitor on June 21, 2015. In this case, the exceptional events demonstration was for a wildfire. EPA did not receive adverse comments relevant to the exceptional event. Documentation regarding the exceptional event is provided in the docket for this action.

[8] See Figure 10-10b: Desert View, June 21, 2015 HYSPLIT back trajectories in the New Mexico State Recommendation Technical Support Document, submitted to EPA September 22, 2016. This document is in the docket and posted on EPA's Ozone Designations page at https://www.epa.gov/ozone-designations/ozone-designations-2015-standards-new-mexico-state-recommendations-and-epa.

back-trajectory analysis or residence time analysis. The five factors are air quality data, emissions and emissions-related data, meteorology, geography/topography, and jurisdictional boundaries.

As described in the TSD for this area, 1) The Desert View monitor in NM is violating the 2015 ozone NAAQS. 2) Emissions of NOx in El Paso County are approximately 71 percent greater than emissions of NOx in Doña Ana County; emissions of VOC in El Paso County are approximately 128 percent greater than emissions of VOC in Doña Ana County; the population of El Paso County is approximately 290 percent greater than the population of Doña Ana County and the population density of El Paso is approximately 1373 percent greater than the population density of Doña Ana County; and the VMT in El Paso County is 194 percent higher than the VMT in Doña Ana County. 3) Back trajectory analyses provided by EPA and TCEQ show transport from El Paso County to the violating Desert View monitor, and the HYSPLIT analysis shows that on 8 of the 13 exceedance days at the violating monitor back trajectories flowed through El Paso county. 4) The Franklin Mountains in El Paso County don't prevent air movement, as the HYSPLIT analysis shows air movement from east to west at the south end of these mountains in El Paso County. 5) El Paso County is a clearly defined jurisdictional boundary. As indicated in the ozone designation guidance, EPA believes that population information can serve as potential indicators of the probable location and magnitude of emissions sources that may contribute to ozone concentrations in a given nonattainment area. Back trajectory analyses, provided by both EPA and the TCEQ, show transport from El Paso County to the violating Desert View monitor on monitored exceedance days. EPA's HYSPLIT analysis shows that on 8 of the 13 exceedance days at the violating monitor back trajectories flowed through El Paso county. Figures 5a and 5b in the TSD clearly shows several of these trajectories are in the proximity of large point sources in El Paso County. Consistent with the ozone designation guidance, EPA notes that the trajectory line represents the centerline of an air parcel's movement and thus, one should avoid concluding a region is not along a trajectory's path if the center line of that trajectory missed the region by a relatively small distance.

In EPA's TSD for this area, EPA acknowledges that the southeastern portion of Doña Ana County is heavily impacted by transport of ozone precursors from Mexico. However, foreign contributions do not preclude EPA's analysis of domestic contributions in making designations decisions. A county may contribute to nonattainment even though another jurisdiction's contribution is larger; a contributing county need not be the but-for cause of a violation in order to warrant a nonattainment designation. *See Miss. Comm'n on Env't Quality v. EPA*, 790 F.3d 138, 163. Contribution may also be found even though a nearby county's nonattainment problem would still persist in the absence of that contribution. *See Catawba County, NC v. EPA*, 571 F.3d 20 at 39 (D.C. Cir. 2009). Indeed, EPA must designate as nonattainment any area that "exacerbates" nonattainment nearby, a flexible standard that courts have recognized as central to the "very purpose" of Section 107(d) area designations. See *Catawba*, 571 F.3d at 39. See also *Miss. Comm'n on Env't Quality*, 790 F.3d 138 at 163. Consistent with CAA section 107(d)(1)(a)(i), even an area whose ambient air concentration complies with the relevant NAAQS must be designated as nonattainment if it contributes to a NAAQS violation in a nearby area. See also *Clean Wisconsin*, 964 F.3d at 1153.

Regarding the consideration of emissions from the rest of New Mexico, those areas were designated as part of the EPA's final action on April 30, 2018.[9] Those areas were not subject to challenge or the remand that this final action addresses. Therefore, the EPA will not be reevaluating those nearby areas for contribution to the Desert View Monitor. This final action addresses the El Paso County area only which is the subject of the D.C. Circuit's remand.

[9] See 83 FR 25776 (June 4, 2018).

WHEN IS AN AREA CONTRIBUTING TO NONATTAINMENT? CONTRIBUTION ANALYSIS ISSUES

Comment: Commenter states that EPA's decision not to consider international emissions in the context of designations is not based on any provision in the CAA. Commenter states that the CAA does not prohibit EPA from considering the impact of international emissions in the context of designations and the EPA can acknowledge that, in light of the contribution from Juarez, Mexico, El Paso County emissions do not likely influence ozone design values at the Desert View monitor.

EPA Response: The EPA lacks jurisdiction over foreign countries, including Mexico and thus, has no authority to designate areas outside the US or require such areas to address violations of the NAAQS. However, consistent with CAA section 107, EPA has authority within the US to designate as nonattainment, any area that does not meet, or that contributes to ambient air quality in a nearby area that does not meet, the national primary or secondary ambient air quality standard for the pollutant. A US county may contribute to nonattainment even though another jurisdiction's contribution is larger. Emissions of NOx and VOC from sources located in El Paso County are not insignificant: emissions of NOx in El Paso County are approximately 71 percent greater than emissions of NOx in Doña Ana County, and emissions of VOC in El Paso County are approximately 128 percent greater than emissions of VOC in Doña Ana County; the population of El Paso County is approximately 290 percent greater than the population of Doña Ana County and the population density of El Paso is approximately 1373 percent greater than the population density of Doña Ana County; and the VMT in El Paso County is 194 percent higher than the VMT in Doña Ana County. Back trajectory analyses, provided by both EPA and the TCEQ, show transport from El Paso County to the violating Desert View monitor. As noted elsewhere, EPA must designate as nonattainment any area that "exacerbates" nonattainment nearby, a flexible standard that courts have recognized as central to the "very purpose" of Section 107(d) area designations. See *Catawba*, 571 F.3d at 39 and *Miss. Comm'n on Env't Quality*, 790 F.3d at 163. Section 179B provides an opportunity for a state to demonstrate that a nonattainment area would be able to attain and maintain, or would have attained, the relevant NAAQS "but for emissions emanating from outside the United States." Such "but for" provisions are not included in section 107 and thus, EPA is unable to exclude areas impacted by emissions from outside the US in this final action. The CAA provides for accounting for impacts of international emissions during attainment planning and reclassification, but not during designations.

Consistent with CAA section 107(d)(1)(a)(i), even an area whose ambient air concentration complies with the relevant NAAQS must be designated as nonattainment if it contributes to a NAAQS violation in a nearby area. See also *Clean Wisconsin*, 964 F.3d at 1153. Furthermore, an area that is found to contribute to a violation cannot claim it is exempt from nonattainment because of the existence of another nearby area with a greater contribution. CAA 107 states that the standard is "any area that contributes to nonattainment in a nearby area that does not meet" the NAAQS. It does not state any area that is the primary contributor, or largest contributor, or overwhelming contributor. As upheld in *Catawba*, EPA has historically and consistently "interpreted 'contribute' to mean 'sufficiently contribute'" in the designations context. 571 F.3d at 39. Here Texas failed to demonstrate that it is not sufficiently contributing. Instead, Texas argued that Juarez, Mexico is the overwhelming, largest contributor to the exceedances of the violating Desert View monitor which does not overcome the EPA's five-factor analysis.

In several instances, the EPA has designated areas as nonattainment despite the existence of nearby areas that could be characterized as greater or overwhelming contributors to the same nearby nonattainment area. For example, EPA designated Kaufman, Ellis, and Wise counties as contributing to nearby violating monitors within the Dallas-Fort Worth (DFW) nonattainment area for the 2015 ozone NAAQS. The Kaufman and Ellis County monitors were attaining the 2015 ozone standard and Wise County has no

ozone monitor. Emissions of NOx from Kaufman, Ellis, and Wise counties separately accounted for about four, seven, and eight percent, respectively, of the total NOx emissions in the nine-county DFW nonattainment area. Emissions of VOC from Kaufman, Ellis, and Wise counties separately accounted for about two, four, and nine percent, respectively, of the total VOC emissions in the nine-county DFW nonattainment area. The population in Kaufman, Ellis, and Wise counties separately accounted for about two, less than two, and less than one percent, respectively, of the total population in the nine-county DFW nonattainment area.

In addition, EPA designated Chambers and Fort Bend counties as contributing to nearby violating monitors within the Houston-Galveston-Brazoria (HGB) nonattainment area for the 2015 ozone NAAQS. Chambers and Fort Bend counties have no ozone monitors. Emissions of NOx from Chambers and Fort Bend counties separately accounted for about four and nine percent, respectively, of the total NOx emissions in the six-county HGB nonattainment area. Emissions of VOC from Chambers and Fort Bend counties separately accounted for about 15 and seven percent, respectively, of the total VOC emissions in the six-county HGB nonattainment area. The population in Chambers and Fort Bend counties separately accounted for about less than one and 11 percent, respectively, of the total population in the six-county HGB nonattainment area.

In contrast to the DFW and HGB areas, El Paso County contributes much greater percentages of precursor emissions within its area of analysis. As described in EPA's 2018 TSD for NM: Juarez contributes 52% of the total NOx emissions in the area compared to 28% from El Paso County, 67% of the total VOC emissions in the area compared to 22% from El Paso County, and has 61% of the population in the area compared to 38% in El Paso County. Despite the impacts from Juarez, there is also evidence that El Paso County sufficiently contributes to the design values at the Desert View monitor; consideration of all five factors in the ozone designation guidance, which collectively, clearly indicate that El Paso contributes to the violating monitor establish that it is reasonable for EPA to include El Paso in the designated nonattainment area.

Comment: Commenter states that EPA improperly discounts emissions from Juarez, Mexico. Commenter states that merely citing CAA section 179B in place of the prior analysis is impermissible, and that EPA's guidance requires it to "evaluate the degree of contribution from nearby areas" as part of the boundary evaluation, not disregard it by reference to partial relief that Texas has not yet requested and that EPA has not yet considered, let alone granted. Commenter states that nothing in the CAA, EPA regulations, or EPA's guidance precludes considering Mexico emissions as the cause of nonattainment when considering where to set the boundaries of the area. Commenter states that EPA's reference to CAA section 179B fails to recognize the limited role of CAA section 179B, and if EPA were to grant a CAA section 179B request, it would not remove the designation and would only reach some, not all, of the obligations and burdens that flow from it, e.g., a successful CAA section 179B demonstration would not remove the statutory offset requirements that would reduce economic opportunity in El Paso.

EPA Response: EPA is aware of emissions from Juarez; however, EPA does not have jurisdiction over Mexico. Consistent with the ozone designation guidance, EPA evaluated El Paso County for its potential to contribute to the violation of the 2015 ozone NAAQS at the nearby monitor in NM. EPA's designation decision here is based on consideration of all five factors in the ozone designation guidance, which collectively, clearly indicate that El Paso contributes to the violating monitor. Commenter misinterprets the ozone designation guidance, which does not "require" EPA to evaluate the degree of contribution from nearby areas. The guidance describes the value of analyzing the magnitude and spatial extent of emissions, which provide information about potential spatial gradients in ozone precursor emissions: "Combining these analyses (e.g., magnitude of emissions and point of release) with meteorological information can inform the evaluation of the degree of contribution from nearby areas." Consistent with the ozone designation guidance, EPA performed the five-factor analysis, including an evaluation of

emissions and emissions-related data and found that emissions of NOx in El Paso County are approximately 71 percent greater than emissions of NOx in Doña Ana County, and emissions of VOC in El Paso County are approximately 128 percent greater than emissions of VOC in Doña Ana County; the population of El Paso County is approximately 290 percent greater than the population of Doña Ana County and the population density of El Paso is approximately 1373 percent greater than the population density of Doña Ana County; and the VMT in El Paso County is 194 percent higher than the VMT in Doña Ana County. Combining this emissions data with meteorological information: Back trajectory analyses, provided by both EPA and the TCEQ, show transport from El Paso County to the violating Desert View monitor.

As noted above, EPA must designate as nonattainment any area that "exacerbates" nonattainment nearby, a flexible standard that courts have recognized as central to the "very purpose" of CAA section 107(d) area designations. See *Catawba*, 571 F.3d at 39 and *Miss. Comm'n on Env't Quality*, 790 F.3d at 163. CAA section 179B provides an opportunity for a state to demonstrate that a nonattainment area would be able to attain and maintain, or would have attained, the relevant NAAQS "but for emissions emanating from outside the United States." Such "but for" provisions are not included in CAA section 107 and thus, EPA is unable to exclude areas impacted by emissions from outside the US in this final action. The CAA provides for accounting for impacts of international emissions during attainment planning and reclassification, but not during designations. The five-factor analysis is not a comparative analysis among nearby areas but an area-specific analysis of whether each area is contributing. Regardless of contribution from Juarez, analysis of the five factors shows that El Paso County contributes to the violating monitor and, therefore, is consistent with the CAA definition for nonattainment.

EPA's April 30, 2018 designations decision, and Texas's recommendations, suggest that EPA treat El Paso County differently than any other area where there is a large contribution from one area or county and a larger contribution from another area or county. It is not appropriate to treat El Paso County differently than any other area of the US during designations. Such treatment is contrary to EPA's ozone designation guidance, contrary to court decisions that stress consistency in the designations process (see *Catawba*), and contrary to Congress's legislative intent, as evidenced by the inclusion of CAA section 179B. Congress agreed that areas close to international borders that satisfy the requirements of CAA section 179B deserved certain special treatment in the state implementation plan process, but it is very clear that such special treatment would happen post-designation, at the attainment plan/reclassification stages. As such, EPA has reasonably concluded that El Paso County and other border areas do not deserve such special treatment in the designations process. Rather, EPA has completed a contribution analysis for El Paso County consistent with other areas around the country with emissions from multiple nearby geographic areas.

Comment: Commenters state that EPA did not explain why it changed its original conclusion that the El Paso emissions in the analysis did not affect Doña Ana on dates with substantially lower ozone in El Paso than Doña Ana. Commenters contend that the Desert View monitor would have attained the standard but for the dates where the trajectories transport emissions only from Mexico. Commenters also state that based on the TCEQ back trajectories, the Desert View monitor would attain the standard but for the dates where the trajectory transited only Mexico. Commenters contend that excluding the Mexico-only transit days results in a lower value for the fourth high each year, indicated as the "modified 4th high" for each year, and based on the modified 4th highs, the design value for the 3-year period would have been 69 ppb.

EPA Response: EPA's April 2018 designation for El Paso County was remanded to EPA. See *Clean Wisconsin v. EPA*, 964 F.3d 1145 (D.C. Cir. 2020). As the Court noted in its opinion remanding the El Paso County designation, the EPA must designate as nonattainment any area that contributes to a nearby

violation.[10] Therefore, and consistent with the ozone designation guidance, EPA re-evaluated the data available at the time of the April 2018 designations to determine whether El Paso County contributes to the nearby violation at the Desert View monitor. As detailed in the TSD, regarding emissions, EPA notes that emissions of NOx in El Paso County are approximately 71 percent greater than emissions of NOx in Doña Ana County; emissions of VOC in El Paso County are approximately 128 percent greater than emissions of VOC in Doña Ana County; the population of El Paso County is approximately 290 percent greater than the population of Doña Ana County and the population density of El Paso County is approximately 1373 percent greater than the population density of Doña Ana County; and the VMT in El Paso County is 194 percent higher than the VMT in Doña Ana County. Regarding meteorology, EPA notes that back trajectory analyses provided by EPA and TCEQ show transport from El Paso County to the violating Desert View monitor, and the HYSPLIT analysis shows that on 8 of the 13 exceedance days at the violating monitor back trajectories flowed through El Paso county. Regarding geography and topography in the area, EPA notes that the Franklin Mountains in El Paso County don't prevent air movement, as the HYSPLIT analysis shows air movement from east to west at the south end of these mountains in El Paso County. And regarding jurisdictional boundaries, EPA notes that El Paso County is a clearly defined jurisdictional boundary. Given the overall weight of evidence of all five factors, EPA has determined that El Paso County contributes to the violating monitor in Doña Ana County.

Our April 2018 attainment designation did not sufficiently weigh the five factors for El Paso County for contribution and inappropriately relied on contributions from international emissions. For contribution, we did not properly weigh the impact of emissions (NOx, VOC, population size and density, and VMT) from El Paso County on the violating monitor. In addition, while EPA does believe that international emissions significantly influence air quality in Doña Ana and El Paso counties, international influence is properly addressed through the appropriate CAA section 179B demonstration process, not the NAAQS designation process.

As mentioned earlier, CAA section 179B provides an opportunity for a state to demonstrate that a nonattainment area would be able to attain and maintain, or would have attained, the relevant NAAQS "but for emissions emanating from outside the United States." Such "but for" provisions are not included in CAA section 107 and thus, EPA is unable to exclude potential impacts of emissions from outside the US. Consistent with CAA section 107(d)(1)(a)(i), even an area whose ambient air concentration complies with the relevant NAAQS must be designated as nonattainment if it contributes to a NAAQS violation in a nearby area. See also *Clean Wisconsin*, 964 F.3d at 1153. A county may contribute to nonattainment even though another jurisdiction's contribution is larger; a contributing county need not be the but-for cause of a violation in order to warrant a nonattainment designation. See *Miss. Comm'n on Env't Quality*, 790 F.3d 138 at 163. Contribution may also be found even though a nearby county's nonattainment problem would still persist in the absence of that contribution. See *Catawba*, 571 F.3d 20 at 39 (D.C. Circuit, 2009). Indeed, EPA must designate as nonattainment any area that "exacerbates" nonattainment nearby, a flexible standard that courts have recognized as central to the "very purpose" of Section 107(d) area designations. See *Catawba*, 571 F.3d at 39. See also *Miss. Comm'n on Env't Quality*, 790 F.3d at 163. Consistent with CAA section 107(d)(1)(a)(i), even an area whose ambient air concentration complies with the relevant NAAQS must be designated as nonattainment if it contributes to a NAAQS violation in a nearby area. See also *Clean Wisconsin*, 964 F.3d at 1153.

As described in the final TSD for the El Paso-Las Cruces TX-NM area: 1) The Desert View monitor in NM is violating the 2015 ozone NAAQS. 2) Emissions of NOx in El Paso County are approximately 71 percent greater than emissions of NOx in Doña Ana County; emissions of VOC in El Paso County are approximately 128 percent greater than emissions of VOC in Doña Ana County; the population of El Paso County is approximately 290 percent greater than the population of Doña Ana County and the

[10] *Clean Wisconsin v. EPA*, 964 F.3d 1145, 1164 (D.C. Cir. 2020)

population density of El Paso is approximately 1373 percent greater than the population density of Doña Ana County; and the VMT in El Paso County is 194 percent higher than the VMT in Doña Ana County. 3) Back trajectory analyses provided by EPA and TCEQ show transport from El Paso County to the violating Desert View monitor, and the HYSPLIT analysis shows that on 8 of the 13 exceedance days at the violating monitor back trajectories flowed through El Paso county. 4) The Franklin Mountains in El Paso County don't prevent air movement, as the HYSPLIT analysis shows air movement from east to west at the south end of these mountains in El Paso County. 5) El Paso County is a clearly defined jurisdictional boundary. Given the overall weight of evidence of all five factors, EPA has determined that El Paso County contributes to the violating monitor in Doña Ana County.

EPA's review of the TCEQ's back trajectories does not find a significant difference between what either set of trajectories suggests with respect to the five-factor analysis: At 100 m AGL five TCEQ trajectories pass through El Paso County and one of those trajectories does pass through a large section of Juarez between El Paso and Doña Ana counties. Six trajectories in EPA's mapping tool pass through El Paso County and two of those trajectories pass through a large section of Juarez between El Paso and Doña Ana counties. At 500 m AGL six TCEQ trajectories pass through El Paso County and three of those trajectories pass through a large section of Juarez between El Paso and Doña Ana counties. Seven trajectories in EPA's mapping tool pass through El Paso County and three of those trajectories pass through a large section of Juarez between El Paso and Doña Ana counties. In addition, consistent with the ozone designation guidance, EPA notes that the trajectory line represents the centerline of an air parcel's movement and thus, one should avoid concluding a region is not along a trajectory's path if the center line of that trajectory missed the region by a relatively small distance.

POPULATION DENSITY AND DEGREE OF URBANIZATION

Comment: Commenter states EPA concluded that El Paso County's larger population and higher population density are contributing factors to ozone exceedances in Doña Ana County but failed to provide an analysis demonstrating that these characteristics actually impact the Desert View monitor. Commenter states that the proposed El Paso-Las Cruces ozone nonattainment area is not an interconnected, population-dense urban area and therefore, EPA should not give any weight to El Paso's relative population size and density as a factor in designating El Paso County as nonattainment based on contributing to exceedances in the existing Sunland Park ozone nonattainment area in Doña Ana County.

EPA Response: As mentioned in EPA's ozone designation guidance, ambient ozone is formed through complex atmospheric processes. Air quality in a nonattainment area is also typically the result of a combination of regional and local emissions. In the designations process, for each area with a violating monitor, EPA evaluates the current emissions data from nearby counties to assess each county's potential contribution to ozone concentrations at the violating monitor(s) in the area under evaluation. Therefore, consistent with EPA's ozone designation guidance, EPA's evaluation of emissions and emissions-related data includes population and population density because these elements provide indicators of the location and magnitude of emissions-related activities within the county. Such emissions may contribute to ozone concentrations at the nearby violating monitor. Within the area of analysis, El Paso County has the highest 2015 population with 835,593 and a population density of 825 people per square mile. In comparison, the population of El Paso County is approximately 290 percent greater than the population of Doña Ana County and the population density of El Paso is approximately 1373 percent greater than the population density of Doña Ana County. EPA's evaluation of emissions data found that emissions of NOx in El Paso County are approximately 71 percent greater than emissions of NOx in Doña Ana County, and emissions of VOC in El Paso County are approximately 128 percent greater than emissions of VOC in Doña Ana County.

Consideration of population size and density is not dependent on the nearby area being an "interconnected, population-dense urban area." Areas do not have to be "interconnected," or population dense, or urban to be evaluated for contribution. The CAA merely requires that the areas be "nearby" which the EPA has interpreted to include, as a starting point, the CBSA or CSA. As mentioned earlier, the CBSA and CSA are determined by the OMB, and CSA is a term for a combination of adjacent metropolitan and micropolitan statistical areas that can demonstrate economic or social linkage. EPA has determined that the CSA or CBSA is a reasonable representation of which areas may be "nearby" for purposes of determining contribution. El Paso is part of the area of analysis corresponding to the El Paso-Las Cruces TX-NM CSA comprised of Doña Ana County, New Mexico, and El Paso and Hudspeth Counties, Texas.

Finally, EPA notes that the ozone designation guidance does not specify that EPA show "actual impact" but instead to assess the five factors (air quality data, emissions and emissions-related data, meteorology, geography/topography, and jurisdictional boundaries) for "potential contribution" to ozone concentrations at the violating monitor. Therefore, EPA's analysis and consideration of the above factors are consistent with our ozone designation guidance and prior actions.

TRAFFIC AND VMT

Comment: Commenter states that EPA's TSD stated that El Paso County's larger share of traffic and greater number of VMT contribute to ozone exceedances in Doña Ana County. El Paso County's population is larger than Doña Ana County's, and therefore its traffic and VMT are also larger than Doña Ana County's. However, as noted in the TSD, there is limited commuting traffic between the two areas. Only 2% of El Paso County residents who work commute to Doña Ana County, which represents 0.6% of the total population of El Paso and Doña Ana Counties. Commenter states that the small fraction of El Paso residents who work in Doña Ana County are most likely to work in Las Cruces, NM. Commenter states that this evidence does not support the use of traffic and VMT as a factor in designating El Paso County as nonattainment.

EPA Response: As mentioned in a prior response, ambient ozone is formed through complex atmospheric processes. Air quality in a nonattainment area is also typically the result of a combination of regional and local emissions. In the designations process, for each area with a violating monitor, EPA evaluates the current emissions data from nearby counties to assess each county's potential contribution to ozone concentrations at the violating monitor(s) in the area under evaluation. Therefore, consistent with EPA's ozone designation guidance, EPA's evaluation of emissions and emissions-related data includes traffic and VMT because these elements provide indicators of the location and magnitude of emissions-related activities within the county. Such emissions may contribute to ozone concentrations at the nearby violating monitor. Consistent with the ozone designation guidance, EPA's use of VMT is only one of the elements analyzed within the factor addressing emissions and emissions-related data. EPA evaluated all emissions and emissions-related data available at the time of the April 2018 designations, which, other than VMT and commuting patterns, included county-level emissions of NOx and VOC, locations of large point sources, and population size, density, and growth. Consistent with the ozone designation guidance, EPA also evaluated the four other factors – air quality data, meteorology, geography/topography, and jurisdictional boundaries - to determine whether El Paso County contributed to the violating monitor in Doña Ana County. EPA's decision is based on review of all five factors.

Commenter notes that only 2% of El Paso County residents who work commute to Doña Ana County. Consistent with the TSD, EPA notes that 89% of El Paso County residents are commuting within El Paso County and thus, contributing to some portion of the VMT in El Paso County. Regardless of where El Paso County drivers are headed (work, school, shopping, etc.), the VMT in El Paso County is 194 percent

higher than the VMT in Doña Ana County and the close proximity of El Paso County to the violating monitor makes the VMT emissions an important aspect of the contribution analysis.

Comment: Commenter states that EPA's TSD neglected to consider the impacts of Interstate 10 (I-10) and EPA should acknowledge the international and intranational contributions to VMT in El Paso County. The TSD states "the southeastern portion of Doña Ana County is likely impacted by VMT emissions from El Paso County." Commenter adds that this statement neglects the presence of I-10 in El Paso TX, which experiences significant intranational and international traffic and related VMT. Commenter states that I-10 traffic is not exclusively or even directly related to El Paso County commuter traffic or the population of El Paso County, but EPA does not acknowledge this issue. Commenter also states that the majority (approx. 62%) of El Paso County's 2014 NOx emissions were on-road mobile source (EPA NEI) due to the presence of I-10 traffic, but El Paso County has a relatively low VMT. Commenter states that based on historical VMT data, approx. 25% of El Paso County's 2014 on-road NOx emissions can be attributed to through traffic on I-10, which is outside of the TCEQ's control. Commenter also states that the City of El Paso experiences numerous vehicles entering from Mexico annually (over 12,000,000 in 2014) and these inbound crossings include vehicles that are registered in Mexico and use different fuels and different engine emissions standards that TCEQ cannot regulate.

EPA Response: EPA agrees that I-10 traffic is not exclusively or even directly related to El Paso County commuter traffic or the population of El Paso County – such assertions were not made by EPA. As mentioned in a prior response, in the designations process, for each area with a violating monitor, EPA evaluates the current emissions data from nearby counties to assess each county's potential contribution to ozone concentrations at the violating monitor(s) in the area under evaluation. Therefore, consistent with EPA's ozone designation guidance, EPA's evaluation of emissions and emissions-related data included population size and density, and traffic and VMT because these elements provide indicators of the location and magnitude of emissions-related activities within the county. Such emissions may contribute to ozone concentrations at the nearby violating monitor. Figure 3 in EPA's TSD for the area does not show that the population is limited to the area marked by I-10, but instead shows population as a function of the entire county. Figure 4 in EPA's TSD for the area does not show that VMT is limited to the area marked by I-10 either, but instead shows VMT relatively widespread across the western half of El Paso County.

Generally, VMT numbers are generated by a combined effort, often between a state's Department of Transportation (DOT) and the Municipal Planning Organization (MPO), and often the state air pollution control agency will also have some degree of input into the development of the VMT. The state DOT regularly maintains Travel Demand Models (TDMs) for the various urban areas in a state, with varying degrees of input from the MPO. A TDM is a tool to support the urban transportation planning process for an area, and the TDM can predict how changes in size and character of the area's population will impact the area's transportation system (all the existing and planned roadways) in the future. Often a state's DOT will run the area's TDM to develop an estimate of the level of vehicle travel activity. The TDM output is validated against numerous ground counts, i.e., traffic passing over DOT counters placed in various locations throughout a county or area. As cited in the TSD for this area, VMT data used by EPA were taken from the National Emissions Inventory[11] and did not provide emissions from international traffic. EPA notes that the data provided by the TCEQ to address international traffic was not available at the time of our April 2018 designations action either.

Comment: Commenter states that EPA's nonattainment designation is inconsistent with the previous designations in the Commonwealth of Pennsylvania (Berks County and Northampton). Commenter states that EPA used VMT and population as a reason to exclude in the Pennsylvania actions but included VMT

[11] See *https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei*.

and population as a reason for nonattainment in El Paso County. Commenter states that based on these analyses, along with the 2014-2016 monitoring data showing attainment of the NAAQS in El Paso County, EPA should treat El Paso County similar to Berks County and Northampton and retain the original designation for El Paso County.

EPA Response: First, EPA did treat El Paso County similar to Berks and Northampton Counties. EPA's separate analyses of Berks, Northampton, and El Paso Counties was consistent with EPA's ozone designation guidance, where each area designation begins with the five-factor analysis. The findings of the five-factor analysis are then evaluated by EPA using a weight-of-evidence analysis and evaluated on a case-by-case basis, as each area is unique. Comparison of counties in unrelated areas is not part of the five-factor analysis, nor is such comparison relevant to assessing contribution to a violating monitor.

Second, EPA's final TSD for the area including Berks County does not identify VMT or population as "reasons to exclude" Berks County from the nonattainment area, but does indicate *"meteorology shows, in Figures 6a-e and 6g-o, that violating monitors in the Philadelphia-Wilmington-Atlantic City area are generally not impacted by emissions from Berks County."* EPA notes significant differences between El Paso and Berks counties: the population of El Paso County (835,593) is about 101 percent greater than the population of Berks County (415,271), El Paso County is about 70 percent more densely populated than Berks County (825 people/square mi compared to 485 people/square mi), VMT in El Paso County (5,956 million miles) is about 80 percent higher than in Berks (3,298 million miles), NOx emissions in El Paso County (18,391 tpy) are about 37 percent higher than in Berks (13,379 tpy), and VOC emissions in El Paso County (13,912 tpy) are also higher than in Berks (13,067 tpy). That said, the only important comparisons in this action are those between El Paso County and Doña Ana County: emissions of NOx in El Paso County are approximately 71 percent greater than emissions of NOx in Doña Ana County; emissions of VOC in El Paso County are approximately 128 percent greater than emissions of VOC in Doña Ana County; the population of El Paso County is approximately 290 percent greater than the population of Doña Ana County and the population density of El Paso is approximately 1373 percent greater than the population density of Doña Ana County; back trajectory analyses provided by EPA and TCEQ show transport from El Paso County to the violating Desert View monitor, In addition, the meteorology for the El Paso-Las Cruces TX-NM area shows that the violating monitor in NM *is* potentially impacted by emissions from El Paso County.

Third, EPA's final TSD for the area including Northampton County notes that Northampton County is among the counties "*excluded from the New York Metro nonattainment area …. They also ranked in the bottom half of [the 34 counties evaluated in the New York Metro area] for 2014 total [VMT], except for Orange County, New York. These counties were also not upwind of the peak monitor in Fairfield County, Connecticut.*" EPA notes significant differences between El Paso and Northampton Counties: the population of El Paso County (835,593) is about 177 percent greater than the population of Northampton County (300,813), VMT in El Paso County (5,956 million miles) is about 181 percent higher than in Northampton County (2,114 million miles), NOx emissions in El Paso County (18,391 tpy) are about 42 percent higher than in Northampton County (12,944 tpy), and VOC emissions in El Paso County (13,912 tpy) are about 89 percent higher than in Northampton County (7,357 tpy). And, as noted above, the meteorology for the El Paso-Las Cruces TX-NM area shows that the violating monitor in NM is impacted by emissions from El Paso County. EPA reiterates that the only important comparisons in this action are those between El Paso County and Doña Ana County, which are listed in the preceding paragraph.

As noted earlier in this RTC, emissions of NOx and VOC, as well as population in each of Kaufman, Ellis, and Wise counties separately did not account for more than nine percent of the total NOx, VOC, and population in the nine-county DFW nonattainment area. In addition, emissions of NOx and VOC, as well as population in each of Chambers and Fort Bend counties separately did not account for more than

15 percent of the total NOx, VOC, and population in the six-county HGB nonattainment area.[12] In contrast to these areas, which were also designated nonattainment, El Paso County contributes much greater percentages of precursor emissions within its area of analysis. As described earlier, Juarez contributes 52% of the total NOx emissions in the area compared to 28% from El Paso County, 67% of the total VOC emissions in the area compared to 22% from El Paso County, and has 61% of the population in the area compared to 38% in El Paso County.

Therefore, the EPA disagrees that this action is materially inconsistent with our evaluations in the two examples raised by the commenter. This action is distinguished based on the specific factual circumstances of the El Paso County and Doña Ana County area and applies the five-factor analysis in a consistent manner.

Comment: Commenter states that in contrast to El Paso County, the seven multi-state ozone nonattainment areas have populations that regularly travel outside their respective counties for work due to the interconnected nature of those economies, which contributes to increased VMT within the nonattainment areas. Commenter states that the VMT for each of the seven multi-state areas is 93% to 1,930% higher than that of El Paso County, and the VMT of the seven multi-state areas is 44% to 1,415% higher than that of the EPA's proposed El Paso-Las Cruces ozone nonattainment area.

EPA Response: Consistent with EPA's ozone designation guidance, EPA is using the CBSA or CSA as a starting point for the contribution analysis as a reasonable approach to ensure that the nearby areas most likely to contribute to a violating area are evaluated. El Paso County, TX is part of the El Paso-Las Cruces TX-NM CSA and therefore, EPA analyzed El Paso County for its potential to contribute to the violation of the 2015 ozone NAAQS at the nearby monitor in NM. Also consistent with EPA's ozone designation guidance, EPA evaluates the counties within the CSA using the five-factor analysis: air quality data, emissions/emissions-related data, meteorology, geography/topography, and jurisdictional boundaries. The findings of the five-factor analysis are then evaluated by EPA using a weight-of-evidence analysis and evaluated on a case-by-case basis, as each area is unique. Therefore, EPA's designation decisions are not based on one element within the factor for emissions/emissions-related data, such as VMT. In addition, EPA's evaluation of VMT in the El Paso-Las Cruces TX-NM area is not made in comparison to other areas but weighed with the findings of all five factors for this area to determine whether or not El Paso County potentially contributes to the nearby violating monitor. Commenter compares the VMT for El Paso County with seven multi-state, nonattainment areas, each of which contain multiple counties. Perhaps the largest of these multi-state areas is the New York/Northern New Jersey/Long Island area. This particular area has a population of over 20 million people and a correspondingly larger VMT than El Paso County. Commenter does not describe how these multi-state comparisons are relevant to El Paso County.

GEOGRAPHY/TOPOGRAPHY

Comment: Commenters indicate that EPA's TSD presents an imprecise re-evaluation of the geographic/topographic considerations for Franklin Mountains airflow affects. Commenters assert that TCEQ's analysis (Analysis figures and references attached to comment) shows the mountains do affect ozone values at the Desert View monitor but the emissions from Mexico are a contributor. Commenters indicate that TCEQ's trajectory analysis shows Texas with 7.7% of wind flowing east to west on high ozone days and that wind speed are elevated, it is unlikely that the Desert View monitor is affected by Texas. TCEQ provided a surface wind analysis including wind histograms that they indicated shows that

[12] See the TSD for the DFW and HGB Nonattainment Areas Final Area Designations for the 2015 Ozone NAAQS, posted in the docket for this rulemaking and also at *https://www.epa.gov/ozone-designations/ozone-designations-2015-standards-texas-state-recommendations-and-epa-response*.

winds are diverted due to the mountains' altitude and their north to south spatial position. TCEQ's assessment continued that wind channeling effect created by the Franklin Mountains as seen at the El Paso UTEP and Ascarate Park monitors, which are along the Rio Grande is indicated in Figure 5 of Attachment 1 of TCEQ's comments. TCEQ indicates that in this area, the wind flows approximately east to west or west to east depending on the day. The wind histograms show two acute peaks at wind directions of approximately 100 and 275 degrees. These wind directions correspond with the location of the mountains and the river valley with respect to the monitor and TCEQ indicates that east mode winds (100 degrees) were frequently associated with high wind speeds which would disperse pollutants (ozone precursors and ozone).

TCEQ also evaluated the eastern portion of the City of El Paso, indicating the mountains limit wind flow from the east and west, creating south-to-north wind flow. TCEQ provided histograms data from monitors in eastern El Paso (Ivanhoe and Skyline Park) and indicated that these histograms are very different wind histograms than those from monitors near the river valley (El Paso UTEP and Ascarate Park), as shown in Figure 6 of Attachment 1 to TCEQ's comments. TCEQ indicated that emissions from point sources and the population are on the east side of the City of El Paso and are less likely to affect the Desert View monitor. TCEQ indicated that data from these monitors display a high frequency of winds from a south-to-north direction, with a peak wind direction of 175 degrees and this is the direction of wind flow from Mexico into Texas and New Mexico, which has been associated with high ozone. TCEQ continued that this direction is associated with low wind speeds, which are also conducive to ozone formation, allowing emissions from Mexico to drift slowly through El Paso and into New Mexico. TCEQ also indicated that in cold-weather months, cold fronts create a northwest to southeast wind flow and that these days are frequently associated with high wind speeds and not conducive to ozone formation.

TCEQ concluded that these bimodal wind direction distributions demonstrate that the mountains do affect wind flow in the El Paso and southern New Mexico areas by channeling wind east to west and can rapidly move and disperse ozone and ozone precursors. TCEQ also concluded that their residence time, or endpoint frequency trajectory analysis, shows that higher ozone is associated with winds from the south-southeast, not east to west for ozone monitors in El Paso. This south-southeast direction is from Mexico not Texas. Since the EPA did not consider the higher-than-average wind speeds caused by El Paso's topography, TCEQ claimed that the EPA's analysis does not sufficiently address the dispersion caused by the topography. TCEQ summarize that EPA's technical analyses used to reevaluate whether El Paso County potentially contributes to ambient ozone concentrations at the violating Desert View monitor in the Sunland Park ozone nonattainment area are imprecise, based on incomplete technical analysis, and disregard that El Paso County, TX and Doña Ana County, NM do not function as one interconnected urban area and have limited air shed mixing due to geography/topography.

EPA Response: TCEQ indicated that their trajectories indicated that 7.7% of the time there was a flow from east to west but as discussed elsewhere in responses to comments TCEQ's NAM 12 km (5 out of 13 days), EPA's EDAS 40 km (8 out of 13 days) and NAM 12 km (10 out of 13 days) trajectory analyses all indicate much more than 7.7% of the trajectories pass through El Paso County. TCEQ's histograms are for some monitors in El Paso County and for all hours of the year and not focused on the winds on the 13 days that ozone exceedances were monitored at the Desert View monitor.

We agree that the mountains have some impact on wind flow when looking at all hours for several years in TCEQ's histograms but that does not provide much information as to what is specifically occurring on the days that ozone exceedances occurred and thus is not of much value to this action. TCEQ's histograms for the monitors at UTEP and Ascarate Park, which they state are affected by both the Franklin mountains and the Rio Grande valley but did not provide a wind histogram for the Chamizal monitor which is between the UTEP and Ascarate monitors and is also a long-term monitor with meteorology measurements. Both monitors (UTEP and Ascarate Park) show higher frequencies of

southeasterly and north-northwesterly wind directions for wind speeds less than 6 mph. TCEQ did not provide a similar analysis for the Desert View monitor, but even if histograms had been developed it would be of limited use unless it focused just on the wind directions and wind speeds on monitored exceedance days. The lack of an easterly wind, and the high frequency of westerly wind directions at the Skyline Park monitor are very likely due to the Franklin Mountains which are both near and due west of the Skyline Park monitor and the multi-year histogram is of limited value. Histograms for Ivanhoe and Skyline Park are not very informative as they are based on all wind directions and wind speeds for multiple years and not focused on wind speed and wind directions on only the ozone exceedance days.

TCEQ also provided comments about winds during cold weather months, but those comments are not germane to this subject as all exceedances at the Desert View monitor in the 2014-2016 period were in months May-August and not cold weather months.

EPA notes that in TCEQ's histograms there is still east-to-west winds and southeast to northwest winds shown at the monitors near the river, south of the peaks of the mountains, and even at Ivanhoe that, if linear, would transport air parcels from El Paso County areas towards the Desert View monitor. In that same area, there are several point sources that could be caught in flows from the east-southeasterly. Much of the population and emissions sources (on-road, nonroad, area, point, etc.) are not to the east of the Franklin mountains but are to the west, southwest, south, and southeast of the Franklin mountains. Overall, any effects of the Franklin Mountains are being considered as part of the five-factor analysis and not individually determinative. As discussed in another response in this document we discount the endpoint analysis and utilize the HYSPLIT centerline analysis for several reasons discussed in other responses. We disagree that south to southeasterly winds at the monitors in El Paso County indicate Mexico contribution when these wind directions can actually reflect transport from Mexico and also El Paso County.

HYSPLIT analyses allow for a targeted focus on meteorology and transport that occur when specific ozone exceedances are monitored. Whereas histograms that are made up of wind directions and wind speeds for all hours of the year give information summarized on an annual or multi-annual basis and do not provide the targeted information about transport winds during monitored ozone exceedances, thus histograms are of much less value than the targeted HYSPLITs in determining transport during ozone exceedances. EPA used the HYSPLIT back trajectory centerline analyses to focus on just the exceedance days and hour(s) that contributed to the exceedance which are usually lighter wind days and this confirmed that El Paso County was a contributing area for 5-10 days out of 13, depending on using TCEQ's NAM 12 km HYSPLITs or EPA's HYSPLIT analyses using EDAS 40 km and NAM 12 km meteorology.

Comment: Commenters indicate that EPA's new analysis does not include documented information about the complex mountainous terrain and effect of the located topography. Commenters state that NMED's 179B demonstration for Doña Ana County is more detailed in describing not only the Franklin Mountains impact but how those geographical features also interact with the Sierra de Juarez in Mexico and Mount Cristo Rey between the mountains on both sides of the border. Commenters state that the revised TSD attempts to reverse the original TSD conclusion by stating that "the EPA has found the Franklin Mountains do not have as much of a limiting effect on transport of emissions as stated in our prior TSD" and goes on to say that "the majority of the City of El Paso is located to the south of the Franklin Mountains leaving open a corridor for transport of ozone and ozone precursors to the Desert View Monitor." Commenters state that EPA based this new conclusion on its "less accurate 40 km HYSPLIT analyses." Commenters state that EPA's substitution of a 40 km HYSPLIT portrayal that masks the mountains is insufficient and misleading. Commenters state that EPA's revised geography/topography analysis brushes aside important information and EPA's analysis on this key factor is insufficient to justify the reversal.

EPA Response: We disagree with the commenter that EPA substituted data. In the Intended designation TSD, EPA performed HYSPLIT using EDAS 40 km meteorology data that the commenter asserts that using 40 km meteorology masks the mountains is insufficient and misleading. EPA relied on the HYSPLITs included in our existing record (no substitutions) in the designation analysis for El Paso County and did not provide any substitution. EPA noted in the Intended Area Designation TSD for El Paso-Las Cruces TX-NM for counties remanded to EPA several other factors about geography and topography that are part of EPA's analysis including: 1) A Figure 6 that illustrated the physical features in the area of analysis that shows that much of the populated areas, sources of emissions, and emissions of El Paso County are south of the influence of the Franklin Mountains and HYSPLIT analyses in Figures 5a and 5b showed some air flows flowing around the Franklin Mountains for areas to the east of the Franklin Mountains. 2) The majority of the City of El Paso and El Paso County is located to the south of the Franklin Mountains leaving open a corridor for transport of ozone and ozone precursors to the Desert View Monitor. 3) Therefore, the Franklin mountains provide geographical/topographical barriers but do not limit air pollution transport from El Paso County to the violating monitor, as shown by the HYSPLIT model that uses meteorological data in Figures 5a and 5b.

We disagree that EPA did not document location and elevation of the Franklin Mountains. EPA did include Figure 6 that included both the Franklin Mountains and the mountains in nearby Mexico in our intended TSD and did evaluate that there were paths for the air to flow around Franklin Mountains based on the HYSPLITs in the TSD. We also noted that most of the areas of El Paso County with population and emissions are not encumbered by the Franklin Mountains and even sources to the east of the Franklin Mountains can flow to the southwest around the Franklin Mountains and towards the Desert View monitor. Both the EDAS 40 km meteorological data and NAM 12 km meteorological data both would incorporate local terrain features including the Franklin Mountains in the meteorological modeling done to generate the EDAS and NAM data sets. As discussed in another response both the EDAS 40 km and NAM 12 km both include the use of local surface and upper air meteorological data including wind speed and wind direction to help in developing an accurate meteorological dataset as possible with the tools available. TCEQ provided HYSPLITs using a smaller meteorological grid with the NAM 12 km data set and those HYSPLITs indicated that on 5 of the 13 exceedance days the HYSPLIT back trajectory centerline passed through part of El Paso County areas with some emissions. So based on both EPA's HYSPLITs and TCEQ's HYSPLITs that both use meteorological data that incorporates terrain features including the Franklin Mountains indicated that at least 5 of 13 exceedance days at the Desert View monitor had some contribution from El Paso County. In response to comments from TCEQ and others, EPA generated additional HYSPLITs using NAM 12 km meteorological data that for all hours that contributed to the thirteen 8-hour exceedances and these HYSPLITs showed transport from some parts of El Paso County for all three vertical start points (100 m, 500 m, and 1000 m) on 7 of the 13 exceedance days at the Desert View monitor.

Overall, EPA believes the information above does take into account potential influence of the Franklin Mountains and supports EPA conclusion that the Franklin Mountains do not limit flow from most areas of El Paso County. For areas of El Paso County to the east of Franklin Mountains and north of the southern parts of the Franklin Mountains, the HYSPLIT analyses (HYSPLITs in EPA's Intended TSD, HYSPLITs in TCEQ's comments, and HYSPLITs done by EPA for this response to comments) indicate that flow can go around the southern edge of the Franklin Mountains sometimes and towards the Desert View monitor and therefore the Franklin Mountains are not a barrier but a topographical feature that can influence transport patterns from El Paso County areas towards the Desert View monitor under some circumstances.

ENVIRONMENTAL JUSTICE

Comment: Commenter states that El Paso's 3-year average design value has exceeded 70 ppb during every year on record, except for 2016, when its design value was exactly 70ppb.

EPA Response: The EPA agrees that air quality data in El Paso County has been violating the 2015 ozone NAAQS since 2016. However, EPA decided in this action to limit the data considered to what was available at the time of the April 2018 designations action.

As the D.C. Circuit stated clearly in *Catawba County, NC v. EPA*, 571 F.3d 20, 51 (D.C. Cir. 2009), a case reviewing EPA's area designations for the 1997 PM 2.5 NAAQS, "inconsistent treatment is the hallmark of arbitrary agency action." *See also Mississippi Comm'n v. EPA*, 790 F.3d 138 (D.C. Cir. 2015) (reviewing EPA's area designations for the 2008 ozone NAAQS). EPA reasonably relied on data in the existing record in this revised designations action to remain consistent within El Paso County and the El Paso-Las Cruces TX-NM nonattainment area, consistent with the rest of the area designations for the 2015 ozone NAAQS across the country, and consistent with EPA's past practice and court decisions.

EPA decided to use the existing record to support this revised designations decision to rely on a consistent set of data within El Paso County and the El Paso-Las Cruces TX-NM nonattainment area. EPA's original designation of nonattainment for the southern portion of Doña Ana County relied on the data in the existing record. The violating monitor that forms the basis for the area being designated nonattainment was determined using 2014-16 design values in the existing record. Designating one portion of a nonattainment area based on data available to EPA on April 30, 2018 and another portion based on the data available to EPA in 2021 could create inconsistent results, with different portions of the same area being designated based on different patterns of violations.

The D.C. Circuit explicitly upheld the reasonableness of using consistent data within a particular nonattainment area in *Mississippi Comm'n v. EPA*, 790 F.3d at 160. In that case, EPA had to decide what data to use in a multi-state nonattainment area covering the Memphis CBSA. EPA had 2008-2010 design values for all three states involved (Mississippi, Tennessee, and Arkansas); however, Mississippi and Tennessee had certified early its 2009-2011 design values. Those states requested that EPA consider the more up-to-date data, claiming that such consideration would change the boundaries of the nonattainment area. EPA decided not to rely on a "mismatched dataset" for the nonattainment area, and instead relied solely on the 2008-2010 design values.

EPA's decision also allows the agency to rely on a consistent set of data across the entire set of EPA's designations actions for the 2015 ozone NAAQS, including those remanded to the Agency by the D.C. Circuit in *Clean Wisconsin*, the designation upheld by the court, and those that were unchallenged. If EPA had decided to rely on updated data for all the remanded counties, it could have created similarly inconsistent outcomes in multiple nonattainment areas across the country. Similarly, if EPA had decided to rely on updated data for some remanded areas and not others, it would have created inconsistent outcomes. Guided by the D.C. Circuit's statements in *Mississippi Comm'n* and ensuring consistent treatment of all designated areas, EPA reasonably concluded that using one set of data for all designations—the data in front of the agency when it took its April 30, 2018 designations action—was the appropriate course of action.

EPA's action is further supported by the *Clean Wisconsin* court's direction to "issue revised designations as expeditiously as practicable." Even if EPA decided to look past the inconsistencies detailed above, relying on new data for the remanded action would have taken the agency significantly longer to consider, and could have required additional process steps that would have taken even more time, including, for example, seeking new state recommendations. EPA's reasonable decision to rely on the data available at

the time of the April 30, 2018 designations action was consistent within the El Paso/Las Cruces TX/NM nonattainment area, consistent across the country, consistent with past practice and previous court decisions, and aligned with the D.C. Circuit's direction.

CONCERNS REGARDING IMPLEMENTATION REQUIREMENTS AFTER DESIGNATION

Comment: Commenters state that "[g]enerating the required offsets from area and mobile sources would be administratively challenging and may be impossible or impractical due to the difficulties of generating permanent and enforceable reductions from these … sources." Commenters express concern with the timing to implement additional requirements for a Moderate nonattainment area, should the area be reclassified from Marginal to Moderate. Commenters state that a nonattainment designation for El Paso would do economic harm to the County.

EPA Response: In determining how best to manage air quality in nonattainment areas in order to meet the NAAQS, to the extent the CAA does not mandate specific control measures, states may consider economic concerns in development of their state implementation plans. We note that in Marginal ozone nonattainment areas, the nonattainment new source review requirement for offsets applies only to new major stationary sources or modifications to those sources and does not apply to mobile sources.[13]

As stated earlier in this RTC, CAA section 179B provides an opportunity for a state to demonstrate that a nonattainment area would be able to attain and maintain, or would have attained, the relevant NAAQS "but for emissions emanating from outside the United States." EPA disagrees with the commenters assumption that an area designated Marginal nonattainment will automatically be subject to bump up and reclassified as a Moderate nonattainment area. To the contrary, the EPA encourages areas to attain the standard and avoid bump up to Moderate nonattainment. Therefore, the EPA believes that commenter's concerns over meeting Moderate nonattainment area requirements are premature at this time. As mentioned earlier, in determining whether an area should be designated nonattainment, EPA did not consider economic impacts because that is not relevant for determining whether an area is violating the NAAQS or is a nearby area that is contributing to a violation as provided under CAA section 107(d). EPA notes that designating the area as nonattainment could assist the area in attaining the 2015 human health-based ozone standards more quickly, reducing health impacts and health-care costs associated with air quality that violates the ozone NAAQS.

ATTAINMENT DATE SHOULD NOT BE RETROACTIVE

Comment: Commenter states that if El Paso County is designated as nonattainment, it should not be tied retroactively to implementation deadlines that existed prior to the area being designated as nonattainment. Commenter states that the attainment designation for El Paso County was remanded to the EPA, not vacated, and thus, it remains effective. Commenter states that any attempt to "link" El Paso County to the Sunland Park nonattainment designation implementation dates would exceed the EPA's statutory authority and would be improper and illegal under the CAA, and it would be an unconstitutional deprivation of due process.

Commenter states that based on the deadlines communicated by EPA, at the time El Paso County may be designated as nonattainment, Texas would already be subject to a finding of failure to submit state implementation plan (SIP) revisions that were not required for the area at the time they were due. A finding of failure to submit would trigger an EPA obligation under 42 USC § 7410(c); CAA section 110(c) to promulgate a federal implementation plan anytime within two years if the SIP planning requirements are not met and potential emissions offset and highway funding sanctions pursuant to 42

[13] The major source threshold for Marginal ozone nonattainment areas is 100 tons per year.

