

The PM2.5 SIP

(The Requirements of Serious Nonattainment)

Background

- In 2006 EPA issued a new 24-hour fine particulate standard (also known as PM2.5)
- In October 2009, EPA finalized the designations for Utah; declaring three areas as not meeting that standard (aka “non-attainment areas”). These areas are:
 - The Salt Lake City Utah Non-Attainment Area (NAA): encompassing all of Salt Lake County, all of Davis County, and parts of Tooele, Weber, and Box Elder Counties.
 - The Provo Utah NAA: encompassing most of Utah County
 - The Logan Utah-Idaho NAA: encompassing most of Cache County, Utah and parts of Franklin County, Idaho.
- Following this designation, Utah was given a window to bring these areas back into attainment with the standard. The deadline was set as five years from the date of declaration, with the possibility of extending that deadline by up to five years based upon a demonstration of need. Thus, Utah’s deadline was set as January 1, 2019.
- The methodology for accomplishing this task, along with monitoring, recordkeeping, reporting, compliance demonstration, necessary rule changes, etc. is laid out in a document called the “State Implementation Plan” often shortened to “SIP”.
- This SIP was “due” to be issued by January 1, 2014.

Historical Issues

- In 1992 Utah negotiated and issued a SIP to address a similar concern with what is now sometimes called coarse particulate or PM10. EPA approved this same SIP at the federal level in 1994.
- The PM10 SIP covered multiple sources in the PM10 NAA, which was all of Salt Lake and Utah Counties, several defined sources located in Davis County, and the City of Ogden.
- There has only been a single time that this PM10 SIP has been officially updated since 1994 (22 years). That was in 2005 to address transportation conformity in Utah County. Although Utah has attempted to update the SIP multiple times, only one of these has ever been approved by EPA at the federal level.
- Although not quite as drastic, similar issues hold true with respect to SIPs issued for other pollutants.
- This has resulted in a direct impact on those sources listed in the PM10 SIP document that are also required to obtain a Title V Operating Permit. Specifically, all of them – as every single source listed in the SIP is what is known as a “Major Source”, and thus is also a Title V source by definition.

Current State of Affairs

- Utah met the original deadline and issued a PM2.5 SIP under the approval of the Utah Air Quality Board in December of 2013. Unfortunately, as that SIP was undergoing the public comment process prior to final approval, EPA lost a lawsuit involving the definition of how PM2.5 and PM10 are treated within the Clean Air Act. Although it is more complicated than this document will address, essentially PM2.5 had been treated as a subset of PM10, rather than as a separate pollutant.
- As a result of this lawsuit, Utah was forced to “start over” and reissue the PM2.5 SIP under a different subsection of the rules. However, none of the deadlines changed, and Utah had already missed the demonstration of attainment window.
- This causes a worsening in severity of non-attainment. Until this point Utah had been at the least severe state of non-attainment, called “Moderate.” The next level is “Serious” which is triggered either by A) the actual monitored level of particulates in the atmosphere, or B) by missing certain deadlines in the attainment process.
- Utah has not been formally declared “Serious” at present; although we are expecting that declaration to be made sometime this year (current projections are for December).
- In late July of 2016, the EPA administrator signed the PM2.5 Implementation Rule, which updated many of the rules and consequences (yet again). The general flavor of this latest version is the same, but more involved. The document is far too large to discuss in detail here (the rule text is 588 pages long), but generally speaking nothing became easier, less complicated, or less intense. Especially the consequences for being declared a “Serious” non-attainment area.

What Constitutes a “SIP”

In simple terms, a SIP is a framework that explains how the State is going to make an area return to good air quality (attainment). Each SIP is designed to control a specific non-attainment problem. There is a separate SIP for: PM2.5, SO₂, CO, ozone, PM10, etc.

Technically, the State of Utah has written the majority of these SIPs as separate chapters of one larger “umbrella” SIP, but it is much easier to view them individually as separate documents. Thus, one could refer to the PM2.5 SIP, the ozone SIP, or the CO SIP, etc., rather than stating “Section IX, Part H, Subsections 11-13 of the SIP” (This would refer to the Emission Limits and Operating Practices requirements for PM2.5 of the Utah SIP).

Each specific SIP controls its specific non-attainment problem through three general areas – each of those areas dealing with a different group of sources:

1. Transportation controls: This group includes things like broadly mandated fuel changes (oxygenated gasoline, Tier III fuels), I/M programs, implementation of dedicated HOV lanes, fleet turnovers, and other similar programs. These are the rules that apply to the first group of sources – what are known as mobile sources. Basically, vehicles – cars, trucks, etc.
2. Rule changes and other changes at what we call “area sources”: This group includes most of the generally applicable rules, and most of the source category rules – such as no wintertime solid fuel burning, changes in the VOC content of surface coatings, opacity requirements on haul roads, rules for boilers and ovens (including bakery ovens for

example), etc. For purposes of the SIP, the definition of an area source is any non-mobile source that isn't "Major".