USC §7509(a) and (b); CAA § 179(a) and (b) and 40 CFR 52.31. Commenter also contends that while EPA states it is important to treat different portions of the same nonattainment area consistently, EPA's treatment of Texas and El Paso County under the EPA's proposed schedule for the nonattainment designation is inconsistent with New Mexico and the Sunland Park nonattainment area. Commenter states that New Mexico was given the full amount of time allowed under the CAA to develop and submit the required SIP revisions, and Texas, in contrast, will not be given the legally required time period under the CAA to submit SIP revisions for El Paso County. Commenter also states that New Mexico did not face an immediate finding of failure to submit; while Texas would immediately be at risk of a finding of failure to submit upon the effective date of the designation. Commenter adds further, even if EPA did not act on its own to issue a finding the EPA could be forced to issue a finding of failure to submit for Texas through litigation.

Commenters oppose setting the initial date of designation for El Paso retroactively to August 3, 2018. Commenters state that combining El Paso County with Doña Ana County into a single nonattainment area now, long after the initial designation of Doña Ana County, and applying the original attainment date for Doña Ana County retroactively to El Paso County, contravenes the CAA and imposes untenable consequences. Commenters state that if EPA intends to proceed with its intended designation for El Paso, EPA must, by statute, allow three years from El Paso's initial designation until its attainment date. Commenters state "This approach contravenes the CAA. Where, as here, "an area that is designated attainment…is subsequently redesignated to nonattainment" the CAA requires that the area "shall, at the time of the redesignation, be classified by operation of law in accordance with" [CAA section] 181(a)(1)'s attainment dates. Under [CAA section] 181(a)(1), an area classified as a Marginal nonattainment area has three years from the date of initial designation until its designation date. El Paso was initially designated attainment for this ozone standard, and that designation was never vacated. By retroactively attaching Doña Ana County's attainment date to El Paso County, EPA would deny Texas the statutory required three years for El Paso to attain. EPA does not have the authority to shorten this statutory timing. If EPA proceeds, Texas and El Paso County would be deprived of their statutory planning intervals." Commenters add that the only reasonable approach would be to establish an effective date for the designation based on the effective date of this new regulatory action, providing the appropriate statutory intervals for planning.

EPA Response: This set of comments addresses two related issues: first, what attainment date applies to the El Paso-Las Cruces TX-NM nonattainment area; and second, what implementation deadlines apply for the area. The CAA does not speak directly to a situation where EPA initially designated an area erroneously and had that designation remanded by a court; as such, EPA's decision today rests on a reasonable interpretation of ambiguous statutory provisions.

On the first issue, the attainment date will remain August 3, 2021 for the entire nonattainment area, based on the original effective date of the designation of Doña Ana County, NM on August 3, 2018. Today's action, in addition to similar effects on other areas of the country, expands the El Paso-Las Cruces TX-NM nonattainment area to include El Paso County in response to a remand from the D.C. Circuit Court of Appeals. EPA is not redesignating El Paso County today, and thus is not governed by the process requirements of CAA section 181(b). Instead, consistent with numerous areas across the country in response to the D.C. Circuit's remand, EPA is modifying its original designation to include a larger nonattainment area to comply with the CAA 107(d)(1)(A)(i) requirement that areas that "contribute[] to ambient air quality" in violating areas shall be designated nonattainment. This approach—treating these as a modification of EPA's original designation, rather than a redesignation—aligns with the D.C. Circuit's direction to the Agency: "We therefore require EPA to issue revised designations as expeditiously as practicable." *Clean Wisconsin v. EPA*, 964 F.3d 1145, 1176 (D.C. Cir. 2020).

If El Paso County was being designated nonattainment based on violating monitors within the county itself, it may have been possible to create separate nonattainment areas with different attainment dates. However, because El Paso County's nonattainment designation is based on its contribution to a violating monitor in Doña Ana County, it would not be consistent with the CAA to create separate areas. Section 182(j) of the CAA governs multi-state ozone nonattainment areas, and provides that states sharing jurisdiction over such areas "shall take all reasonable steps to coordinate, substantively and procedurally, the revisions and implementation of State implementation plans applicable to the nonattainment area concerned." If two portions of the same nonattainment area had different nonattainment dates, it would be difficult, if not impossible, for the two states governing those portions to coordinate "substantively and procedurally" on plans to timely achieve the NAAQS (the purpose of state implementation plans). The maximum attainment date is integral to the majority of subpart 2 requirements—serving as the analytical year for air quality modeling for attainment demonstrations, the endpoint for reasonable further progress, and defining what controls are "reasonably available" to achieve and will further attainment. Having two separate goalposts for the two portions of the same nonattainment area could therefore translate into materially different substantive requirements applying to the industries operating in those areas.

Further, multiple attainment dates for the same area could also result in an inequitable scheme of substantive requirements. When an area reaches its attainment date, the statute requires EPA to determine whether the area has attained "based on the area's design value (as of the attainment date)." CAA section 181(b)(2)(A). If an area fails to attain the NAAQS, the statute requires by law that the area be reclassified, generally to the next higher classification. This "bump-up" carries with it an increased stringency in requirements (see Subpart 2). If Doña Ana County and El Paso County had different attainment dates, it could result in the two counties ending up with different classifications, even if the same air quality monitor was the determining monitor at both attainment dates. For example, if monitoring data for the three years preceding the 2021 attainment date at a monitor in Doña Ana County were not attaining the NAAQS, the EPA would be required under the statute to determine that the area failed to attain and would need to reclassify that area and impose any other mandatory statutory consequences (e.g., contingency measures for some classifications). The resulting new requirements associated with that classification would be imposed upon Doña Ana County only, even if emissions from El Paso County contributed to that violation. If EPA established an attainment date of three years from the effective date of this notice, per commenters' request, for El Paso County, it could very well be the case that the same monitor might no longer be violating the standard by the time El Paso County's attainment date came to pass (based in part on reductions imposed on industries in the Doña Ana County portion of the area), and would therefore never face any of the requirements Doña Ana County was subject to. The CAA's structure of requiring contributing areas to be designated as nonattainment under CAA section 107(d) is designed to avoid this inequitable result. As such, it is reasonable for EPA to conclude that the modification of the original designation boundary line to include El Paso County as an area contributing to the violating monitor in Doña Ana County should not disturb the attainment date for the now-combined nonattainment area. In keeping the attainment dates consistent across the nonattainment area, EPA is acting well within the statutory authority provided by the CAA.

However, EPA recognizes that Texas is in a unique position among the states affected by the D.C. Circuit's remand. For all of the other nonattainment area boundaries modified in this action or on June 14, 2021, in response to the court's decision, the relevant states already had counties or portions of counties as a part of those nonattainment areas, and thus already had an obligation to submit SIPs meeting the requirements for a Marginal nonattainment area. However, no portion of Texas was already designated nonattainment as a part of the Doña Ana, NM area; as such, Texas had no notice that it should prepare Marginal area SIP submissions for that area. Given the lack of prior notice, EPA believes it is reasonable to provide Texas with a deadline of 12 months from the effective date of the final remand action in the *Federal Register* to submit a SIP submission that meets all the Marginal nonattainment area planning

requirements for the newly expanded El Paso-Las Cruces TX-NM nonattainment area. See CAA section 301(a)(1).

Setting a separate deadline for El Paso's SIP submissions is not at odds with EPA's decision to keep a consistent attainment date for the entirety of the El Paso-Las Cruces TX-NM nonattainment area, or CAA section 182(j). The CAA requires that "reasonable" steps be taken by states to coordinate planning efforts for joint nonattainment areas and providing some additional time to allow Texas to make Marginal area submissions will not interfere, and might even better serve, future coordination on planning efforts for the entire nonattainment area. Other parts of the CAA also provide support for this final action's decisions regarding attainment dates and SIP submission deadlines: section 182(i) allows the Administrator to adjust SIP deadlines but not attainment dates upon mandatory reclassification of certain ozone nonattainment areas. In addition, areas subject to Marginal area requirements are not required to "plan" for attainment in the same way that areas classified Moderate and above are. The primary substantive obligations associated with a Marginal classification are the requirement to submit an emissions inventory and the requirement that new sources in the area must implement nonattainment new source review. Neither of these requirements are integrally related to attainment planning—they are not submitted to demonstrate how the area will attain or make reasonable further progress towards attainment, and they are not suspended if the area is attaining.

Setting a reasonable future deadline for SIP submissions is consistent with EPA's past practice and D.C. Circuit precedent. On January 4, 2013, the D.C. Circuit remanded EPA's 2007 PM2.5 Implementation Rule, finding that EPA had applied the incorrect set of implementation provisions within the CAA, including a series of deadlines for SIP submissions. Upon remand, the deadlines that should have applied to the relevant areas were in the past. Given that, EPA took final action in 2014 to set up "relatively brief but reasonable" deadlines for required SIP submissions. While the action changed the submission deadlines, it also left in place the attainment dates that had occurred in the past for the relevant nonattainment areas. Petitioners challenged EPA's rule establishing future SIP submittal deadlines on the basis that the CAA established SIP submittal deadlines, those should have applied based on the D.C. Circuit's earlier decision, and EPA lacked discretion to change those deadlines. EPA's rule establishing new, future SIP submittal deadlines in this circumstance was upheld by the D.C. Circuit in *WildEarth Guardians v. EPA*, 830 F.3d 529 (2016) (finding that EPA acted within its authority in novel circumstances where a SIP submission deadline passed without states' awareness due to a remanded action).

Setting a deadline of 12 months from the effective date of the final remand action in the *Federal Register* for Texas's SIP submissions responds directly to many of the commenters' concerns, including concerns about due process and immediate findings of failure to submit that could lead to sanctions and EPA having a FIP deadline.

DESIGNATE ALL OF DOÑA ANA COUNTY AS NONATTAINMENT

Comment: Commenter states that EPA must designate the entirety of Doña Ana County as nonattainment. Commenter states that the most recent design value for the Santa Teresa monitor is 74 ppb, while the most recent design value for the Chapparal monitor is 72 ppb. Commenter states that the Solano monitor in Las Cruces and the La Union monitor are each on the verge of exceeding the standard, each with a design value of 70 ppb. Commenter states that none of these other monitors are included in the boundaries of the existing nonattainment area. Commenter states that because Doña Ana County, as a whole, "does not meet" the 2015 ozone NAAQS, EPA must designate the entire county as nonattainment. 42 U.S.C. § 7407(d)(1)(A). Commenter states that the NMED recommended, in September 2016, that Santa Teresa be included in the Doña Ana County nonattainment area, and accordingly, EPA could expand the nonattainment area to include Santa Teresa without initiating a 120-day process.

EPA Response: The EPA appreciates the commenter's views, but the boundary within Doña Ana County was not challenged or remanded to EPA. See *Clean Wisconsin v. EPA*, 964 F.3d 1145 (D.C. Cir. 2020). In addition, the monitoring data cited by the commenter is current data (2018-2020) and thus, was not available at the time of our April 2018 designations action. As stated in our Notification of Availability and Public Comment Period ("NOA"), the EPA is basing its final designations decisions on data and information contained in the existing designations record.[14] As stated in the NOA and highlighted further in a response above, the EPA will not consider new information submitted during the public comment process that is not a part of the existing record. Therefore, this issue is outside the scope of this action.

EPA refers US citizens to *https://echo.epa.gov/report-environmental-violations* to report what appears to be a possible violation of environmental laws and regulations. Information submitted will be forwarded to EPA environmental enforcement personnel or to the appropriate regulatory authority. If witnessing an environmental event that may lead to an immediate threat to human health or the environment, call 911, then report it to the National Response Center at: 1-800-424-8802.

BOUNDARY OF THE NONATTAINMENT AREA

Comment: Commenters opposes expanding the boundary of the Doña Ana County nonattainment area to include El Paso County. If El Paso County is designated as nonattainment, EPA should follow historical precedents and not designate El Paso County as part of the existing Sunland Park ozone nonattainment area. The EPA designated El Paso County, TX and Doña Ana County, NM separately when these counties were each designated as nonattainment for the 1979 one-hour ozone NAAQS.

EPA Response: The CAA does not require EPA to designate areas with the same boundary as a prior designation under a different NAAQS. Section 107(d)(1) of the CAA directs the EPA to designate an area as nonattainment if it is violating the NAAQS or if it is contributing to a violation of the NAAQS in a nearby area. Consistent with the ozone designation guidance, EPA re-evaluated El Paso County and finds that El Paso County contributes to the nearby violating monitor. A county designated as contributing to a nearby violating area cannot be designated as a separate nonattainment area. As EPA stated above in response to comments urging a different attainment date, separating out the two areas would result in an inequitable scheme of substantive requirements. The EPA is finalizing the boundary for the El Paso-Las Cruces TX-NM Area as provided in the May 2021 TSD. The EPA is designating El Paso County as nonattainment within the El Paso-Las Cruces TX-NM nonattainment area for the 2015 ozone NAAQS.

Comment: Commenter states that EPA's five-factor weight of evidence analyses default to county borders and EPA should be using data specific to the Sunland Park nonattainment area rather than data for all of Doña Ana County.

EPA Response: The EPA believes that the commentor failed to provide an adequate explanation of what specific data was not considered or should be considered. The EPA performed its 5-factor analysis consistently with the method prescribed in the EPA's Ozone Designation guidance. The EPA's analysis in this final action considered all of the evidence for each factor that was available at the time of the April 2018 designations. Furthermore, this final action focuses on the EPA's analysis of El Paso County and its nonattainment area boundary. It is unclear whether the commentor is asking the EPA to revisit the boundary of the Sunland Park, New Mexico portion of the nonattainment area within the state of New Mexico, which the EPA is not addressing as part of this action.

[14] See 86 FR 31460, 31462 (June 14, 2021).

Comment: Commenter states that if EPA moves forward with a nonattainment designation, the nonattainment area should be limited to the City of El Paso boundary. Outside of the City of El Paso boundary, El Paso County's emissions, population, and traffic are small. Additionally, El Paso County has previously implemented a vehicle inspection and maintenance (I/M) program and two fuels programs to reduce vehicle emissions: an oxygenated fuels program and a Low Reid Vapor Pressure Gasoline program. Based on the location of industrial sources, the majority of emissions sources in El Paso County are located within the boundaries of the City of El Paso.

EPA Response: The EPA disagrees with the commentors proposed boundary. The EPA's five-factor analysis as described throughout this response to comments and detailed in our May 2021 TSD for this final action supports its determination that the boundary of the nonattainment area should encompass all of El Paso County. Nothing in the commentors assertions or arguments alters our decision and the EPA stands by its analysis and determination.

EPA acknowledges the existing I/M and fuel programs being implemented in El Paso County. EPA is finalizing the boundary for the El Paso-Las Cruces TX-NM Area as provided in the May 2021 TSD. The EPA is designating El Paso County as nonattainment within the El Paso-Las Cruces TX-NM nonattainment area for the 2015 ozone NAAQS.

Comment: Commenter states that EPA's revised analysis of jurisdictional boundaries does not follow EPA guidance and precedent and ignores compelling factors.

EPA Response: We disagree that EPA's revised analysis does not follow EPA's ozone designation guidance regarding jurisdictional boundaries. Neither the CAA nor the ozone designation guidance requires EPA to designate areas with the same boundary as a prior designation under a different NAAQS. Commenters provide the example of El Paso and Doña Ana Counties as designated separately under the 1-hr ozone and PM10 NAAQS. However, the examples provided did not set precedent - the boundary for one of the multi-state nonattainment areas under the 1997 ozone NAAQS included counties in Arkansas and Tennessee, and under the 2008 ozone NAAQS, EPA expanded that multi-state boundary to also include a county in Mississippi.[15] In particular, both El Paso County and Doña Ana County had violating monitors when EPA chose to designate them separately; here, El Paso County's nonattainment designation is based instead on its contribution to the Doña Ana monitor.

Finally, we disagree that EPA's revised analysis of jurisdictional boundaries ignores compelling factors. Commenter did not include the factors it believes EPA ignored. As referred to in the ozone designation guidance and stated in the TSDs for the intended and final area, "EPA considered existing jurisdictional boundaries for the purposes of providing a clearly defined legal boundary to carry out the air quality planning and enforcement functions for nonattainment areas." Commenters do not specify how the El Paso County boundary fails to provide a clearly defined legal boundary for the nonattainment area. The TCEQ and NMED have the authority to carry out the air quality planning and enforcement functions within their jurisdictional boundaries for the 2015 ozone NAAQS.[16]

Comment: Commenters state that a justification based on a shared Metropolitan Planning Organization (MPO) is facially inadequate. Commenters state that the El Paso MPO has no attainment demonstration or control strategy planning or enforcement function. Commenters also state that air quality planning and enforcement offices of TX and NM would need to "effectively complement the corresponding offices" in the other state.

[15] See 69 FR 23858 (April 30, 2004) and 77 FR 30088 (May 21, 2012).
[16] As required by CAA section 110(a)(2). See 84 FR 49057 (September 18, 2019) for the New Mexico SIP and 84 FR 49663 (September 23, 2019) for the Texas SIP.

EPA Response: EPA's designation decision is not based on "a shared MPO." Consistent with the ozone designation guidance, EPA used a five-factor analysis to evaluate whether El Paso County is contributing to the nearby violating monitor in NM. The five factors are air quality data, emissions and emissions-related data, meteorology, geography and topography, and jurisdictional boundaries. Consistent with the ozone designation guidance, EPA's designation decisions are based on consideration of all five factors: Emissions of NOx in El Paso County are approximately 71 percent greater than emissions of NOx in Doña Ana County; emissions of VOC in El Paso County are approximately 128 percent greater than emissions of VOC in Doña Ana County; the population of El Paso County is approximately 290 percent greater than the population of Doña Ana County and the population density of El Paso is approximately 1373 percent greater than the population density of Doña Ana County. Back trajectory analyses provided by EPA and TCEQ show movement of air parcels from El Paso County to the violating Desert View monitor, and the HYSPLIT analysis shows that on 8 of the 13 exceedance days at the violating monitor back trajectories flowed through El Paso County. The Franklin Mountains in El Paso County don't prevent air movement, as the HYSPLIT analysis shows air movement from east to west at the south end of the Franklin Mountains in El Paso County. El Paso County is a clearly defined jurisdictional boundary. Collectively, our analysis of these five factors provides demonstrable evidence that El Paso County sufficiently contributes to the violating monitor.

EPA adds that one of the important functions of the El Paso MPO is to assist the TCEQ in implementing the transportation conformity program, which is one of the required elements for a Marginal ozone nonattainment area. Commenter suggests that TX and NM will both need control and enforcement authority within the entire nonattainment area, which is not true. Texas and NM need only address the portion of the nonattainment area within their own state boundary, which each has the authority to do.[17] As EPA has responded elsewhere in this RTC, the areas are part of the same nonattainment area due to the fact that El Paso County's designation is based on the County's contribution to the violating monitor in Doña Ana County.

Comment: Commenter states that the El Paso-Las Cruces area is very different from other regions that EPA has designated as multi-state ozone nonattainment areas. There are currently seven multi-state areas designated as nonattainment under the 2015 eight-hour ozone NAAQS (Chicago, Cincinnati, Louisville, New York-Northern New Jersey-Long Island, Philadelphia-Wilmington-Atlantic City, St. Louis, and Washington D.C.). These multi-state nonattainment areas are large, metropolitan, industrialized areas with significantly higher ozone precursor emissions. Ozone precursor emissions in each of these seven multi-state ozone nonattainment areas are 85% to 1,049% greater than the emissions in the proposed El Paso-Las Cruces ozone nonattainment area.

EPA Response: Consistent with EPA's ozone designation guidance, EPA is using the CBSA or CSA as a starting point for the contribution analysis as a reasonable approach to ensure that the nearby areas most likely to contribute to a violating area are evaluated. El Paso County, TX is part of the El Paso-Las Cruces TX-NM CSA and therefore, EPA analyzed El Paso County for its potential to contribute to the violation of the 2015 ozone NAAQS at the nearby monitor in NM. Also consistent with EPA's ozone designation guidance, EPA evaluates the counties within the CSA using the five-factor analysis: air quality data, emissions/emissions-related data, meteorology, geography/topography, and jurisdictional boundaries. The findings of the five-factor analysis are then evaluated by EPA using a weight-of-evidence analysis and evaluated on a case-by-case basis, as each area is unique. Therefore, EPA's designation decisions are not based on one element within the factor for emissions/emissions-related data, such as VMT. In addition, EPA's evaluation of VMT in the El Paso-Las Cruces TX-NM area is not made in comparison to other

[17] As required by CAA section 110(a)(2). See 84 FR 49057 for the New Mexico SIP and 84 FR 49663 for the Texas SIP.

areas but weighed with the findings of all five factors for this area to determine whether or not El Paso County potentially contributes to the nearby violating monitor. Commenter compares the ozone precursor emissions for El Paso County with seven multi-state, nonattainment areas, each of which contain multiple counties. Perhaps the largest of these multi-state areas is the New York/Northern New Jersey/Long Island area. This particular area includes 24 counties and ozone precursor emissions of over 300,000 tpy for each of NOx and VOC. Commenter does not describe how these multi-state comparisons are relevant to El Paso County.

INSUFFICIENT BASIS FOR EPA'S REVERSING ITS ANALYSIS/POLICY

Comment: EPA has not identified in the revised five-factor analysis a sufficient basis for reversing the conclusions of its original analysis. While an agency may reverse a prior policy, if the agency's "new policy rests upon factual findings that contradict those which underlay its prior policy; or [if the agency's] prior policy has engendered serious reliance interests that must be taken into account," the agency must "provide a more detailed justification than would suffice for a new policy created on a blank slate." *F.C.C. v. Fox Television Station, Inc*., 556 U.S. 502, 515 (2009). Ignoring underlying findings or reliance interests would be arbitrary or capricious and thus, "a reasoned explanation is needed for disregarding facts and circumstances that underlay or were engendered by the prior policy." Id. at 515-16; see also *Encino Motorcars, LLC v. Navarro,* 136 S. Ct. 2117, 2125-26 (2016) (citing Fox Television's discussion of agency policy changes.

EPA Response: As opposed to how the commenter characterizes *Fox Television,* an agency "need not demonstrate to a court's satisfaction that the reasons for the new policy are *better* than the reasons for the old one; it suffices that the new policy is permissible under the statute, that there are good reasons for it, and that the agency *believes* it to be better, which the conscious change of course adequately indicates." *Fox* 556 U.S. at 515. The EPA has not ignored its previous decision relating to the designation of El Paso County; in fact, the Agency has gone above and beyond what would be required by *Fox* by explaining not only why today's decision is reasonable and supported by the facts, but also why the previous decision was not. The portion of EPA's April 2018 action relating to El Paso County was an erroneous application of its national designations policy, as outlined in the Ozone Designations Guidance. The Technical Support Document and this Response to Comments document accompanying today's action describe in great detail why El Paso County contributes to the violating monitor in Doña Ana County, and why the previous conclusions EPA made in that regard were incorrect. With respect to the commenter's statement regarding reliance interests, EPA considered reliance interests and adopted a deadline for the El Paso County attainment plan that is reasonable given these circumstances, as discussed in section VIII of the preamble to the final action.

Specifically, and consistent with the ozone designation guidance, EPA re-evaluated the data from the existing record to determine whether El Paso County contributes to the nearby violation at the Desert View monitor. As detailed in the TSD, emissions of NOx in El Paso County are approximately 71 percent greater than emissions of NOx in Doña Ana County; emissions of VOC in El Paso County are approximately 128 percent greater than emissions of VOC in Doña Ana County; the population of El Paso County is approximately 290 percent greater than the population of Doña Ana County and the population density of El Paso County is approximately 1373 percent greater than the population density of Doña Ana County; and the VMT in El Paso County is 194 percent higher than the VMT in Doña Ana County. Regarding meteorology, the back trajectory analyses provided by EPA and TCEQ show transport from El Paso County to the violating Desert View monitor, and the HYSPLIT analysis shows that on 8 of the 13 exceedance days at the violating monitor back trajectories flowed through El Paso County. Regarding geography and topography in the area, the Franklin Mountains in El Paso County don't prevent air movement, as the HYSPLIT analysis shows air movement from east to west at the south end of these mountains in El Paso County. And regarding jurisdictional boundaries, El Paso County is a

clearly defined jurisdictional boundary. Given the overall weight of evidence of all five factors, EPA has determined that El Paso County contributes to the violating monitor in Doña Ana County.

EPA's April 2018 attainment designation did not sufficiently weigh the five factors for El Paso County for contribution and inappropriately relied on contributions from international emissions. For contribution, EPA did not properly weigh the impact of emissions (NOx, VOC, population size and density, and VMT) from El Paso County on the violating monitor. As noted earlier, a 'contributing' county need not be the but-for cause of a violation in order to warrant a nonattainment designation." *Miss. Comm'n on Env't Quality*, 790 F.3d at 163. It follows that a county may "contribute" to nonattainment even though another jurisdiction's contribution is larger. Indeed, EPA must designate as nonattainment any area that "exacerbates" nonattainment nearby, a flexible standard that courts have recognized as central to the "very purpose" of Section 107(d) area designations. *Catawba*, 571 F.3d at 39. Finally, while EPA does believe that international emissions significantly influence air quality in Doña Ana and El Paso counties, international influence is properly addressed through the appropriate CAA section 179B demonstration process and not the NAAQS designation process.

Comment: Commenter states that EPA's decision to designate El Paso as attainment in 2018 was arbitrary and capricious. Commenter states that "a 'contributing' county need not be the but-for cause of a violation in order to warrant a nonattainment designation." *Miss. Comm'n on Env't Quality v. EPA*, 790 F.3d 138, 163 (D.C. Cir. 2015). It follows that a county may "contribute" to nonattainment even though another jurisdiction's contribution is larger. Indeed, EPA must designate as nonattainment any area that "exacerbates" nonattainment nearby, a flexible standard that courts have recognized as central to the "very purpose" of Section 107(d) area designations. *Catawba*, 571 F.3d at 39. Commenter also states that 42 USC § 7509a(a) demonstrates that Congress intended for EPA to consider foreign emissions during its review of SIPs – i.e., *after* EPA has designated nonattainment areas and states have developed plans for bringing these areas into attainment. The relief that Congress provided is narrow. States must "meet all the requirements applicable" under the CAA other than the requirement to demonstrate attainment.

EPA Response: EPA notes that this comment was addressed in *Clean Wisconsin v. EPA*, 964 F.3d 1145, 1164 (D.C. Cir. 2020) and thus, is resolved by this action. Consistent with the Court's decision and the ozone designation guidance, and in line with what the commenter requested, EPA re-evaluated El Paso County. EPA finds that El Paso County contributes to the nearby violating monitor and that our previous attainment designation did not sufficiently weigh the five factors for El Paso County for contribution and inappropriately relied on contributions from international emissions. First, for contribution, in the 2018 action, we did not properly weigh the impact of emissions (NOx, VOC, population size and density, and VMT) from El Paso County on the violating monitor. Second, while EPA does believe that the international emissions significantly influence air quality in Doña Ana and El Paso counties, that influence is properly addressed through the appropriate CAA section 179B demonstration process, not the NAAQS designation process. As the Court noted in its opinion remanding the El Paso designation, the EPA must designate as nonattainment any area that contributes to a nearby violation.[18] The EPA has determined that El Paso County contributes to a violating monitor. The EPA is finalizing the boundary for the El Paso-Las Cruces TX-NM Area as provided in the May 2021 TSD. The EPA is designating El Paso County as nonattainment within the El Paso-Las Cruces TX-NM nonattainment area for the 2015 ozone NAAQS.

EL PASO COUNTY SHOULD NOT BE DESIGNATED AS NONATTAINMENT

Comment: Several commenters oppose the intended designation of El Paso as nonattainment.

[18] *Clean Wisconsin v. EPA*, 964 F.3d 1145, 1164 (D.C. Cir. 2020)

EPA Response: Consistent with the Court's decision and the ozone designation guidance, EPA re-evaluated El Paso County for contribution to the Desert View monitor. The Desert View monitor in NM is violating the 2015 ozone NAAQS. Emissions of NOx in El Paso County are approximately 71 percent greater than emissions of NOx in Doña Ana County; emissions of VOC in El Paso County are approximately 128 percent greater than emissions of VOC in Doña Ana County; the population of El Paso County is approximately 290 percent greater than the population of Doña Ana County and the population density of El Paso is approximately 1373 percent greater than the population density of Doña Ana County; and the VMT in El Paso County is 194 percent higher than the VMT in Doña Ana County. Back trajectory analyses provided by EPA and TCEQ show transport from El Paso County to the violating Desert View monitor, and the HYSPLIT analysis shows that on 8 of the 13 exceedance days at the violating monitor back trajectories flowed through El Paso county. The Franklin Mountains in El Paso County don't prevent air movement, as the HYSPLIT analysis shows air movement from east to west at the south end of these mountains in El Paso County. El Paso County is a clearly defined jurisdictional boundary. Collectively, our analysis of these five factors provides demonstrable evidence that El Paso County sufficiently contributes to the violating monitor. The EPA is finalizing the boundary for the El Paso-Las Cruces TX-NM Area as provided in the May 2021 TSD. The EPA is designating El Paso County as nonattainment within the El Paso-Las Cruces TX-NM nonattainment area for the 2015 ozone NAAQS.

OPPOSING CONSTRUCTION/EXPANSION OF FACILITIES IN THE SUBJECT AREA

Comment: One Commenter requests that EPA not allow El Paso Electric to build a gas-powered electric generating power plant in El Paso, on the border with Chaparral, NM. Another Commenter opposes the expansion of the Newman Gas Plant.

EPA Response: The EPA appreciates the commenter's views, but these issues are outside the scope of this action.

SUPPORTIVE

Comment: Commenter states that recent analyses commissioned by the NMED confirm that emissions from El Paso contribute substantially to nonattainment in Sunland Park. Commenter refers to photochemical modeling conducted by the Western Regional Air Partnership in 2016 showed that nearby areas of Texas (those within a 12/4-km grid centered on Doña Ana County) contributed 6.9 ppb to Sunland Park's design value in 2011, compared to 7.6 ppb from nearby areas in Mexico and 2.4 ppb from New Mexico. Commenter also refers to source apportionment modeling conducted by Western States Air Resources Council in 2020 found that emissions from Texas were responsible for 8% of the ozone reaching the Desert View monitor on high ozone days, and on two of the ten days analyzed by this study, Texas contributed 10 ppb or greater towards the design value at the Desert View monitor.

EPA Response: EPA acknowledges these comments. The EPA is finalizing the boundary for the El Paso-Las Cruces TX-NM Area as provided in the May 2021 TSD. The EPA is designating El Paso County as nonattainment within the El Paso-Las Cruces TX-NM nonattainment area for the 2015 ozone NAAQS.

Comment: Several commenters express support of EPA's proposal designating El Paso County as nonattainment for the 2015 ozone NAAQS. Commenters state that for 2018 to 2020, the UTEP, Chamizal, and Skyline Park monitors' ozone design values are 76 ppb, 74 ppb, and 73 ppb, respectively. Commenter also states that El Paso's three-year average design value has exceeded 70 ppb during every year on record, except for 2016, when its design value was exactly 70 ppb, and that El Paso is experiencing increasing violations of the standard from 2016-2020. Commenter states that on August 21,

2020 El Paso reported a design value of 102ppb – the highest design value reported in Texas in 2020 and the highest value reported in El Paso in more than a decade.

EPA Response: EPA acknowledges these comments. EPA notes that the monitoring data cited by the commenter was not available at the time of our April 2018 designations action. As stated in our NOA, the EPA is basing its final designations decisions on data and information contained in the existing designations record and thus, the EPA did not consider this new information submitted during the public comment process as part of the basis for its decision making.[19] The EPA is finalizing the boundary for the El Paso-Las Cruces TX-NM Area as provided in the May 2021 TSD. The EPA is designating El Paso County as nonattainment within the El Paso-Las Cruces TX-NM nonattainment area for the 2015 ozone NAAQS.

Comment: Commenter agrees that the nonattainment area should be subject to the existing August 2021 attainment date. Commenter states that EPA's five factor analysis confirms that El Paso is contributing to nonattainment in Sunland Park and that El Paso is the predominant domestic source of ozone precursor emissions in the region. Commenter also states that El Paso County's population is approximately 40 times larger than the population of Sunland Park and experiences about 90 times as many VMT per year.

EPA Response: EPA acknowledges these comments in support of our designation. The EPA is finalizing the boundary for the El Paso-Las Cruces TX-NM Area as provided in support of our designation.

Comment: Commenter states that because El Paso County and Doña Ana County share an airshed, they have long collaborated to implement air pollution control programs. In addition, representatives from EPA, the Texas Commission on Environmental Quality, and the New Mexico Environment Department participate in the Joint Advisory Committee for the Improvement of Air Quality in the Paso del Norte Air Basin.

EPA Response: EPA appreciates the commenter's statements in support of our designation.

Comment: Commenter supports "EPA's proposal to require El Paso County to reduce emissions that contribute to ozone (or "smog") pollution."

EPA Response: EPA acknowledges these comments in support of our designation. We note that designating the area as nonattainment could assist the area in attaining the 2015 human health-based ozone standards more quickly, reducing health impacts and health-care costs associated with air quality that violates the ozone NAAQS. The EPA is finalizing the boundary for the El Paso-Las Cruces TX-NM Area as provided in the May 2021 TSD. The EPA is designating El Paso County as nonattainment within the El Paso-Las Cruces TX-NM nonattainment area for the 2015 ozone NAAQS.

3.1.2 Region VIII

3.1.2.1. Colorado

RESPONSES TO STATE COMMENTS

Comment: Commenter claims that during the 2014-2016 timeframe, Colorado flagged data from events for informational purposes as reported in EPA's Air Quality System. The commenter believes that any

[19] See 86 FR 31460, 31462 (June 14, 2021).

day with an informational flag should be excluded from the HYSPLIT analysis. According to the commenter's initial review, this would remove 48 of the 174 sets of back trajectories from EPA's analysis.

EPA Response: The EPA included all 2014-2016 exceedance days at the violating monitors within the nonattainment area in the HYSPLIT back trajectory analysis presented in the Technical Support Document (TSD). If EPA concurs with an exceptional events demonstration with regulatory significance, that event-influenced data would be excluded from EPA's Air Quality System (AQS) database. This approach is nationally consistent for all the 2015 ozone designations and with the Exceptional Events Rule. *See generally*, 40 CFR § 50.14. Here, although some of these data may have been flagged by the State as potentially being impacted by an exceptional event, the State must establish that a clear causal relationship exists between the exceedance and the exceptional event. *See id*. Therefore, the data should not be automatically excluded from the analysis merely because Colorado flagged the data for informational purposes. *See id.*

To further address this comment, the EPA selected all 2014-2016 exceedance days at the violating monitors with any wildfire or stratospheric flag and removed them from the HYSPLIT back trajectory analyses to see what impact it would have on the results. The results show no change to the number of back trajectories that transected or originated in the northern portion of Weld County. This strongly suggests that the conclusions drawn from the HYSPLIT analyses as they pertain to the northern portion of Weld County are not influenced by these State-flagged days.

Furthermore, the EPA's decision to include northern Weld County in the nonattainment area was made based on a 5-factor analysis described in the TSD. The HYSLPIT back trajectories were just one tool used in the Meteorology factor analysis. Therefore, the concern outlined in the State's comments does not affect the resulting conclusions drawn from the Meteorology analysis, nor does it change the conclusions drawn from the other four factors used to make this determination.

Comment: The commenter claimed to identify 12 individual days from EPA's analysis where at least one back trajectory transected or originated in northern Weld County. Of those 12 days, Colorado claimed that three had been given informational flags for wildfire smoke or stratospheric intrusions (7/18/14, 6/18/16, 6/28/16) by the state. Colorado stated that it gave the remaining 9 days further consideration and evaluation and claimed that six had potential ozone enhancement due to wildfire smoke. Colorado stated that this left only 2 days from the EPA HYSPLIT analysis which Colorado identified as ozone exceedances where at least one back trajectory transected or originated in northern Weld County with no apparent ozone enhancement due to wildfire smoke and/or stratospheric ozone.

EPA Response: The HYSPLIT back trajectory start times are 1800 local standard time for all sites. Trajectories were run backward 24 hours. Therefore, several points in each trajectory represent the air parcel on the day preceding the exceedance. Taking this information into account, and to be thorough, the EPA queried the AQS database to determine which Colorado ozone monitors may have had qualifier flags on or within 24 hours of the three dates presented in the comment (7/18/14, 6/18/16, and 6/28/16). From this set of dates, the EPA only identified two days with qualifier flags, and those dates, the flag, and the affected sites are presented in the following table:

Date	Flag	Sites
7/17/2014	"IT" or "RT"	Welby Chatfield Rocky Flats Fort Collins West Fort Collins - CSU NREL
6/18/2018	"IO"	Bondad, Colorado

The wildfire flags on 7/17/2014 affect some of the violating monitors in the nonattainment area (NAA), but the stratospheric intrusion flag on 6/18/2016 is for a monitoring site in the far southwestern portion of Colorado and does not affect any monitors in or near the final NAA. Therefore, the EPA was not able to confirm or reproduce information submitted in the State's comment.

To further address this comment, the EPA reanalyzed the HYSPLIT back trajectories that are presented in the final TSD. For each violating monitor, a list of exceedance days with a qualifier flag was created. The back trajectories (for all three elevations) for these days were then removed. The results show that even when all these flagged data and associated back trajectories are removed, the same number of trajectories transected northern Weld County as in the original analyses. Therefore, the EPA concludes that these data do not affect the results and conclusions drawn by the HYPLIT back trajectory analyses as they pertain to northern Weld County.

Regarding the nine additional days that the State identified as having potential ozone enhancement due to wildfire smoke, the EPA does not have sufficient information to conclude these unidentified days should be removed from the HYSPLIT analyses presented in the TSD. Every year the State certifies that their ambient air quality data for the previous year "are completely submitted to AQS and that the ambient concentration data are accurate to the best of her or his knowledge, taking into consideration the quality assurance findings"[20] and the EPA relied on State-certified data for this designation. If there was not enough evidence to flag these data prior to submitting them to AQS, it is unlikely there is enough information to justify their exclusion from the HYSPLIT analyses. If these days were impacted by wildfire smoke or stratospheric intrusions, and there was sufficient evidence to flag the data, the State should have done so at the time of their submittal to AQS. Furthermore, just because ambient air data may have been impacted by an exceptional event does not mean that the exceedance was caused by that event and the data should be excluded. An approvable exceptional events demonstration must show that there exists a clear causal relationship between the specific event and the monitored exceedance or violation at the affected monitor(s), which has not been done here. *See generally* 40 CFR § 50.14.

Furthermore, the EPA's decision to include northern Weld County in the nonattainment area was made based on a 5-factor analysis described in the TSD. The HYSLPIT back trajectories were just one tool used in the Meteorology factor analysis. Therefore, the concern outlined in the State's comments does not affect the resulting conclusions drawn from the Meteorology analysis, nor does it change the conclusions drawn from the other four factors used to make this determination.

[20] See 40 CFR part 58.15(a), – Annual air monitoring data certification.

Comment: The commenter claims that the HYSPLIT back trajectories found in Figures 11-15 of the TSD do not cover enough area and that a larger-scale, regional view of the back trajectories is more appropriate. The commenter claims that vast majority of 24-hour back trajectories that transected northern Weld County originated far to the north or northwest in interior parts of Wyoming or the Nebraska panhandle. This is significant, as any increase in geographic area covered by a 24-hour back trajectory decreases the proportion of ozone precursors from any one individual area, including northern Weld County.

EPA Response: A back trajectory analysis helps us answer the question of where an air parcel may have been at various points in time before it reached a monitor on a day that air quality exceeded the standard. The fact that a parcel may "originate" in one area over another is strictly a function of number of hours the back trajectory is run for and the meteorology during that period. If the back trajectories were run for one hour (versus 24), the origination points would be much closer than those presented in the TSD. If the back trajectories were run for over 48 hours, the opposite would likely be true. The trajectories suggest potential contribution from all of the areas covered by the transects.

For the purpose of a complete response to this comment, the EPA reanalyzed the HYSPLIT back trajectories presented in the TSD to see where the 24-hour back trajectories that transect northern Weld County originate in the figures. The results show that over 40% of the 24-hour back trajectories within northern Weld County originated within Weld County or an adjacent county. Therefore, the EPA does not agree that the "vast majority" of the 24-hour back trajectories that transected northern Weld County originated far to the north or northwest in interior parts of Wyoming or the Nebraska panhandle. The EPA notes again that where a transect "originates" is not a particularly relevant fact except that it tells EPA where an air parcel may have been 24 hours before the measured violation.

Furthermore, just because a trajectory transecting northern Weld County may have originated outside of northern Weld County, Weld County, or adjacent counties does not mean that northern Weld County did not contribute to high ozone on that exceedance day. In fact, the trajectories were run backward 24 hours because in most cases, 24-hour trajectories have end points outside the area of analysis, so this period was deemed sufficient to analyze the transit through the area of evaluation. The fact that a back trajectory may suggests an air parcel originated in or traveled through areas outside of northern Weld County does not disprove EPA's conclusion that these trajectories also suggest potential contribution from northern Weld to exceedances at violating monitors.

As stated in the final TSD, HYSPLIT trajectories are very useful in combination with information on the location and magnitude of ozone precursor emissions sources. They should not be used in isolation to determine inclusion or exclusion of an area within a nonattainment boundary. Therefore, the EPA utilized a weight of evidence approach using five factors (Air Quality Data, Emissions and Emissions Related Data, Meteorology, Geography/Topography, and Jurisdictional Boundaries) to determine nonattainment area boundaries. The concern outlined in the State's comments does not affect the resulting conclusions drawn from the Meteorology analysis, nor does it change the conclusions drawn from the other four factors used to make this determination.

Comment: The commenter claims that the majority of emissions are anticipated from industrial point sources of air pollution, and in particular oil and gas point sources, as opposed to non-road or on-road mobile emissions, area sources, etc. An initial review of reported emissions data from stationary sources in northern Weld County identified only 5 stationary sources (all in the oil and gas sector) with a potential to emit equal to or greater than 100 tons per year of VOC and/or NOx. Colorado has aggressive state-wide oil and gas regulations specific to VOCs that apply in northern Weld County. Further, equipment appears to be subject to Best Available Control Technology and/or federal New Source Performance Standards.

Response: The EPA agrees that the data show the majority of Weld County emissions are anticipated from oil and gas point sources. However, it is inappropriate to only consider stationary sources with a potential to emit equal to or greater than 100 tons per year of VOC and/or NOx. There are also numerous small point sources within the northern portion of Weld County. The TSD shows that Weld County has over 300% more total NOx and VOC emissions than the county with the second highest NOx and VOC emissions in the area of analysis and even has 37% more VOC emissions than all of the other counties in the area of analysis combined. Much of these emissions are from oil and gas activities which are present in both the northern and southern portion of the county. The other factor analyses suggest that the emissions from the northern portion of the Weld County contribute to high ozone values at the violating monitors within the final NAA.

The assertion that aggressive state-wide oil and gas regulations specific to VOCs apply to sources in northern Weld County and that equipment may be subject to Best Available Control Technology and/or federal New Source Performance Standards does not disprove EPA's conclusion that emissions from the area contribute to exceedances at violating monitors. In addition, existing controls would not exempt the area from all other NAA requirements. For example, implications of a NAA designation go beyond just controls but also subject that area to NAA New Source Review (NSR) requirements.

WELD COUNTY BOARD OF COUNTY COMMISSIONERS COMMENT

REDESIGNATION

Comment: Commenters refer to EPA's action today as a "redesignation action."

EPA Response: Commenters incorrectly characterize EPA's action today as a "redesignation decision." In today's action, EPA is modifying its original designations in Weld and El Paso counties to include a larger nonattainment area to comply with the CAA 107(d)(1)(A)(i) requirement that areas that "contribute[] to ambient air quality" in violating areas shall be designated nonattainment. This approach—treating these as a modification of EPA's original designation, rather than a redesignation—aligns with the D.C. Circuit's direction to the Agency: "We therefore require EPA to issue *revised designations* as expeditiously as practicable." *Clean Wisconsin v. EPA*, 964 F.3d 1145, 1176 (D.C. Cir. 2020) (emphasis added).

EXISTING RECORD

Comment: Commenters stated that "EPA's failure to consider the most current data is arbitrary and capricious." Commenters claimed that EPA ignored the latest data and that failing to even consider it, regardless of what it shows, is arbitrary and capricious and contrary to past regulatory decisions. Commenters stated that EPA's justifications about consistency and relying on the D.C. Circuit's direction are insufficient. Commenters claimed that other states were allowed to submit more up to date data that EPA relied on. Commenters additionally claim that EPA did not have an accurate understanding of emissions from Northern Weld and that the court's requirement to issue designations "as expeditiously as practicable" requires EPA to gain a more accurate understanding.

EPA Response: As the D.C. Circuit stated clearly in *Catawba County, N.C. v. EPA*, 571 F.3d 20, 51 (D.C. Cir. 2009), a case reviewing EPA's area designations for the 1997 PM 2.5 NAAQS, "inconsistent treatment is the hallmark of arbitrary agency action." *See also Mississippi Comm'n v. EPA*, 790 F.3d 138 (D.C. Cir. 2015) (reviewing EPA's area designations for the 2008 ozone NAAQS). EPA reasonably relied on data in the existing record in today's revised designations action in order to remain consistent within Weld County and the DM/NFR nonattainment area, consistent with the rest of the area designations for the 2015 ozone NAAQS across the country, and consistent with EPA's past practice and court decisions.

EPA decided to use the existing record to support today's revised designations decision in order to rely on a consistent set of data within Weld County and the DM/NFR nonattainment area. EPA's original designation for the DM/NFR nonattainment area, including the southern portion of Weld County, relied on the data in the existing record. The violating monitors that form the basis for the area being designated nonattainment were determined using 2014-16 design values in the existing record. The contribution analyses for the remaining counties in the nonattainment area, including the southern portion of Weld County, were completed in 2018 based on those particular violations at that moment in time. Designating one portion of a nonattainment area based on data available to EPA on April 30, 2018 and another portion based on the data available to EPA in 2021 could create inconsistent results, with different portions of the same area being designated based on different patterns of violations.[21]

The D.C. Circuit explicitly upheld the reasonableness of using consistent data within a particular nonattainment area in *Mississippi Comm'n v. EPA*, 790 F.3d at 160. In that case, EPA had to decide what data to use in a multistate nonattainment area covering the Memphis metro area. EPA had 2008-2010 design values for all three states involved (Mississippi, Tennessee, and Arkansas); however, Mississippi and Tennessee had certified early its 2009-2011 design values. Those states requested that EPA consider the more up-to-date data, claiming that such consideration would change the boundaries of the nonattainment area. EPA decided not to rely on a "mismatched dataset" for the nonattainment area, and instead relied solely on the 2008-2010 design values. The court upheld this approach, stating, "We see no reason…to declare irrational the EPA's conclusion that comparing data from the same time period would be more appropriate than analyzing data from different time periods in the same evaluation process.

[21] This is particularly true given that EPA was acting under a court's deadline to take action on the designations, which were already overdue. Order dated March 12, 2018, *In re Ozone Designation Litigation*, No. 4:17-cv-06936 (N.D. Cal., December 4, 2017). The CAA requires EPA to complete each of the stages in the process of setting and implementing the ozone NAAQS at particular moments in time. It is reasonable for EPA to conclude that the Agency should rely on the data available at the relevant deadline, even for portions of designations remanded to the Agency.

Cognizant of the substantial deference we owe the EPA in that highly technical evaluation… we find the EPA was entitled to rely on a matched dataset instead of a mismatched one." *Id.*

EPA's decision also allows the agency to rely on a consistent set of data across the entire set of EPA's designations actions for the 2015 ozone NAAQS, including those remanded to the Agency by the D.C. Circuit in *Clean Wisconsin*, the designation upheld by the court, and those that were unchallenged. If EPA had decided to rely on updated data for all of the remanded counties, it could have created similarly inconsistent outcomes in multiple nonattainment areas across the country. Similarly, if EPA had decided to rely on updated data for some remanded areas and not others, it would have created inconsistent outcomes. Guided by the D.C. Circuit's statements in *Mississippi Comm'n* and ensuring consistent treatment of all designated areas, EPA reasonably concluded that using one set of data for all designations—the data in front of the agency when it took its April 30, 2018 designations action—was the appropriate course of action.

EPA's action is further supported by the *Clean Wisconsin* court's direction to "issue revised designations as expeditiously as practicable." 964 F.3d at 1176. Even if EPA decided to look past the inconsistencies detailed above, relying on new data for the remanded action would have taken the agency significantly longer to consider, and could have required additional process steps that would have taken even more time, including, for example, seeking new state recommendations. EPA's reasonable decision to rely on the data available at the time of the April 30, 2018 designations action was consistent within the DM/NFR nonattainment area and within Weld County itself, consistent across the country, consistent with past practice and previous court decisions, and aligned with the D.C. Circuit's direction.

Commenters raise two examples they claim show that EPA in fact has considered updated data in its designations decisions for the 2015 ozone NAAQS: Rockdale County in Georgia, and Allegan and Muskegon Counties in Michigan. However, such claims are incorrect and mischaracterize EPA's actions. In the time between EPA's December 22, 2017 intended area designations notice and EPA's April 30, 2018 final area designations action, EPA provided all states (including Colorado) with the opportunity to submit additional information to inform EPA's final decision. In that time, Georgia voluntarily certified its 2015-17 design values early, and Michigan submitted additional air quality data and analyses. Crucially, all of that information was available to EPA when the agency made its final decision for the April 30, 2018 action, and all states, including Colorado, had exactly the same opportunity to submit additional data if they wished during that time. EPA's decision to rely on that data is consistent with the principal EPA is reasonably relying on today: to limit EPA's consideration to data available when EPA took the final designations action signed on April 30, 2018.

EPA disagrees with commenters that the *Clean Wisconsin* court's direction to issue revised designations "as expeditiously as *practicable*" (emphasis added by commenter) required EPA to consider new or updated data beyond what was available on April 30, 2018. EPA has significant technical experience in promulgating area designations, including experience in dealing with data uncertainties. EPA's technical judgment that it consider only the April 30, 2018 data is consistent with past practice and reasonable in light of the circumstances.

307(b)(1) COMMENT

Comment: Commenter claims that EPA's designations action is "locally or regionally applicable" and not "nationally applicable" under section 307(b)(1) of the CAA. Commenter states that the designation of

northern Weld County is a "purely local action" and "limited to a single jurisdiction in Colorado." Commenter also states that nothing in EPA's action "contemplates nationwide scope or effect" and that the designation of El Paso County was made separately based on different data.

EPA Response: Section 307(b)(1) of the CAA governs judicial review of final actions by the EPA. This section provides, in part, that petitions for review must be filed in the Court of Appeals for the District of Columbia Circuit: (i) When the Agency action consists of ''nationally applicable regulations promulgated, or final action taken, by the Administrator,'' or (ii) when such action is locally or regionally applicable, ''if such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination.'' For locally or regionally applicable final actions, the CAA reserves the EPA complete discretion whether to invoke the exception in (ii).

Commenter is incorrect that EPA's action to revise its previously issued designations in response to remand from the D.C. Circuit is a "purely local" action. On its face, the action applies to counties in two different states, in two different EPA Regions, and in two different judicial circuits. As with all designations actions, before taking final action, the EPA sent individual 120-day letters to each affected state that discussed only the specific portions of the action applicable to that state. 120-day letters are not final actions, just notices to each individual state about EPA's intended action for areas in that state. Final actions EPA takes that apply on their face to a number of specific states are not merely an "amalgamation of…local actions." *See, e.g., SIPC v. EPA*, 863 F.3d 666 (7th Cir. 2017) (finding that a designations action covering multiple states was a national action under the meaning of 307(b)(1) because it was "promulgated pursuant to a common, nationwide analytical method").

Commenter is also incorrect that nothing in the EPA's proposed revised designations action contemplates nationwide scope or effect. This final action applies a uniform, nationwide analytical method and interpretation of CAA section 107(d)(1) to these areas across the country in a single final action, and the final action is based on this common core of determinations. More specifically, this final action is based on a determination by the EPA to evaluate areas nationwide under a common five factor analysis in determining whether areas were in violation of or contributing to an area in violation of the 2015 Ozone NAAQS at the time of the April 2018 designations final action. This common, nationwide analysis was used in evaluating the data for the areas covered by this final action. In addition, this final action is based on a number of other determinations that apply nationwide, to both this action and to EPA's June 14, 2021 action, entitled "Revised Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards," 86 Fed. Reg. 31,438. In particular, EPA determined that the areas remanded to the agency in *Clean Wisconsin v. EPA*, 964 F.3d 1145 (D.C. Cir. 2020) should be re-evaluated using the data available to the agency at the time of the original designation, and that the areas' attainment dates should remain the same. Both determinations applied nationwide and, if challenged, would be most appropriately heard by the D.C. Circuit. Accordingly, the Administrator is exercising the complete discretion afforded to him by the CAA and has made the finding that this final action is based on a determination of nationwide scope or effect for purposes of CAA section 307(b)(1) and is publishing that finding in the Federal Register as part of this final action.

EMISSIONS FACTOR

Comment: On the emission factor analysis the EPA admitted that it does not have a clear understanding of the amount of emissions in the northern portion of Weld County and this admission demonstrates that the EPA's decision to limit the record has curtailed its ability to satisfactorily address the court's remand.

In addition, the EPA does not account for the fact that oil and gas emissions have decreased and will continue to do so given recent state regulations requiring statewide NOx and VOC emissions controls.

EPA Response: The CAA requires that the EPA designate areas that fail to attain a revised NAAQS, as well as nearby areas which contribute to violations, as nonattainment. The EPA applied a weight of evidence approach using five factors to determine nonattainment area boundaries. Based on reconsideration of those factors, the EPA determined to modify the State's recommendation and include the northern portion of Weld County.

Although the EPA did not have a specific quantitative estimate for the amount of NOx and VOC emissions produced exclusively from the northern portion of Weld County, the TSD shows that Weld County has over 300% more total NOx and VOC emissions than the county with the second highest NOx and VOC emissions in the area of analysis and even has 37% more VOC emissions than all of the other counties in the area of analysis combined. Much of these emissions are from oil and gas activities which are present in both the northern and southern portion of the county. The other factor analyses suggest that the emissions from the northern portion of the Weld County contribute to high ozone values at the violating monitors within the final nonattainment area. The Court did not state that the EPA needed to quantify the emissions from the northern portion of Weld County contributing to the violating monitors and the EPA believes there is sufficient information to draw the appropriate conclusions in the TSD. Lastly, the EPA only considered existing information in this designation, and therefore did not factor in changes to emissions that had yet to occur at the time of the original action in April of 2018.

Comment: The commenter claims that EPA's emissions inventory data relied on in the original record does not account for state and federal oil and gas emissions control requirements. Specifically, the commenter claims that state rules were adopted in 2014 and implemented in 2015, while federal rules were adopted in 2016. The commenter believes both sets of rules are within the scope of the capped record.

EPA Response: The EPA reviewed emissions data from the 2014 National Emissions Inventory (NEI) in its TSD because it was the most recent national emissions inventory information available at the time of designations. As previously discussed, the EPA is using data from the existing record in order to remain consistent within the DM/NFR nonattainment area and the rest of the country. EPA has concluded that it was reasonable to continue to use 2014 NEI data to develop emissions inventories for all 2015 ozone area designations, including the updated Weld County TSD, so that the agency would have a matched data set for the entire NAA.

The EPA agrees that there may have been state and federal rules that were implemented between 2015 and 2016 that resulted in emissions reductions. However, the state did not provide any data quantifying emissions reductions that occurred from rules implemented in 2015 and 2016. Additionally, if rules were implemented as statewide measures, reductions would have occurred in all of Weld County, thus likely not changing the percentage of emissions attributed to the northern portion of the county. Furthermore, if rules were implemented for nonattainment purposes, it is reasonable to conclude that a greater percentage of reductions would have occurred in the southern versus the northern portion of the county.

The oil and gas source category accounts for the highest ozone precursor emissions out of all of the source categories in Weld County. As indicated in the TSD, oil and gas wells are present in both the northern and southern portions of Weld County. Regardless of any new rules that may have been implemented in 2015 and 2016 and resulted in emissions reductions, the fact remains that the oil and gas source category was still a significant contributor of emissions countywide.

Comment: The commenter claims that EPA's 2021 TSD presents information that is inaccurate and misleading in numerous respects. Figure 4 (page 12) in the EPA's 2021 TSD shows the well counts in both the northern and southern portion of Weld County. The commenter claims the information in this figure is misleading as it appears to include a significant number of wells that are plugged and abandoned. The commenter states that this is a significant discrepancy that leads to the misleading conclusions in the EPA's TSD that the number of wells in northern Weld County has the potential for significant contributions to ozone concentrations at the violating monitors.

EPA Response: Figure 4 shows that the majority of the wells in Weld County are contained within the state's recommended boundary, but it also shows that over 3,000 wells (or about 8% of the total wells in Weld County) are located in the northern portion of Weld County. This number includes wells that are active as well as plugged and abandoned. The EPA recognizes that pollutant emissions (including ozone precursors) are likely to be emitted from wells in all of these categories, and that the relative percentage of wells in northern Weld County and southern Weld County are more important than the total number of wells, as it is suggestive of the portion of the oil and gas emissions that may originate from the northern versus southern portions of Weld County. According to Table 9 of the comment there are 877 active wells (depending how you interpret and aggregate the data from the Colorado Oil and Gas Conservation Commission) in the northern portion of Weld County and 10,941 active wells in the southern portion of Weld County. Derived from additional information in Table 9, the percentage of active wells in the northern portion of Weld County (7.4%) is similar to the percentage of total wells in the same area (8.4%). Furthermore, it should be noted that there are many other factors that could affect emissions from oil and gas wells such as, but not limited to, the volume of gas flared or vented per well, the gathering infrastructure, and how valves, controllers, pumps, artificial lift engines, and tank heaters are powered, and the design, maintenance, and implementation of appurtenances and/or control equipment. The EPA relied on the 2014 NEI emissions data and the Colorado TSD to determine how much oil and gas emissions are present in Weld County. Figure 4 of the TSD illustrates that oil and gas activities are prevalent in both the northern and southern portions of Weld County. Since the portion of active and total wells are similar in northern versus southern Weld County, this comment would not affect the results or conclusions of the TSD.

Comment: The commenter claims that EPA's decision to extend the boundary of the NAA is arbitrary because it is based on analysis of the emissions factor that presents the same information as in the original TSD, and yet the EPA reaches the opposite conclusion. The commenter states that the fact that EPA has conflicting assessments of the same emissions inventory coupled with a lack of specific concerns calls into question the legitimacy of the EPA's concerns and scientific objectivity.

EPA Response: The original April 2018 designation was remanded by the Court. In its opinion, the Court stated that Weld County sources generate exceptionally high amounts of VOC and NOx, and

because northern Weld contributes a portion of those emissions the EPA must consider them. Furthermore, the Court concluded that the EPA presented conflicting characterizations of the topographical and meteorological data and relied on one "apparently mistaken" interpretation of those data to justify the nonattainment boundary in Weld County. In light of the Court decision, the EPA re-evaluated the existing technical record for Weld County for data and information that was used for the initial April 2018 designations.

Based on the re-evaluation of the five factors presented in the TSD, the EPA determined to modify the State's recommendation and include the northern portion of Weld County. The 2018 TSD downplayed the contribution of the northern portion of Weld to the county's overall emissions and didn't effectively explain how local topography and meteorology prevent northern Weld from contributing to ozone NAAQS violations in the nonattainment area. This re-evaluation shows that Weld County has over 300% more total NOx and VOC emissions than the county with the second highest NOx and VOC emissions in the area of analysis and even has 37% more VOC emissions than all of the other counties in the area of analysis combined. Much of these emissions are from oil and gas activities which are present in both the northern and southern portion of the county. Furthermore, this re-evaluation asserts that there are no defining topographic or meteorological features that clearly exclude the northern Weld County emissions from contributing to the violating monitors. On the contrary, this TSD shows that the northern portion of the county lies along the southern slope of the Cheyenne Ridge and argues that some fraction of emissions originating in this area would be expected to drain into the Denver Basin with the nighttime drainage flows and during times of other favorable meteorological conditions. The contribution of emissions from the northern portion of Weld County is further supported by the HYSPLIT back trajectories as presented in Figure 11 through Figure 15 of the TSD. These back trajectories suggest that air parcels impacting all the violating monitors during high ozone events may traverse the northern portion of Weld County during the prior 24 hours.

The EPA disagrees that the decisions to modify the boundary was based on the emissions factor. As stated throughout the TSD and these responses EPA's decision to include northern Weld County in the nonattainment area was made utilizing a weight of evidence approach based on a 5-factor analysis described in the TSD. The data presented in April 2018 TSD and this TSD agree because the EPA is relying on the existing record for this designation. Even though the re-evaluation relies on existing data, the final nonattainment area boundary was chosen after consideration of the Court's specific concerns and the re-analyses of the five factors presented in the final TSD.

METEOROLOGY FACTOR

Comment: On the meteorology factor analysis the commenter claims that EPA cannot justify its decision to remove from the 2021 TSD the composite HYSPLIT plot included in its Final TSD. Commenter states that the reasons presented for relying more heavily on the figures presented in the final TSD are without technical merit and that the composite HYSPLIT plot is critically important to assess the contribution from northern Weld County of ozone at violating monitors on high ozone days. The commenter presents a revised HYSPLIT analysis using existing data and claim that the analysis shows northern Weld County does not contribute to DM/NFR NAA ozone concentrations any more than any other attainment area bordering the DM/NFR NAA area.

EPA Response: As stated in the final TSD, the EPA relied more heavily on the final EPA figures rather than Colorado's composite figures. The composite HYSPLIT plots are still included in the docket and were still considered during this final designation. The commenter attempts to demonstrate that each of the reasons presented are without technical merit, but none of the commenter's points successfully refutes the reasons for more heavily relying on the figures presented in the final TSD. For example, just because the violating Welch monitor is in the southwestern portion of the NAA between two other violating monitors does not make the back trajectories any less important. It alone may not reveal completely new source regions, but that is no reason for exclusion. In fact, the Welch HYSPLIT analysis shows the second highest number of back trajectories in northern Weld County out of any of the violating monitors. In addition, the commenter agrees that the analysis of all exceedance days rather than just the top four days could increase confidence in the analysis.

The commenter also presents a revised HYSPLIT analysis and plot using the exceedance days at the five violating monitors from 2014 to 2016. They state that the analysis, which "addresses the EPA's concerns," demonstrates that northern Weld County does not contribute to DM/NFR NAA ozone concentrations any more than any other attainment area bordering the DM/NFR NAA. The EPA notes that Figure 7 of the comment may show that many grid cells within and surrounding the 2008 NAA boundary have a similar percentage of back trajectory points, but this does not refute the EPA's argument and conclusions; all the grid cells in the northern portion of Weld County have at least a percentage of the total back trajectory hours indicating that trajectories pass through. This HYSPLIT analysis, and the analyses presented in the final TSD, suggest that northern Weld County can contribute air parcels that affect violating monitors on days of high ozone concentrations. As stated in the final TSD, HYSPLIT trajectories are very useful in combination with information on the location and magnitude of ozone precursor emissions sources. They should not be used in isolation to determine inclusion or exclusion of an area within a nonattainment boundary. Therefore, the EPA utilized a weight of evidence approach using five factors to determine NAA boundaries.

Comment: The commenter claims that Figures 8 and 9 of the final TSD present transport dynamics that are plausible but not supported, and the EPA does not provide information to assess the importance of this potential transport pathway. The commenter states that it is also plausible that downslope flow from the Cheyenne Ridge is transported to the South Platte River Valley and then east and away from the NAA, in which case northern Weld County would not affect the ozone formation in the NAA. The commenter presents results from their own HYSPLIT model simulations run in forward trajectory mode and states that the results demonstrate air from the northern portion of Weld County is transported to the Fort Collins West monitor less than 0.18% of the time on high ozone days.

EPA Response: Figures 8 and 9 in the final TSD were presented to help illustrate the nighttime and early-morning down-valley drainage flows. The TSD specifically states that both figures are simplified, as there are considerable transition periods before daytime upslope flow and before nighttime drainage flow. During these transition periods one would expect more variability in the wind directions. The EPA does not refute that some flow from the Cheyenne Ridge could be transported to the South Platte River Valley and then east away from the NAA.

The HYSPLIT forward trajectory plot presented as Figure 8 in the comment supports the EPA's conclusions. It shows that air parcels from northern Weld County tend to move south, farther into the Denver Basin, than any other direction. When Figure 7 and Figure 8 of the comment are considered together, they suggest that northern Weld County emissions (on the day preceding Fort Collins ozone exceedances) tend to be transported into areas that the HYSPLIT back trajectories suggest are more frequent source regions for high ozone days.

The commenter concludes that the results from the HYSPLIT forward trajectories demonstrate air from the northern portion of Weld County is "transported to the Fort Collins West monitor less than 0.18% of the time on high ozone days." This conclusion is a misleading interpretation of the data. The commenter presented and summarized data that looked at each hourly data point from 36-hour forward trajectories on 34 different days. Since there were 36 hourly data points from each forward trajectory, if each trajectory passed over the Fort Collins West Monitor and a single hourly data point from the trajectory fell in the corresponding grid cell, their analysis would show a frequency of 1/36 or ~2.8% "of total hours" at that monitor. Therefore, a frequency of 0.18% total hours may indicate that approximately 6.5% (0.18/2.8) of the forward trajectories traveled from northern Weld County to the grid cell containing Fort Collins West Monitor. Since there were 39 forward trajectories on each day starting in different locations within northern Weld County, the 6.5% likely represents a larger fraction of days with transport from somewhere in northern Weld County. For instance, if those 6.5% of trajectories were spread evenly over the 34 modeled days then, on average there would be trajectories from 2.5 locations in northern Weld County that would contribute an hourly data point to the Fort Collins West Monitor grid cell once in their 36-hour forward trajectory. The commenter did not show what fraction of days contributed at least one hourly data point from a forward trajectory originating in northern Weld county to the Fort Collins West Monitor grid cell, so we can only present the numbers based on "average" behavior assuming evenly distributed data across days. Once again, this breakdown of the data provided by the commenter supports the EPA's conclusions and shows that there is potential flow from northern Weld County to a violating monitor, perhaps on a frequent basis.

Comment: On the meteorology factor analysis if the EPA revises the DM/NFR NAA boundary, the EPA should evaluate all attainment areas surrounding a given nonattainment area equally.

EPA Response: The CAA requires that the EPA designate areas that fail to attain a revised NAAQS, as well as nearby areas which contribute to violations, as nonattainment. The EPA utilized a weight of evidence approach using five factors to determine nonattainment area boundaries. Based on reconsideration of those factors, the EPA determined to modify the State's recommendation and include the northern portion of Weld County in the NAA.

The EPA limited its scope of the five-factor analysis to the area of analysis. As stated in the TSD, the area of analysis includes the Denver-Aurora CSA as well as the Fort Collins CBSA. Within the area of analysis, the EPA evaluated each of the counties by using the five-factor approach. The final TSD includes more information on Weld County because it was the subject of the Court remand. In its opinion, the Court stated that Weld County sources generate exceptionally high amounts of VOC and NOx, and because northern Weld contributes a portion of those emissions the EPA must consider them. Furthermore, the Court concluded that the EPA presented conflicting characterizations of the

topographical and meteorological data and relied on one "apparently mistaken" interpretation of those data to justify the nonattainment boundary in Weld County. Therefore, to be responsive to the Court's ruling and opinion, the EPA believes it is appropriate to provide additional reanalysis of Weld County in the TSD.

Furthermore, the results of the Meteorology factor analysis must be considered with the other four factor analyses in the weight of evidence approach. For example, HYSPLIT trajectories are very useful in combination with information on the location and magnitude of ozone precursor emissions sources. So even though an analysis may show equal potential for two areas to supply air parcels during high ozone events, the area with the higher precursor emissions is more likely to contribute to the high ozone concentrations. The final TSD shows that Weld County has over 300% more total NOx and VOC emissions than the county with the second highest NOx and VOC emissions in the area of analysis and even has 37% more VOC emissions than all of the other counties in the area of analysis combined.

Comment: The EPA does not disclose the settings used for HYSPLIT in their figures nor the days analyzed. It is also unclear if the EPA may have analyzed exceptional events. The EPA also does not explain the basis for selecting the back-trajectory heights that are analyzed.

EPA Response: The EPA produced three trajectories for each exceedance day in the three-year period used to calculate the design value at the violating monitors. The three years in the final TSD are 2014 to 2016. Concurred exceptional events were excluded from the set of exceedance days, but none of the violating monitors had concurred exceptional events from 2014 to 2016, so all exceedance days were used in the analysis. *See generally* 40 CFR § 50.14.

As shown in the final TSD figures, the HYSPLIT back trajectories were run with starting heights of 100m, 500m, and 1000m above ground level (AGL) for each exceedance day. These heights were selected because they are very likely to remain within the mixed layer at the trajectory start time and are elevated enough to be free from the effects of surface terrain in most cases. One set of heights were used for all the locations in the analysis.

The starting locations correspond to the violating monitors and the start times for the trajectories were 1800 local standard time for all sites. Trajectories were run backward 24 hours because in most cases, 24-hour trajectories have end points outside the area of analysis, so this period was deemed sufficient to analyze the transit through the area of evaluation.

HYSPLIT Version 4 for PC was used for these trajectories. The input meteorology was Eta Data Assimilation System (EDAS) which is now called NDAS. More info on EDAS is found here: *https://www.ready.noaa.gov/edas40.php*. All HYSPLIT settings and configurations were the default values: vertical motion was obtained from the meteorological model; model top for calculation was 10,000m AGL; All the other default settings involved are explained on pages 215-223 of the HYSPLIT User Guide.[22]

[22] "HYSPLIT User's Guide." National Oceanic and Atmospheric Administration, accessed on August 20, 2021 at https://www.arl.noaa.gov/documents/reports/hysplit_user_guide.pdf.

Comment: With regard to pollution roses included as Figure 10 of the final TSD, the EPA presents this information in a way that is misleading; ozone formation is driven by photochemistry, so it is expected that high ozone concentrations will tend to occur during the daylight hours, so including all these hours in the upper part of the figure will naturally show higher values than for the periods of time during the night hours (bottom part of figure).

EPA Response: The EPA utilized a weight of evidence approach using five factors to determine nonattainment area boundaries. The pollution roses were just one piece of information used to help illustrate the influence of local terrain and resulting upslope flow on high ozone days. There was no intention for this figure or the text to provide definitive proof that the emissions of ozone precursors from sources in the northern part of Weld County are transported to the Fort Collins West monitor.

Two pollution roses are presented in Figure 10, one for daylight hours and one for nighttime hours. Presenting the two roses allows the reader to compare the predominant wind directions associated with the daytime upslope flows and the nighttime downslope flows. In addition, since ozone formation is driven by photochemistry, it allows the reader to see which wind direction is associated with the higher daytime ozone concentrations. As stated in the TSD, the daytime pollution rose shows that virtually all of the hourly ozone values exceeding 0.070 ppm are transported from the south-southeast to east directions between the hours of 7:00 am and 9:00 pm MST. The nighttime figure was simply included for completeness and to demonstrate that the dominant winds are northwesterly, or down the Cache la Poudre drainage, during nighttime hours. Presenting the same data in just one pollution rose would prevent the reader from distinguishing between daytime and nighttime flow patterns and could be misleading because higher ozone values are expected during the daytime.

GEOGRAPHY/TOPOGRAPHY

Comment: The topographical analysis in EPA's 2021 TSD is flawed in several significant respects. First, the EPA's revised analysis of the Cheyenne Ridge is arbitrary and poorly substantiated. Second, the EPA's analysis inaccurately portrays the location of the Cheyenne Ridge. Third, the EPA's analysis of this topographic feature is incomplete because it does not fully consider the relevance of the feature to the DM/NFR NAA boundary. Furthermore, the EPA doesn't acknowledge the width of the Cheyenne Ridge.

EPA Response: As the commenter stated in its own document, "different sources of data regarding the Cheyenne Ridge, such as peer-reviewed meteorological journals, media coverage, and conference proceedings for the American Association of Geographers, all depict the location of the Cheyenne Ridge differently. Furthermore, the United States Geological Survey (USGS) does not refer to the topographical feature to the north of the current DM/NFR NAA as the Cheyenne Ridge." The final TSD places a label for the Cheyenne Ridge in the general area of the elevated terrain that defines the Cheyenne Ridge and states that the high point of this elevated terrain is "around the border of Colorado and Wyoming". The figure does not proport to identify the ridgeline, and specifically states that there is no clear ridgeline. The fact that there may be higher terrain of the feature to the north or south of a map label does not prove that a label is inappropriately located. For example, the Rocky Mountains certainly have higher terrain to the southwest of the label in Figure 16 of the TSD, but this does not mean that the label is inappropriately located.

The commenter provides an ellipse on Figure 9 of their comment that "approximately encompasses the extent" of the Cheyenne Ridge, and provides a boundary for what they refer to as the HUC 6-101900 watershed (which appears to be the South Platte River Watershed). The commenter notes that it's striking that the northern boundary of this watershed extends far north beyond the Colorado/Wyoming state line and is well north of the Cheyenne Ridge Label on Figure 17 of the TSD. The EPA fails to see how this indicates the EPA inaccurately placed or labeled the Cheyenne Ridge, as the feature is a wide elevated area with no clear ridgeline that separates the North and South Platte River drainages.

The commenter also stated that "the southern peak of the Cheyenne Ridge is at least 10 km north of the Colorado/Wyoming boarder, which is far to the north of where the EPA has located the Cheyenne Ridge in its analysis." The EPA points out that in Figure 17 of the TSD, the "Cheyenne Ridge" label is placed directly over the Colorado/Wyoming border, and that the height of the font used for the text of the "Cheyenne Ridge" label covers approximately 15 km. So, although the commenter concludes that the label is inappropriately placed, the label is extremely close to the exact location the commenter would have placed the label had they created the figure.

The commenter provides additional elevation profiles, transects and analyses of the Cheyenne Ridge, but the figures and text do not refute that most of northern Weld County is on the southern slope of the topographic feature referred to as the Cheyenne Ridge, and in fact, Figure 14 of the TSD of the comment helps to support the EPA's position. This is important because one of the conclusions in the Geography/Topography factor analysis in the final TSD is that "nighttime and early-morning down-valley drainage flow from this slope can transport emissions downslope and down-valley. One would expect the down-valley drainage flow along most of the Cheyenne Ridge would transport emissions towards S. Platte River valley floor within the Denver Basin."

In their topographic analysis, the commenter states that the "rapid elevation gain north of the current DM/NFR NAA boundary geographically isolates northern Weld from the rest of the county." The EPA disagrees with this statement. First, the elevation profiles in Figures 11, 12, 13 and 14 of the comment may appear to show a "rapid" elevation gain north of the existing DM/NFR NAA, but the commenter does not quantify this rapid gain and the rapid gain appears very similar to the elevation gain to the south of the 1997 and 2008 NAA border (see Figure 13 of the comment). Second, although the elevation gain appears dramatic in these profiles, the horizontal distance represented in the profiles is 140 km, and the maximum elevation change in this distance is less than 600 meters (at the greatest). It is unlikely that this amount of elevation gain over this distance would be classified as "rapid" in other areas of the area of analysis or the Rocky Mountains. Third, the commenter does not state how a "rapid elevation gain" north of the current DM/NFR NAA boundary would act as a barrier to emissions moving south into the Denver Basin, which is one of the conclusions presented by the EPA.

Finally, the commenter states that the EPA does not acknowledge the width of the Cheyenne Ridge, but the TSD provides Figure 17, which shows the feature in plane view, three-dimensional view, and in cross section. Furthermore, the TSD states that the feature "is a wide elevated area that has no clear ridgeline."

In its opinion, the Court concluded that the EPA presented a conflicting characterization of the topographical data and that the EPA did not present any "topographical basis at all for northern Weld's exclusion", going on to say that the TSD did not show "distinctly elevated terrain walling off northern Weld from the rest of the Denver basin". 964 F.3d at 1168-69. Informed by the court's guidance, this final TSD provides sufficient information to characterize the Cheyenne Ridge and accurately asserts that the northern portion of the county lies along the southern slope of the Cheyenne Ridge and argues that some fraction of emissions originating in this area would be expected to drain into the Denver Basin with the nighttime drainage flows and during times of other favorable meteorological conditions.

JURISDICTIONAL FACTOR

Comment: In the 2021 TSD, the EPA did not comprehensively evaluate the jurisdictional factors listed in its own guidance. Specifically, the EPA did not explicitly consider the large size of Weld County, the remote rural location of northern Weld County, its isolation from the rest of the county due to climbing elevation and remote location, and the ample available data regarding the lack of meteorological transport of emissions.

EPA Response: The EPA included figures on the population density and degree of urbanization in the area of analysis (Figure 5 of the TSD). This figure illustrates the low population density of northern Weld County. In addition, the EPA included a map of the vehicle miles traveled (VMT) in the area of analysis (Figure 7 in the TSD). This figure illustrates the low VMT in northern Weld County. Aerial and satellite imagery suggest that the climbing elevation is not the only cause for the remote nature of this area, as one can easily identify roads and agricultural land in northern Weld County.

The EPA utilized a weight of evidence approach using five factors to determine nonattainment area boundaries, consistent with the other counties in the DM/NFR nonattainment area and the rest of the country. Although the size of Weld County and the other items mentioned in this comment were considered in this designation, the weight of evidence from the five-factor analysis resulted in the EPA including the entirety of Weld County in the final designation.

Appendix A

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EPA and TCEQ HYSPLITs Plots

EPA HYSPLITs using 40 km EDAS

Included as part of Initial Designation Docket

Figure 5a. HYSPLIT Back Trajectories for the Violating Monitor in Doña Ana County

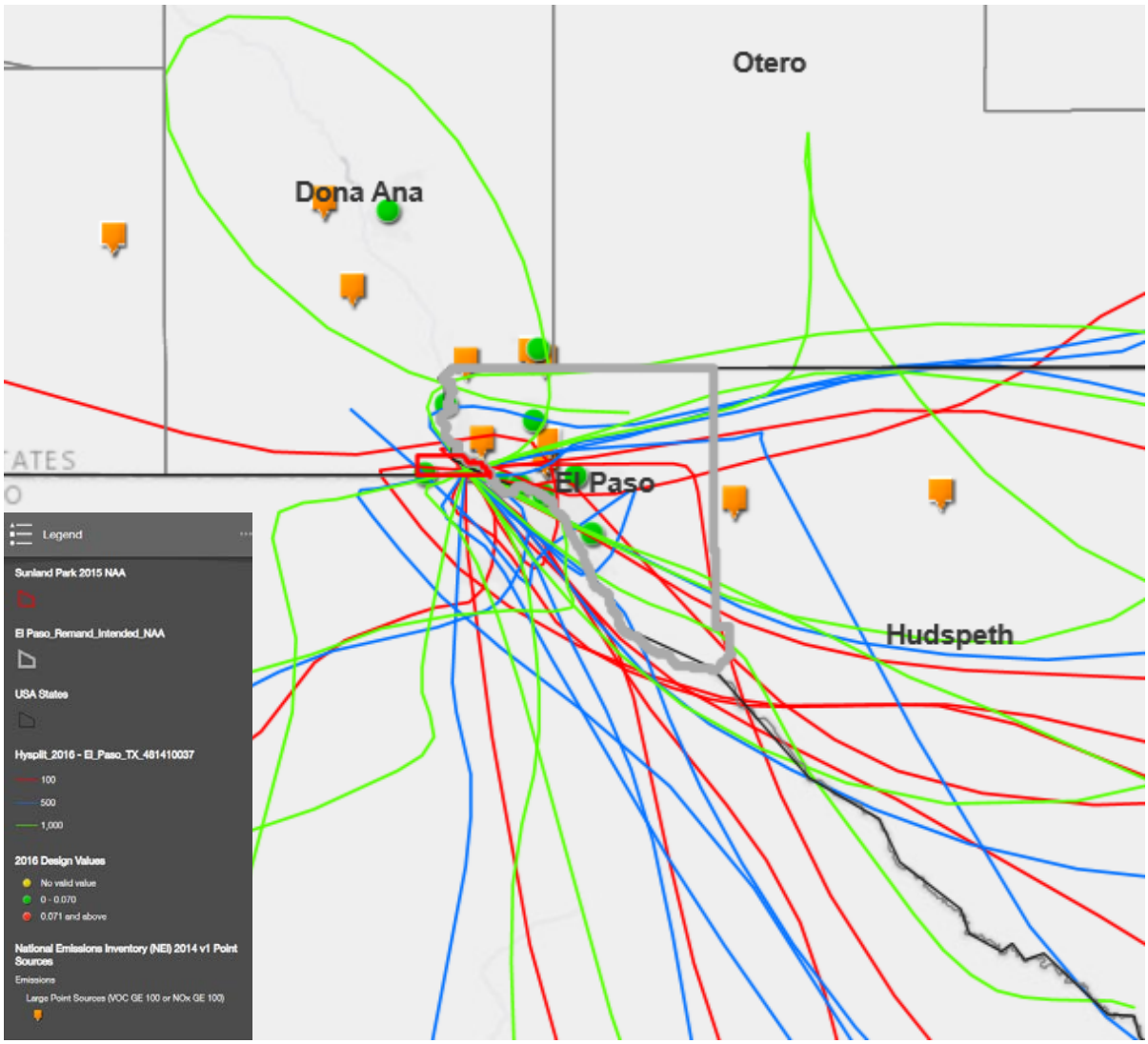
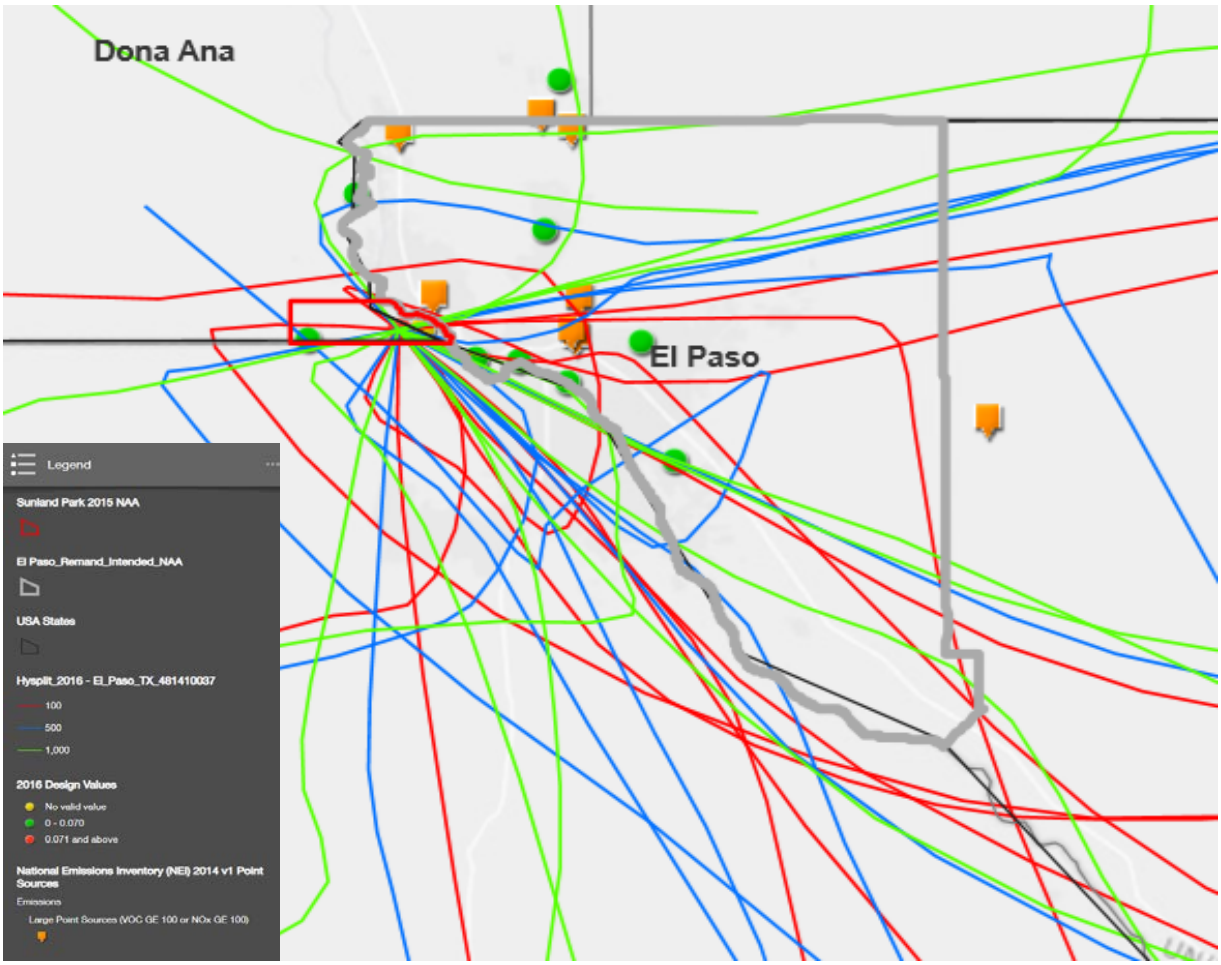


Figure 5b. Enlarged view of Figure 5a



TCEQ HYSPLIT Plot

Provided by TCEQ as part of their Comments on the Intended Designation

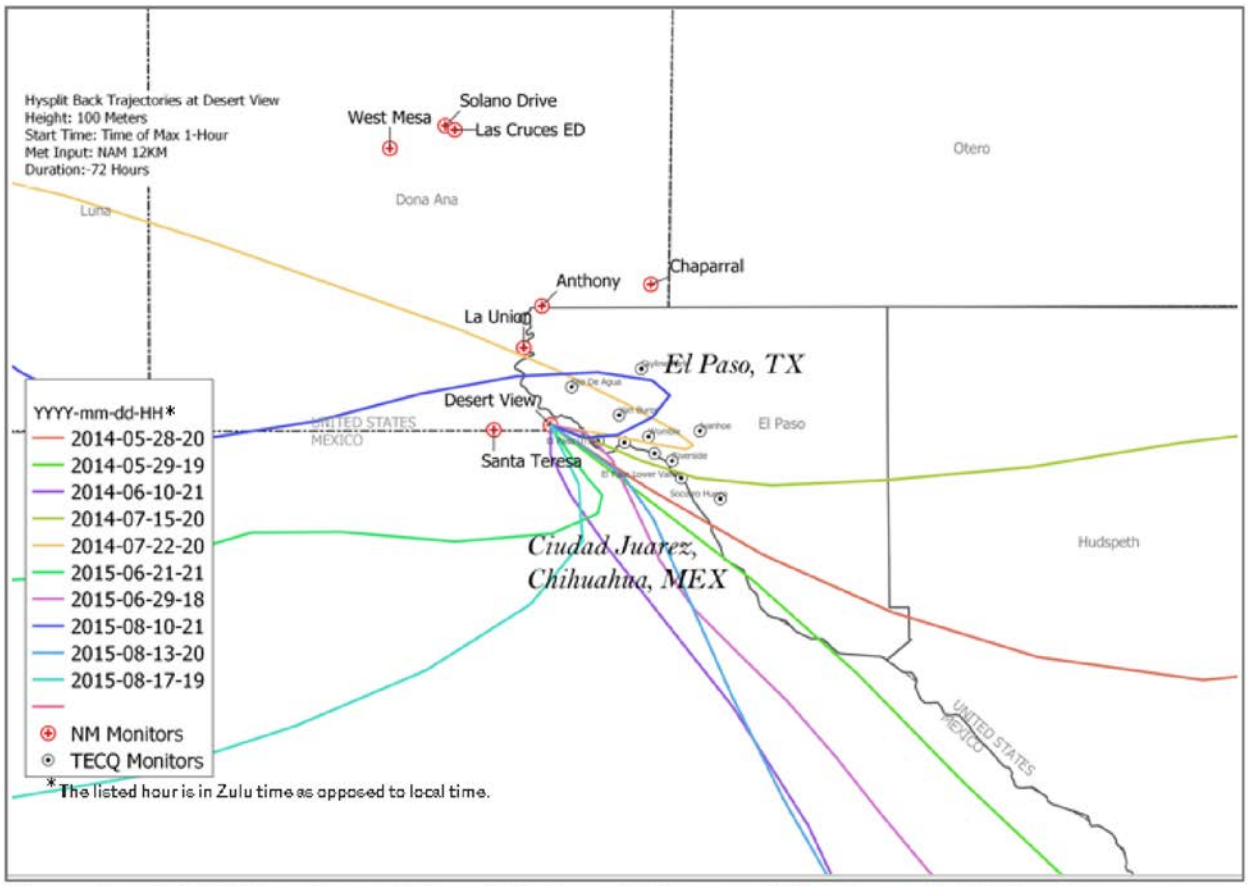


Figure 1: HYSPLIT Results at 100 m AGL from 13 Days in 2014 through 2016 that Exceeded the 2015 Eight-Hour Ozone NAAQS

Zoom of TCEQ's HYSPLIT Plot (Figure 1)

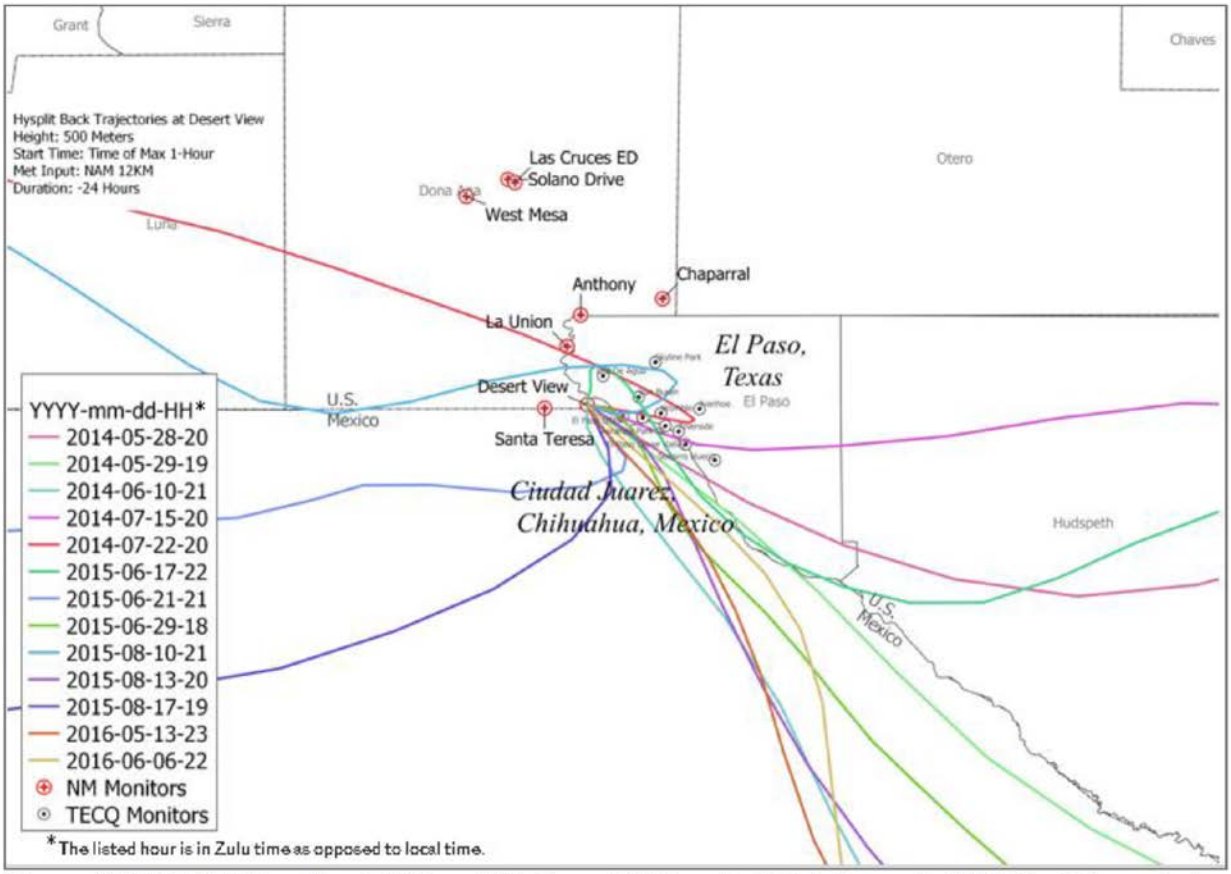


Figure 2: HYSPLIT Results at 500 m AGL from 13 Days in 2014 through 2016 that Exceeded the 2015 Eight-Hour Ozone NAAQS

Zoom of TCEQ's HYSPLIT Plot (Figure 2)

EPA HYSPLITs using 12 km NAM Data

Performed in Response to Comments Received

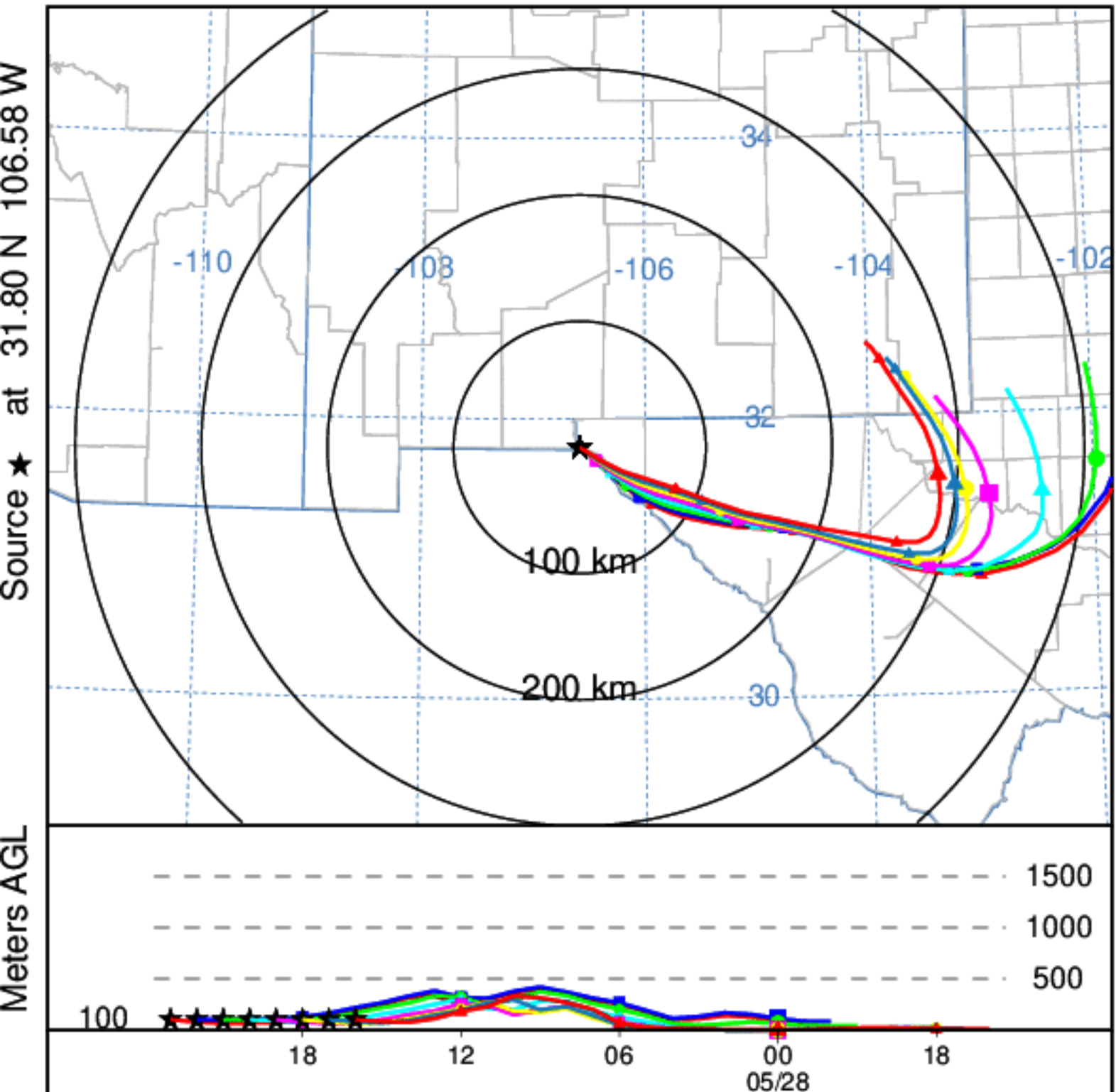
HYSPLIT files available upon request

Contact Erik Snyder of EPA Region 6

snyder.erik@epa.gov

Phone 214-665-7305

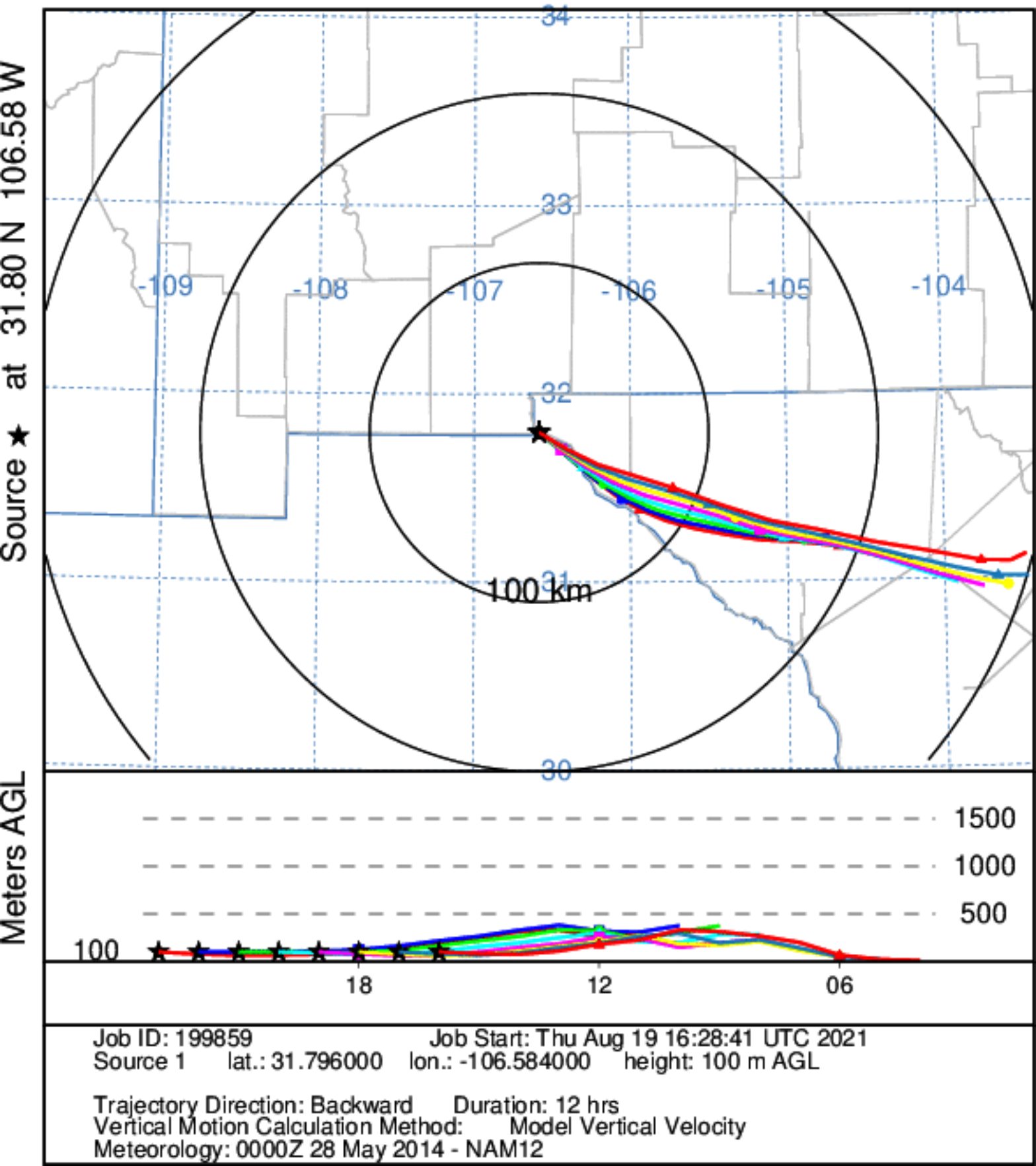
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 28 May 14
NAM Meteorological Data



Job ID: 199937 Job Start: Thu Aug 19 16:32:22 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 28 May 2014 - NAM12

NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 28 May 14
NAM Meteorological Data



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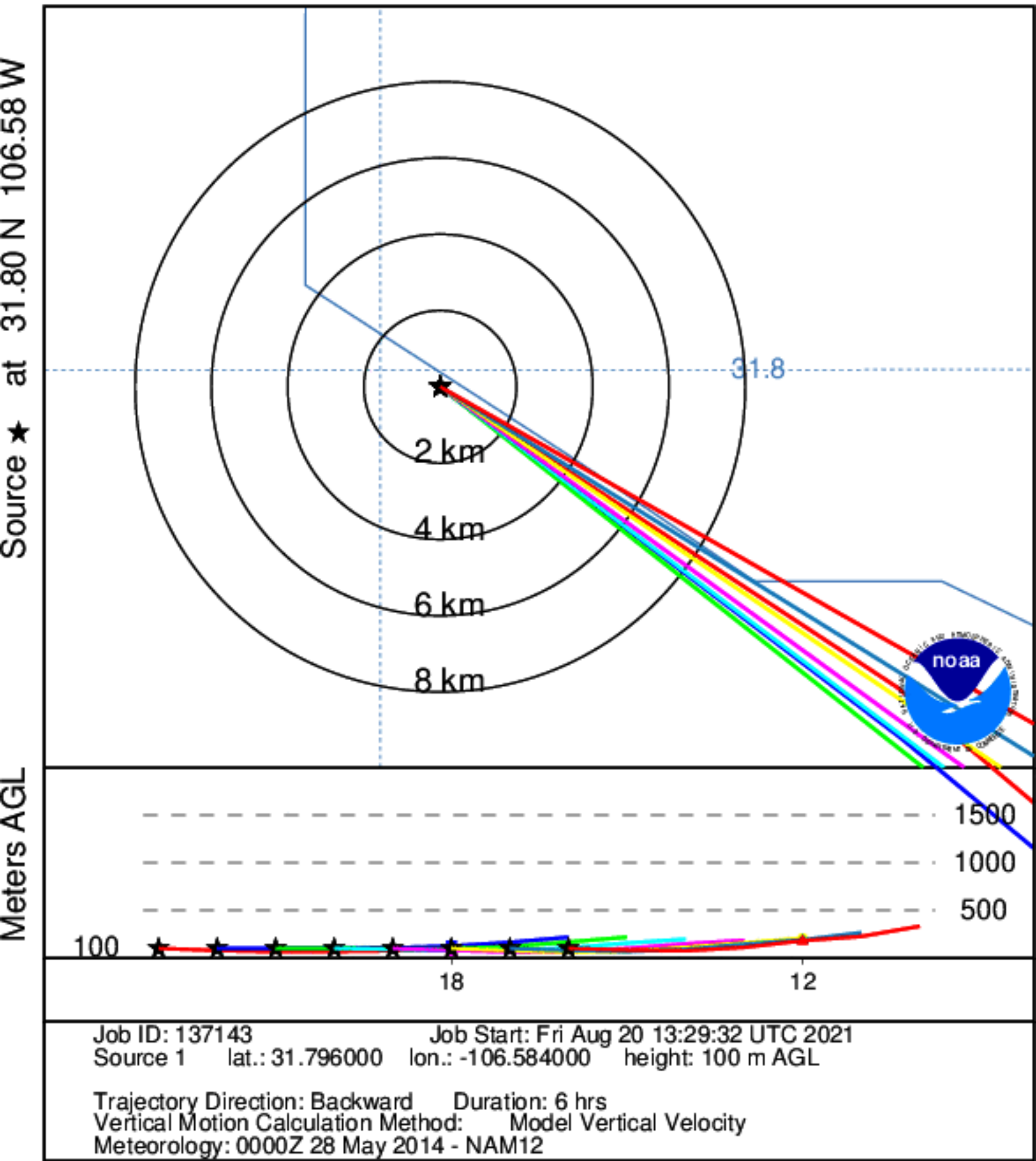
Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 28 May 2014 - NAM12

NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 28 May 14
NAM Meteorological Data