3. Specific requirements on "Major Sources": Major Sources, also known as SIP-listed sources, are traditionally those sources that are large enough that individually their emissions could be distinguished on the monitoring filters, or whose emissions' impact could individually change the outcome of the attainment demonstration. More recently, the definition of "Major" is more precisely defined by their emission level. Major sources are likely affected by the area source requirements listed in #2 above, but also have a whole separate set of individually targeted requirements that apply specifically to that individual facility. And each facility is listed individually in the SIP, along with each requirement.

So, for example, while petroleum liquid storage tanks may have generally applied requirements that affect all such tanks, each of the four major source refineries is also listed by name, along with a host of specific requirements that apply only to that individual refinery.

For each non-attainment area (in this case PM2.5) the SIP works to bring that area back into attainment with the standard through controlling emissions of both the individual pollutant (so here that would be direct emissions of PM2.5) and any defined precursors to that pollutant. For PM2.5, there are several precursor pollutants:

- a. SO₂ is automatically included by definition
- b. NO_x is assumed in, unless the state makes a demonstration as to why it should be excluded (Utah did not choose to exclude NO_x, so it is counted as a precursor automatically by default)
- c. VOCs are assumed in, unless the state makes a demonstration as to why it should be excluded. Originally, VOCs were assumed to be excluded, unless the state made a demonstration to include them. Utah made the demonstration to include VOCs during the initial PM2.5 SIP preparations, and would not choose to exclude VOCs at this juncture. This is one of the changes brought about by the July 2016 PM2.5 Implementation Rule mentioned earlier.
- d. Ammonia is assumed included, unless the state makes a demonstration as to why it should be excluded. Again, as with VOCs, ammonia was originally assumed to be excluded, unless a demonstration was made to include it – but this was also reversed with the implementation rule. To date, Utah has not made a demonstration with regard to emissions of ammonia, so the status of this potential precursor is in flux.

1. The definition of "Major Source" is based upon the severity of the NAA. For a moderate NAA, Major is defined as emissions of PM2.5 or a PM2.5 precursor of 100 tons per year or more. For a serious NAA the definition of Major is lowered to 70 tons per year. If your source PTE is greater than 70 tons per year, you become a "Major Source" and subject to all the requirements of all other SIP-listed source.
2. For any source listed in the SIP these specific requirements (conditions) may include any or all of the following: emission limitations – which are most likely based upon implementing additional emission controls; those emission controls to be applied to emissions of all relevant pollutants (so the primary pollutant and all precursor pollutants); compliance demonstration requirements for each new emission limitation – which would also include

additional monitoring, recordkeeping and reporting (as appropriate); and the assumption that all requirements will remain in place. Each SIP-listed source can also expect a higher degree of scrutiny by both EPA and members of the public, as well as public interest groups, and anyone interested in Utah air quality.

What This Means

If you have been operating under a minor source Approval Order (AO) with emission 70 tpy or greater, once the major source threshold is lowered to 70 tpy, you will become subject to Title V Operating Permit regulations and you will be required to submit a Title V Permit application within one year of the serious designation.

You will also become a SIP listed source. Under this status the UDAQ would require the following (these are the minimum requirements as found in the PM2.5 Implementation Rule):

1. An updated review of control techniques to ensure all controls meet BACT.
2. Based upon the new PM2.5 implementation rule (the document signed by the EPA back in late July) these additional controls are required – **regardless** of their eventual effect on the attainment status of the area. In other words, UDAQ will apply any and all additional feasible levels of control to limit emissions of PM2.5, NOx, SO2 and VOC – regardless of whether those controls do anything to improve the overall attainment status.
3. UDAQ would also then draft new limits based upon those controls and control techniques, including: setting implementation dates, and compliance demonstration methods (using monitoring, recordkeeping, and reporting requirements) to back up those limits.
4. Include all of these in a new document (the SIP) that is regulation. SIPs are difficult to modify. Approval from the Air Quality Board and the EPA is required to modify a SIP, and the EPA will not approve a SIP that allows backsliding.
5. UDAQ will only have 18-months from the date the serious designation is applied to implement these requirements, as UDAQ must submit a new Serious SIP within that timeframe. If it fails to do so, then UDAQ will default on its obligation and EPA will take over responsibility for the program – issuing essentially the same document in the end (although now known as a FIP or federal implementation plan) albeit one with less source input or feedback. All the same rules would apply, just EPA Region VIII (located in Denver) would write it instead of UDAQ.

The only way to avoid these new requirements is to lower your emissions of PM2.5 and PM2.5 precursors below 70 tpy. This will require a permitting change, specifically a new AO which will supersede your current AO. The DAQ will be happy to modify your AO.

The DAQ has scheduled an information meeting to provide additional information on the requirements for a serious PM2.5 nonattainment area. Please plan to attend this meeting.

Meeting: Serious SIP Information Meeting
Date: November 2, 2016
Time: 3:00 to 5:00
Location: MASOB, 195 N 1950 W – 1st Floor Board Room
Salt Lake City