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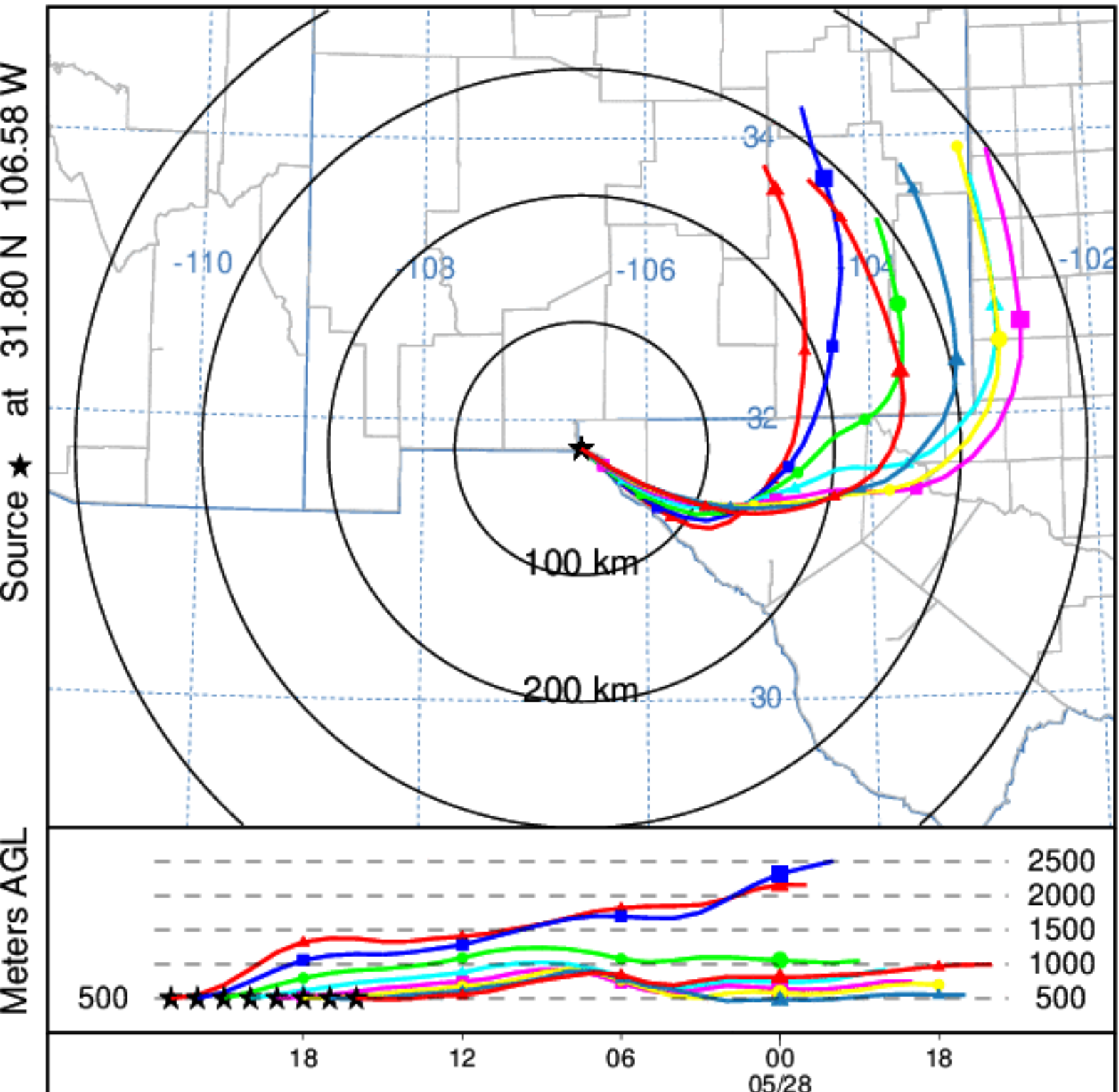
Trajectory Direction: Backward Duration: 6 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 28 May 2014 - NAM12

NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 28 May 14
NAM Meteorological Data



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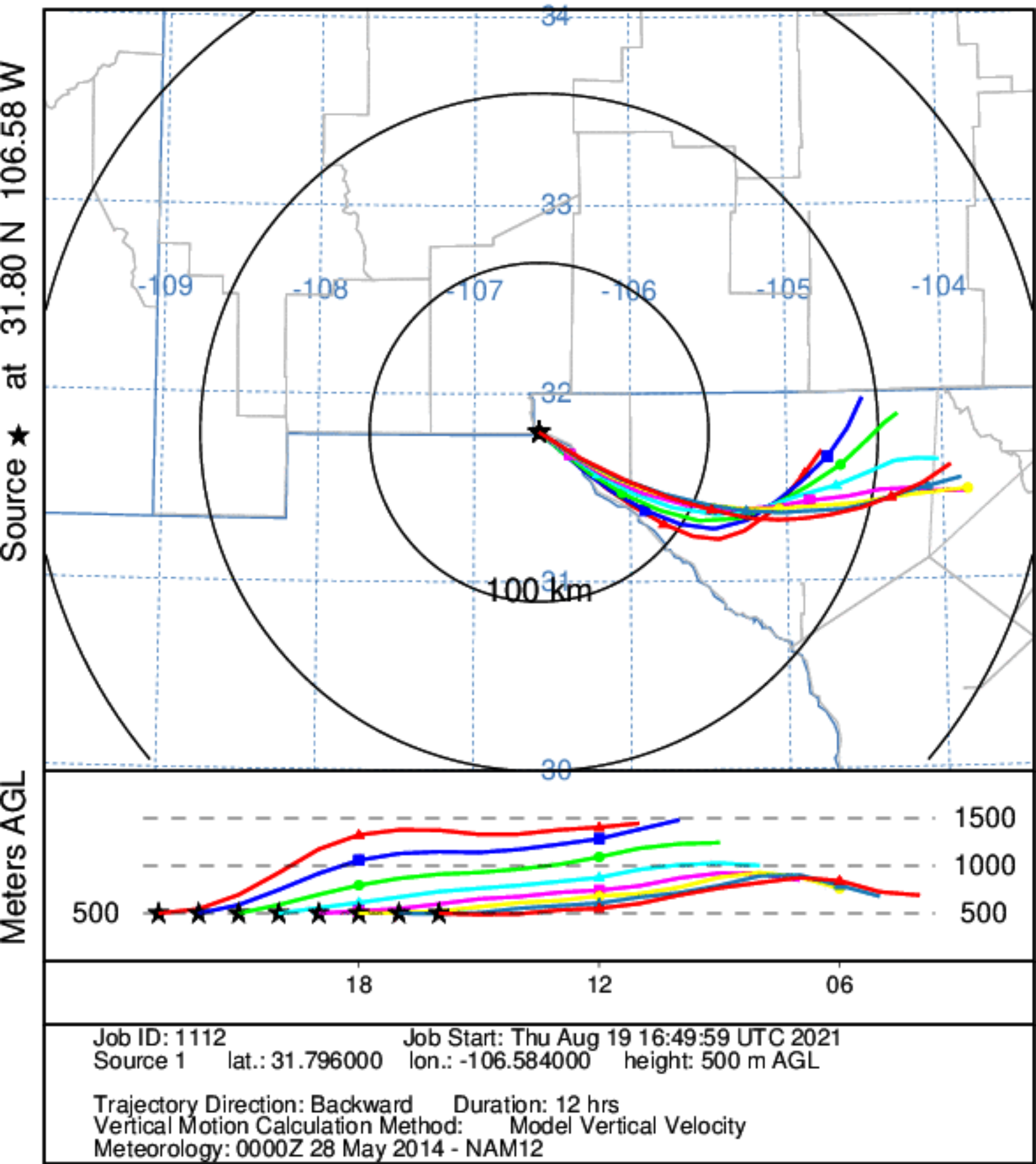
Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 28 May 2014 - NAM12

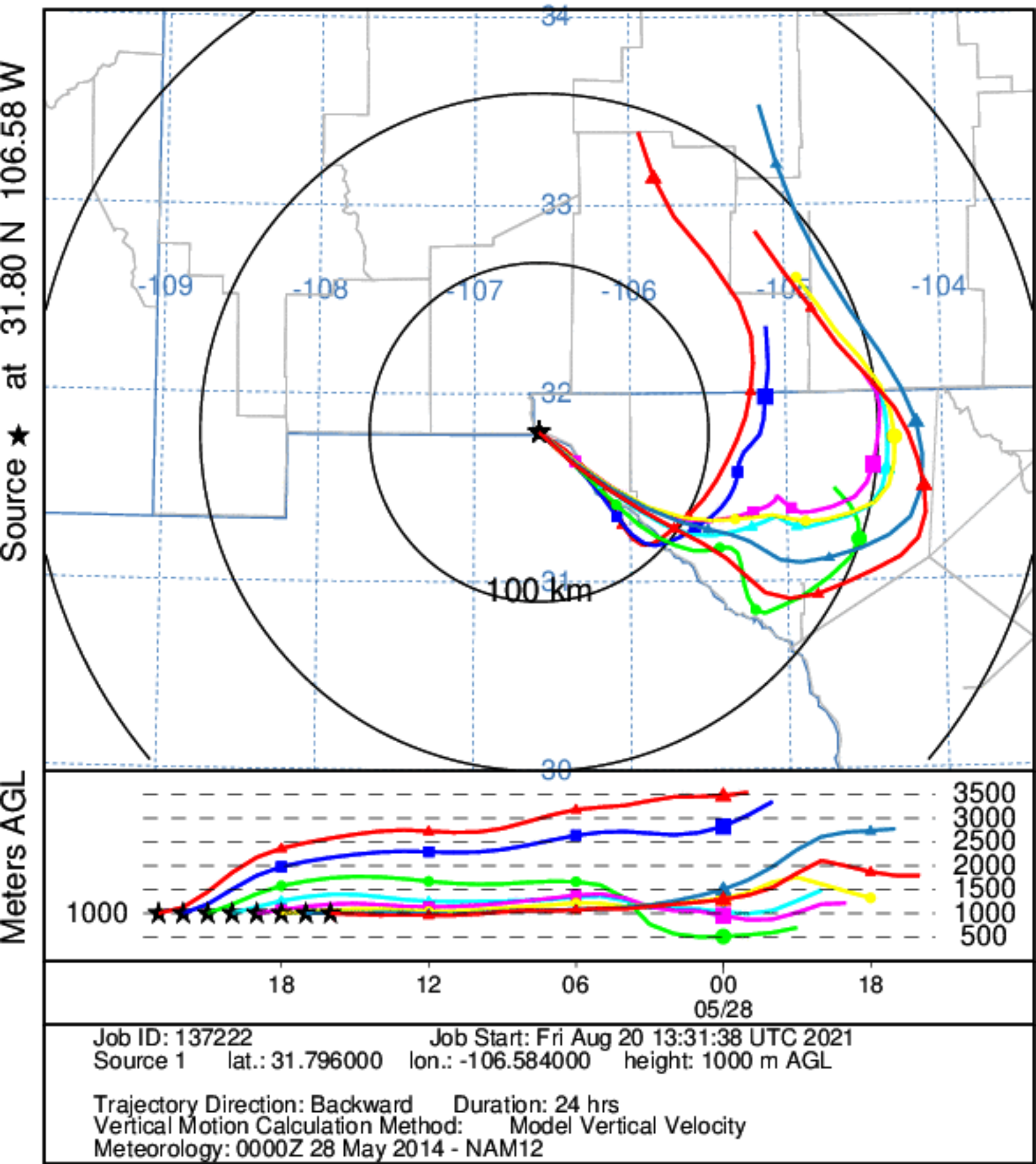
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 28 May 14
NAM Meteorological Data



Job ID: 1112 Job Start: Thu Aug 19 16:49:59 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 28 May 2014 - NAM12

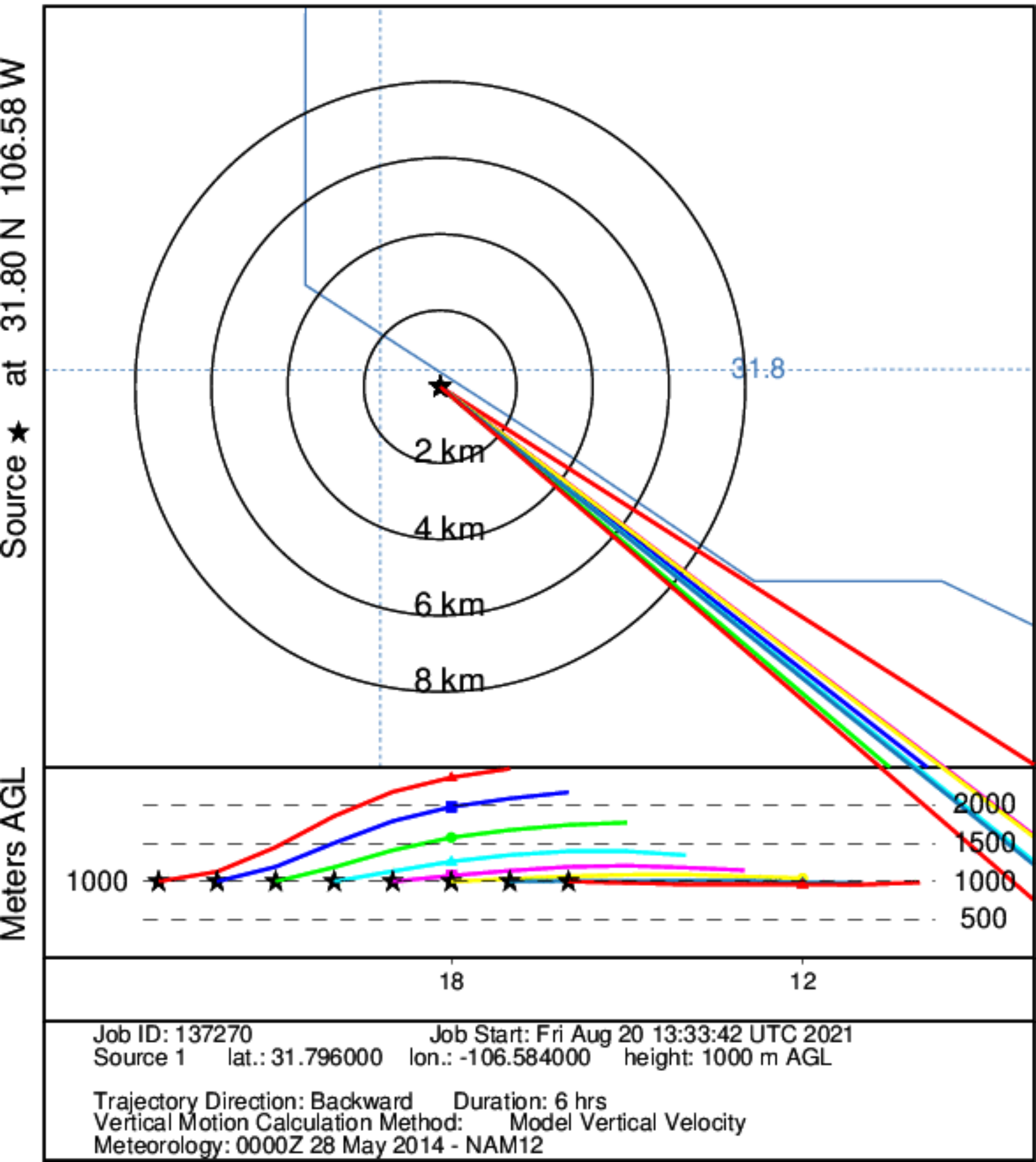
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 28 May 14
NAM Meteorological Data



Job ID: 137222 Job Start: Fri Aug 20 13:31:38 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 28 May 2014 - NAM12

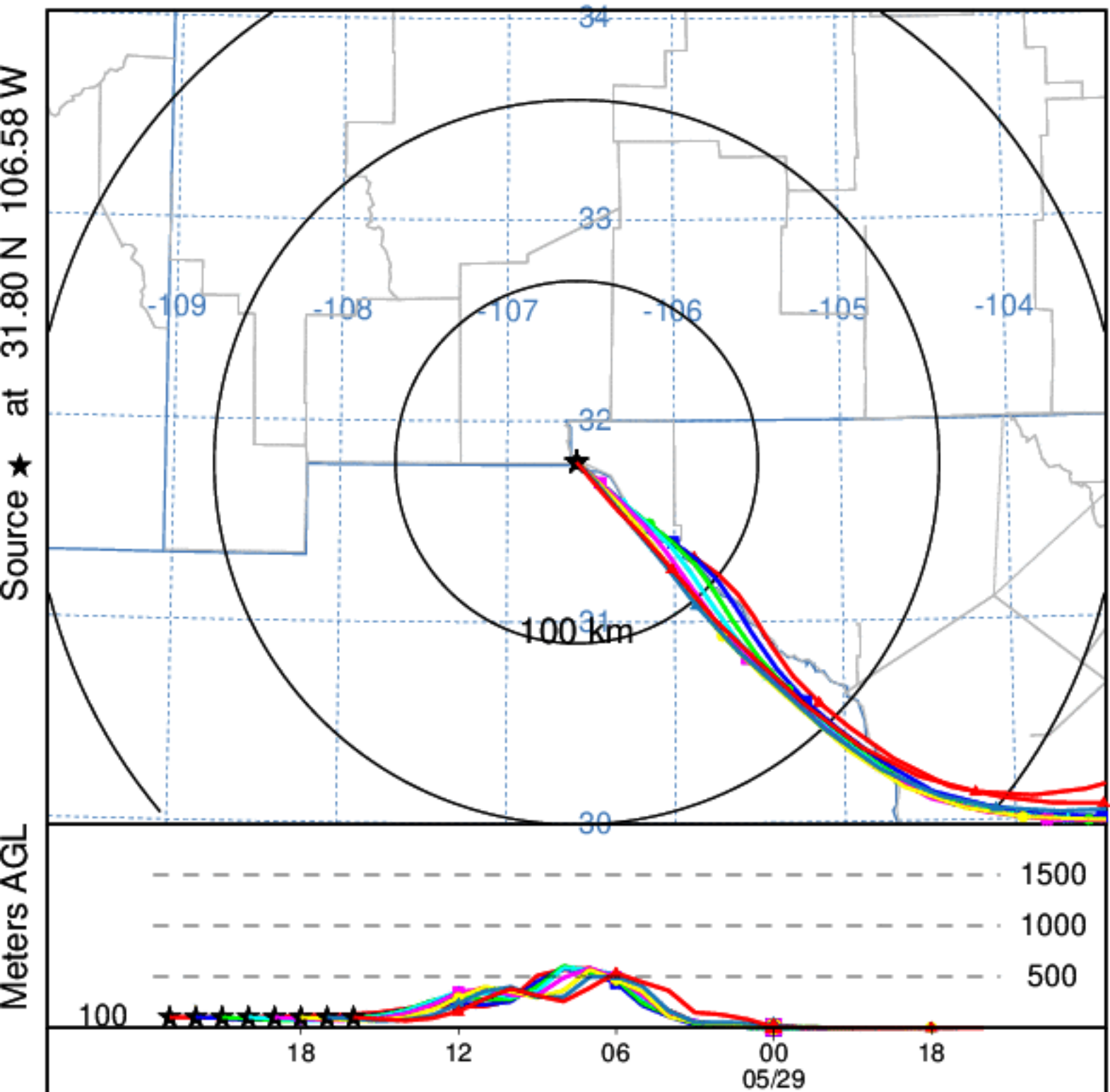
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 28 May 14
NAM Meteorological Data



Job ID: 137270 Job Start: Fri Aug 20 13:33:42 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 6 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 28 May 2014 - NAM12

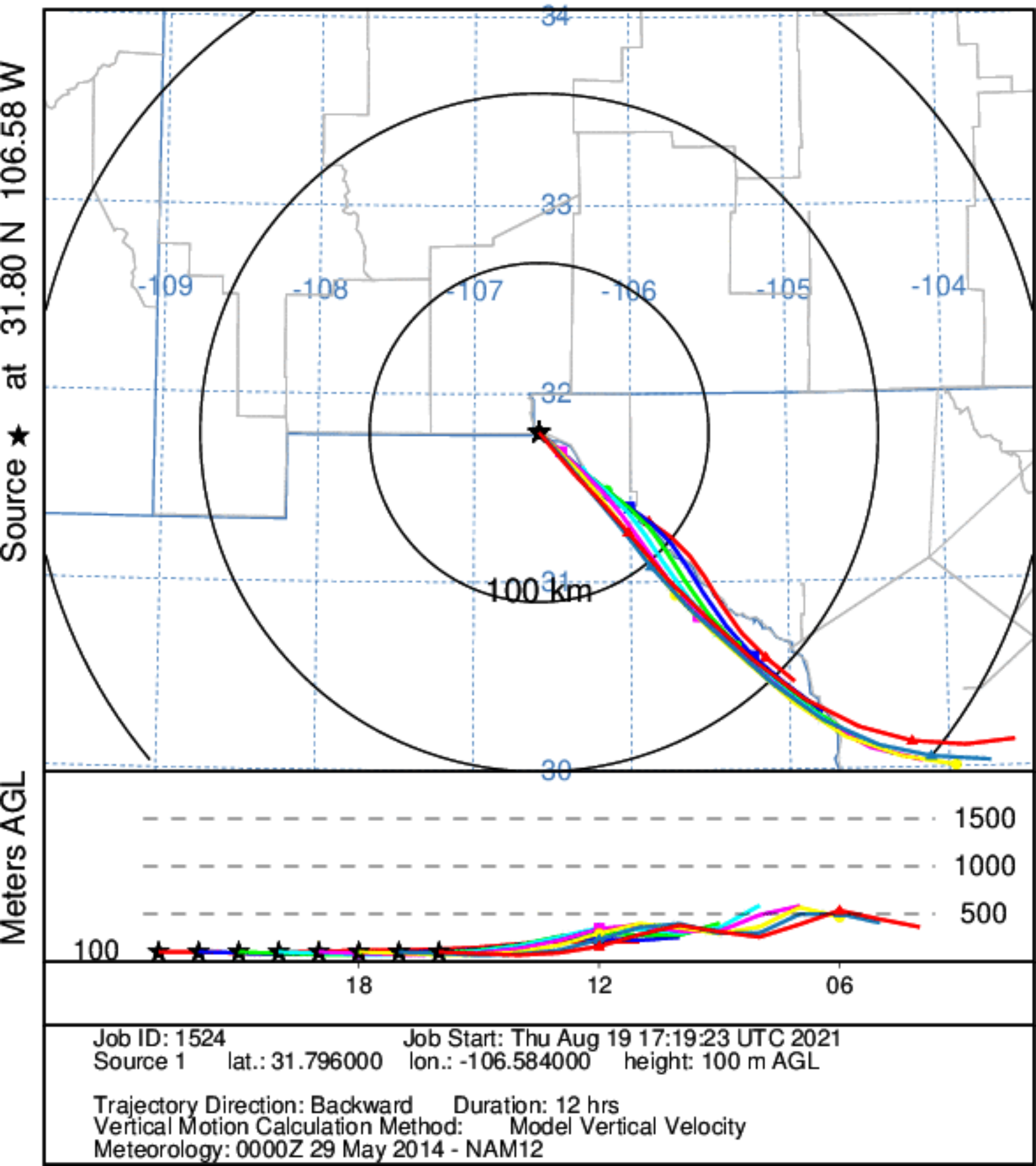
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 29 May 14
NAM Meteorological Data



Job ID: 1355 Job Start: Thu Aug 19 17:07:31 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 29 May 2014 - NAM12

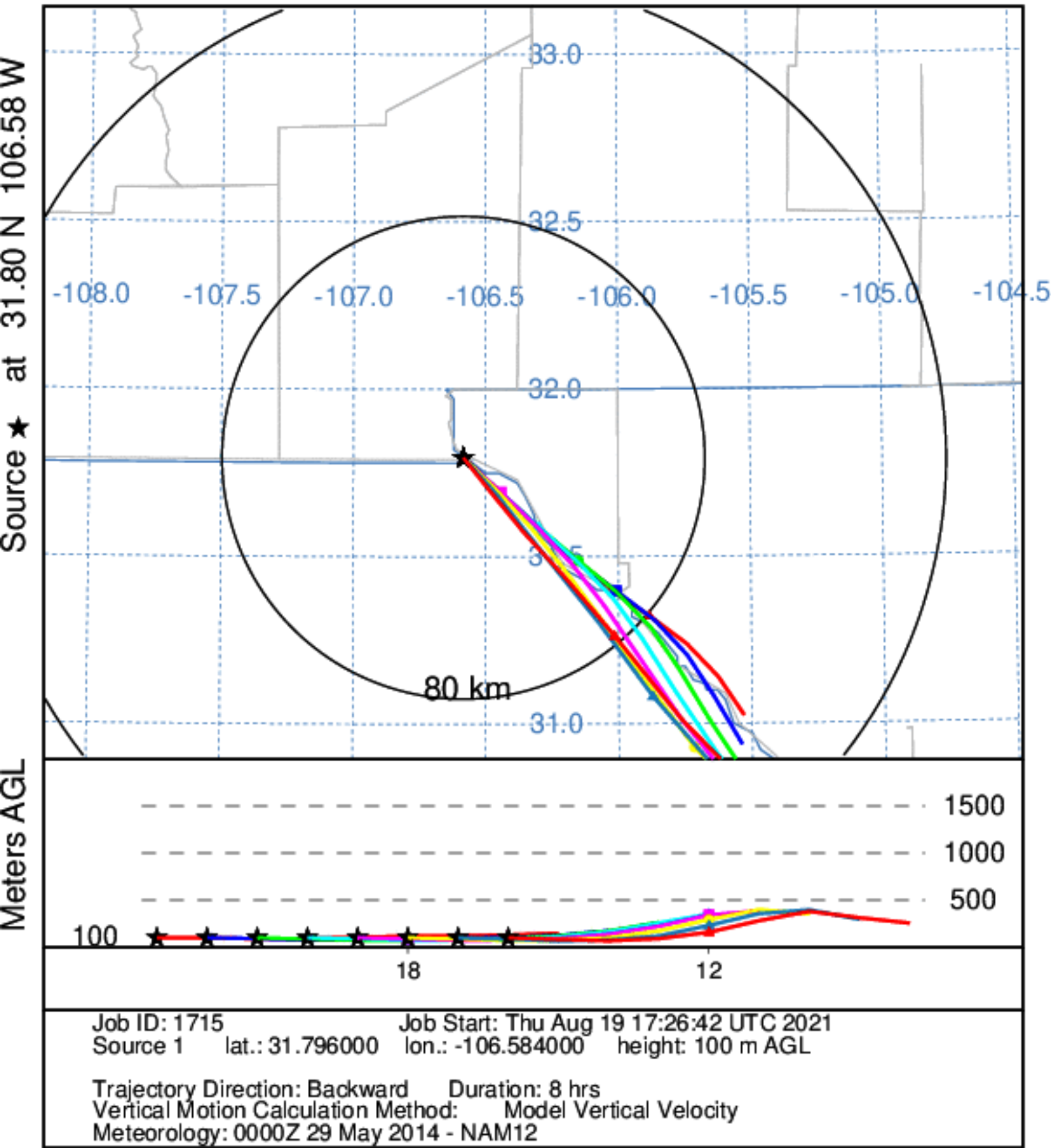
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 29 May 14
NAM Meteorological Data



Job ID: 1524 Job Start: Thu Aug 19 17:19:23 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 29 May 2014 - NAM12

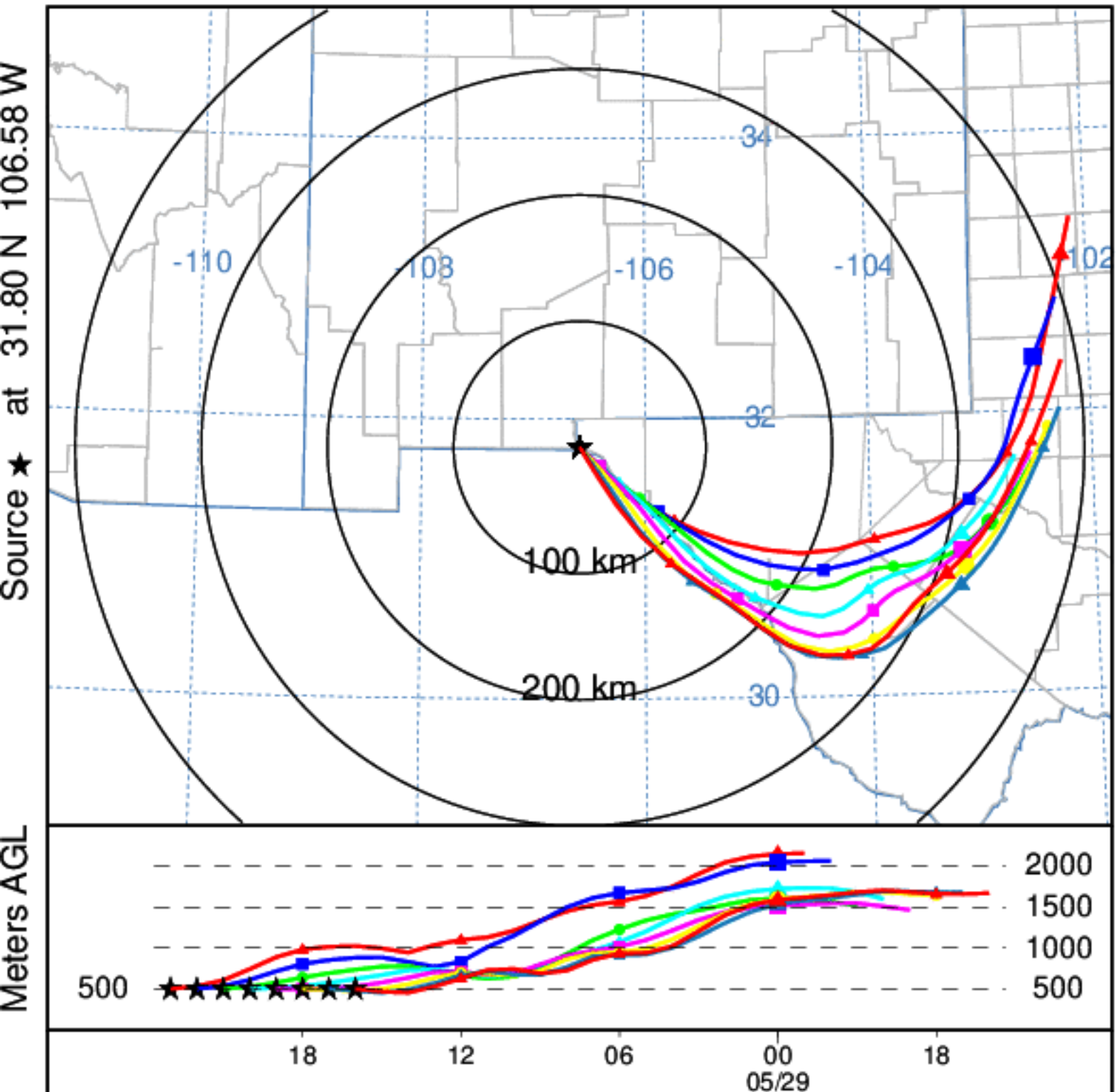
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 29 May 14
NAM Meteorological Data



Job ID: 1715 Job Start: Thu Aug 19 17:26:42 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 8 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 29 May 2014 - NAM12

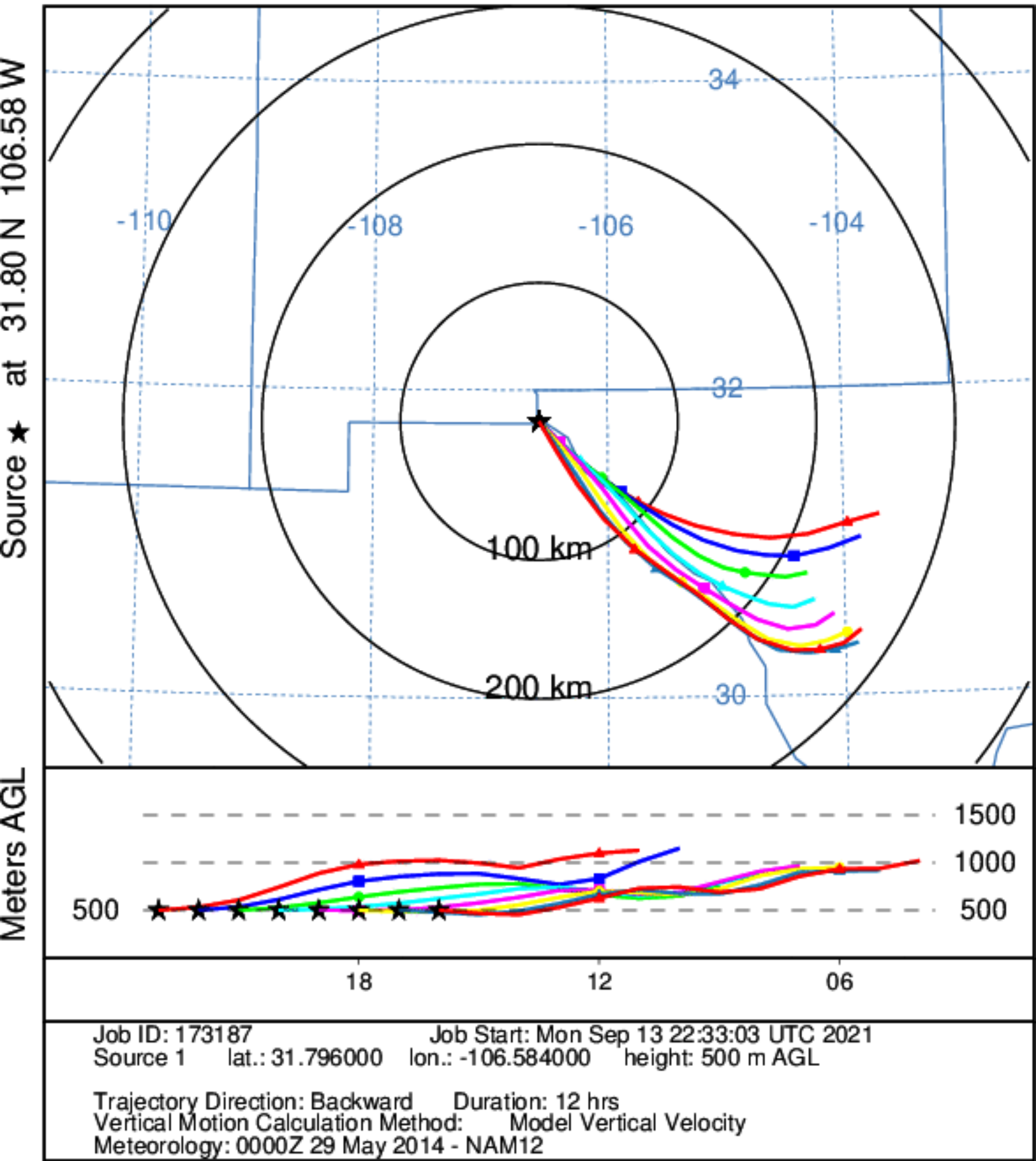
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 29 May 14
NAM Meteorological Data



Job ID: 1590 Job Start: Thu Aug 19 17:21:24 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 29 May 2014 - NAM12

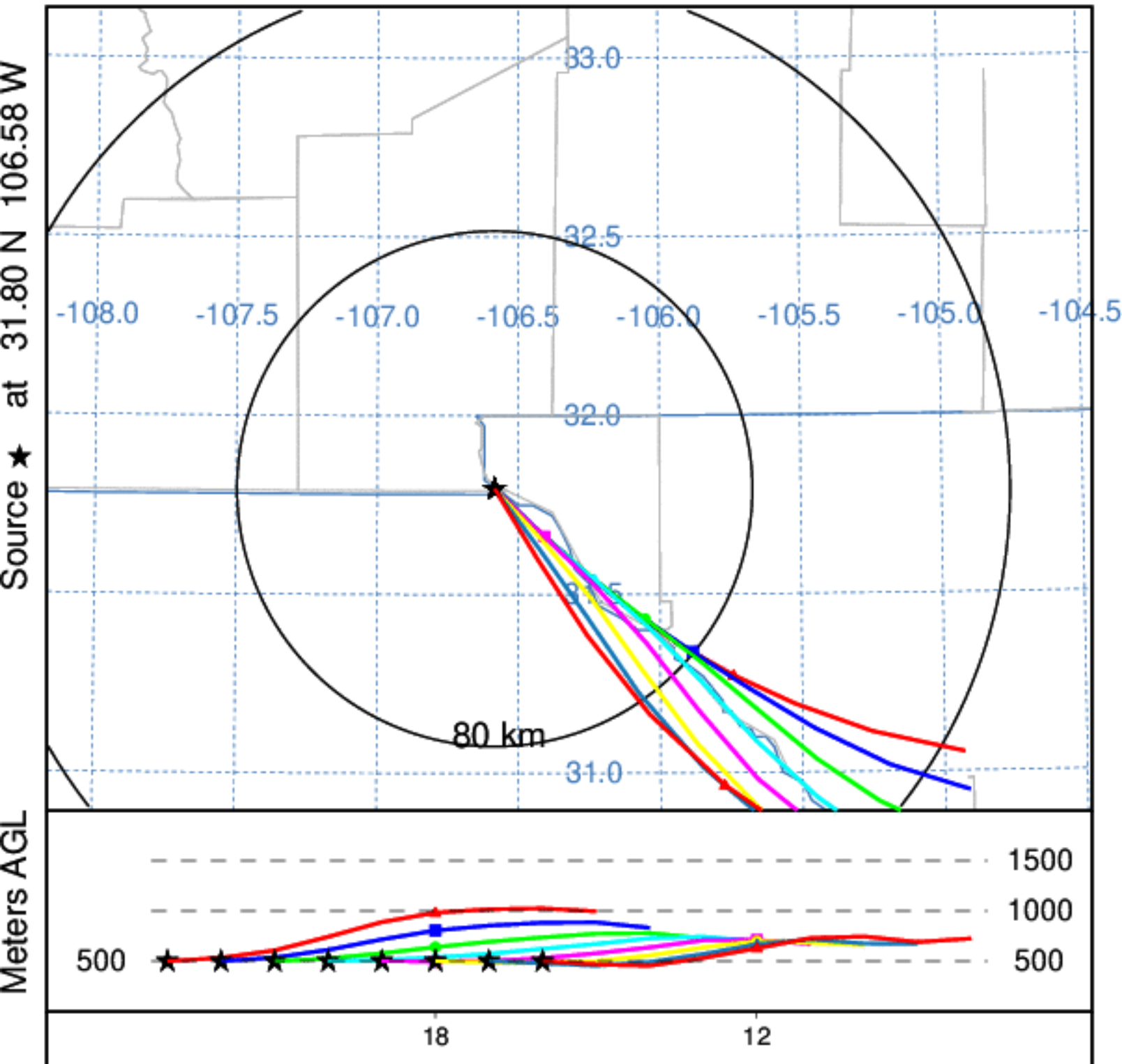
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 29 May 14
NAM Meteorological Data



Job ID: 173187 Job Start: Mon Sep 13 22:33:03 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 29 May 2014 - NAM12

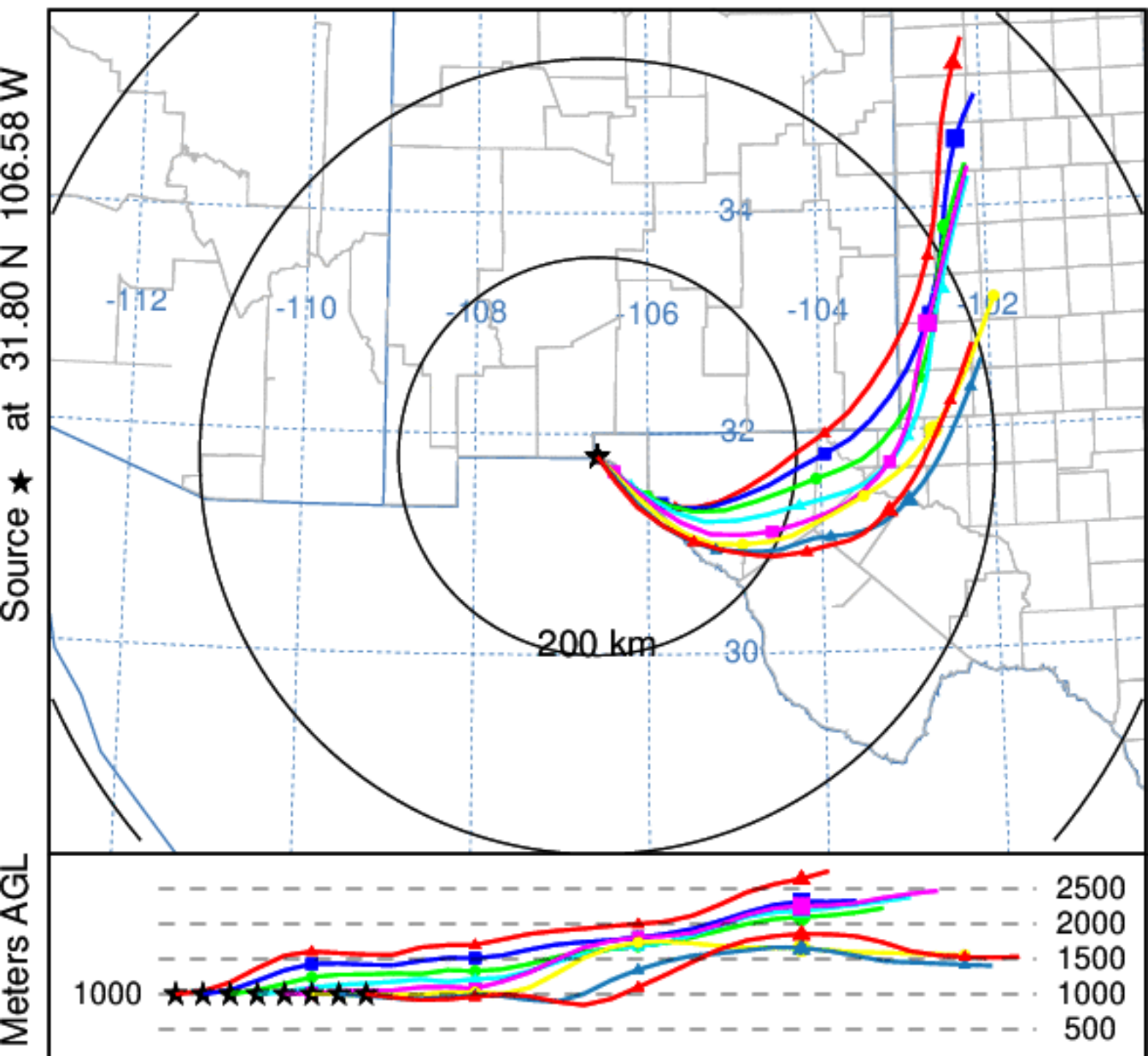
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 29 May 14
NAM Meteorological Data



Job ID: 1690 Job Start: Thu Aug 19 17:25:17 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 8 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 29 May 2014 - NAM12

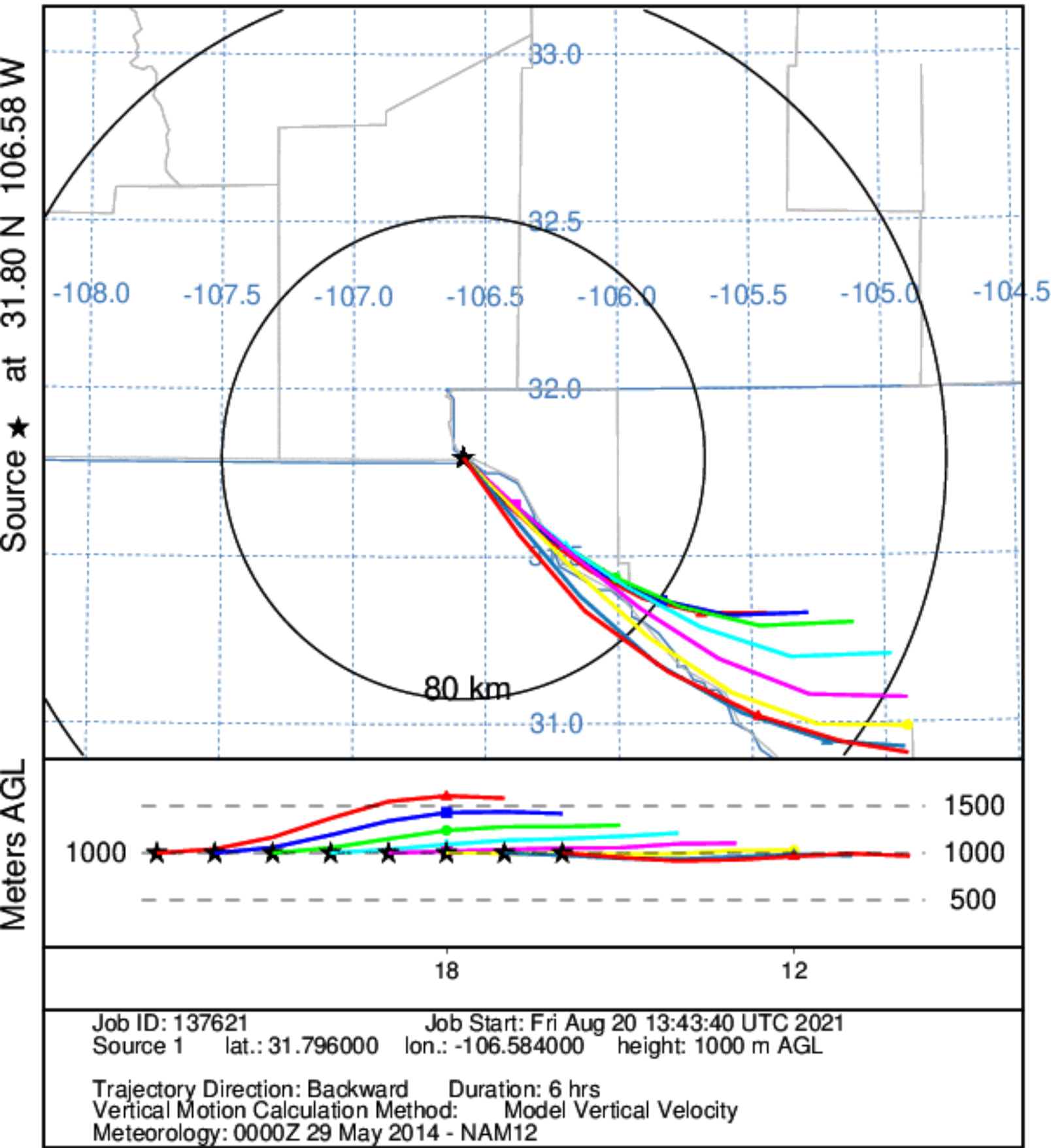
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 29 May 14
NAM Meteorological Data



Job ID: 139078 Job Start: Fri Aug 20 14:10:16 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 29 May 2014 - NAM12

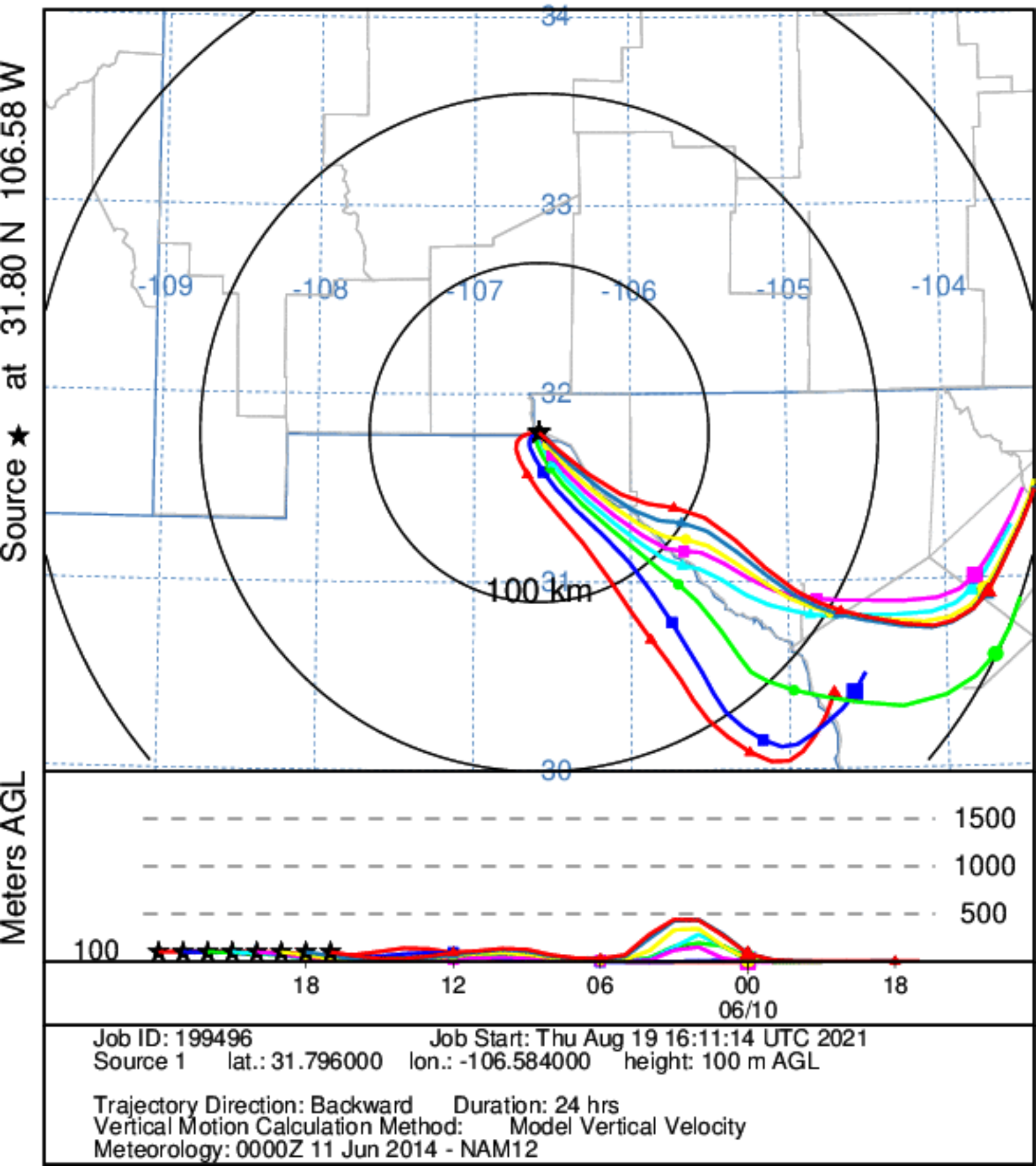
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 29 May 14
NAM Meteorological Data



Job ID: 137621 Job Start: Fri Aug 20 13:43:40 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 6 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 29 May 2014 - NAM12

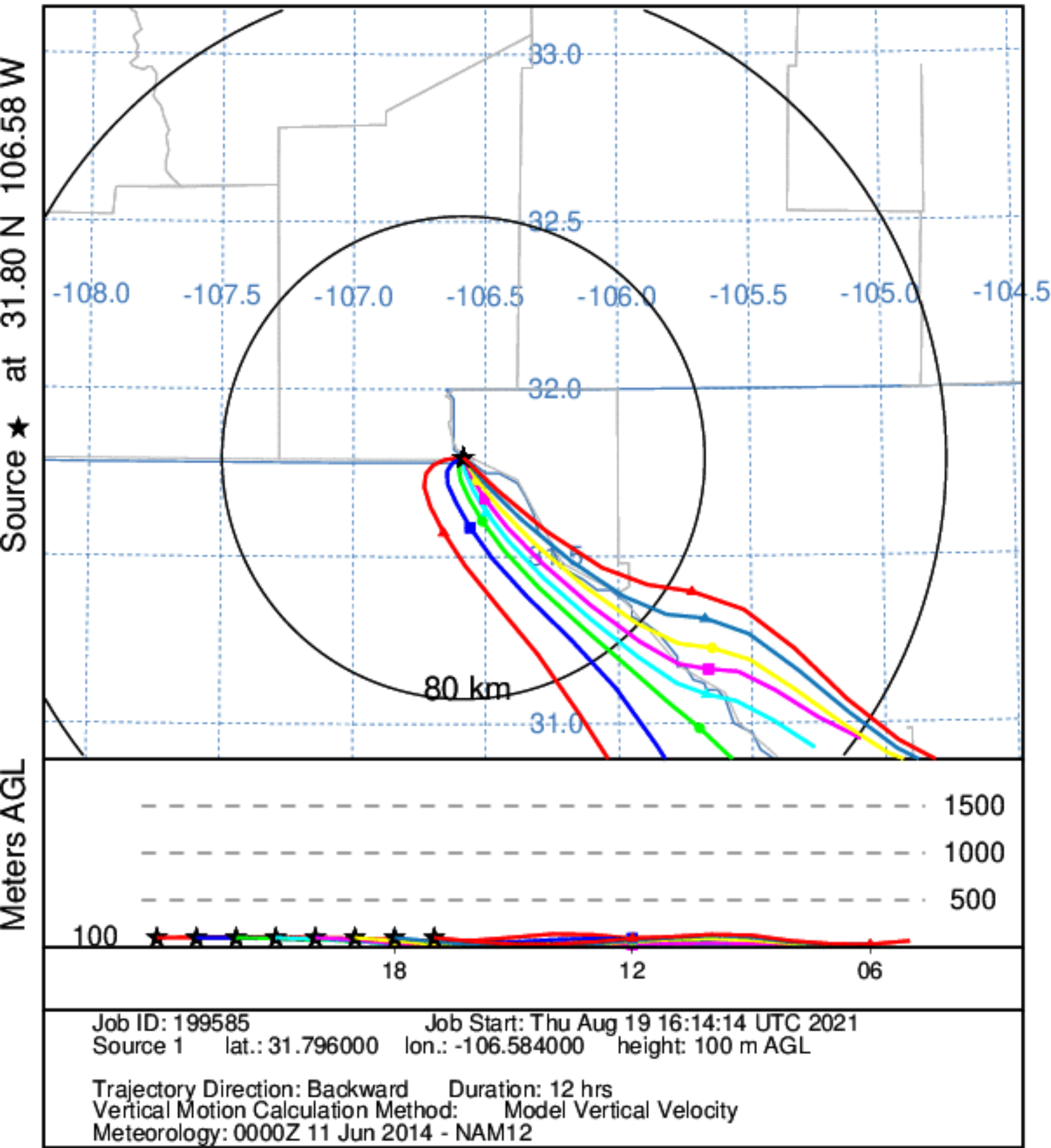
NOAA HYSPLIT MODEL
Backward trajectories ending at 0000 UTC 11 Jun 14
NAM Meteorological Data



Job ID: 199496 Job Start: Thu Aug 19 16:11:14 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 11 Jun 2014 - NAM12

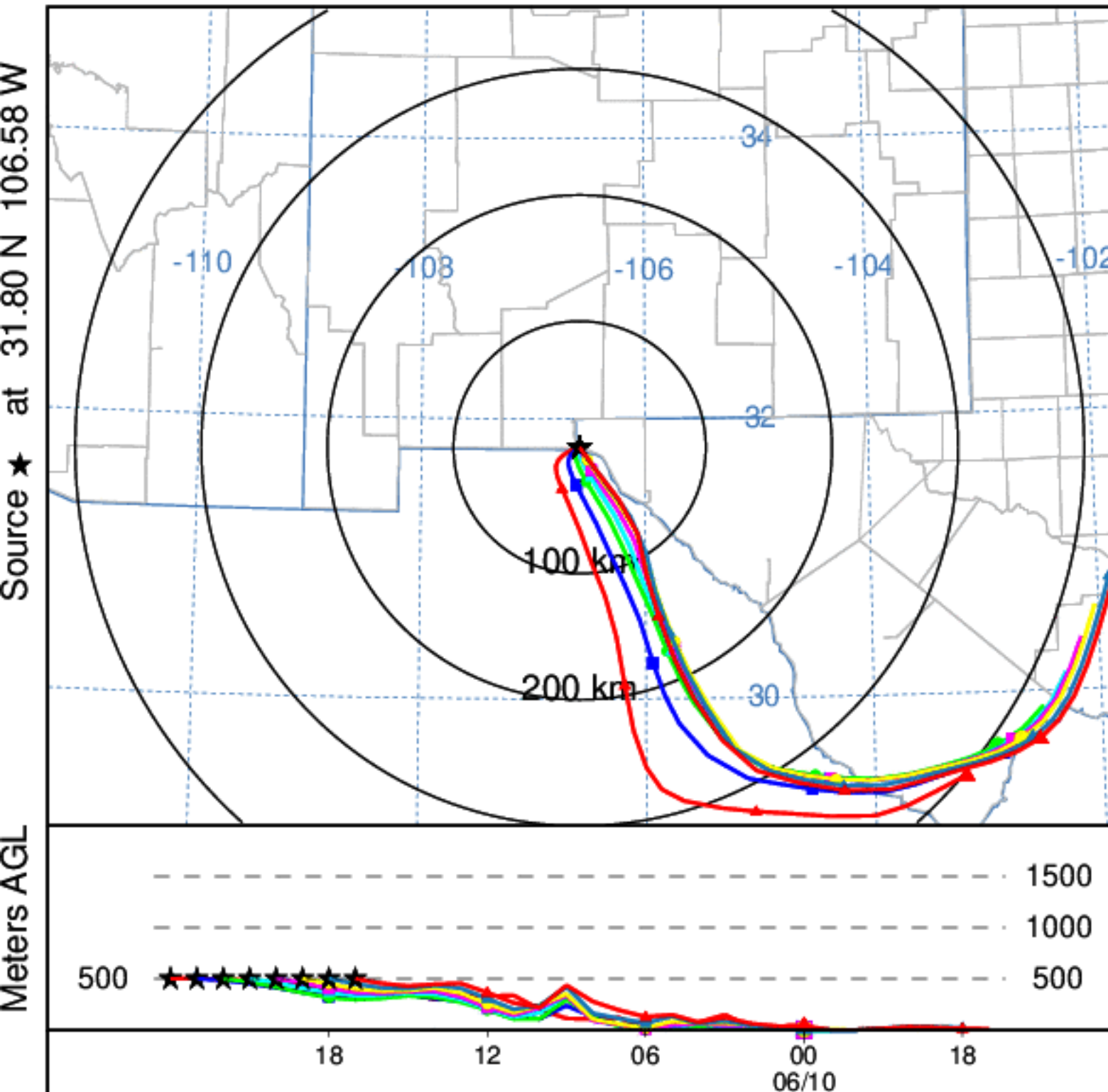
NOAA HYSPLIT MODEL
Backward trajectories ending at 0000 UTC 11 Jun 14
NAM Meteorological Data



Job ID: 199585 Job Start: Thu Aug 19 16:14:14 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 11 Jun 2014 - NAM12

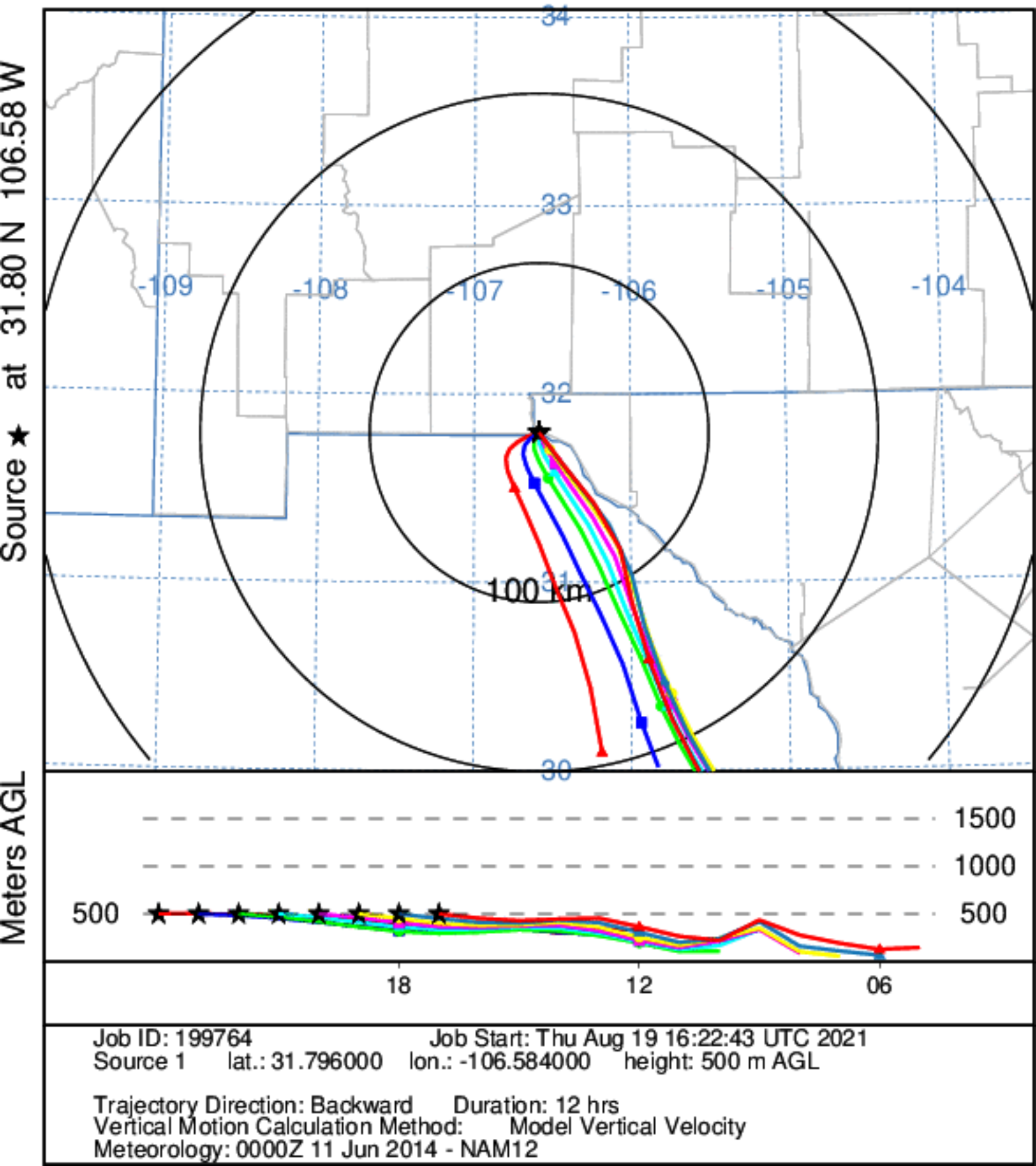
NOAA HYSPLIT MODEL
Backward trajectories ending at 0000 UTC 11 Jun 14
NAM Meteorological Data



Job ID: 199688 Job Start: Thu Aug 19 16:19:22 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 11 Jun 2014 - NAM12

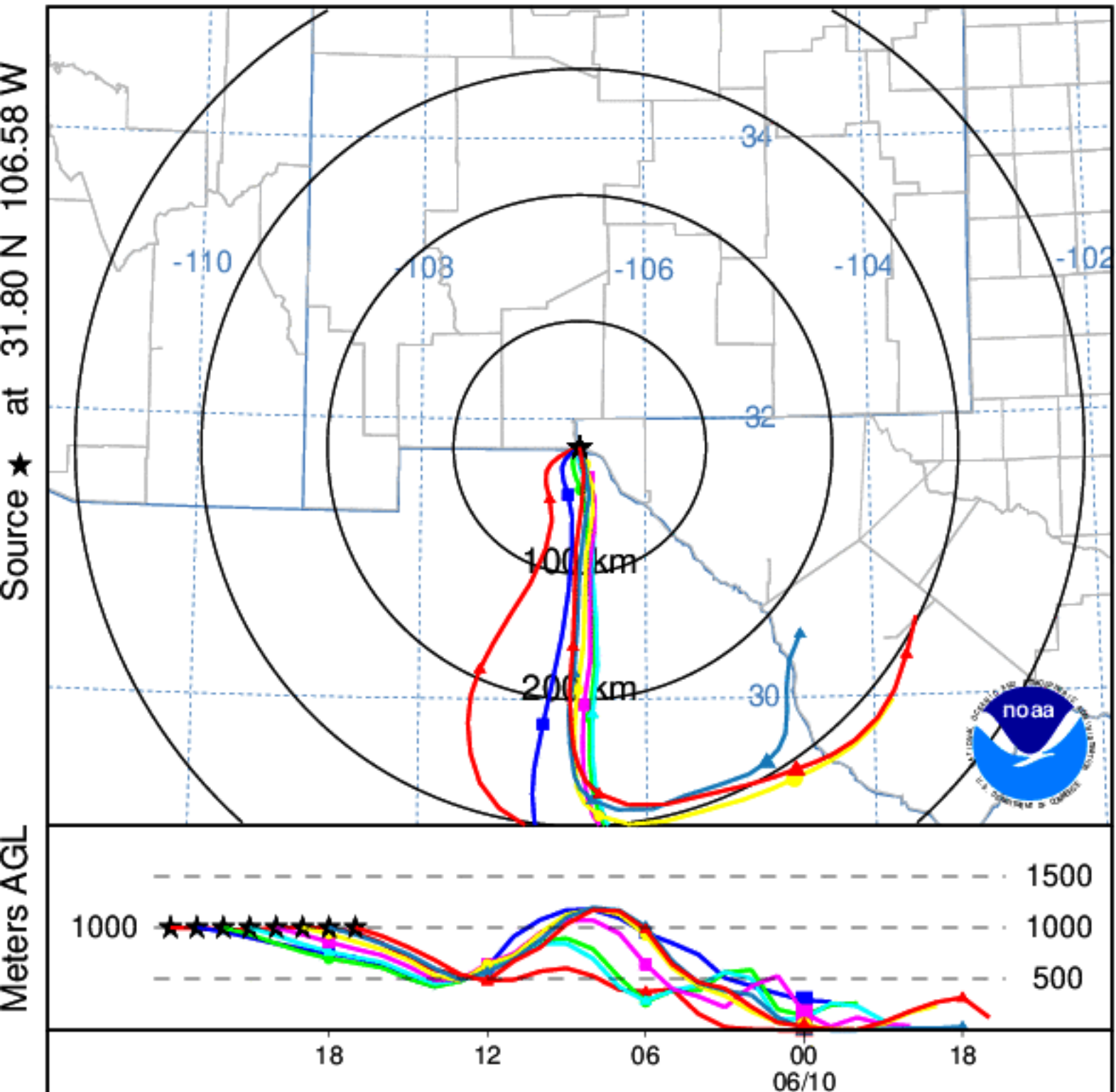
NOAA HYSPLIT MODEL
Backward trajectories ending at 0000 UTC 11 Jun 14
NAM Meteorological Data



Job ID: 199764 Job Start: Thu Aug 19 16:22:43 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 11 Jun 2014 - NAM12

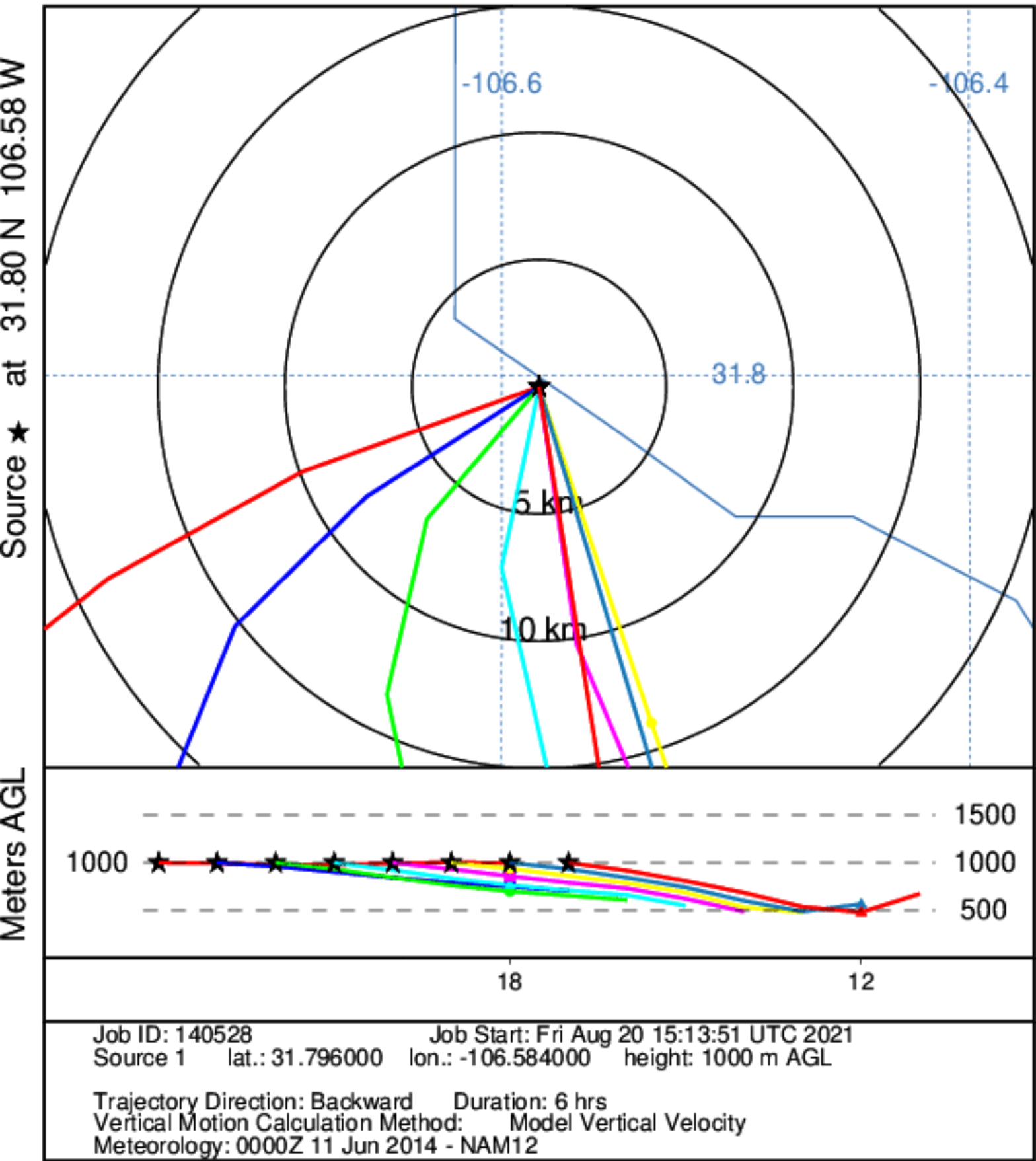
NOAA HYSPLIT MODEL
Backward trajectories ending at 0000 UTC 11 Jun 14
NAM Meteorological Data



Job ID: 140497 Job Start: Fri Aug 20 15:08:45 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 11 Jun 2014 - NAM12

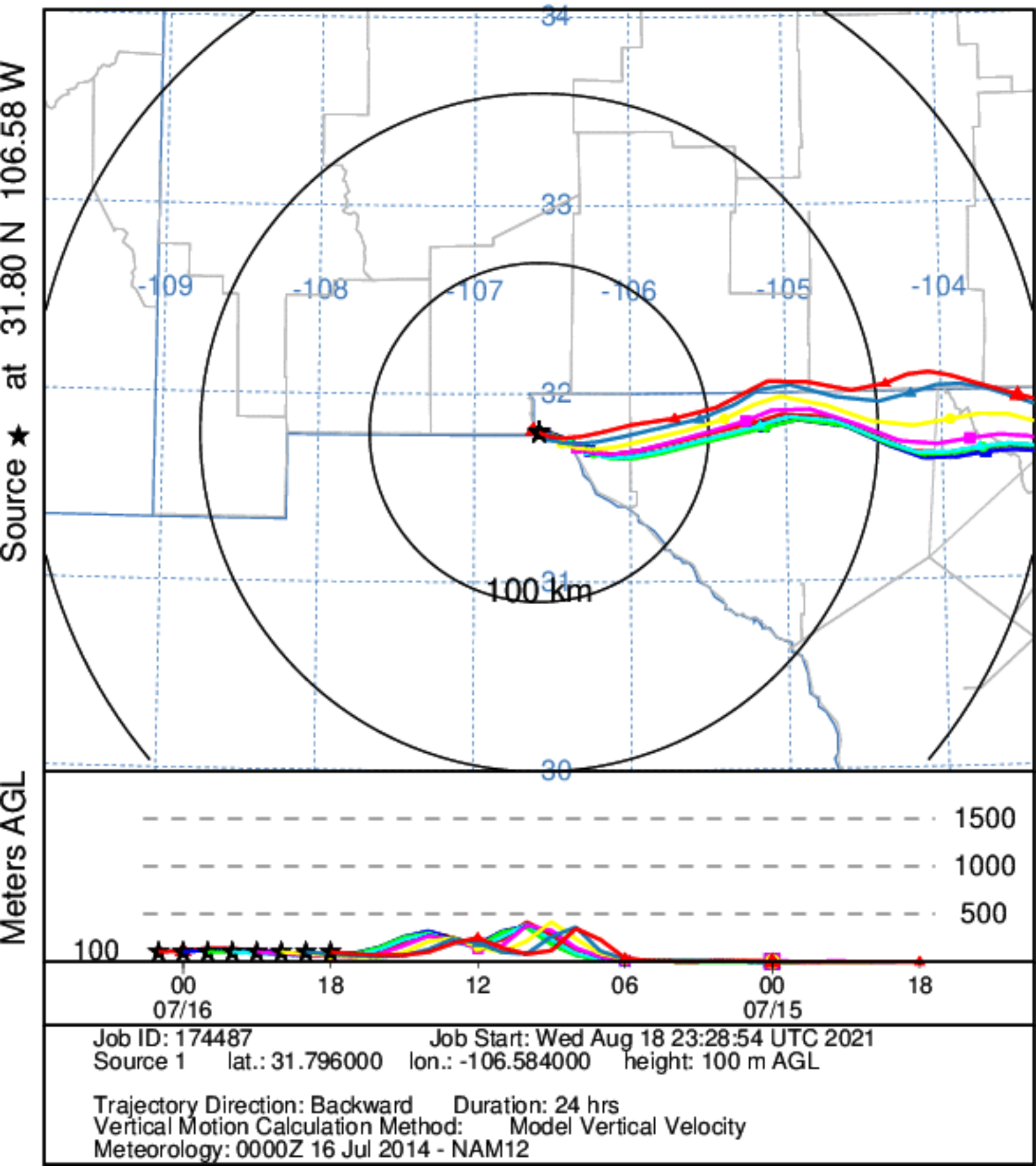
NOAA HYSPLIT MODEL
Backward trajectories ending at 0000 UTC 11 Jun 14
NAM Meteorological Data



Job ID: 140528 Job Start: Fri Aug 20 15:13:51 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 6 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 11 Jun 2014 - NAM12

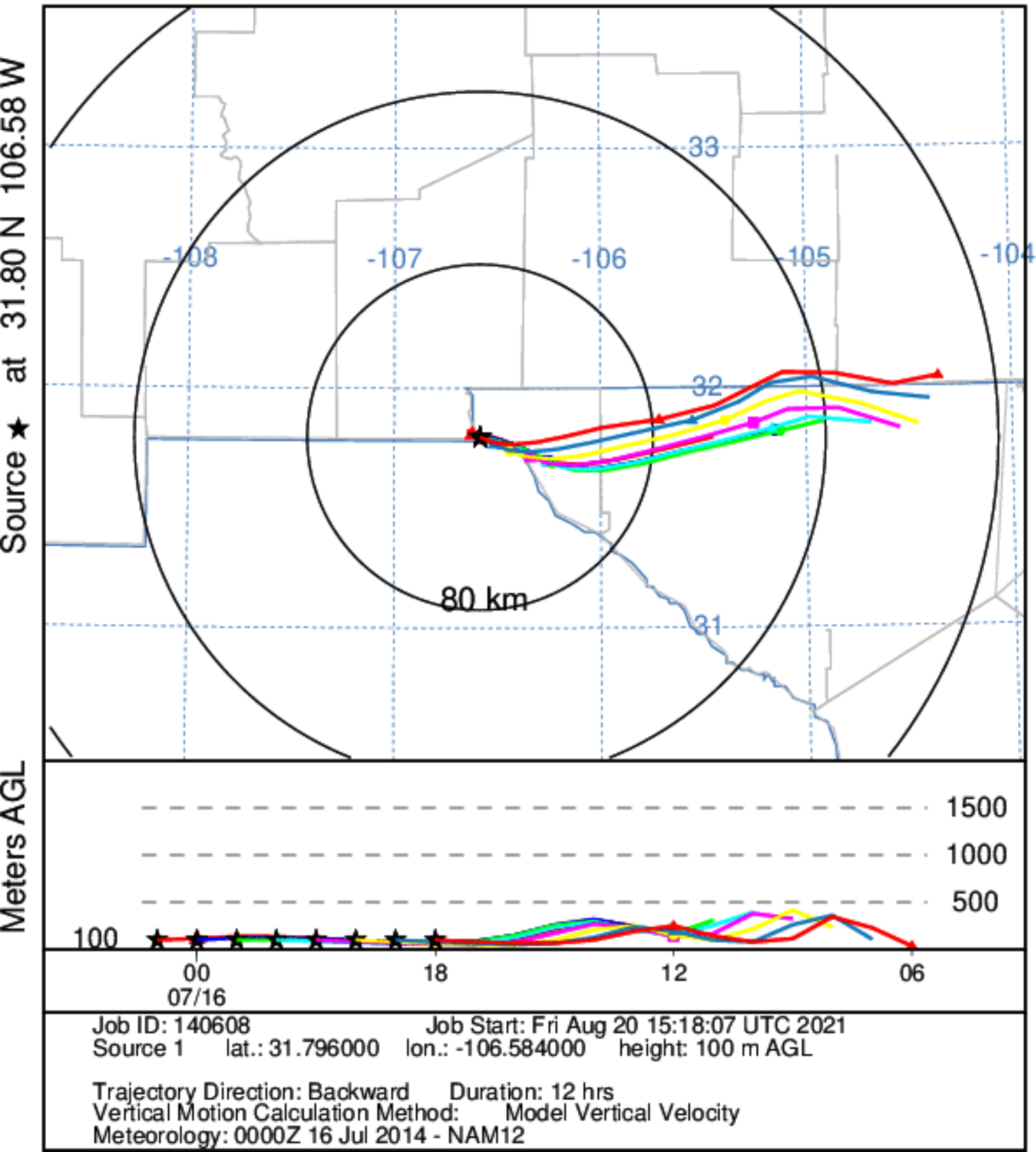
NOAA HYSPLIT MODEL
Backward trajectories ending at 0100 UTC 16 Jul 14
NAM Meteorological Data



Job ID: 174487 Job Start: Wed Aug 18 23:28:54 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 16 Jul 2014 - NAM12

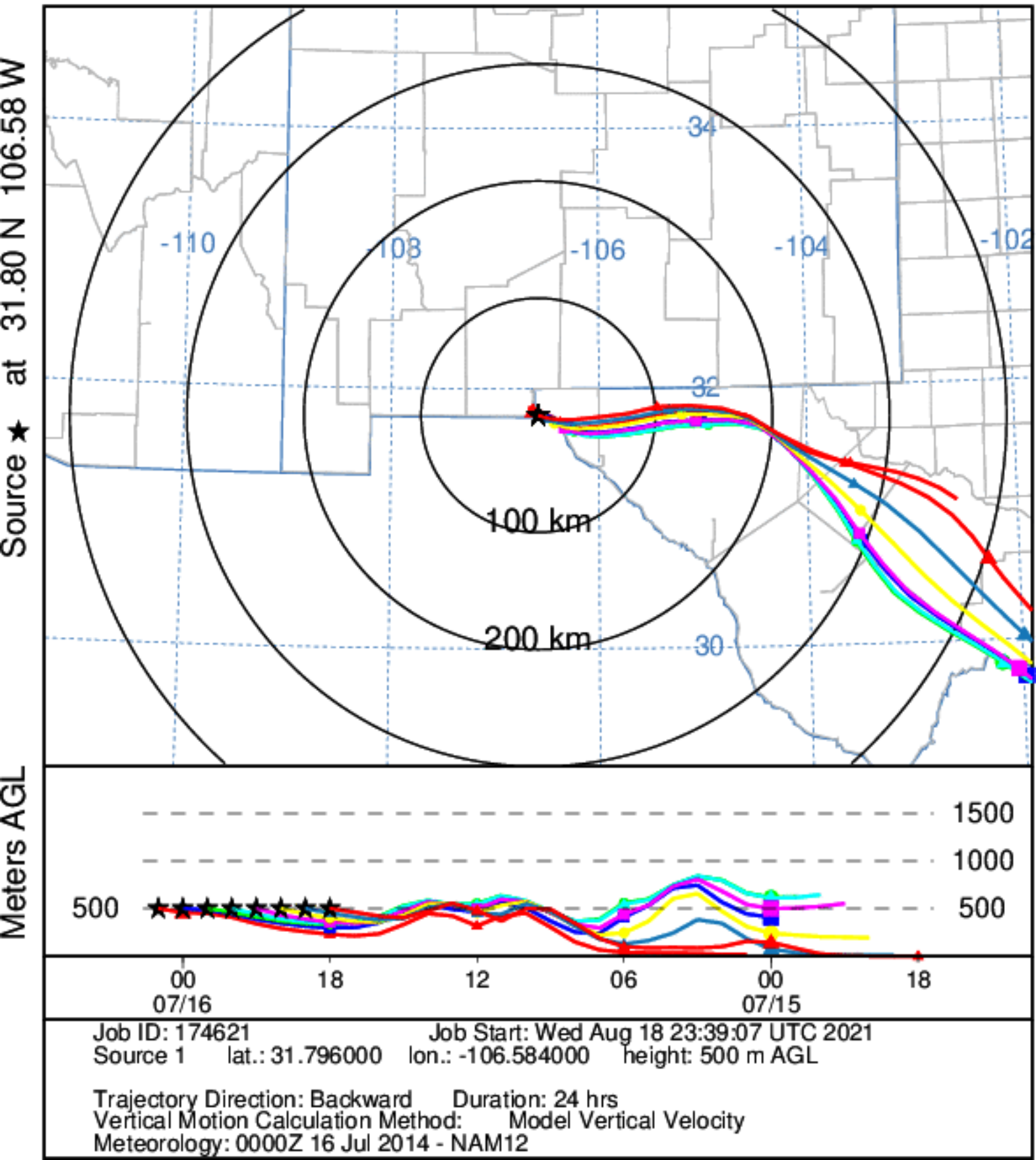
NOAA HYSPLIT MODEL
Backward trajectories ending at 0100 UTC 16 Jul 14
NAM Meteorological Data



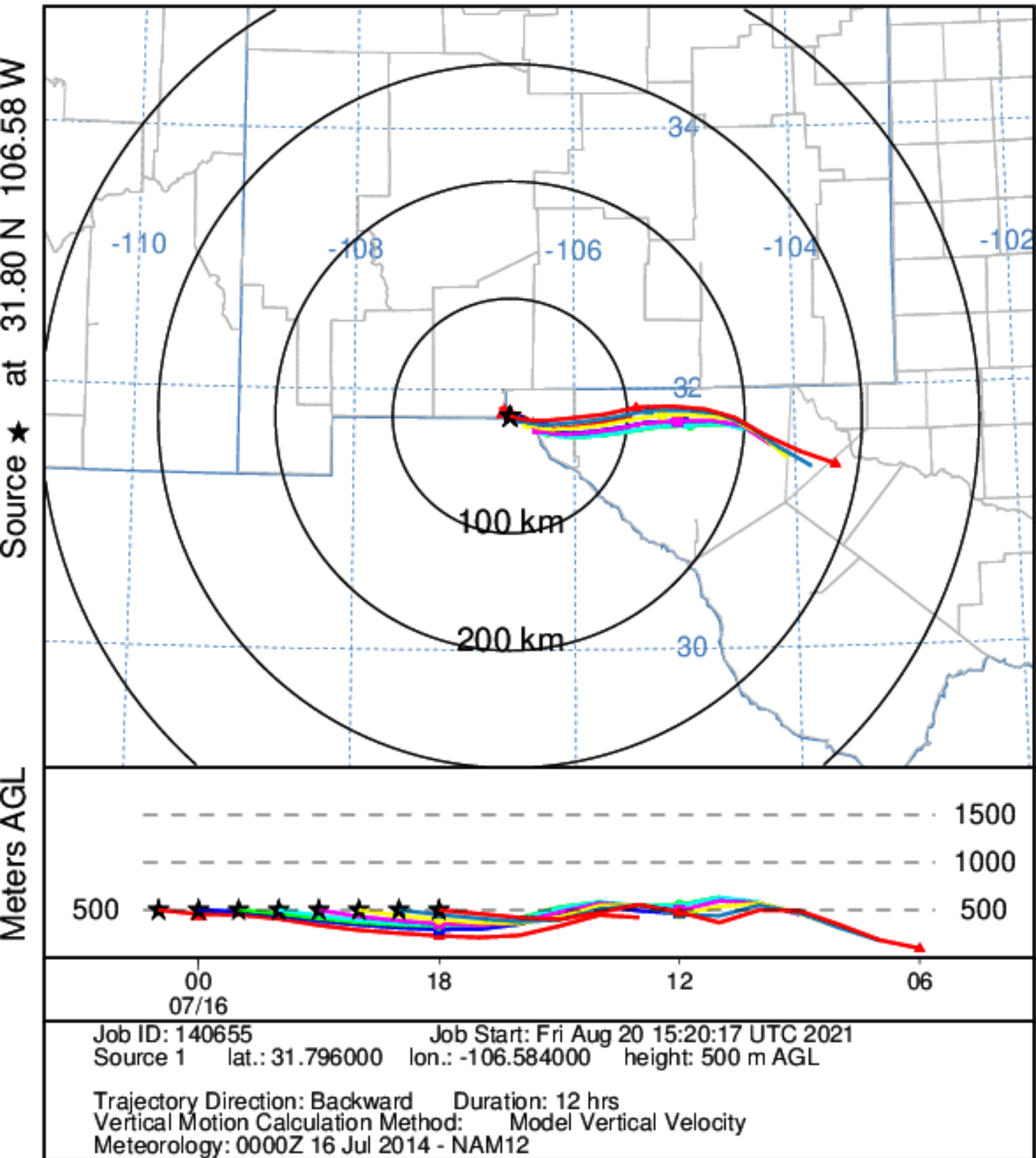
Job ID: 140608 Job Start: Fri Aug 20 15:18:07 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 16 Jul 2014 - NAM12

NOAA HYSPLIT MODEL
Backward trajectories ending at 0100 UTC 16 Jul 14
NAM Meteorological Data



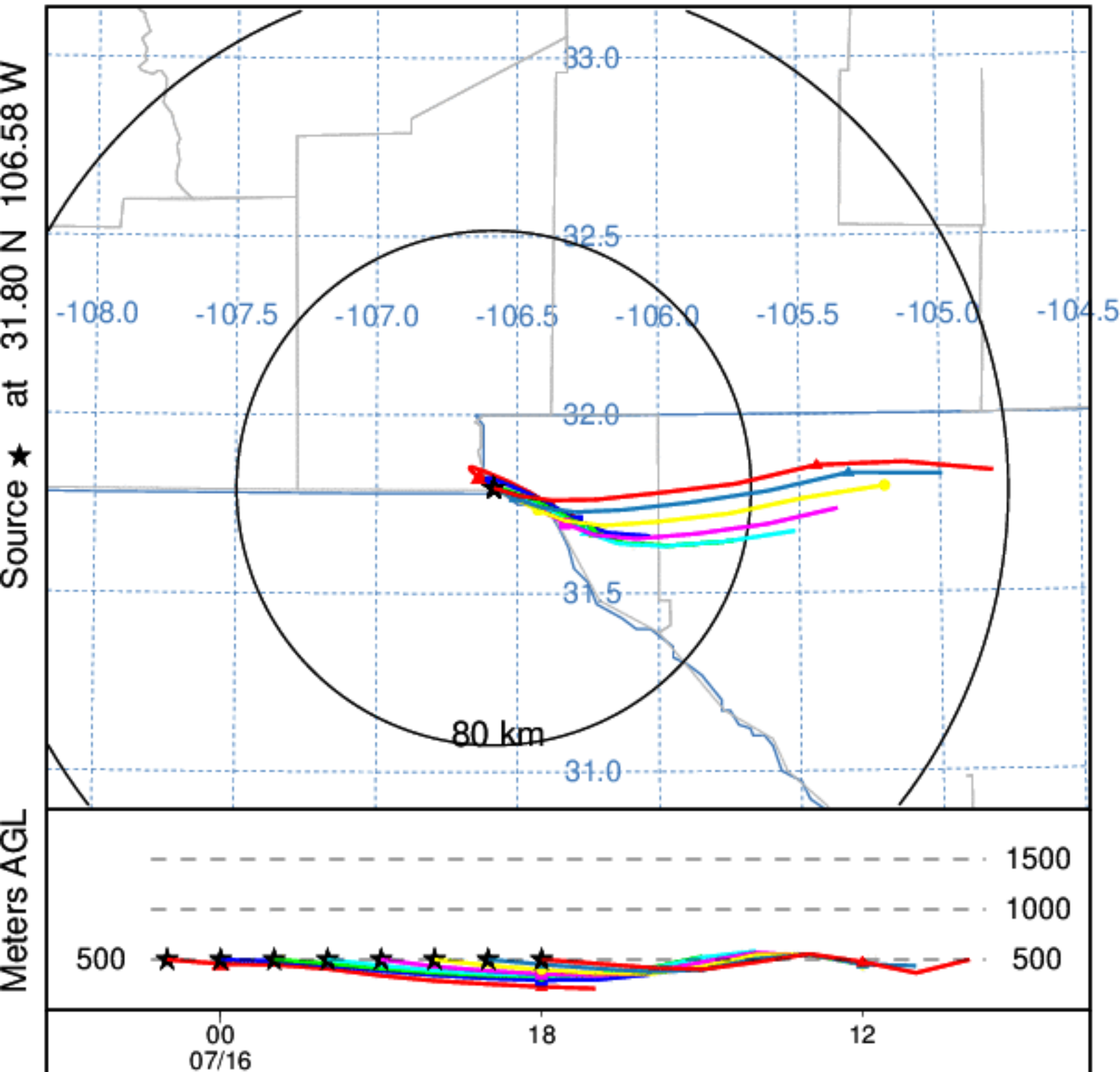
NOAA HYSPLIT MODEL
Backward trajectories ending at 0100 UTC 16 Jul 14
NAM Meteorological Data



Job ID: 140655 Job Start: Fri Aug 20 15:20:17 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 16 Jul 2014 - NAM12

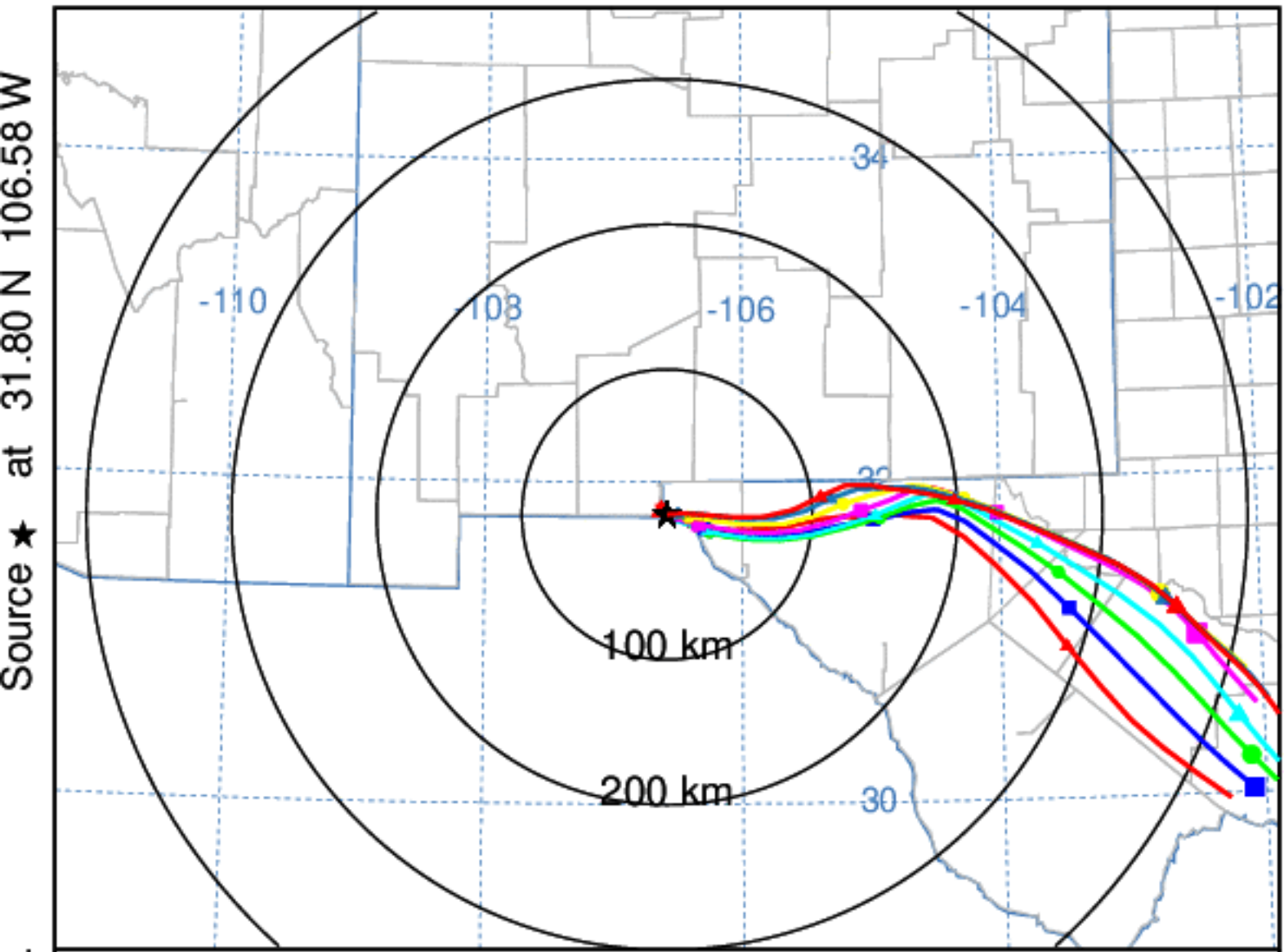
NOAA HYSPLIT MODEL
Backward trajectories ending at 0100 UTC 16 Jul 14
NAM Meteorological Data

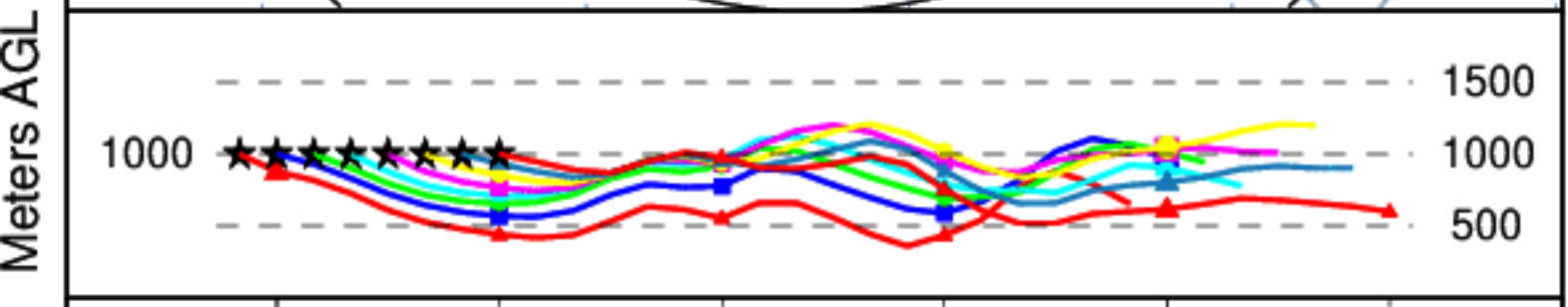


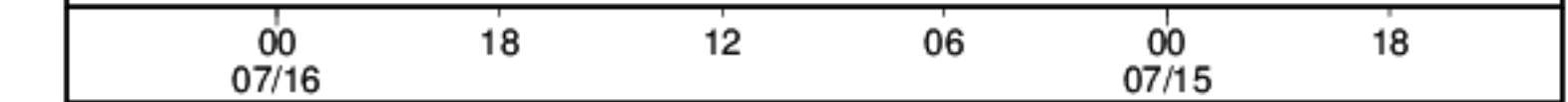
Job ID: 197638 Job Start: Thu Aug 19 13:42:52 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 8 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 16 Jul 2014 - NAM12

NOAA HYSPLIT MODEL
Backward trajectories ending at 0100 UTC 16 Jul 14
NAM Meteorological Data



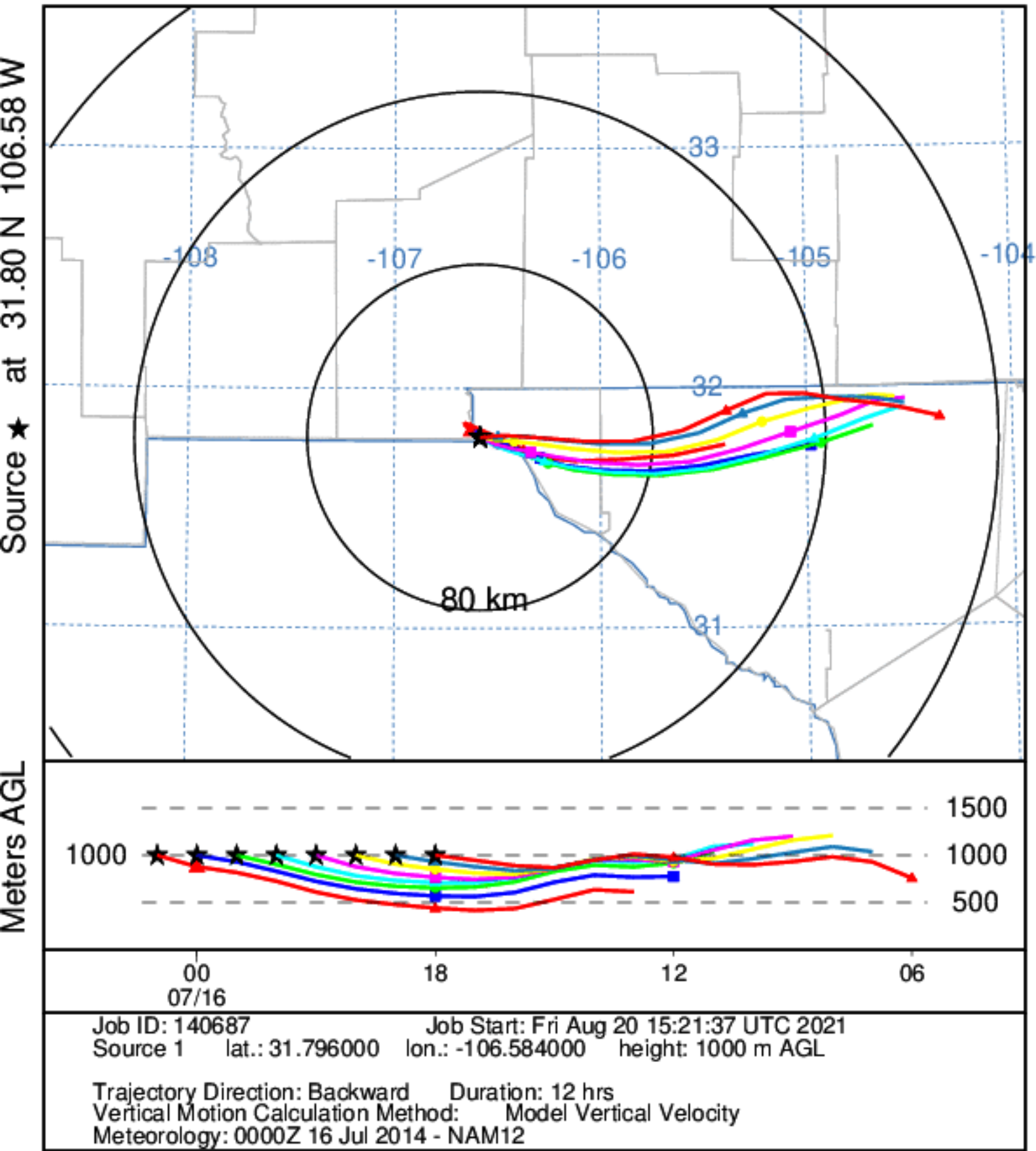




Job ID: 140710 Job Start: Fri Aug 20 15:22:57 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 16 Jul 2014 - NAM12

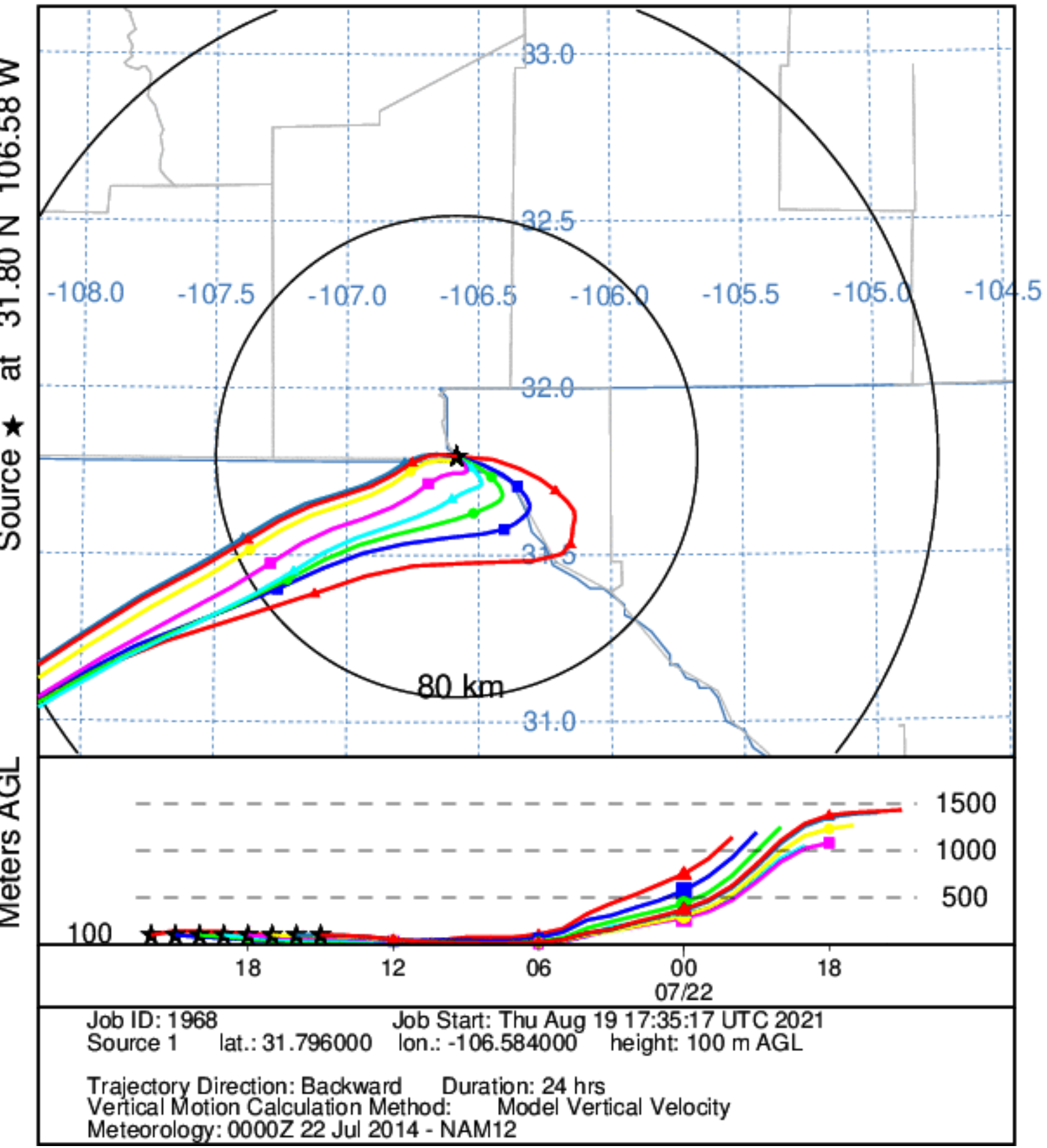
NOAA HYSPLIT MODEL
Backward trajectories ending at 0100 UTC 16 Jul 14
NAM Meteorological Data



Job ID: 140687 Job Start: Fri Aug 20 15:21:37 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 16 Jul 2014 - NAM12

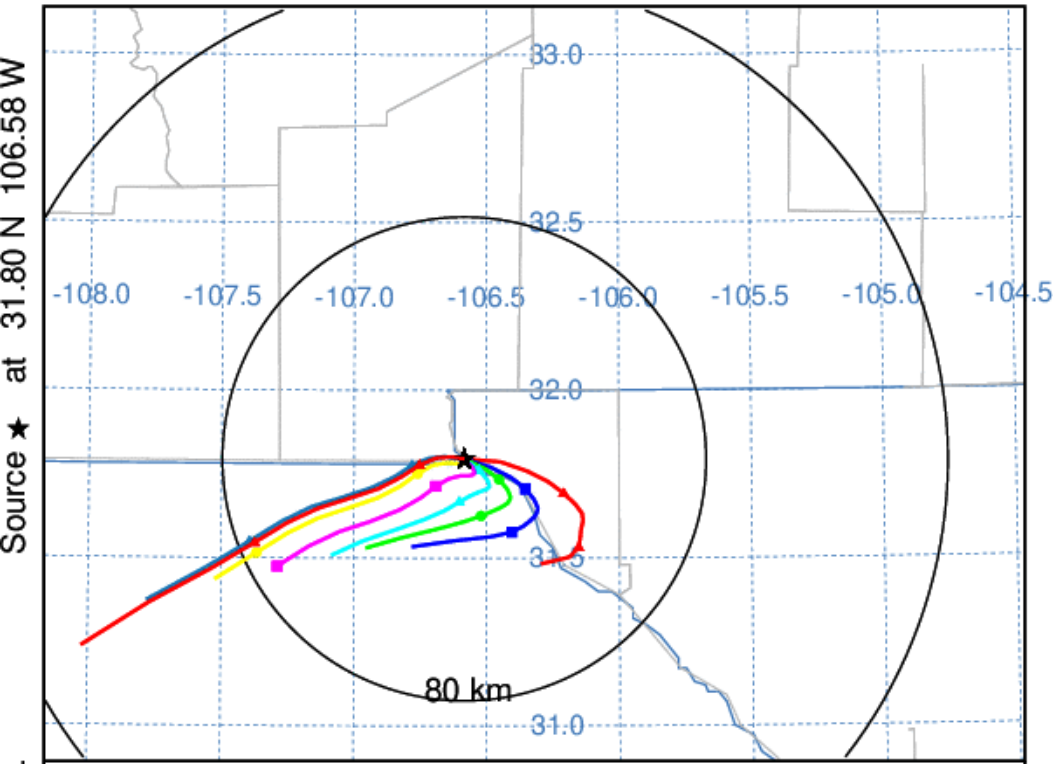
NOAA HYSPLIT MODEL
Backward trajectories ending at 2200 UTC 22 Jul 14
NAM Meteorological Data

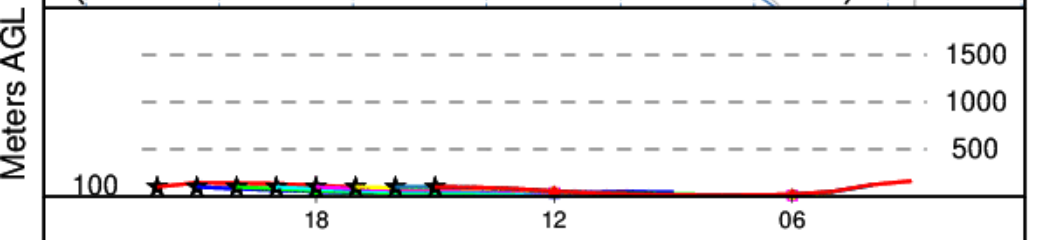


Job ID: 1968 Job Start: Thu Aug 19 17:35:17 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 22 Jul 2014 - NAM12

NOAA HYSPLIT MODEL
Backward trajectories ending at 2200 UTC 22 Jul 14
NAM Meteorological Data

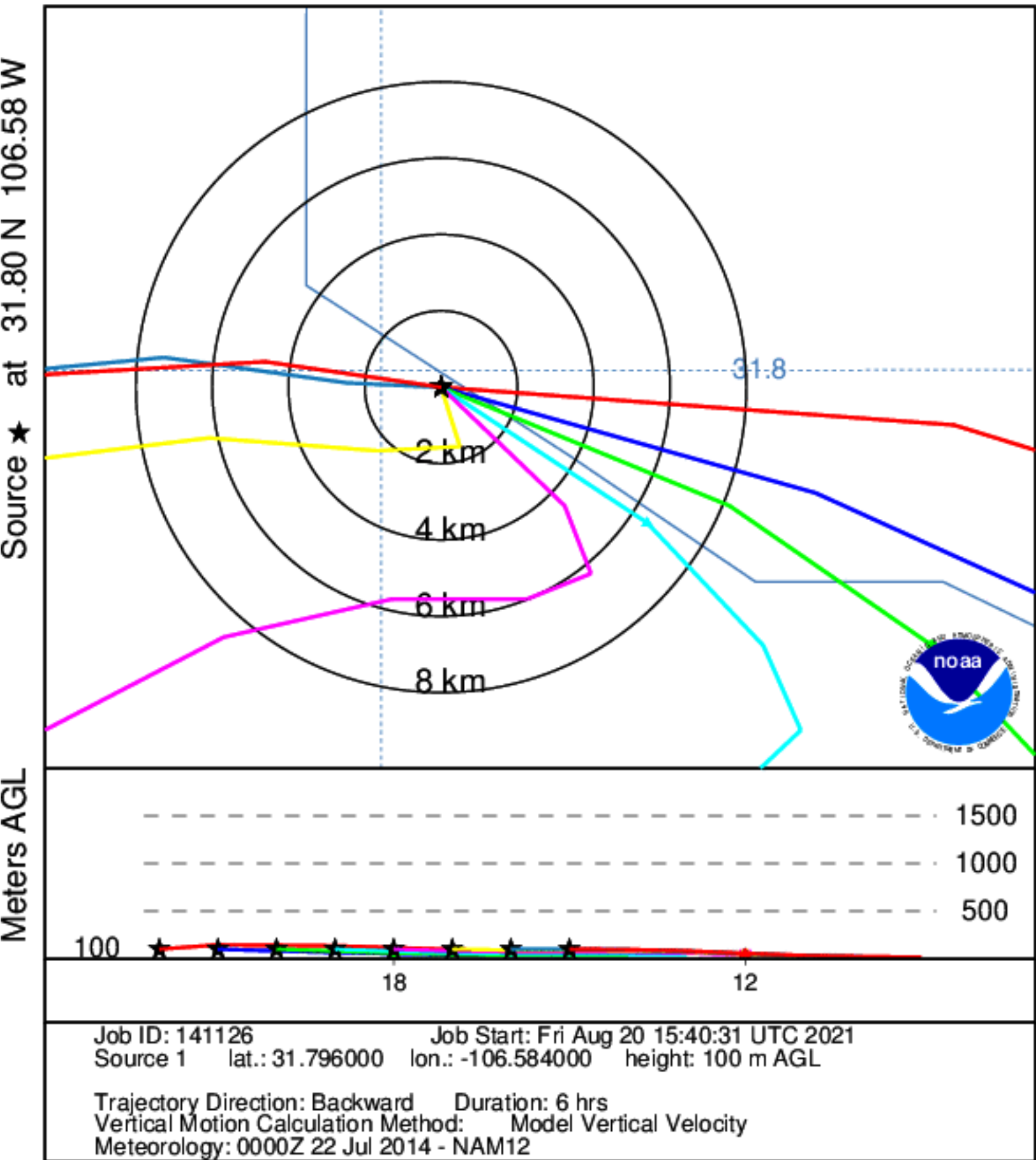




Job ID: 1997 Job Start: Thu Aug 19 17:38:09 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 22 Jul 2014 - NAM12

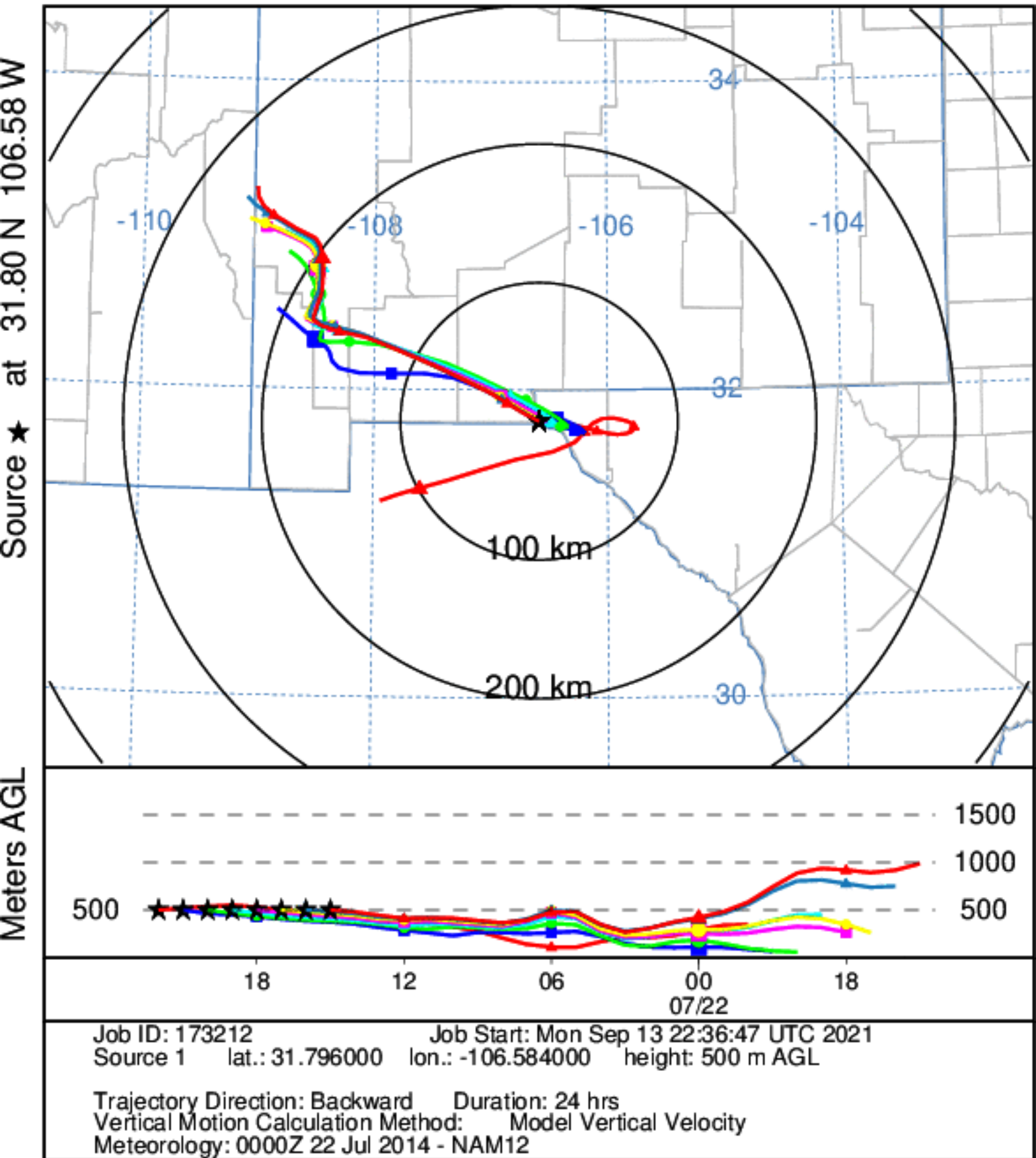
NOAA HYSPLIT MODEL
Backward trajectories ending at 2200 UTC 22 Jul 14
NAM Meteorological Data



Job ID: 141126 Job Start: Fri Aug 20 15:40:31 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 6 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 22 Jul 2014 - NAM12

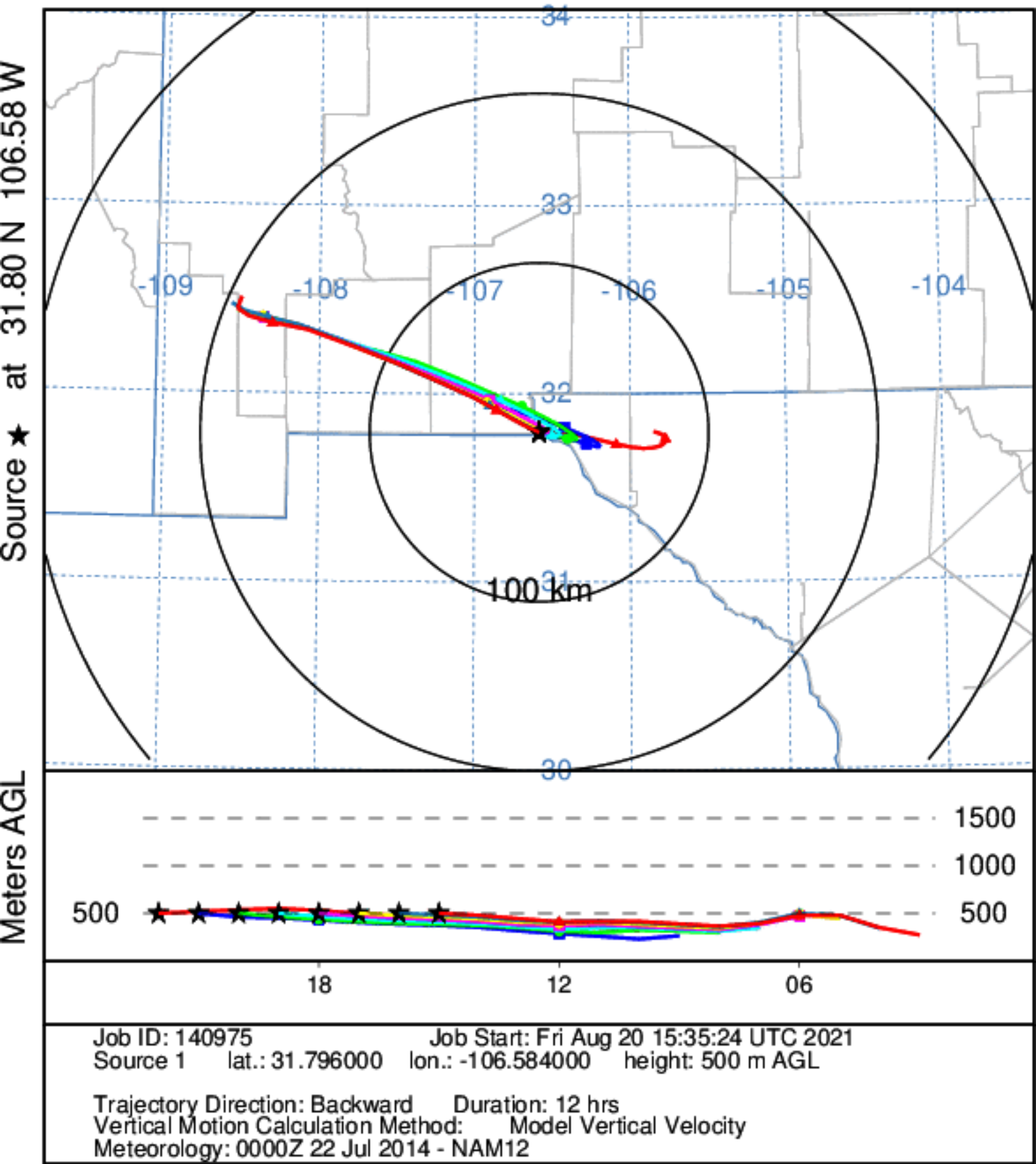
NOAA HYSPLIT MODEL
Backward trajectories ending at 2200 UTC 22 Jul 14
NAM Meteorological Data



Job ID: 173212 Job Start: Mon Sep 13 22:36:47 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 22 Jul 2014 - NAM12

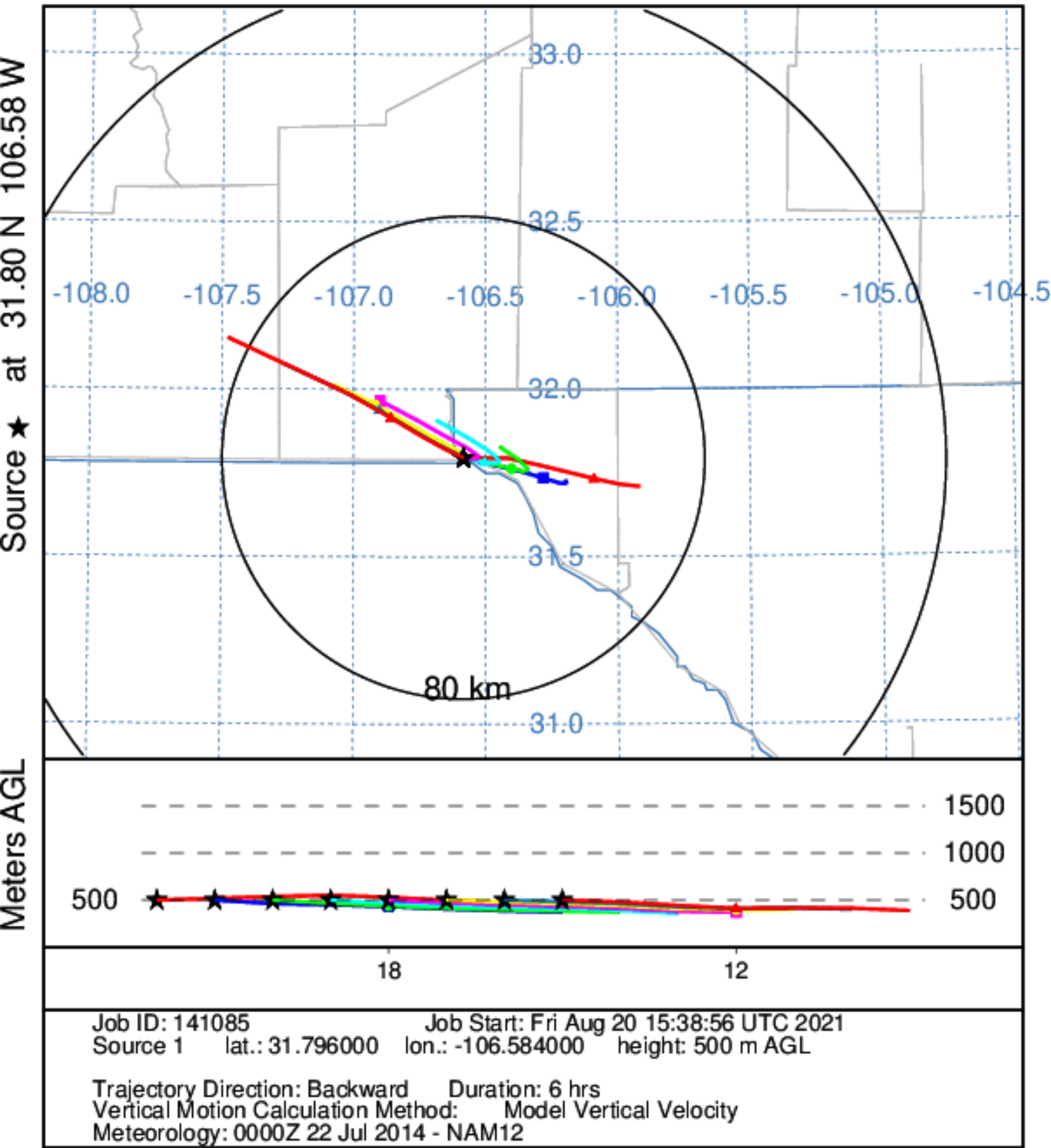
NOAA HYSPLIT MODEL
Backward trajectories ending at 2200 UTC 22 Jul 14
NAM Meteorological Data



Job ID: 140975 Job Start: Fri Aug 20 15:35:24 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 22 Jul 2014 - NAM12

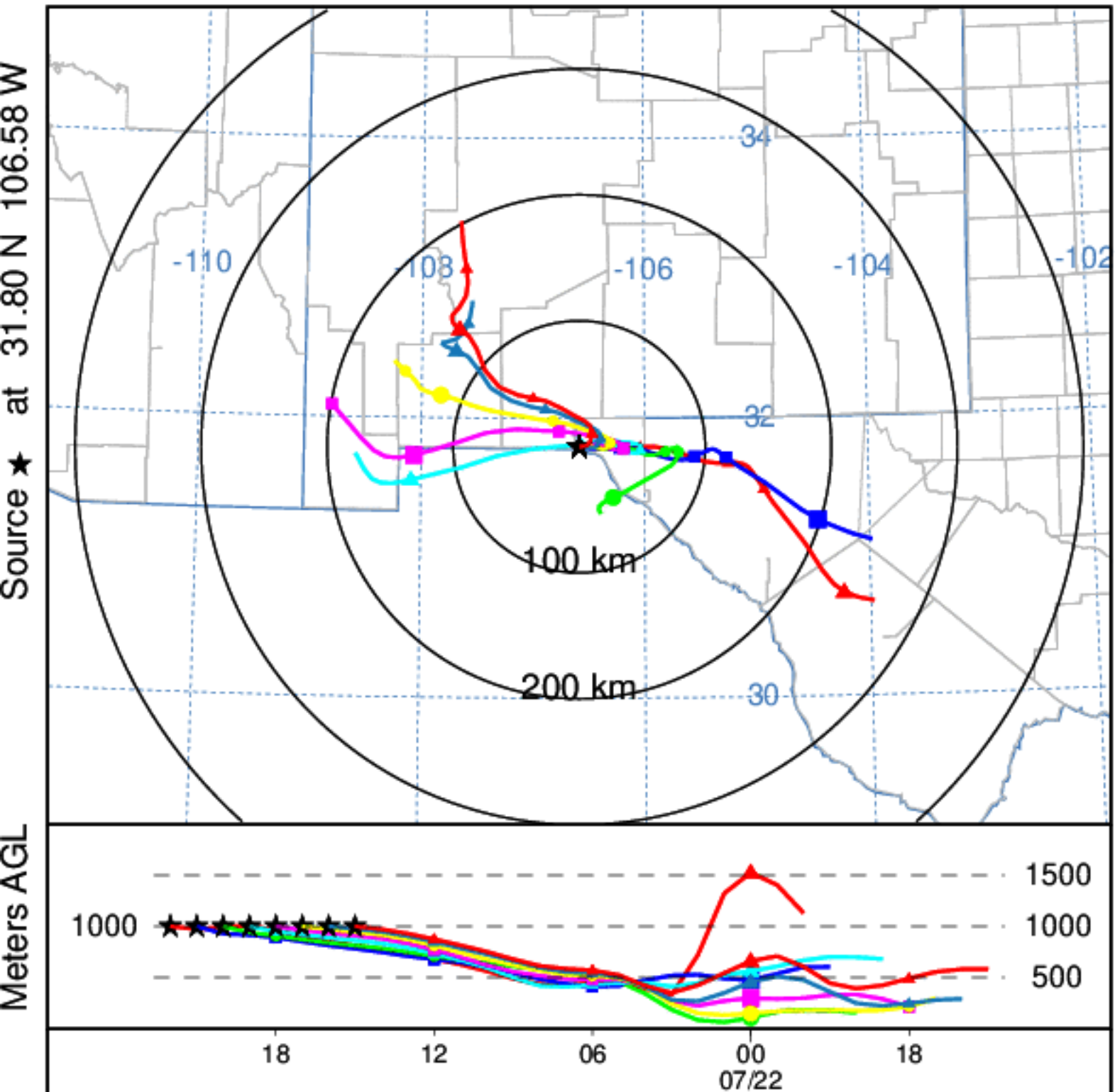
NOAA HYSPLIT MODEL
Backward trajectories ending at 2200 UTC 22 Jul 14
NAM Meteorological Data



Job ID: 141085 Job Start: Fri Aug 20 15:38:56 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 6 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 22 Jul 2014 - NAM12

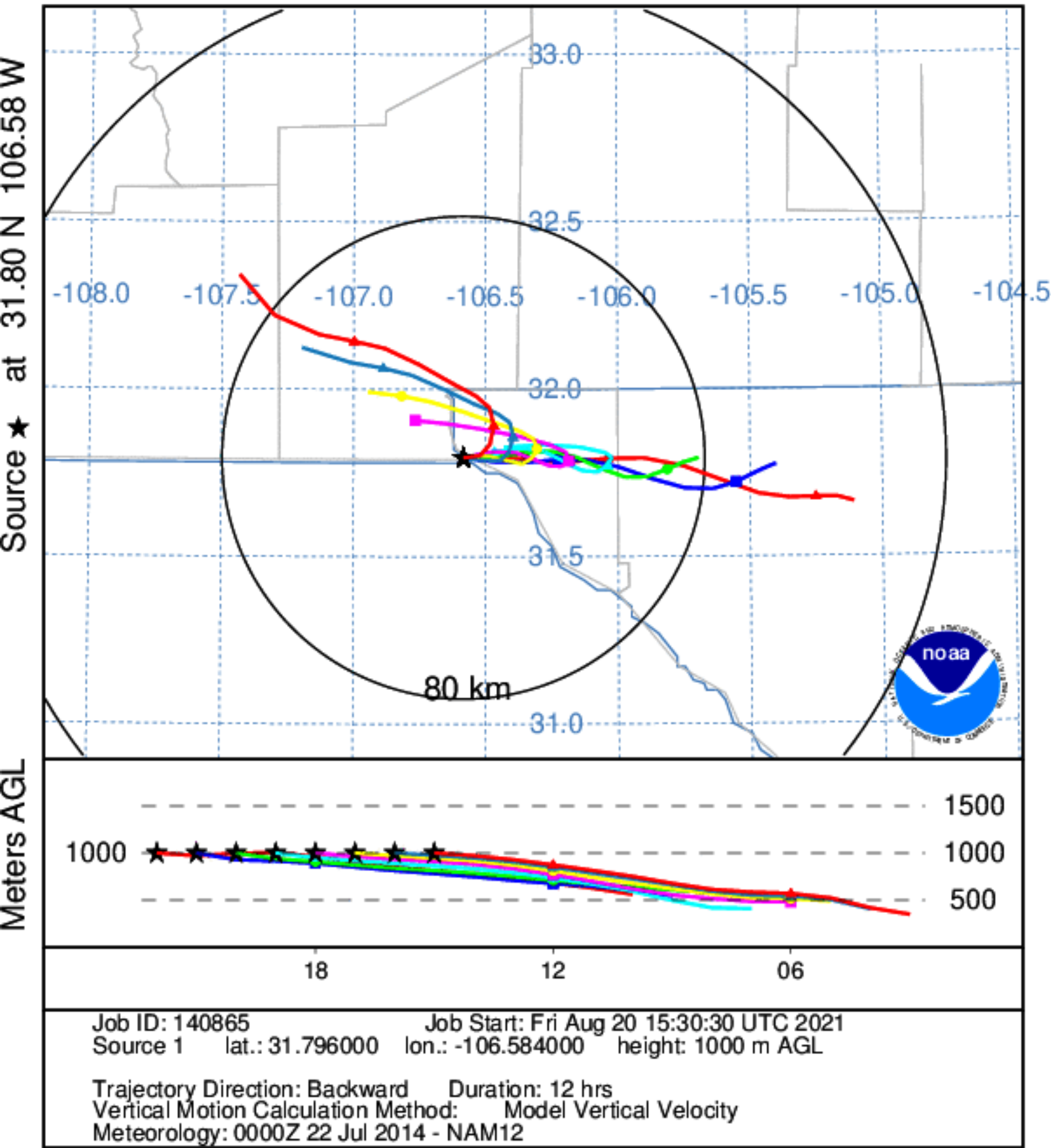
NOAA HYSPLIT MODEL
Backward trajectories ending at 2200 UTC 22 Jul 14
NAM Meteorological Data



Job ID: 140779 Job Start: Fri Aug 20 15:27:10 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 22 Jul 2014 - NAM12

NOAA HYSPLIT MODEL
Backward trajectories ending at 2200 UTC 22 Jul 14
NAM Meteorological Data



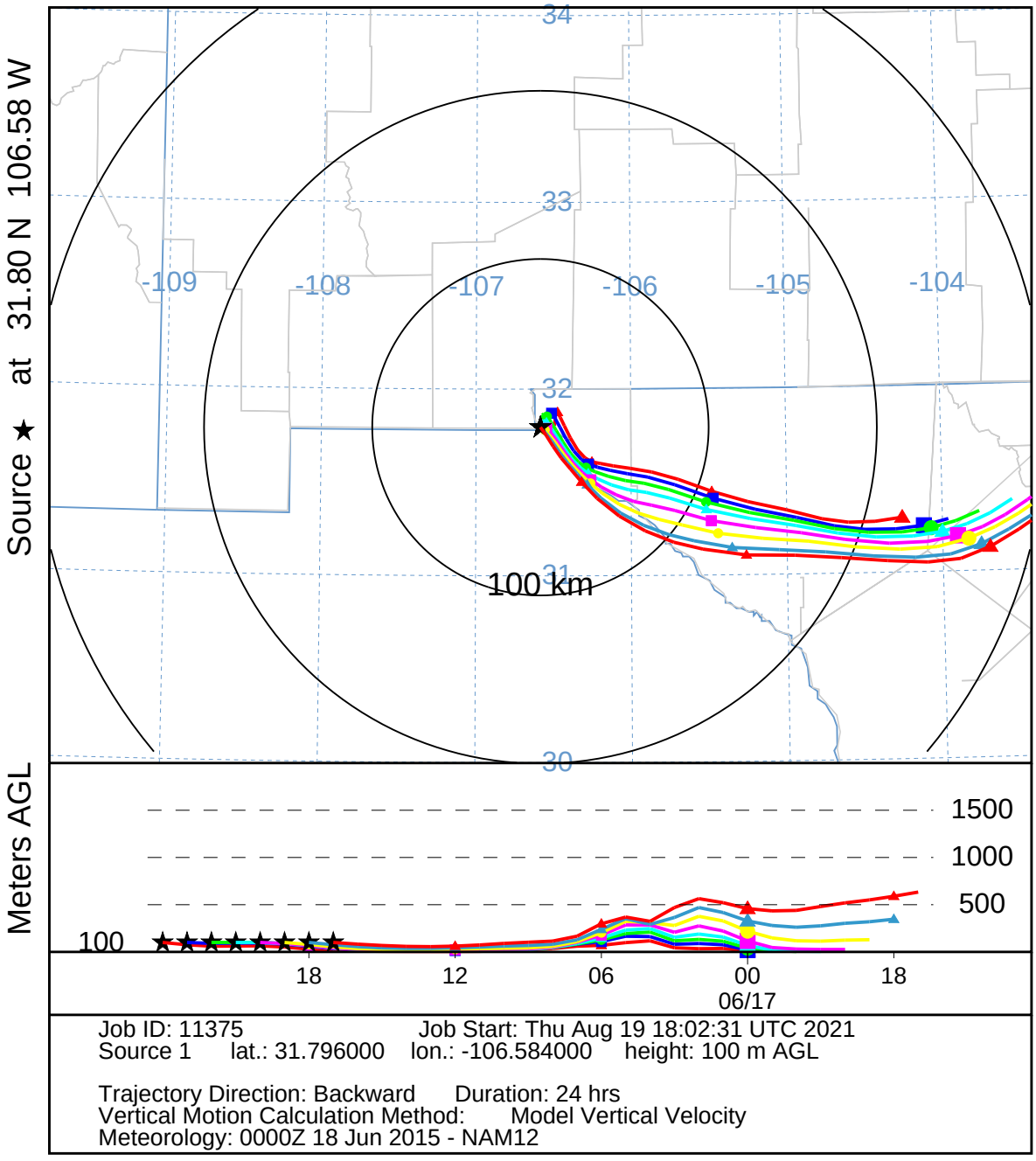
Job ID: 140865 Job Start: Fri Aug 20 15:30:30 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 22 Jul 2014 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0000 UTC 18 Jun 15

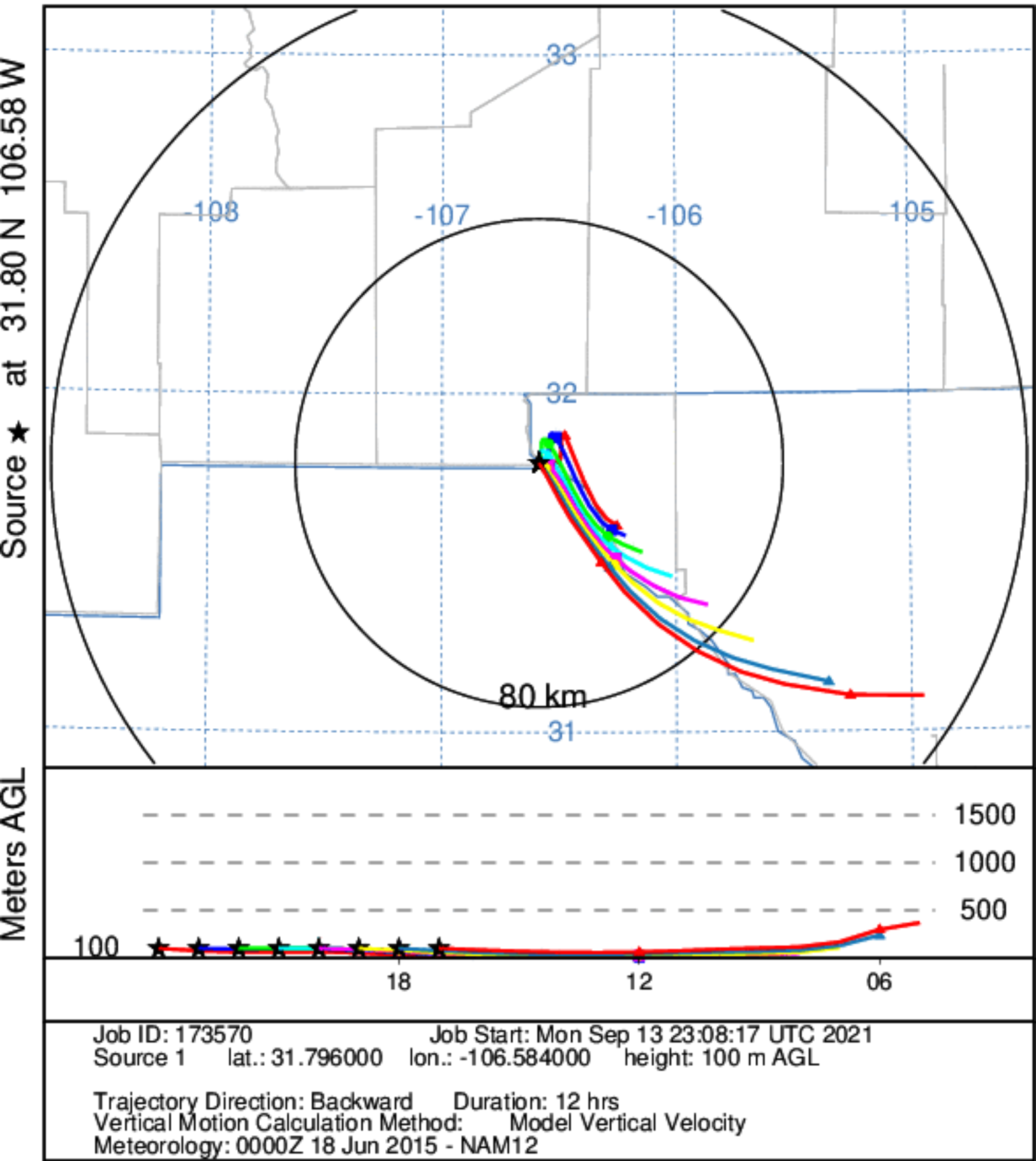
NAM Meteorological Data



Job ID: 11375 Job Start: Thu Aug 19 18:02:31 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 18 Jun 2015 - NAM12

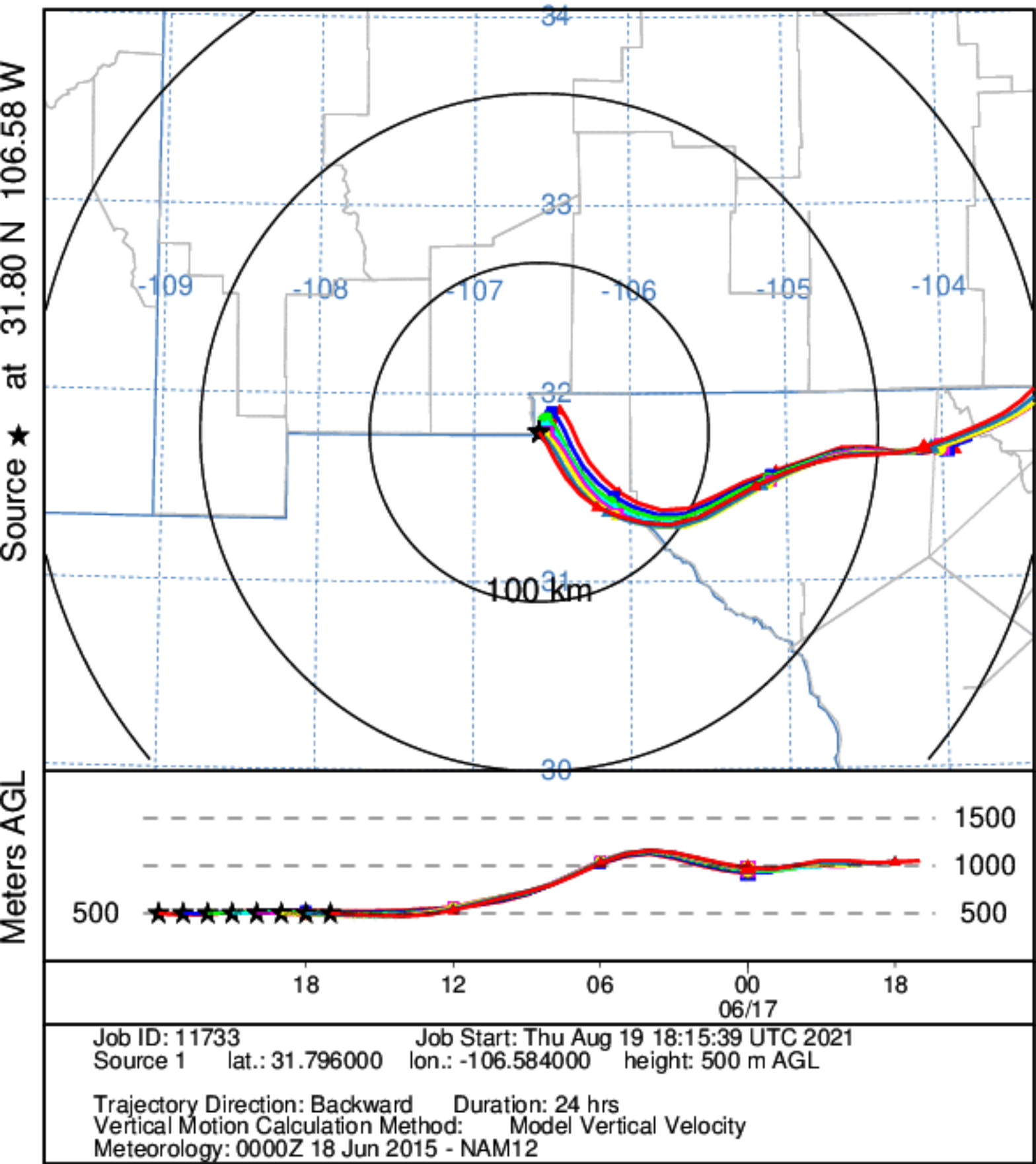
NOAA HYSPLIT MODEL
Backward trajectories ending at 0000 UTC 18 Jun 15
NAM Meteorological Data



Job ID: 173570 Job Start: Mon Sep 13 23:08:17 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 18 Jun 2015 - NAM12

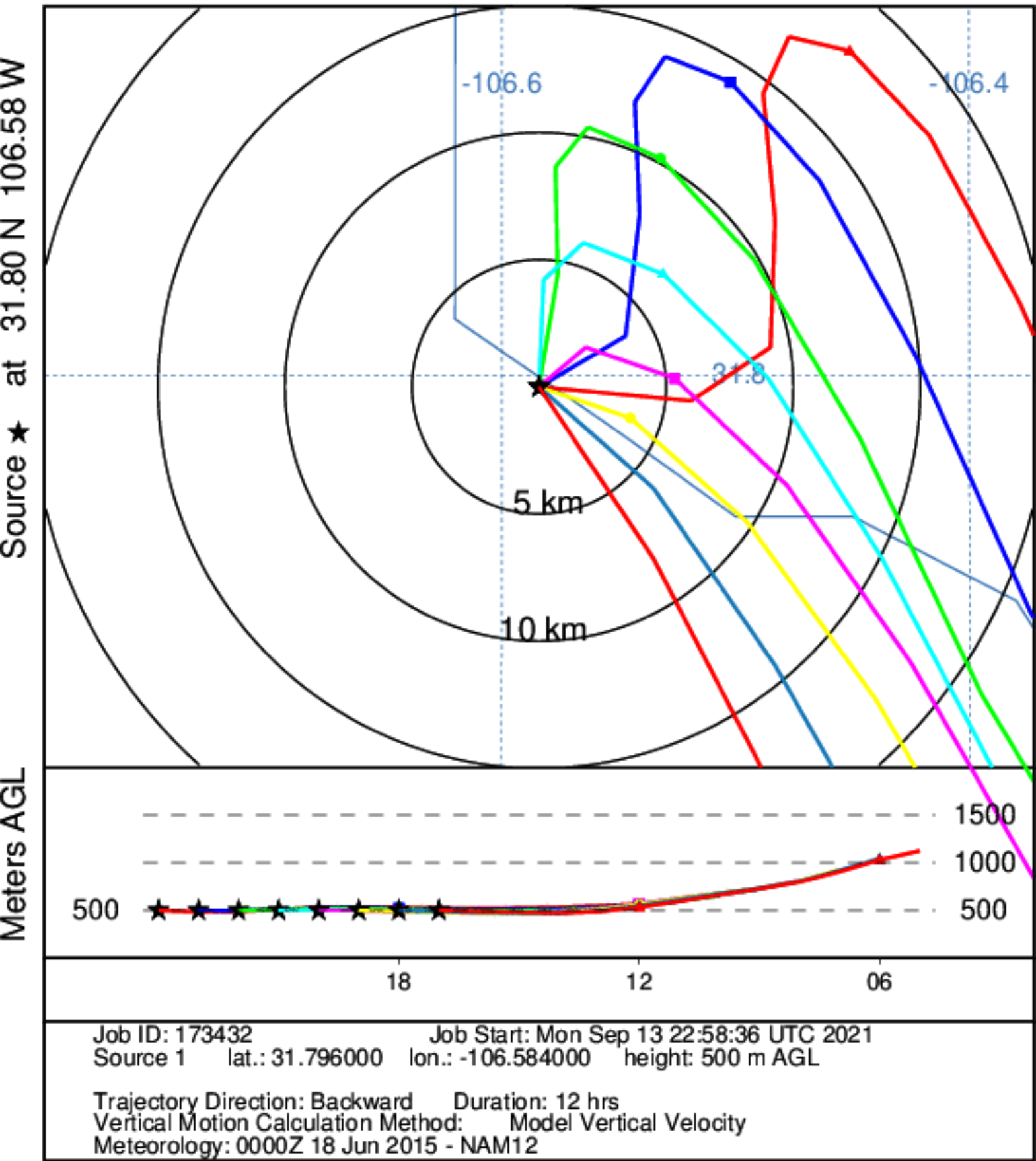
NOAA HYSPLIT MODEL
Backward trajectories ending at 0000 UTC 18 Jun 15
NAM Meteorological Data



Job ID: 11733 Job Start: Thu Aug 19 18:15:39 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 18 Jun 2015 - NAM12

NOAA HYSPLIT MODEL
Backward trajectories ending at 0000 UTC 18 Jun 15
NAM Meteorological Data



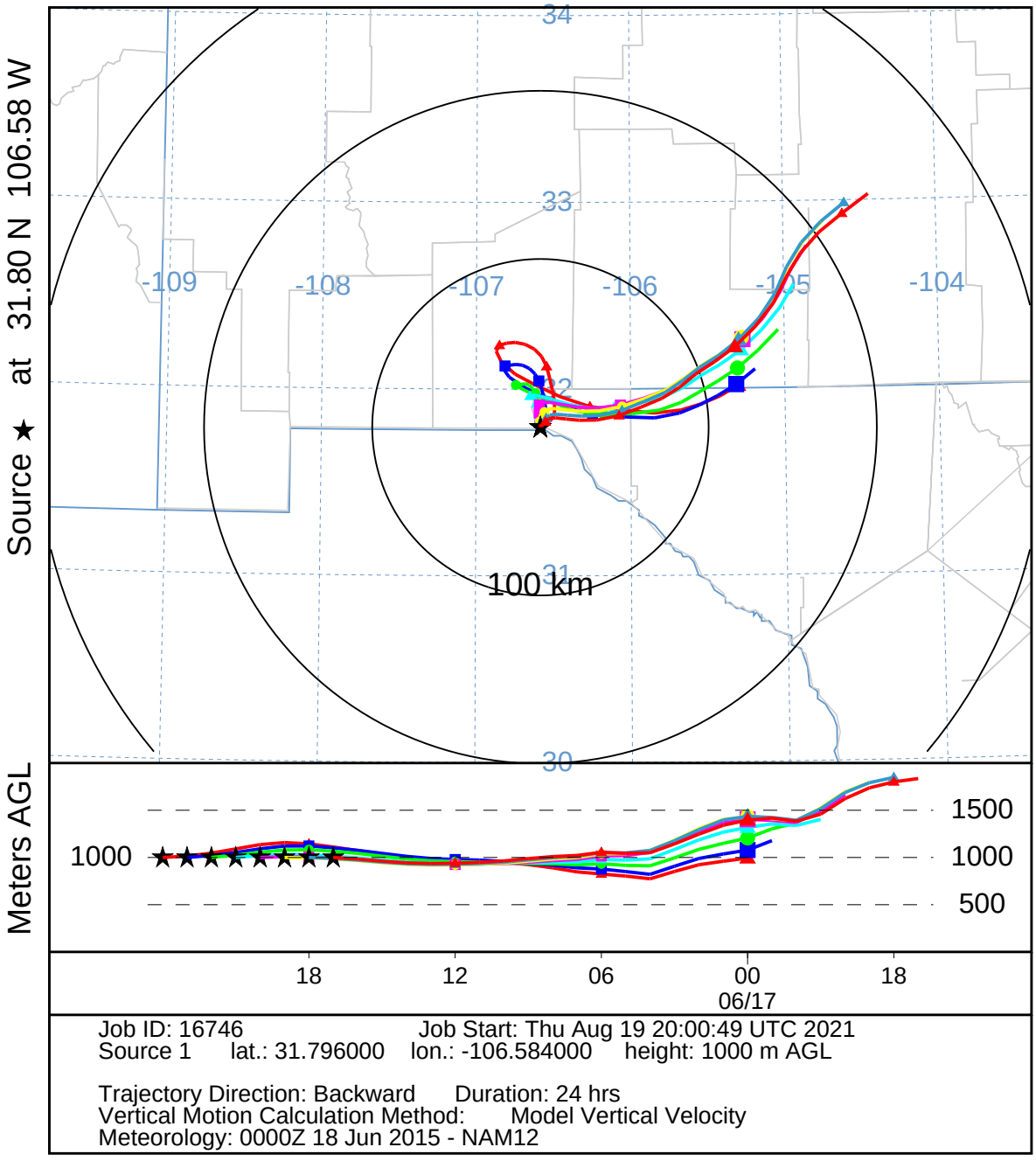
Job ID: 173432 Job Start: Mon Sep 13 22:58:36 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 18 Jun 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0000 UTC 18 Jun 15

NAM Meteorological Data



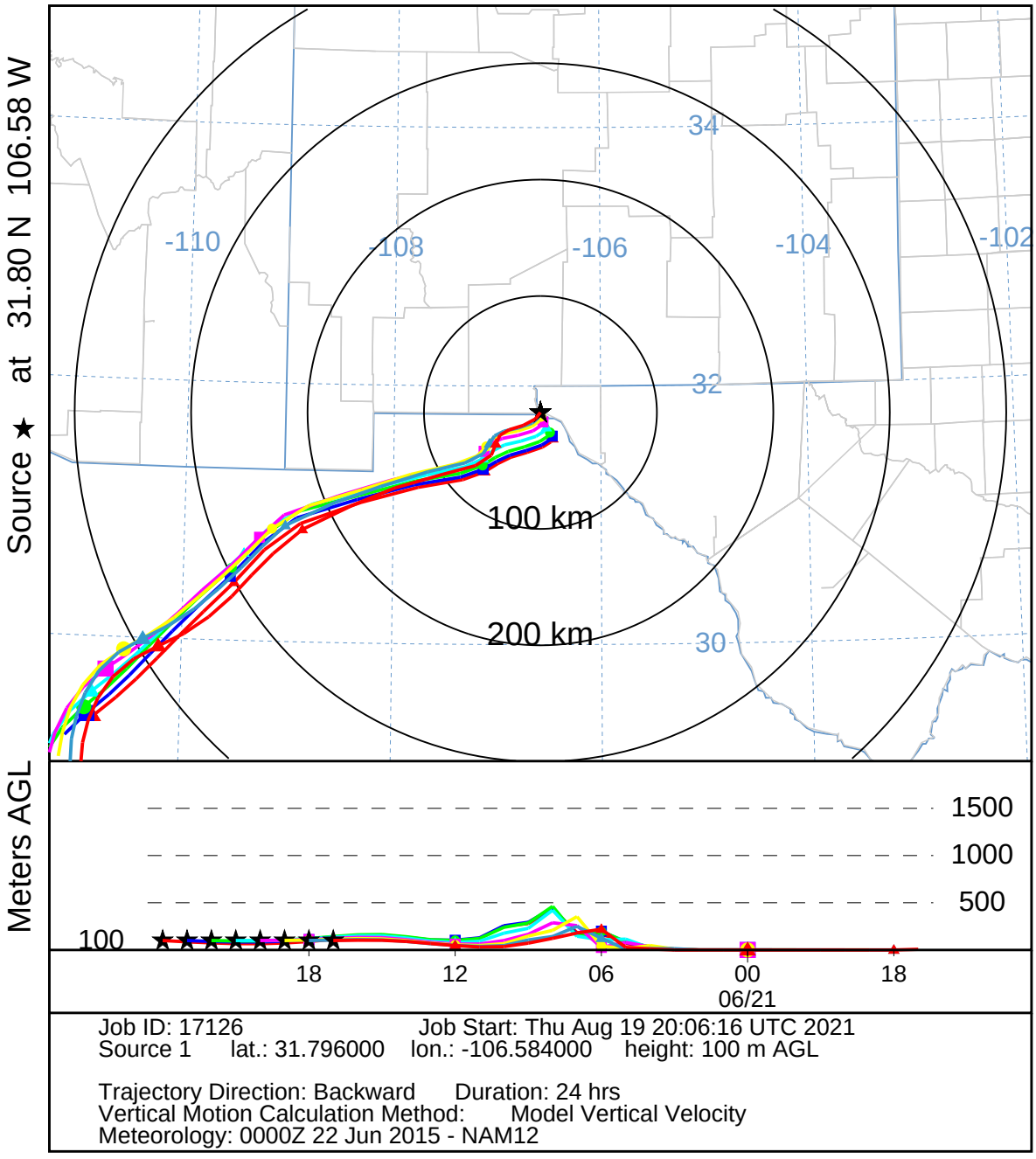
Job ID: 16746 Job Start: Thu Aug 19 20:00:49 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 18 Jun 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0000 UTC 22 Jun 15

NAM Meteorological Data



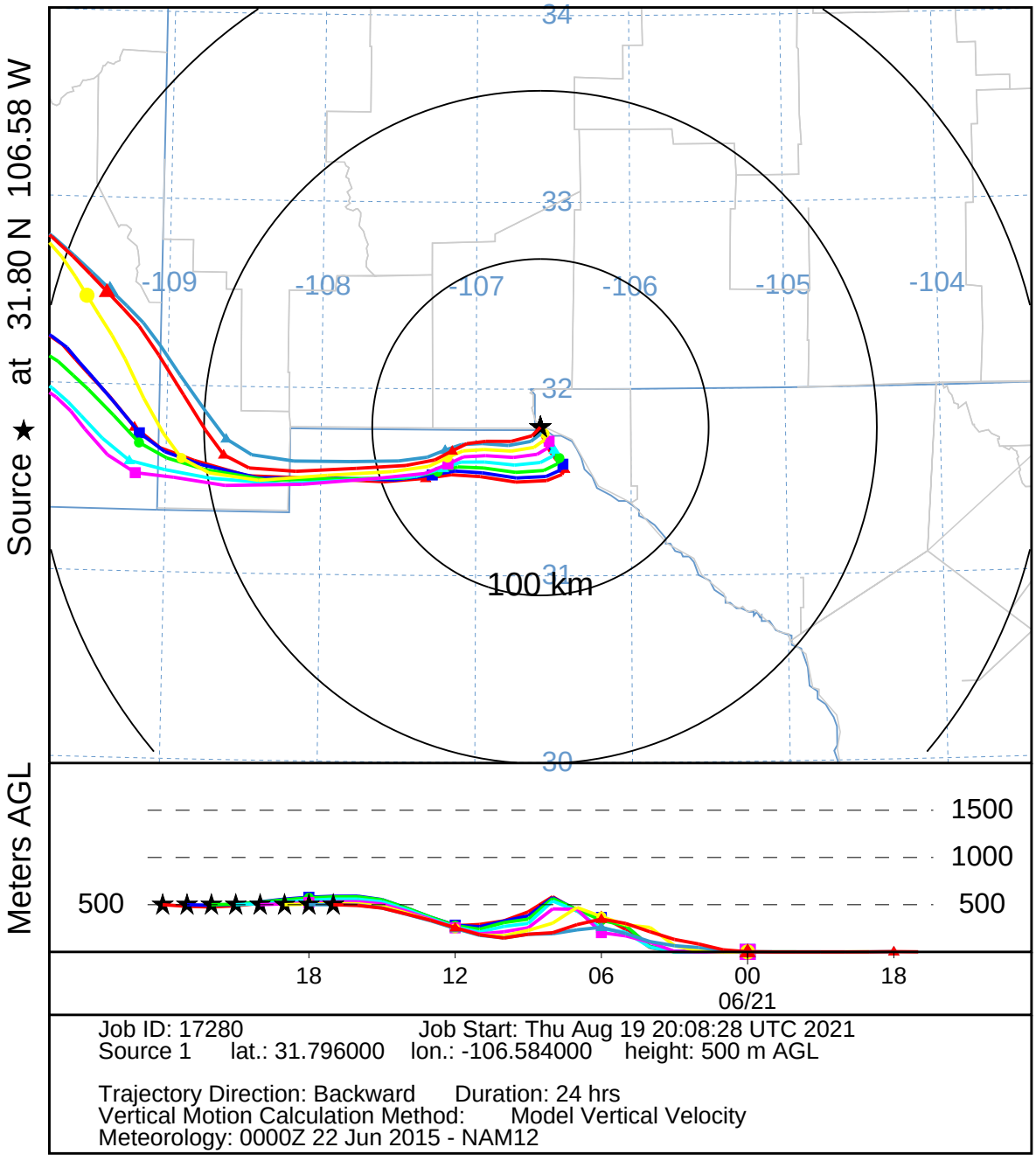
Job ID: 17126 Job Start: Thu Aug 19 20:06:16 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 22 Jun 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0000 UTC 22 Jun 15

NAM Meteorological Data



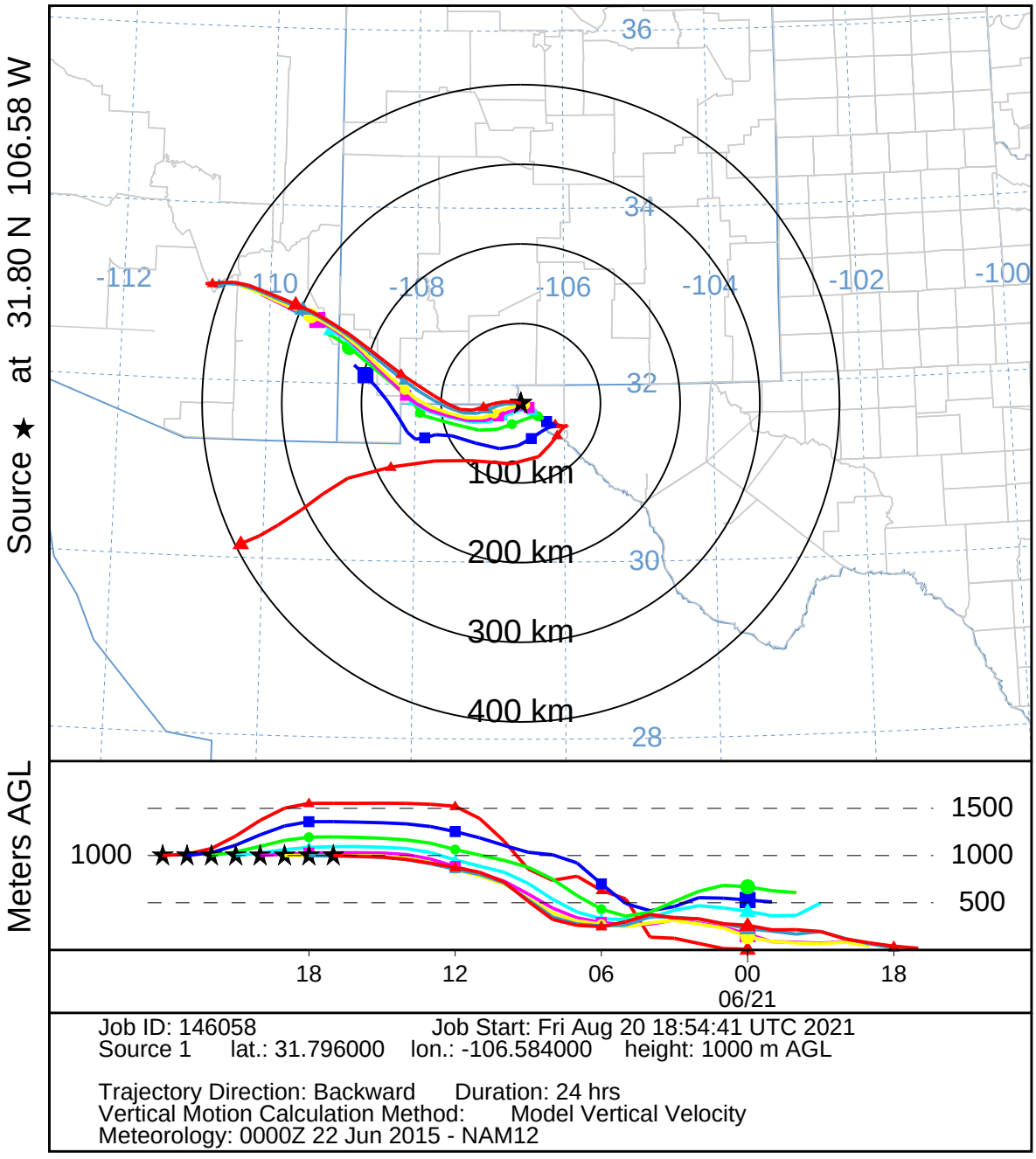
Job ID: 17280 Job Start: Thu Aug 19 20:08:28 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 22 Jun 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0000 UTC 22 Jun 15

NAM Meteorological Data



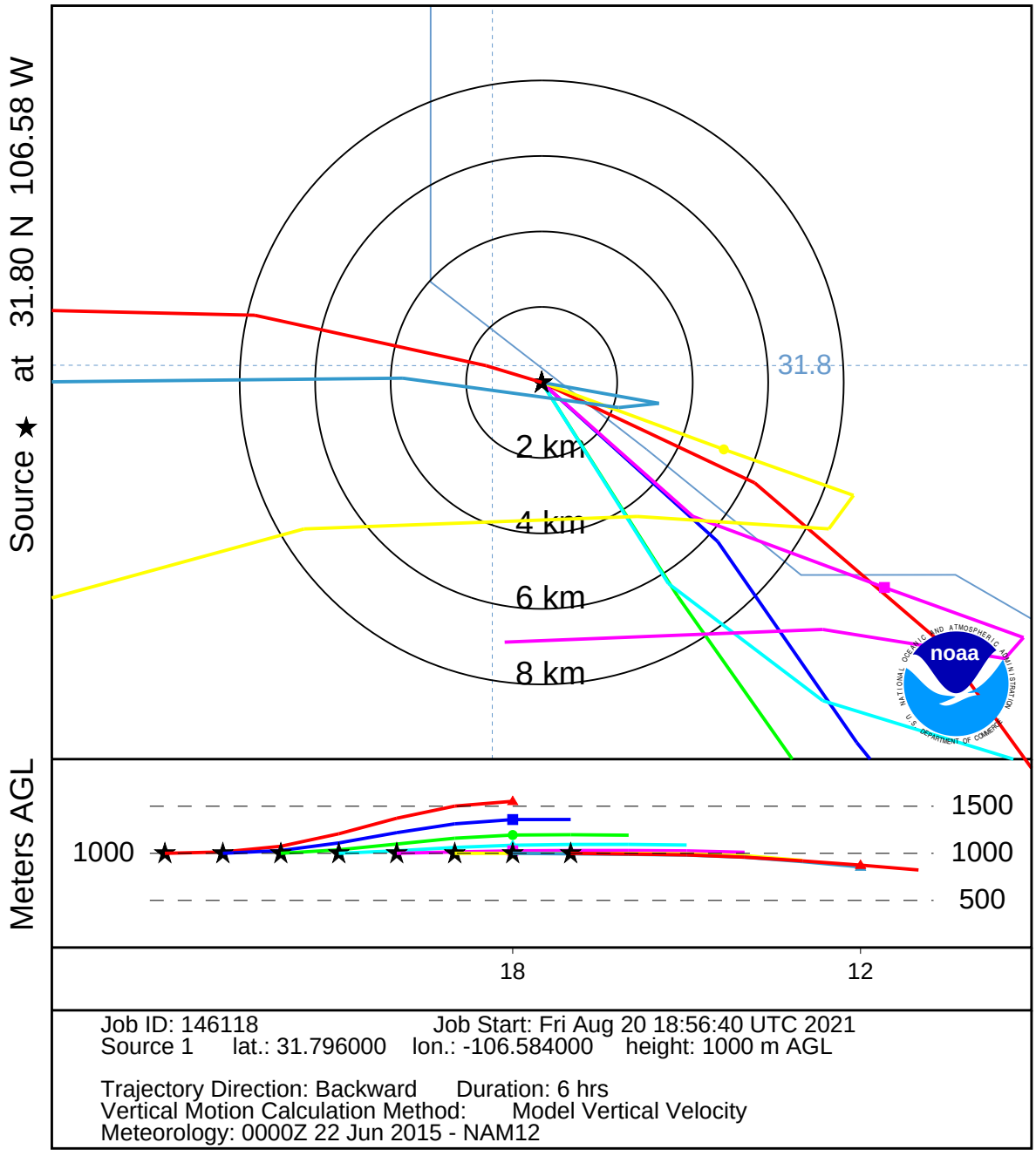
Job ID: 146058 Job Start: Fri Aug 20 18:54:41 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 22 Jun 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0000 UTC 22 Jun 15

NAM Meteorological Data



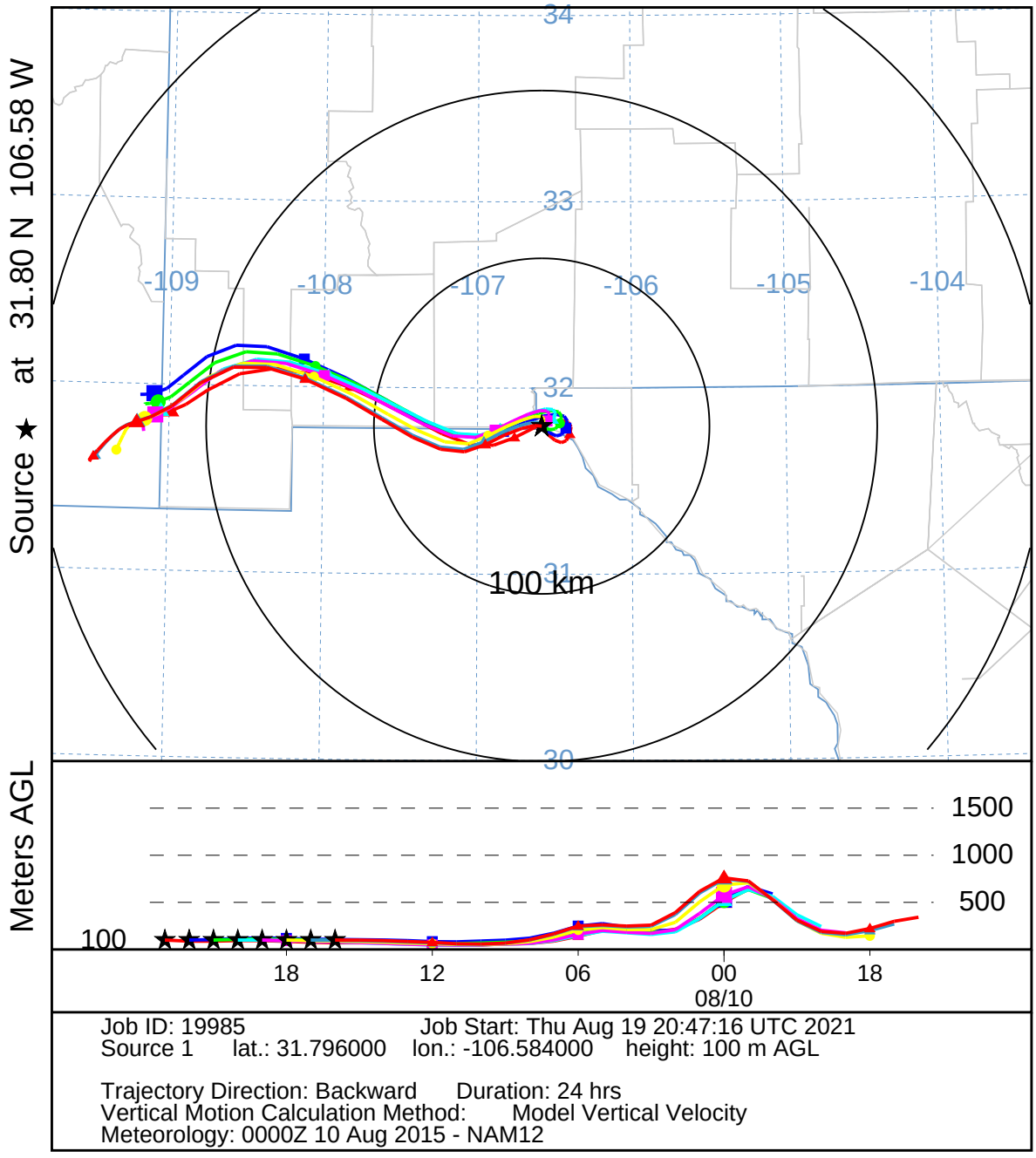
Job ID: 146118 Job Start: Fri Aug 20 18:56:40 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 6 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 22 Jun 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 2300 UTC 10 Aug 15

NAM Meteorological Data



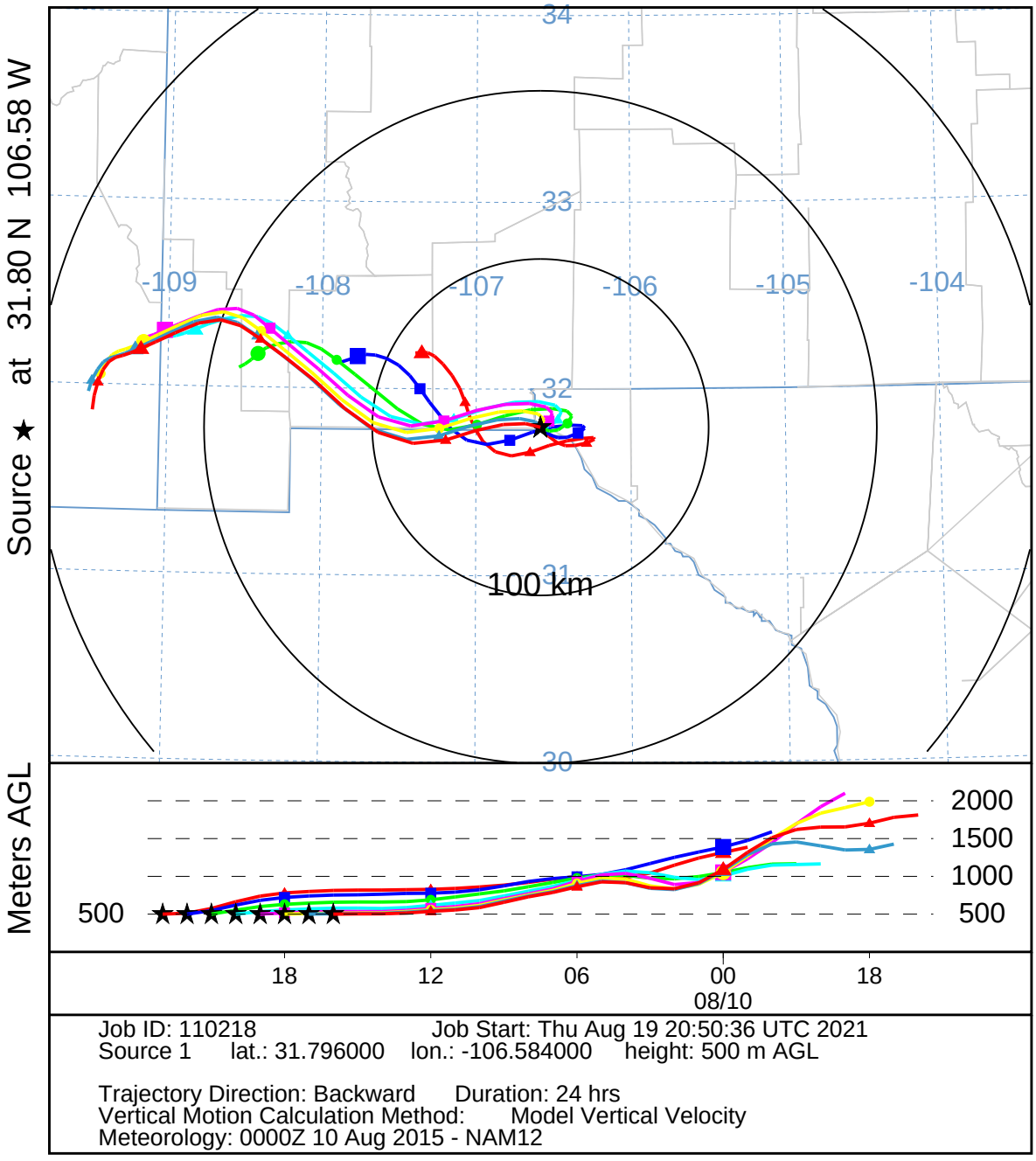
Job ID: 19985 Job Start: Thu Aug 19 20:47:16 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 10 Aug 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 2300 UTC 10 Aug 15

NAM Meteorological Data



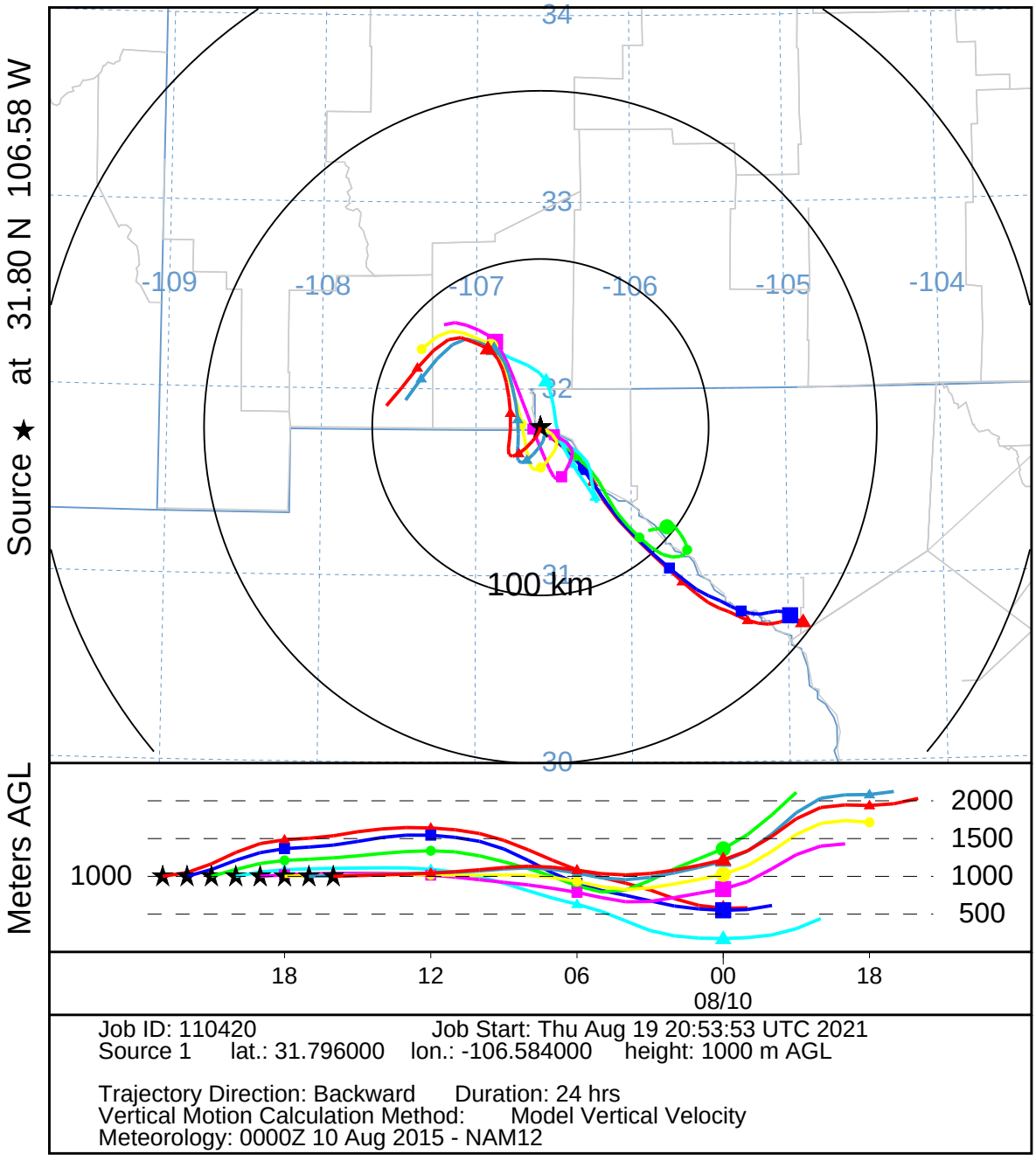
Job ID: 110218 Job Start: Thu Aug 19 20:50:36 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 10 Aug 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 2300 UTC 10 Aug 15

NAM Meteorological Data



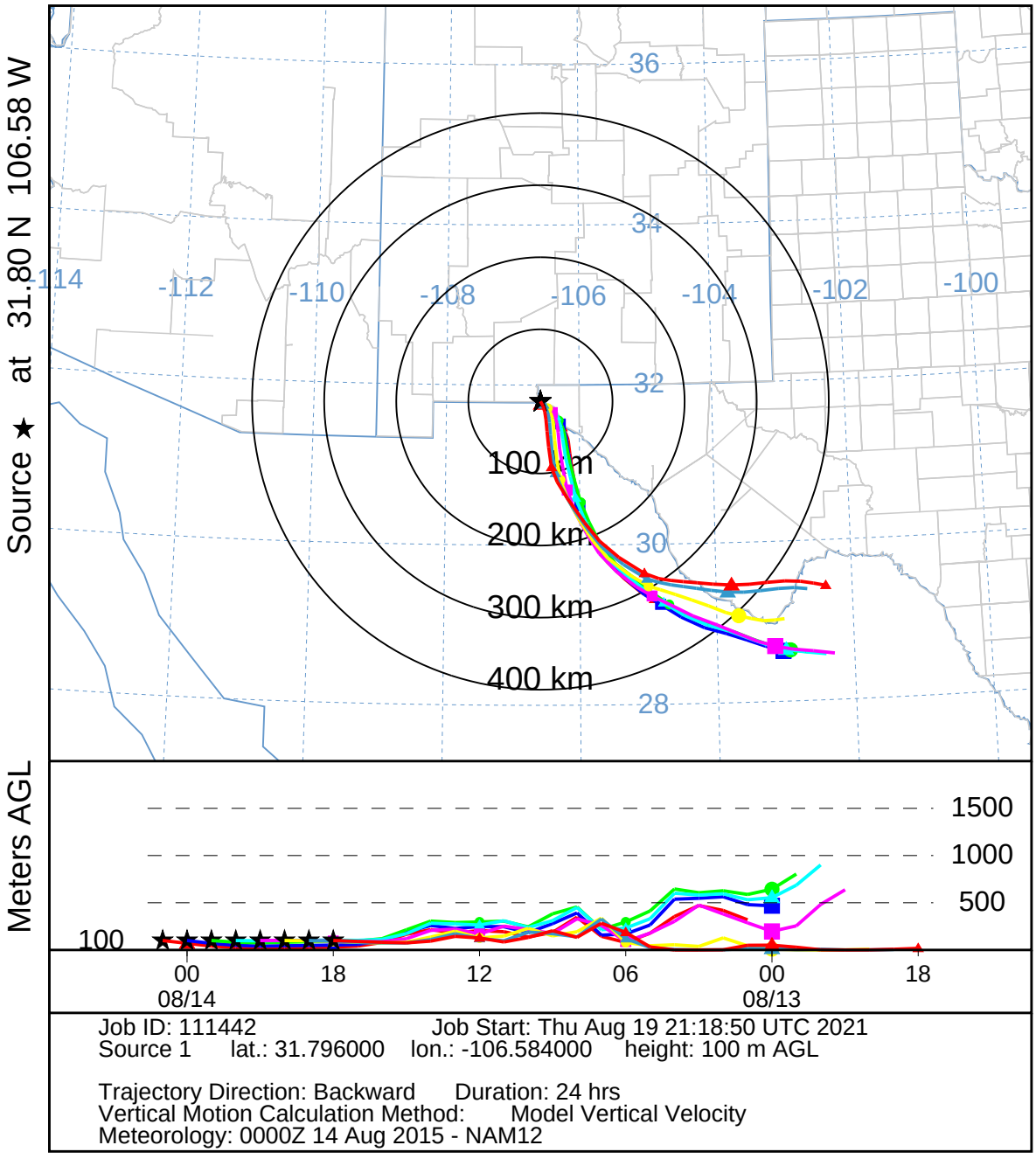
Job ID: 110420 Job Start: Thu Aug 19 20:53:53 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 10 Aug 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0100 UTC 14 Aug 15

NAM Meteorological Data



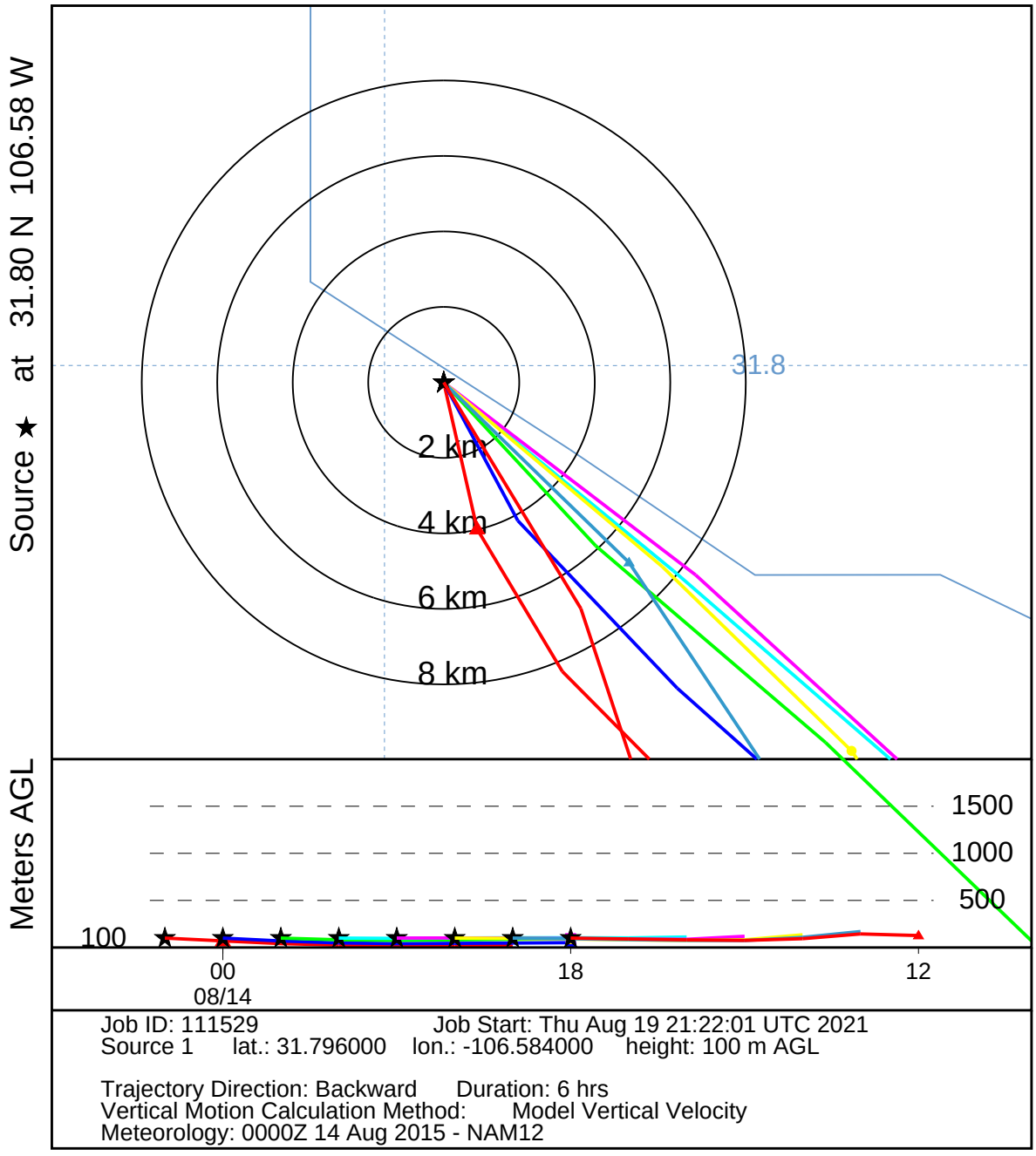
Job ID: 111442 Job Start: Thu Aug 19 21:18:50 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 14 Aug 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0100 UTC 14 Aug 15

NAM Meteorological Data



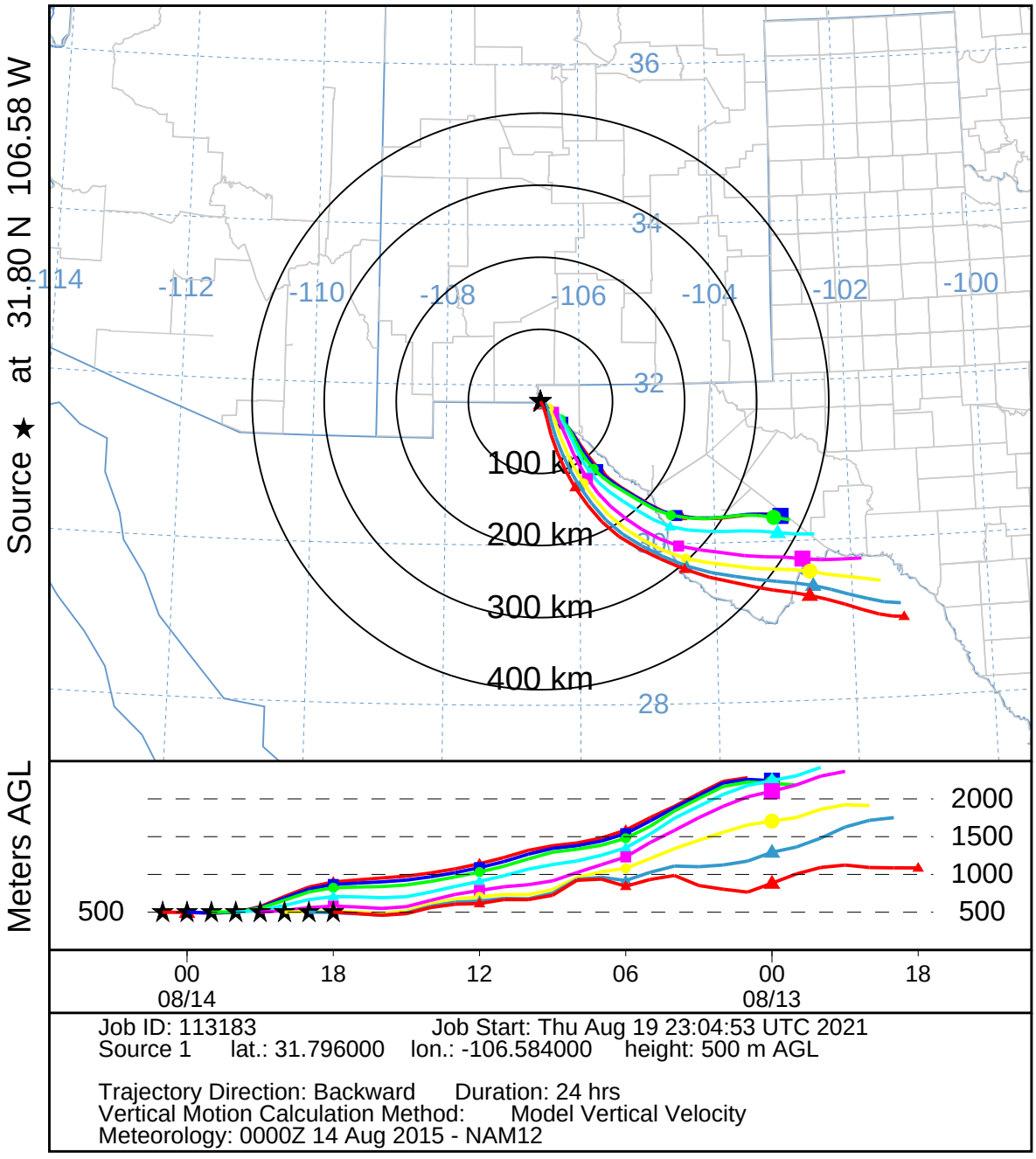
Job ID: 111529 Job Start: Thu Aug 19 21:22:01 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 6 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 14 Aug 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0100 UTC 14 Aug 15

NAM Meteorological Data



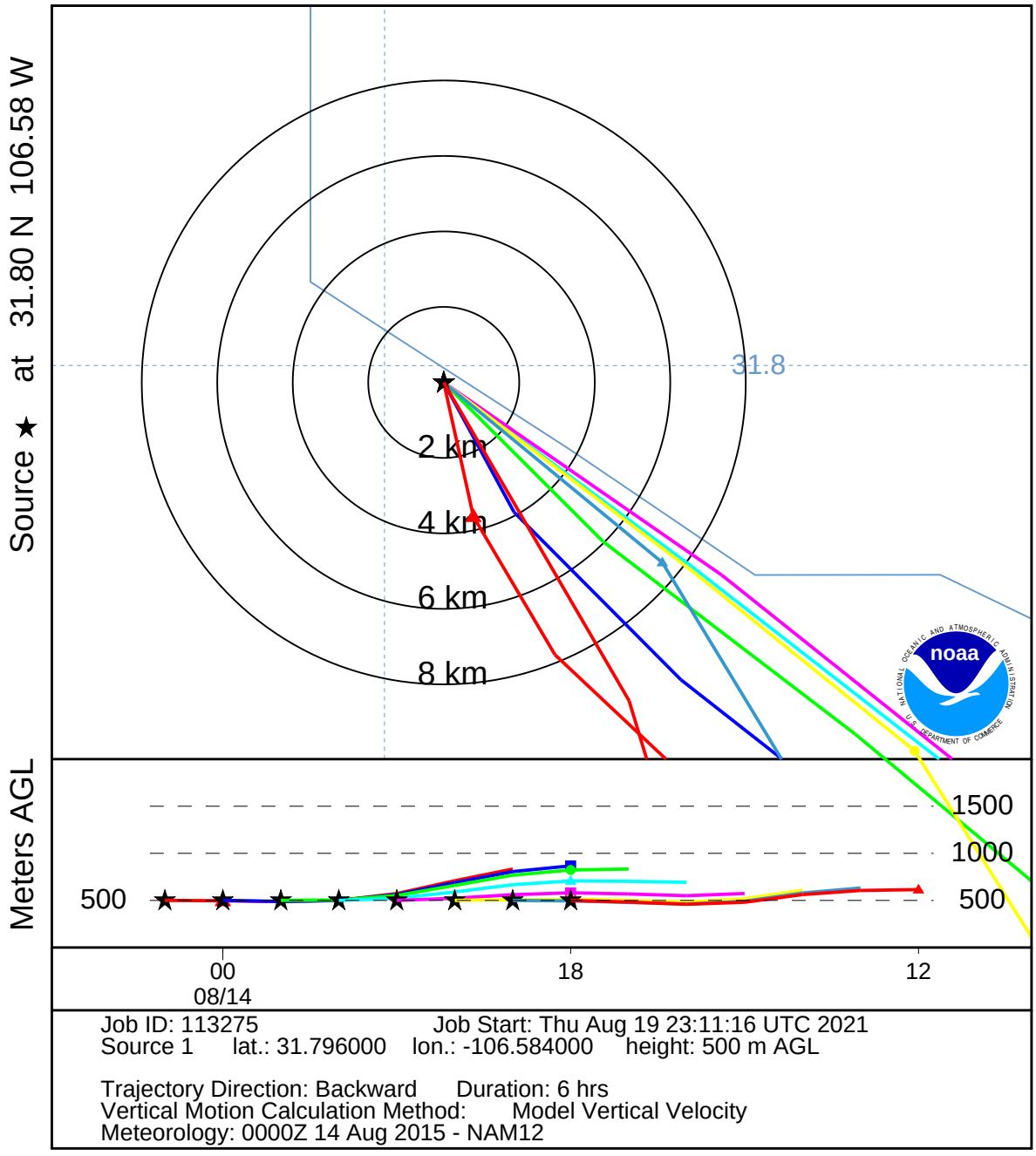
Job ID: 113183 Job Start: Thu Aug 19 23:04:53 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 14 Aug 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0100 UTC 14 Aug 15

NAM Meteorological Data



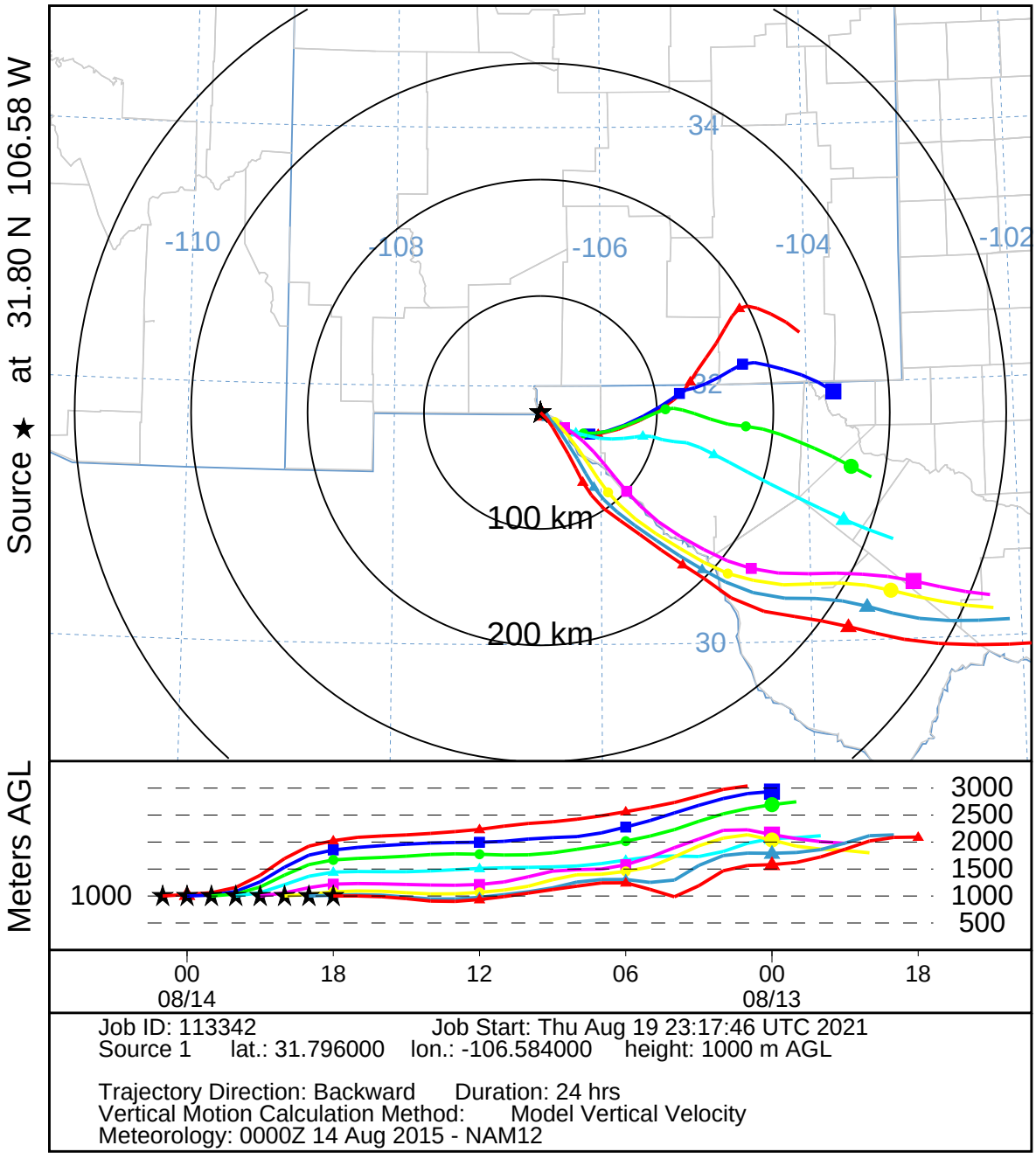
Job ID: 113275 Job Start: Thu Aug 19 23:11:16 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 6 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 14 Aug 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0100 UTC 14 Aug 15

NAM Meteorological Data



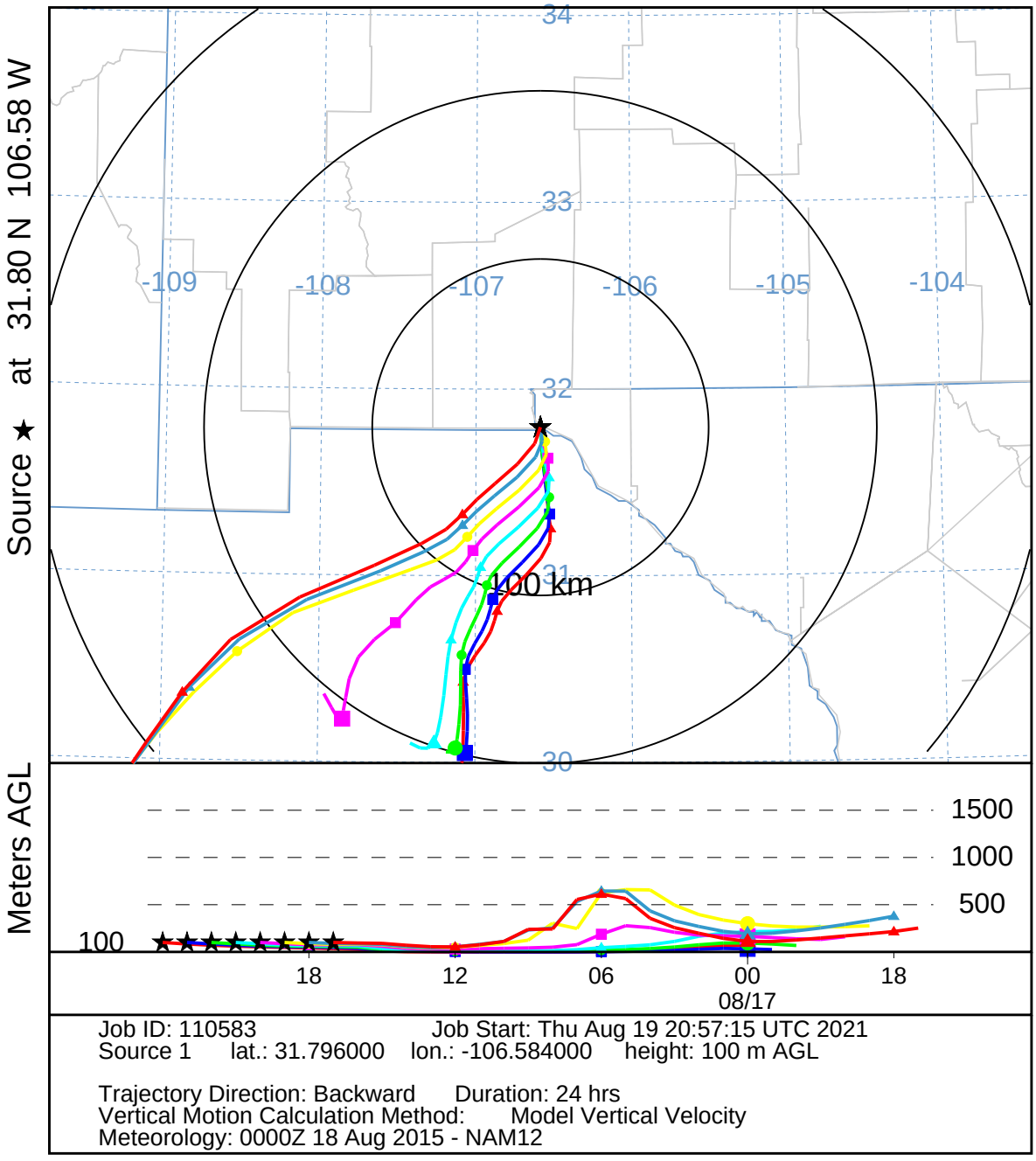
Job ID: 113342 Job Start: Thu Aug 19 23:17:46 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 14 Aug 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0000 UTC 18 Aug 15

NAM Meteorological Data



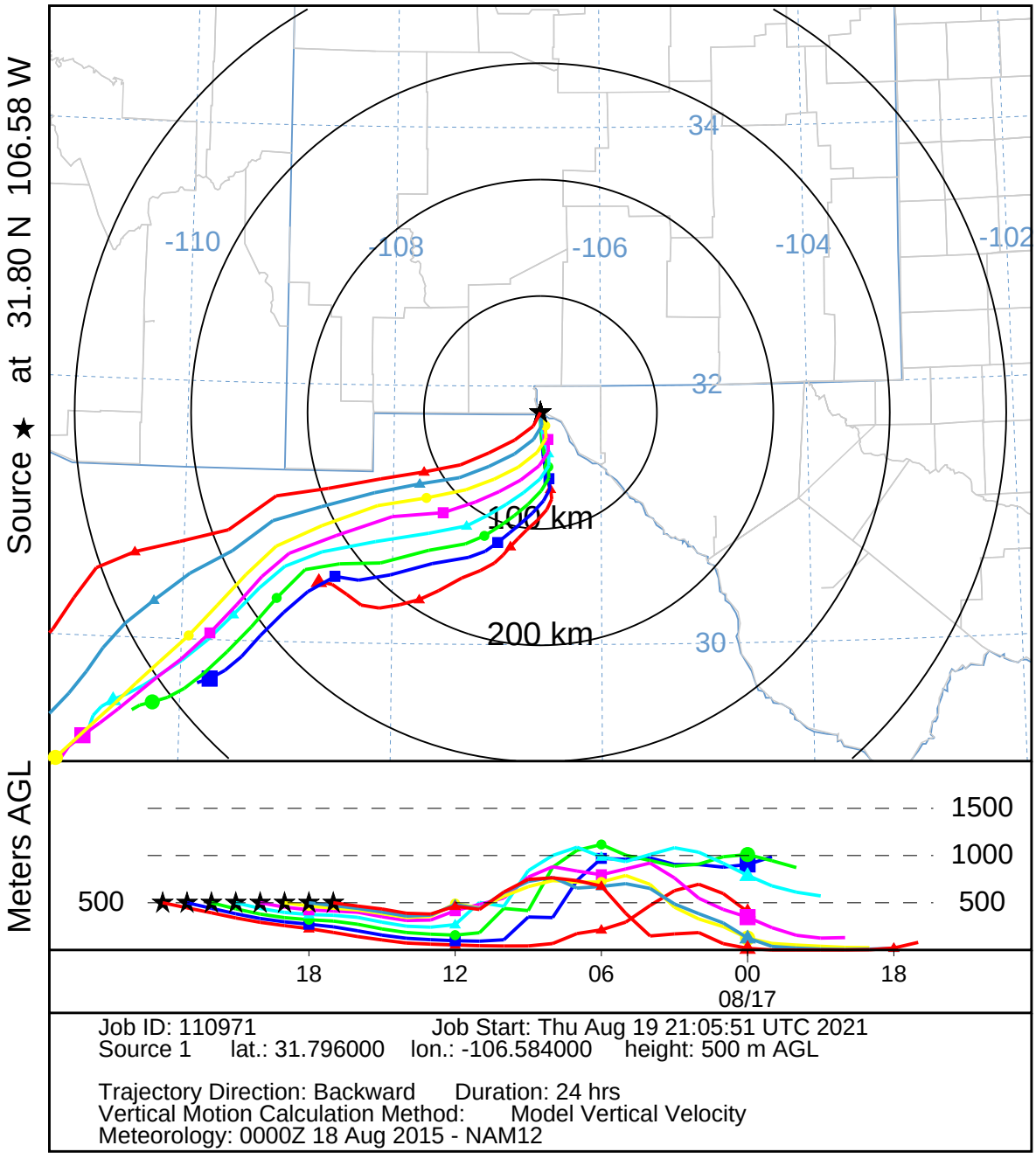
Job ID: 110583 Job Start: Thu Aug 19 20:57:15 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 18 Aug 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0000 UTC 18 Aug 15

NAM Meteorological Data



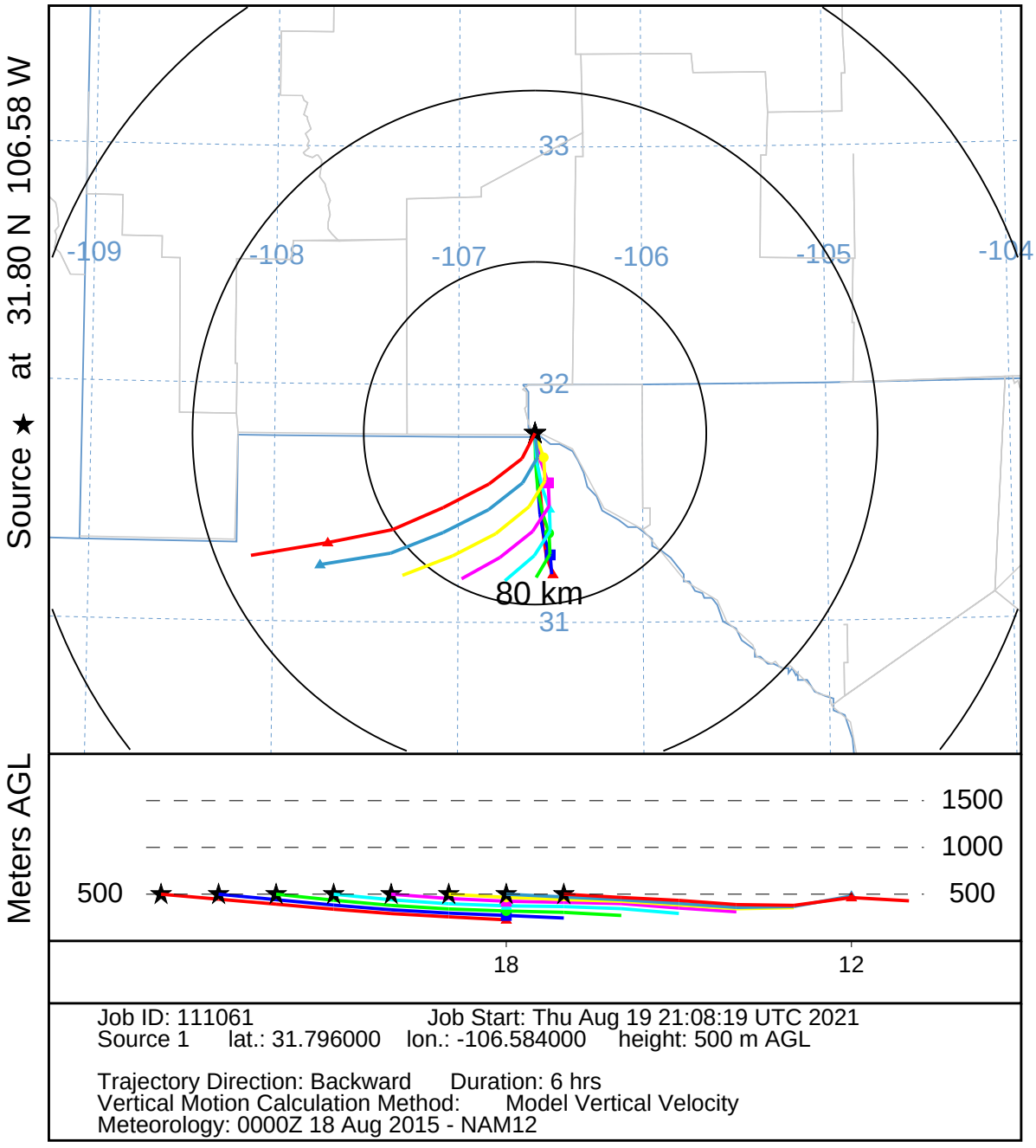
Job ID: 110971 Job Start: Thu Aug 19 21:05:51 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 18 Aug 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0000 UTC 18 Aug 15

NAM Meteorological Data



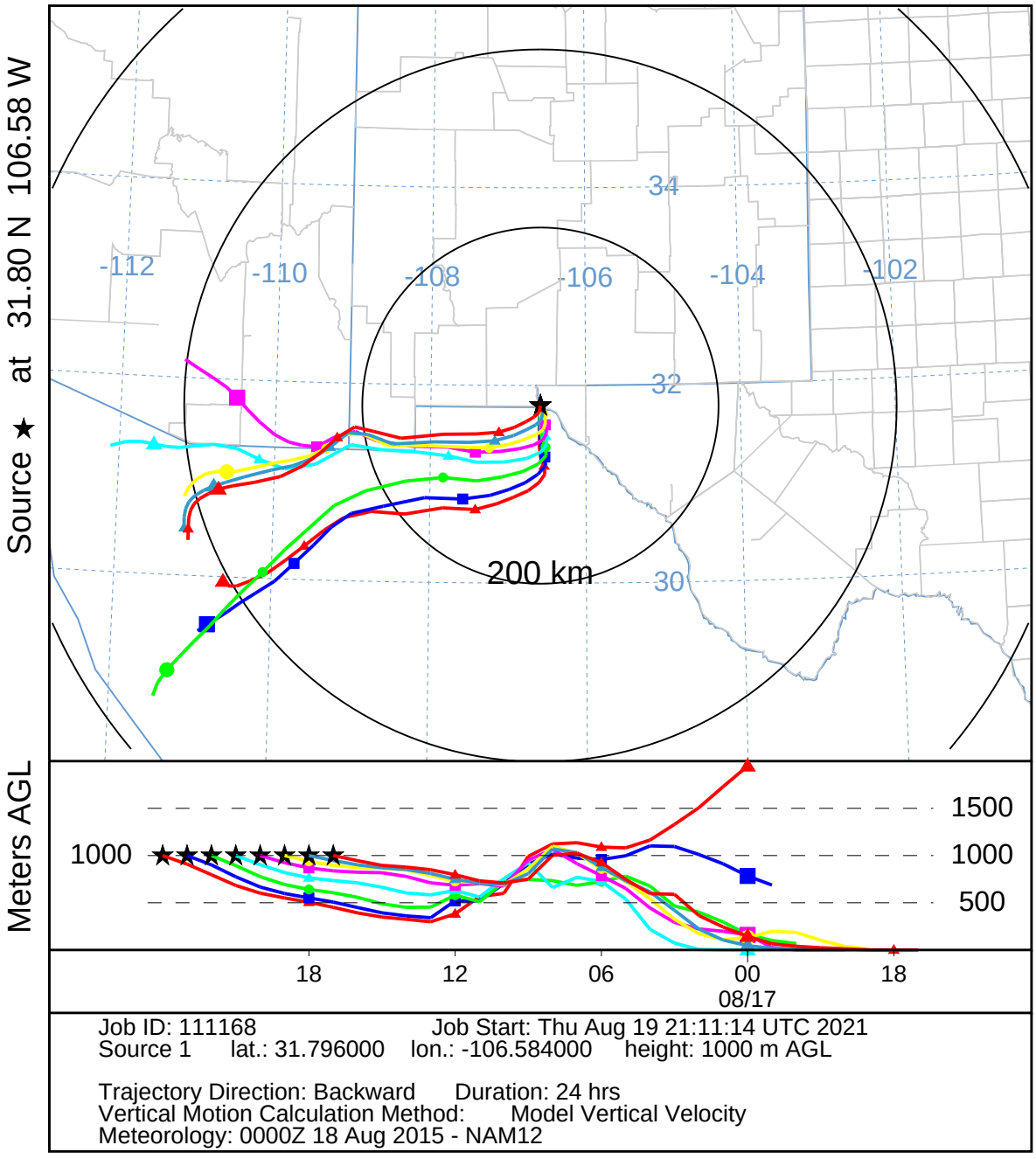
Job ID: 111061 Job Start: Thu Aug 19 21:08:19 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 6 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 18 Aug 2015 - NAM12

NOAA HYSPLIT MODEL

Backward trajectories ending at 0000 UTC 18 Aug 15

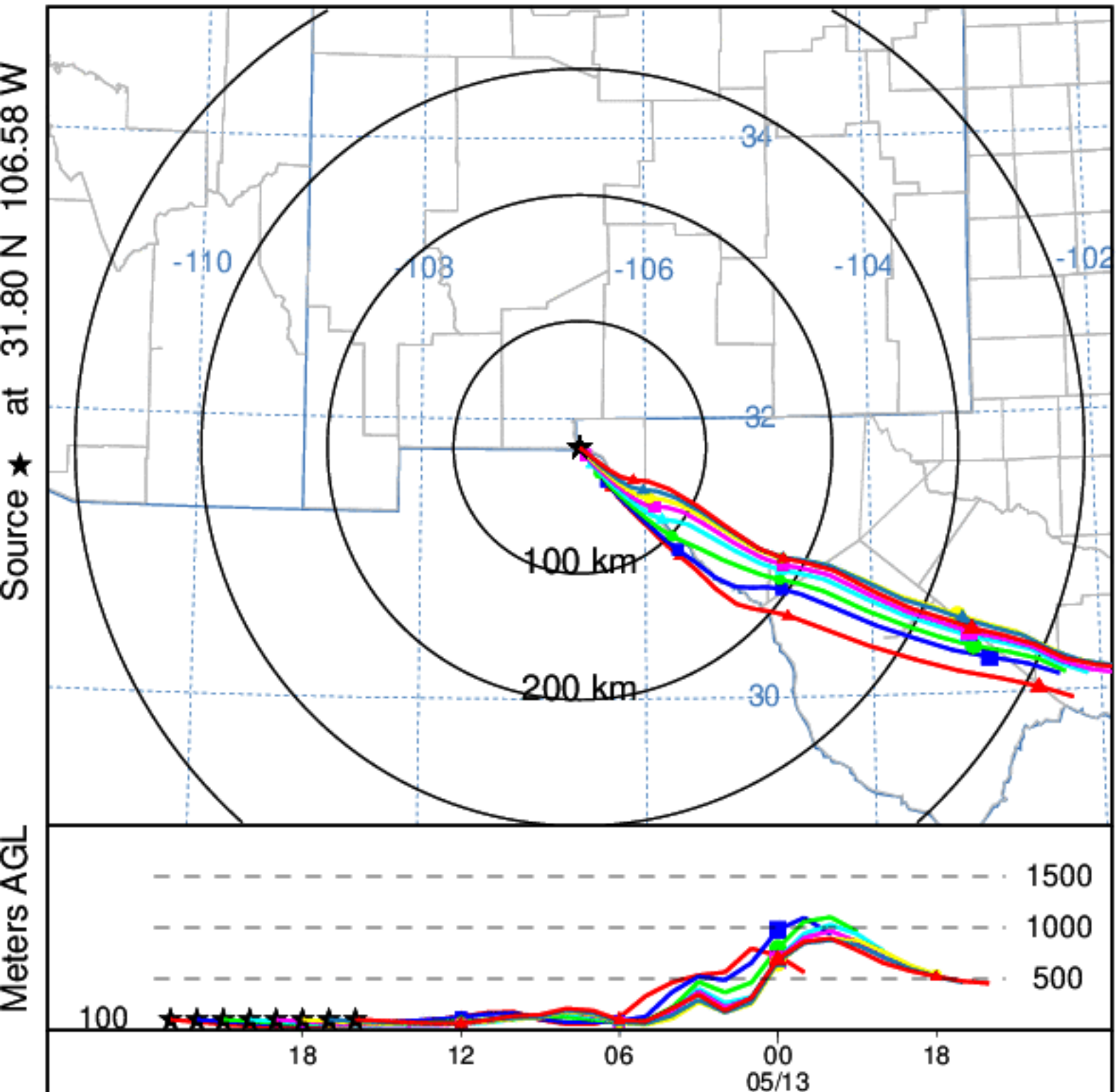
NAM Meteorological Data



Job ID: 111168 Job Start: Thu Aug 19 21:11:14 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 18 Aug 2015 - NAM12

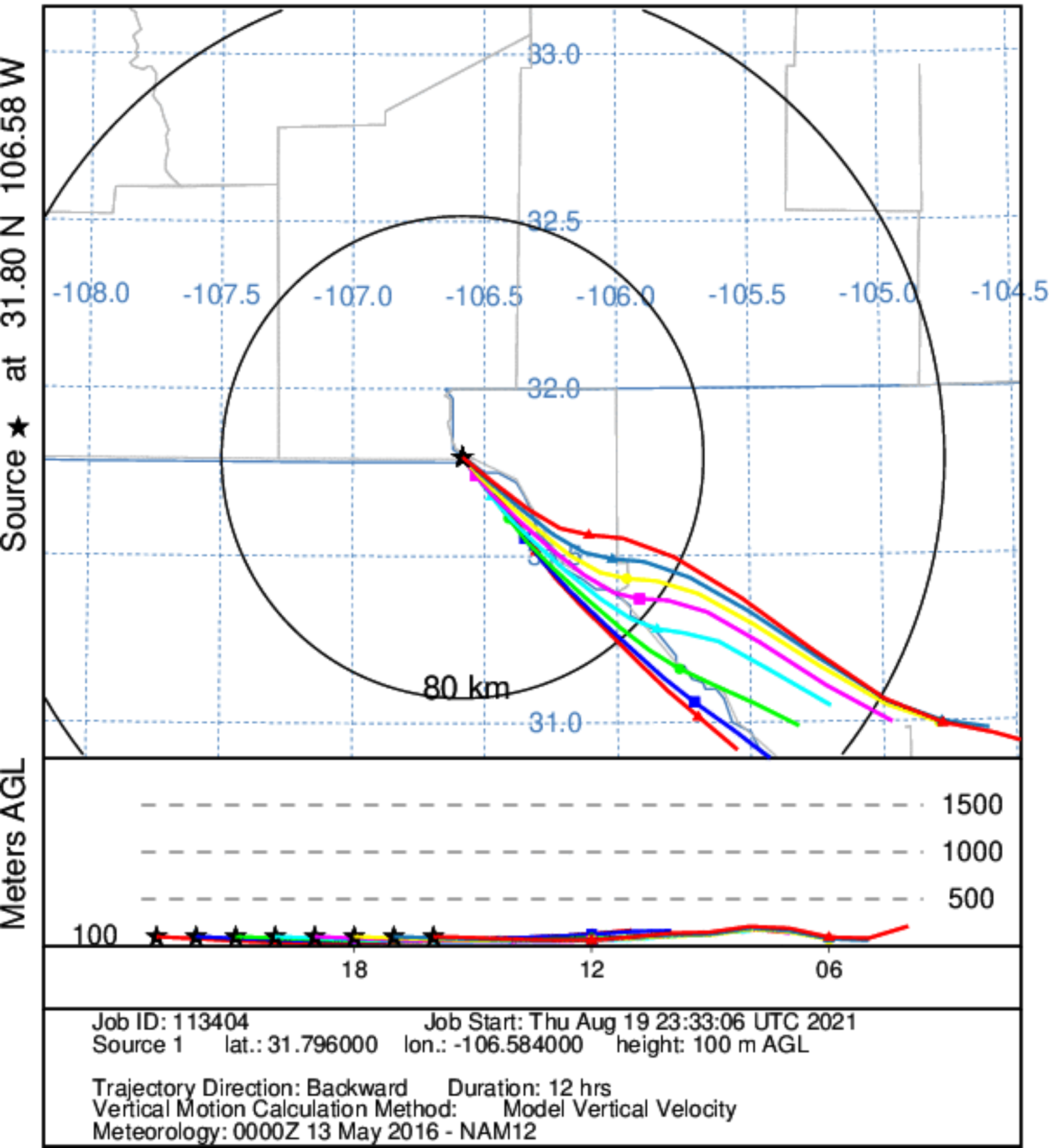
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 13 May 16
NAM Meteorological Data



Job ID: 113372 Job Start: Thu Aug 19 23:27:20 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 13 May 2016 - NAM12

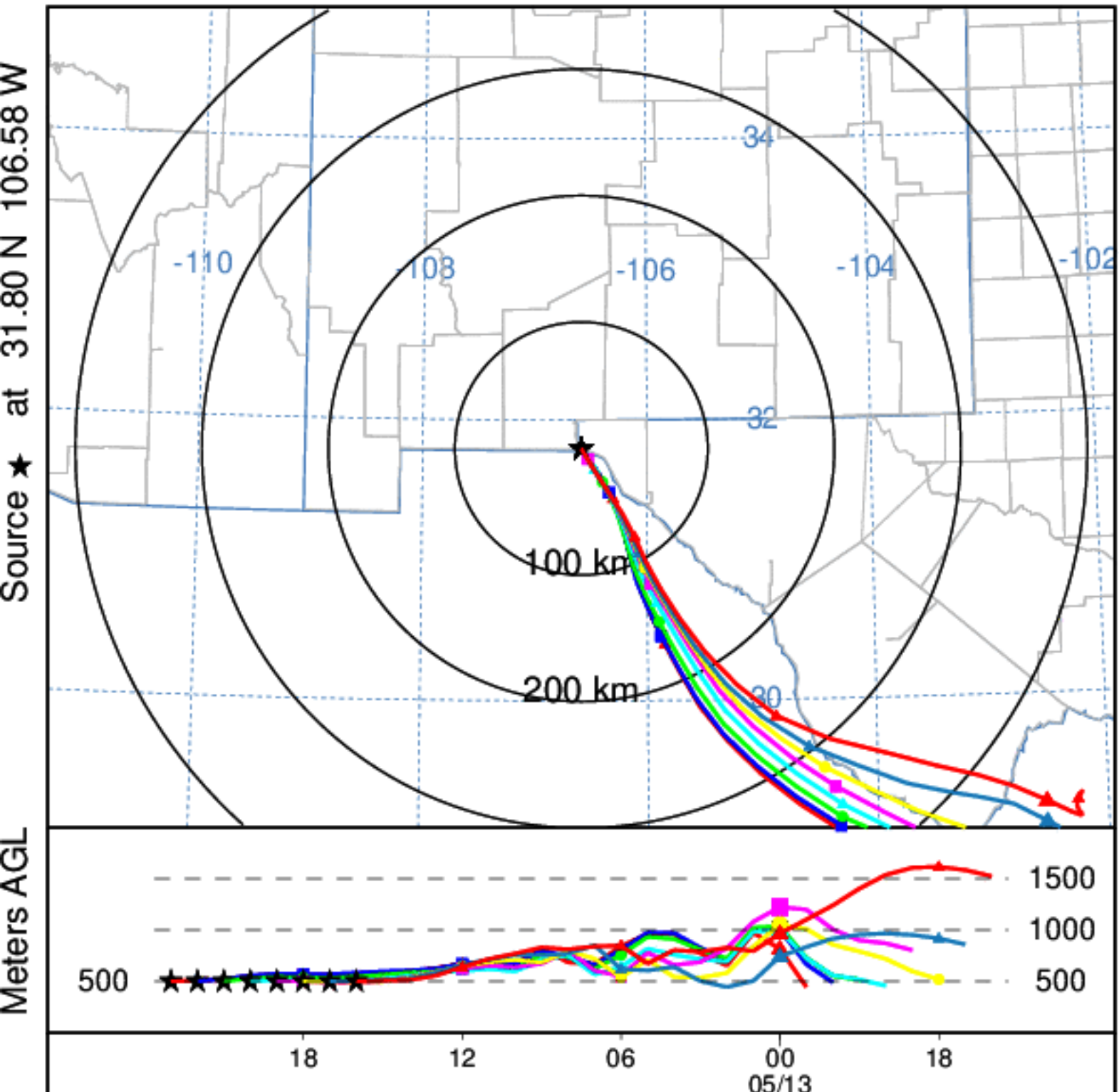
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 13 May 16
NAM Meteorological Data



Job ID: 113404 Job Start: Thu Aug 19 23:33:06 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 13 May 2016 - NAM12

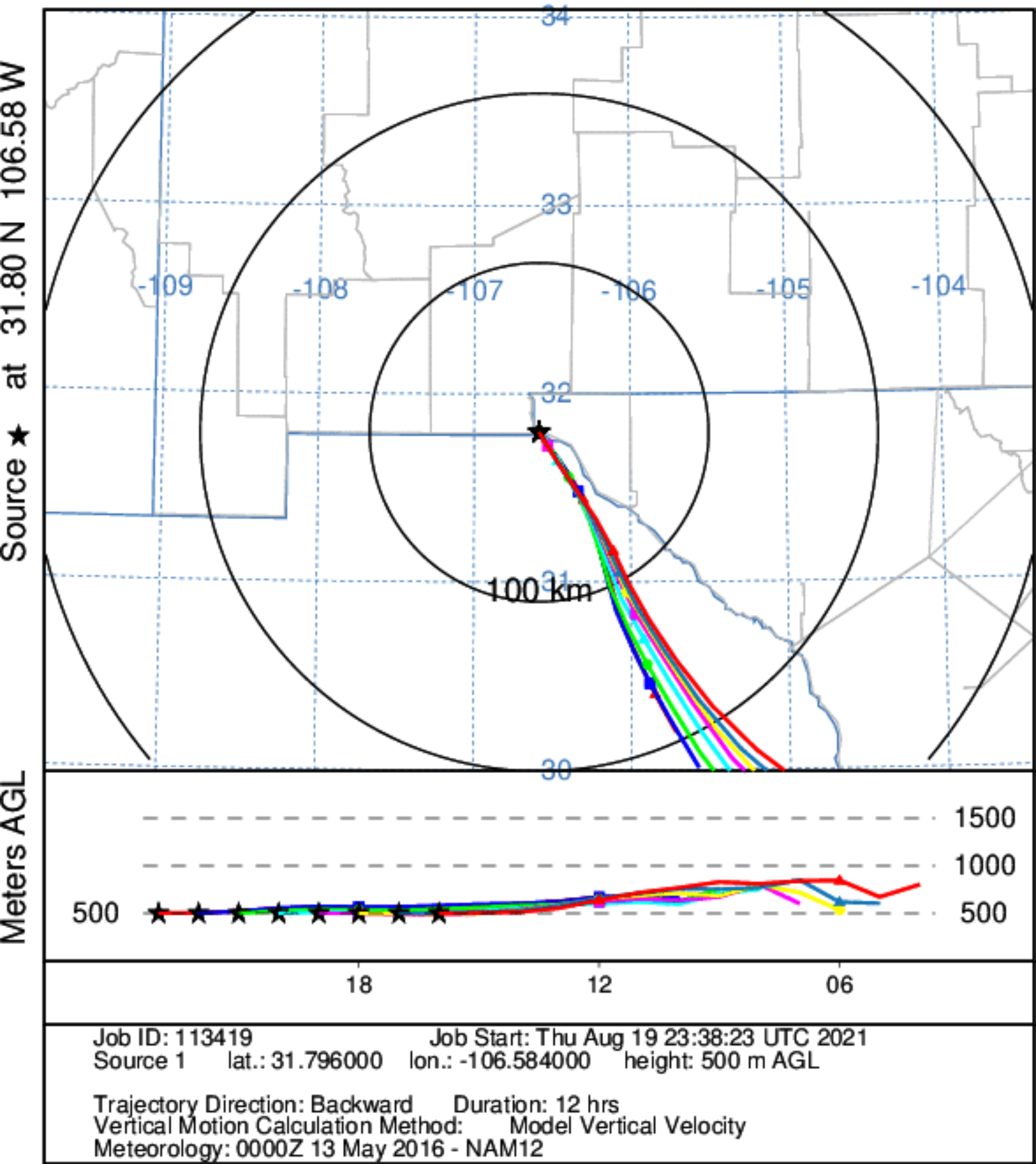
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 13 May 16
NAM Meteorological Data



Job ID: 113445 Job Start: Thu Aug 19 23:40:12 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 13 May 2016 - NAM12

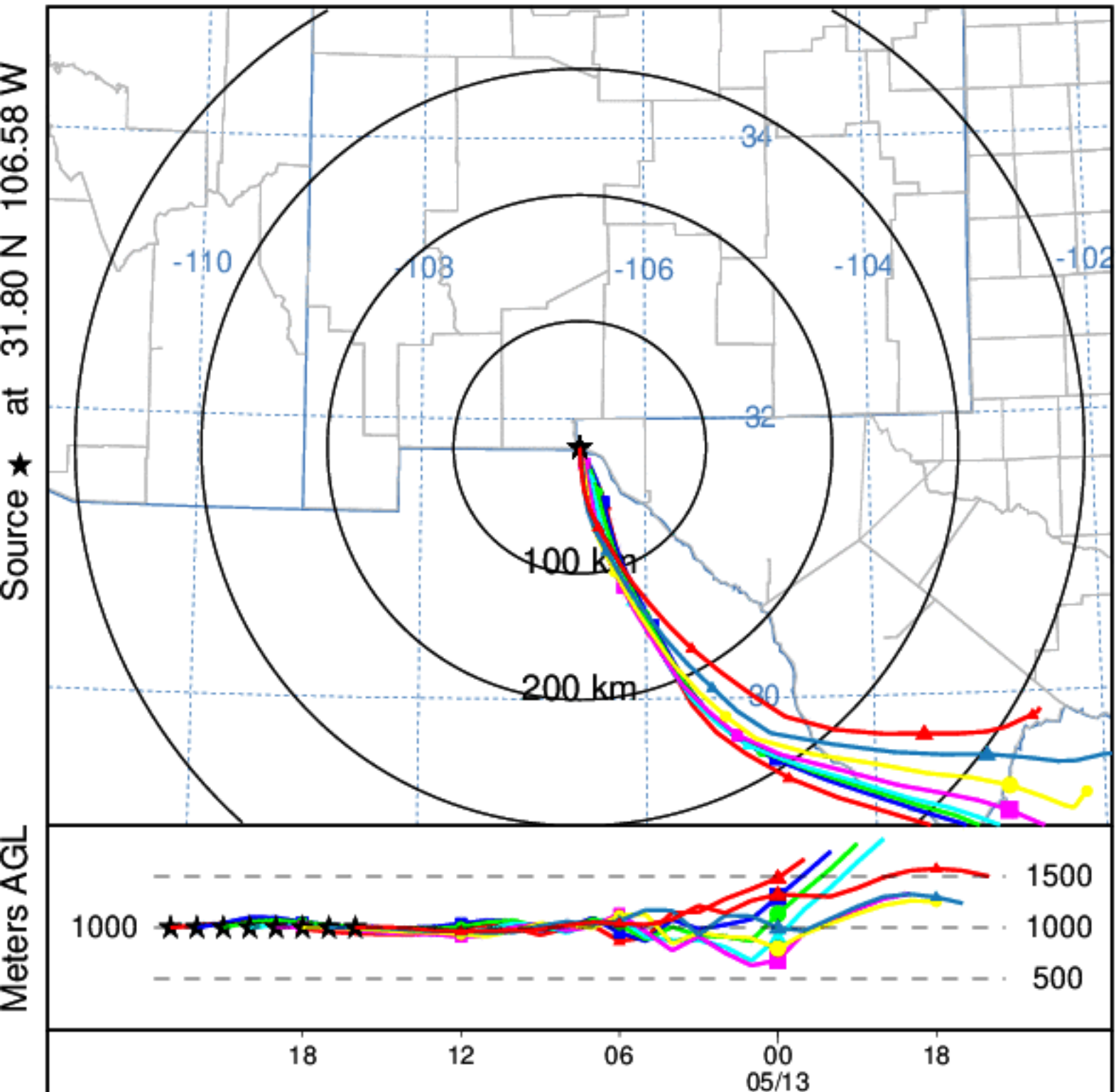
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 13 May 16
NAM Meteorological Data



Job ID: 113419 Job Start: Thu Aug 19 23:38:23 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 13 May 2016 - NAM12

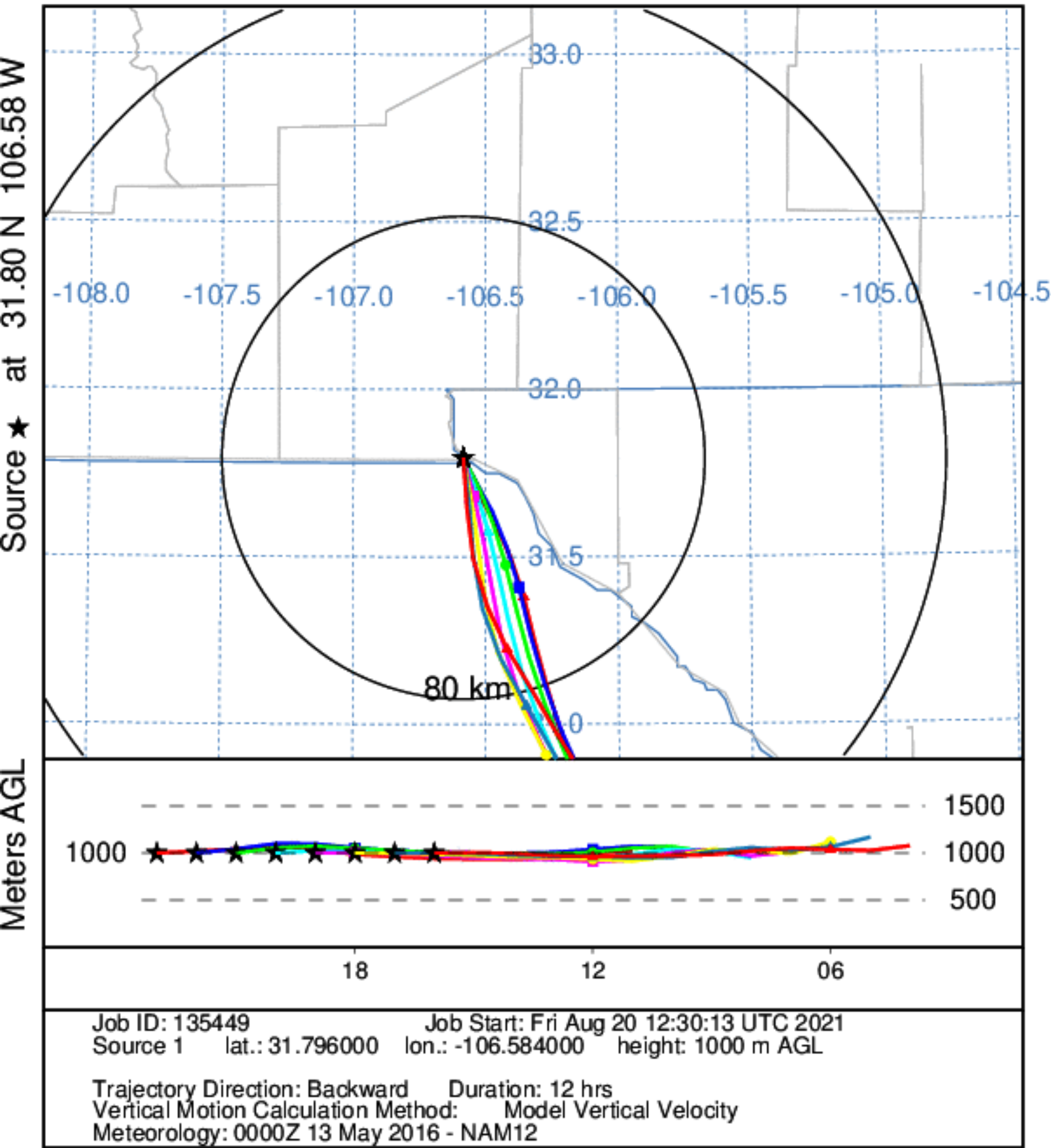
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 13 May 16
NAM Meteorological Data



Job ID: 113490 Job Start: Thu Aug 19 23:45:57 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 13 May 2016 - NAM12

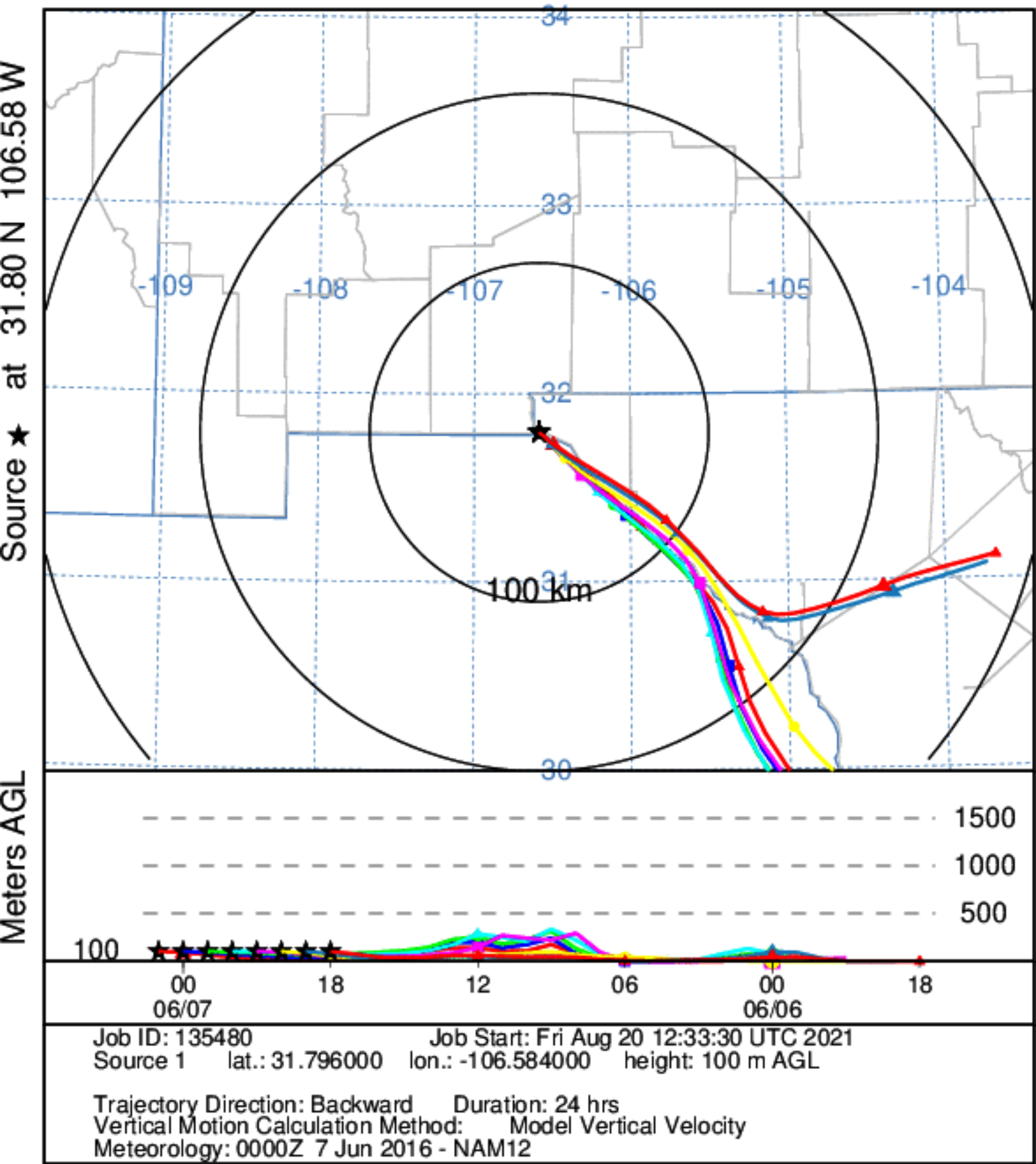
NOAA HYSPLIT MODEL
Backward trajectories ending at 2300 UTC 13 May 16
NAM Meteorological Data



Job ID: 135449 Job Start: Fri Aug 20 12:30:13 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 13 May 2016 - NAM12

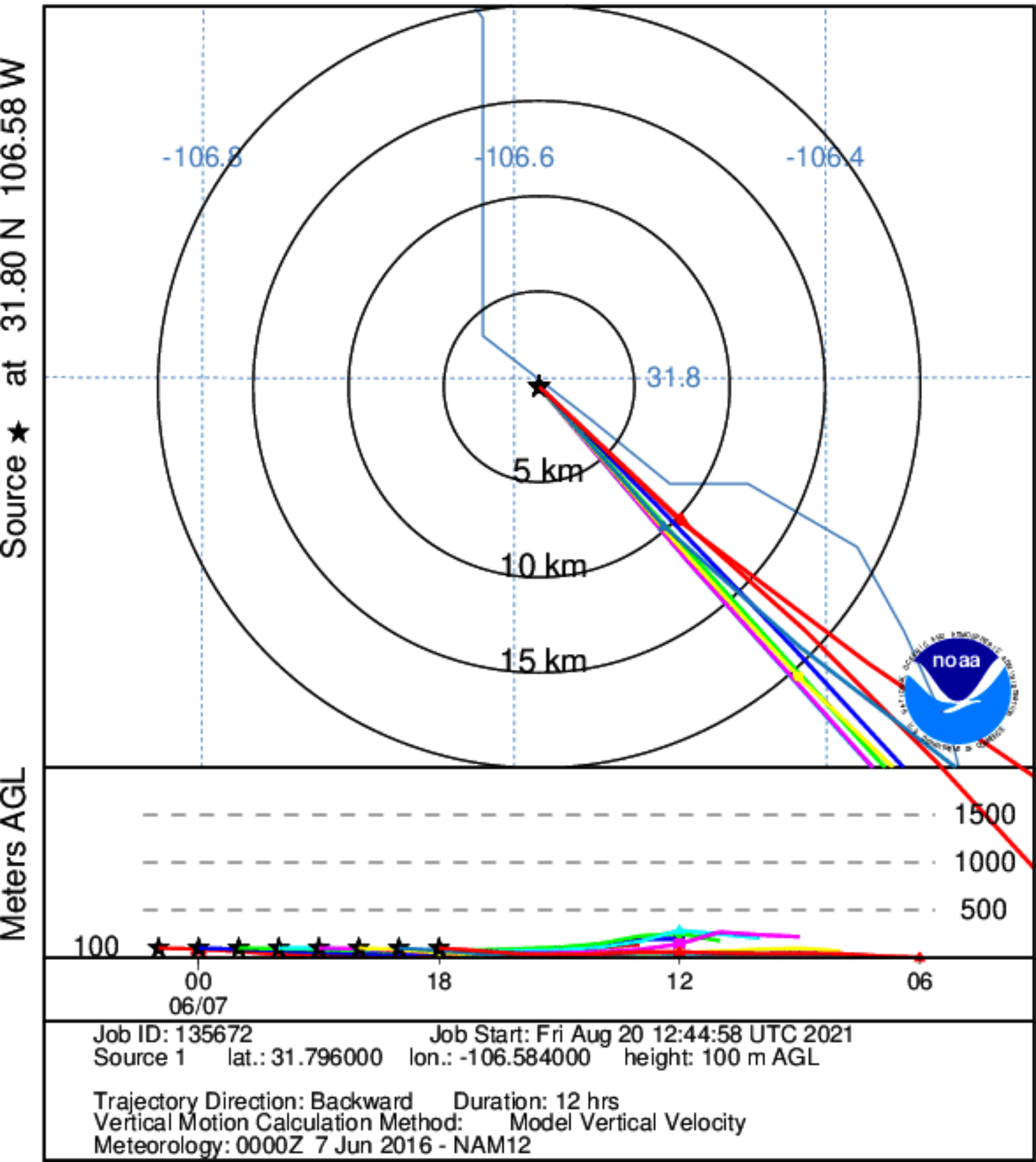
NOAA HYSPLIT MODEL
Backward trajectories ending at 0100 UTC 07 Jun 16
NAM Meteorological Data



Job ID: 135480 Job Start: Fri Aug 20 12:33:30 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 7 Jun 2016 - NAM12

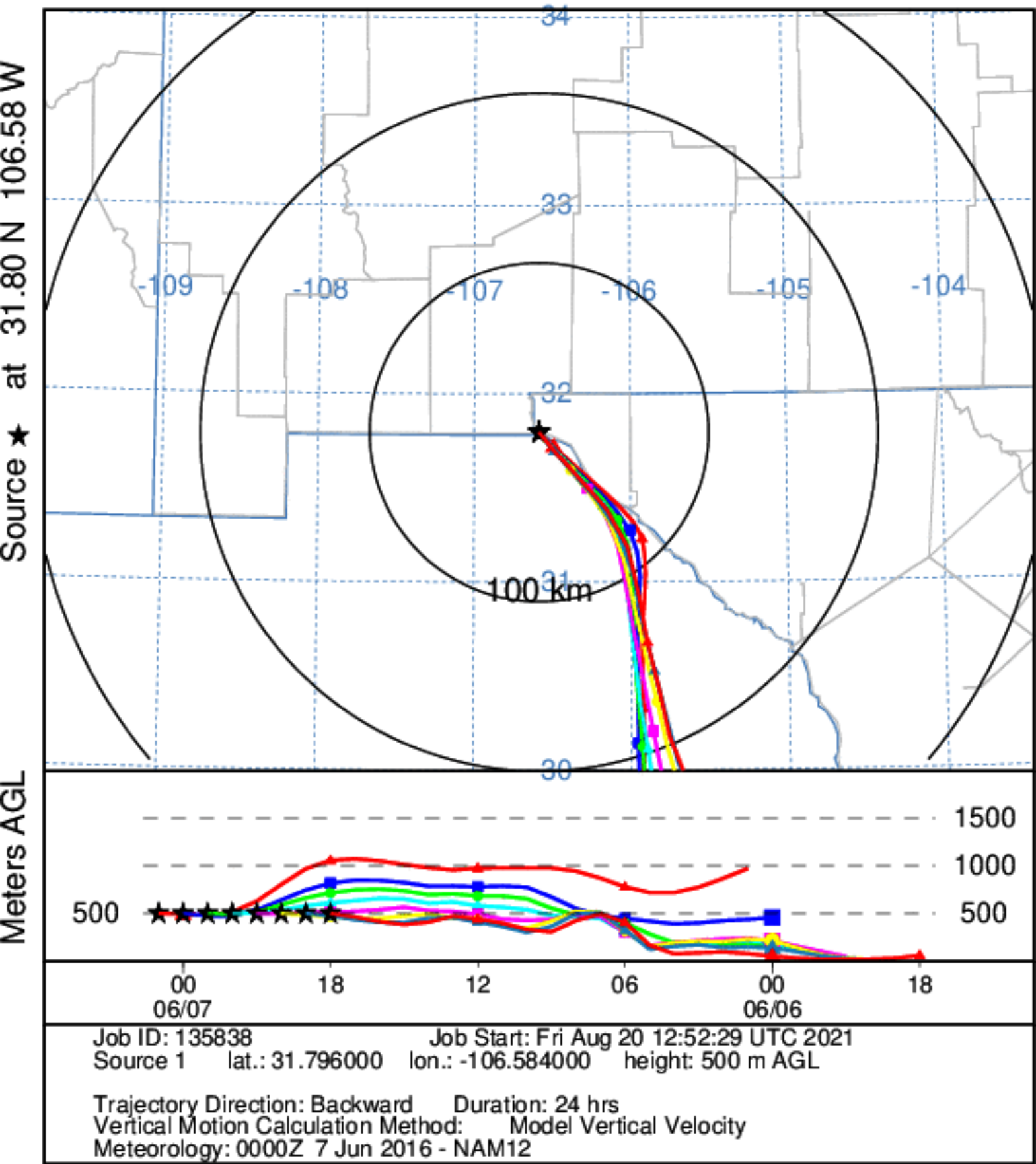
NOAA HYSPLIT MODEL
Backward trajectories ending at 0100 UTC 07 Jun 16
NAM Meteorological Data



Job ID: 135672 Job Start: Fri Aug 20 12:44:58 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 100 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 7 Jun 2016 - NAM12

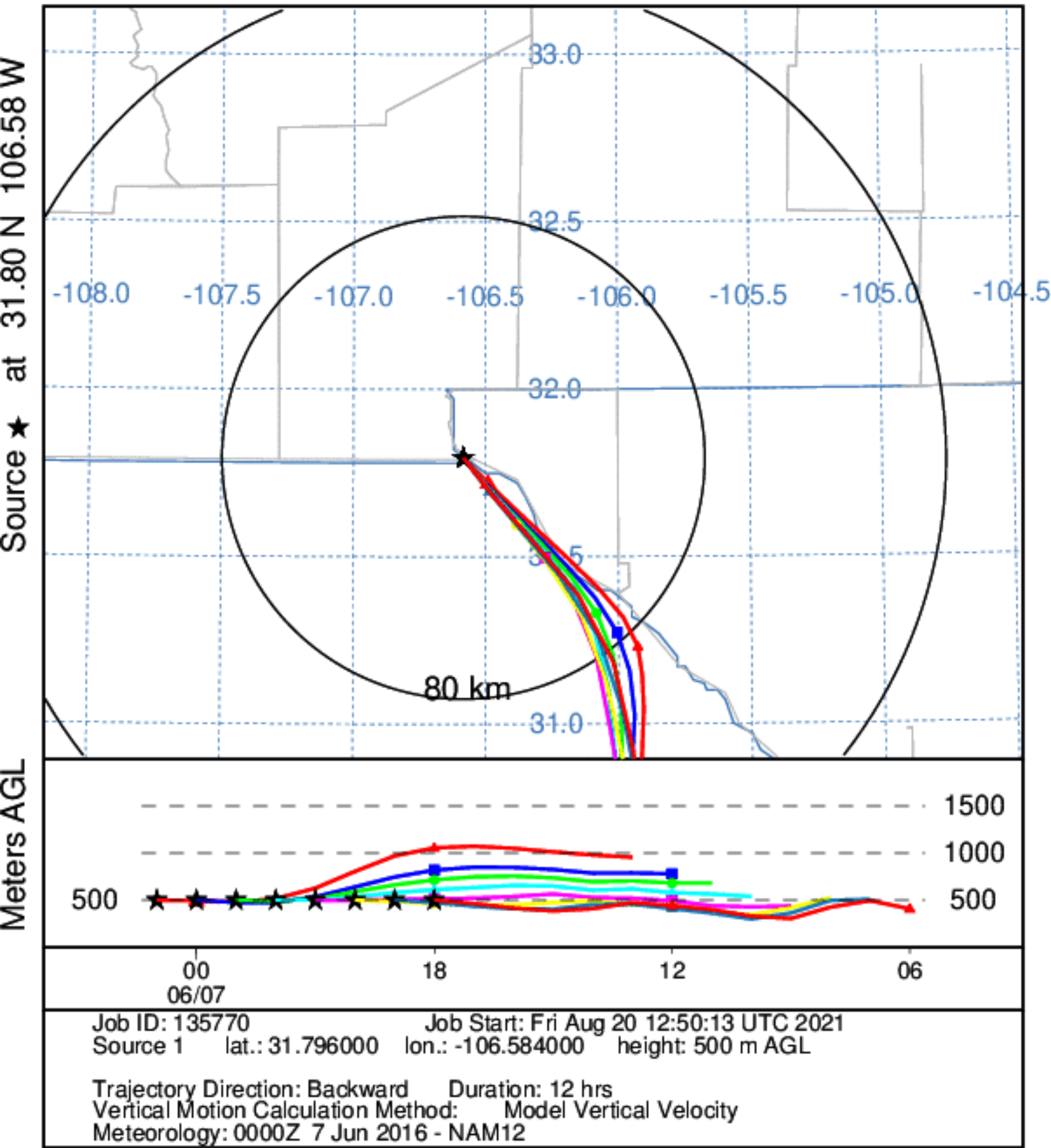
NOAA HYSPLIT MODEL
Backward trajectories ending at 0100 UTC 07 Jun 16
NAM Meteorological Data



Job ID: 135838 Job Start: Fri Aug 20 12:52:29 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 7 Jun 2016 - NAM12

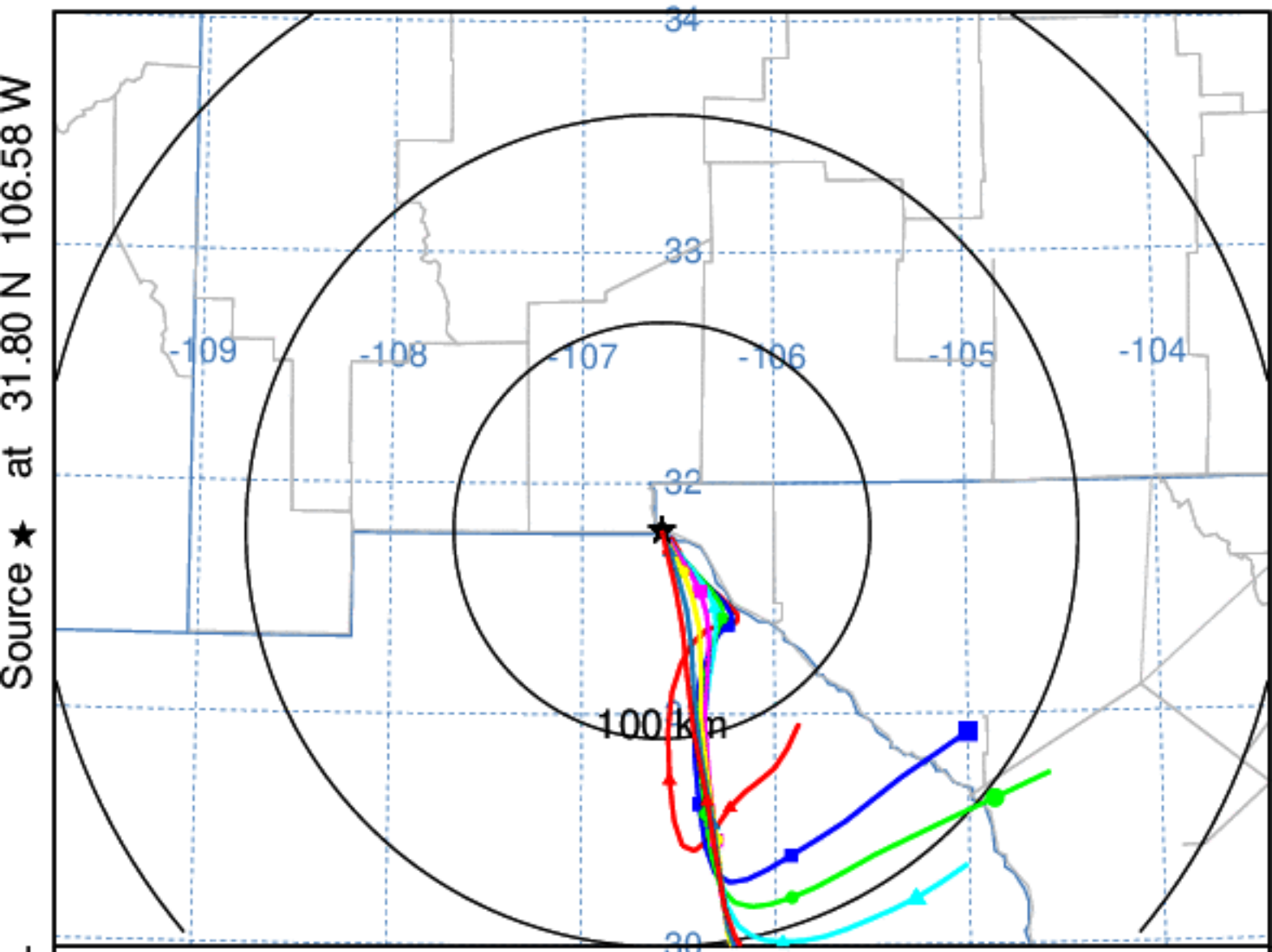
NOAA HYSPLIT MODEL
Backward trajectories ending at 0100 UTC 07 Jun 16
NAM Meteorological Data

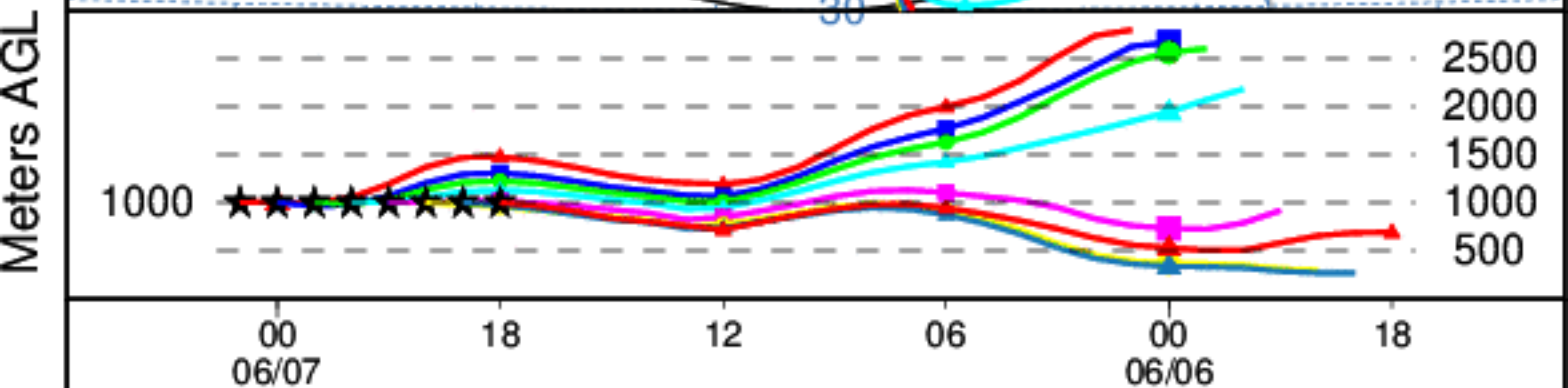


Job ID: 135770 Job Start: Fri Aug 20 12:50:13 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 500 m AGL

Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 7 Jun 2016 - NAM12

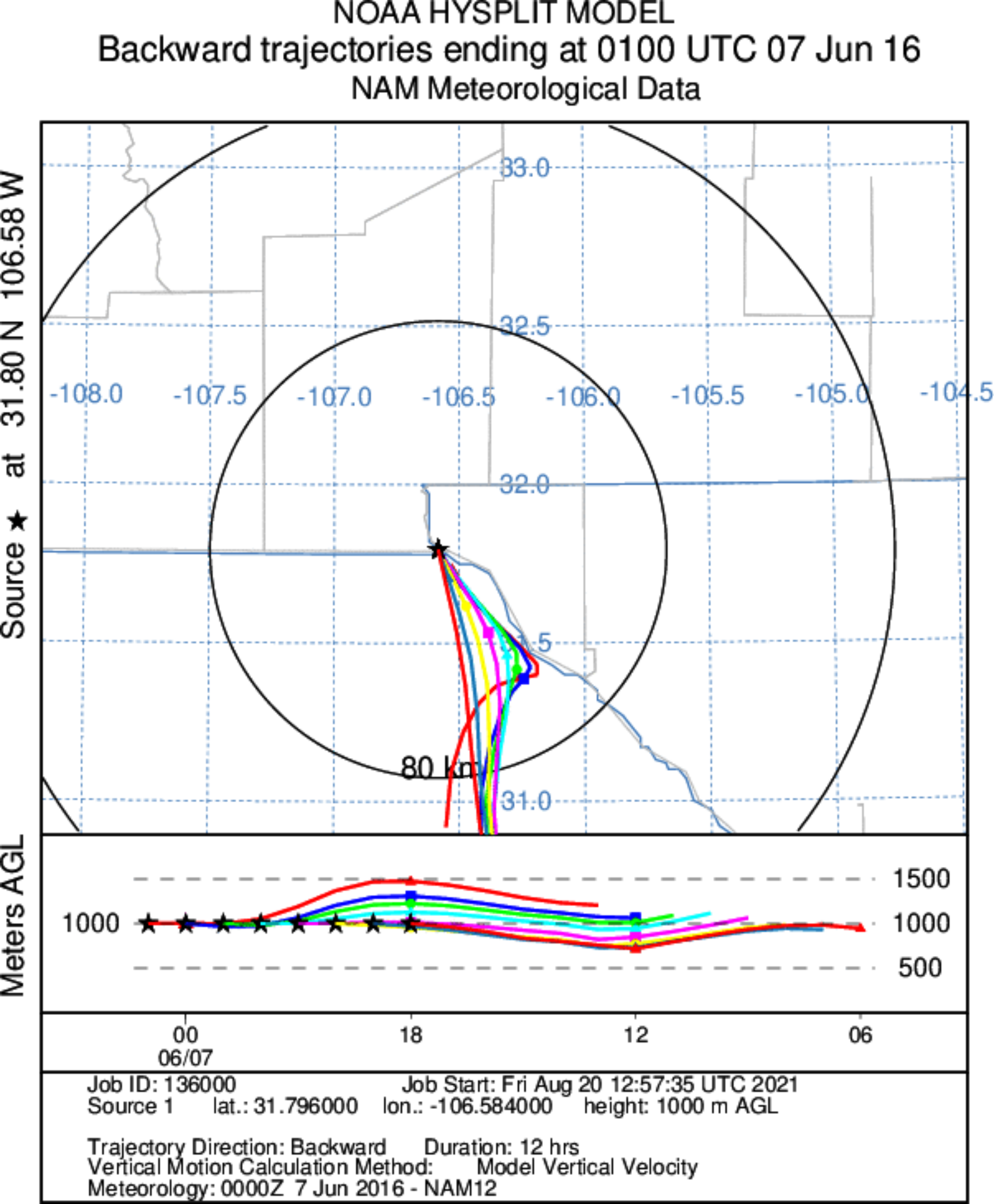
NOAA HYSPLIT MODEL
Backward trajectories ending at 0100 UTC 07 Jun 16
NAM Meteorological Data





Job ID: 136125 Job Start: Fri Aug 20 12:59:56 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL

Trajectory Direction: Backward Duration: 24 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 7 Jun 2016 - NAM12


NOAA HYSPLIT MODEL
Backward trajectories ending at 0100 UTC 07 Jun 16
NAM Meteorological Data
Source ★ at 31.80 N 106.58 W
33.0
32.5
32.0
31.5
31.0
-108.0
-107.5
-107.0
-106.5
-106.0
-105.5
-105.0
-104.5
80 km
Meters AGL
1500
1000
500
1000
00
06/07
18
12
06
Job ID: 136000
Job Start: Fri Aug 20 12:57:35 UTC 2021
Source 1 lat.: 31.796000 lon.: -106.584000 height: 1000 m AGL
Trajectory Direction: Backward Duration: 12 hrs
Vertical Motion Calculation Method: Model Vertical Velocity
Meteorology: 0000Z 7 Jun 2016 - NAM12