



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQ-095-14

MEMORANDUM

TO: Air Quality Board

THROUGH: Bryce C. Bird, Executive Secretary

FROM: Joel Karmazyn, Environmental Scientist

DATE: November 24, 2014

SUBJECT: PROPOSE FOR PUBLIC COMMENT: Amend R307-302. Solid Fuel Burning Devices in Box Elder, Cache, Davis, Salt Lake, Tooele, Utah, and Weber Counties.

As mentioned in the Governor's State of the State address earlier this year, his office has requested that DAQ seek the Board's approval to obtain public comment on a proposal to implement a wintertime seasonal solid fuel burning ban within the PM_{2.5} nonattainment areas to help bring this area into attainment of the PM_{2.5} air quality standard.

Based on comments received during earlier stakeholder interactions and past rulemaking, we have identified some issues that should be considered in conjunction with proposing an inversion season total solid fuel burning ban for all sources.

Total Solid Fuel Ban Ramification	Resolution and Option(s)
Sole source households	1) The legislature has provided \$500,000 for conversion. Encourage voluntary participation of sole source households 2) Re-opening the sole source registry to allow for additional conversions 3) Request assistance from political subdivisions to widely advertise registry opening through direct mail, email and web pages
Sources above the inversion layer – ski resorts, condo rental units and residential homes would be impacted	Exempt high elevation sources from the rule. DAQ has engaged EPA in this discussion.
Commercial, industrial and institutional food preparations that use solid fuels (pizza ovens, industrial meat smoking etc.) would shut down	Exempt these sources

Total Solid Fuel Ban Ramification	Resolution and Option(s)
Industrial solid fuel boilers and incinerators would be prohibited from operating	1) We are currently aware of only one operating solid fuel boiler. Existing units could be exempted. 2) A ban would be a disincentive to build waste-energy recovery systems because they could only operate during non-restricted periods. Permitted units could be exempted because they must meet BACT. May also have to meet MACT.
A seasonal ban would adversely impact the hearth industry. Consumers may stop purchasing appliances that could not be used.	1) There is no resolution for this consequence
Wood heat would not be a backup option during a power outage	1) The Director may use enforcement discretion during emergency conditions. 2) The rule may include a waiver for emergency conditions
Low income households may not be able to afford 100% use of gas or electricity for heating	The State may aggressively advertise the Low Income Home Energy Assistance Program. Some may adversely perceive the assistant program as charity and avoid it. Others may be challenged by the administrative process, for example undocumented immigrants are not eligible for heating assistance.
Wood shops, mills etc. would have to dispose of saw dust and scrap wood or store it until it could be burned	We do not have inventory knowledge for saw dust and scarp wood to determine if this is a consequential issue

The community multi-scaled air quality (CMAQ) air quality model was used to assess the potential improvement for the Hawthorne monitor by implementing this proposal for year 2015, the first year this proposal could effectively be implemented. Two scenarios were modeled; the first is the current area source controls with an 85% wood smoke compliance rate as presented in the SIP, and the second is where the wood smoke compliance is increased to 100% (wood smoke ban). The results of that modeling show that for 2015 at the Hawthorne monitoring site, the design value would be:

Current SIP modeling with current program (85% compliance): 37.2 $\mu\text{g}/\text{m}^3$

Current SIP modeling with complete ban (100% compliance): 35.5 $\mu\text{g}/\text{m}^3$

Meteorology (including temperature inversions) is the key to whether or not we exceed the air quality standard. During years when there are no inversions, we do not generally exceed the standard; and during years when there are multiple prolonged inversions, we routinely exceed the standard. By reviewing thirteen years of meteorological data, we are able to identify potential ban periods which could result in the most benefit and least risk of exceeding the standard (see two attached graphs).

Based on our review of the available monitoring, it appears that having such a ban from November 1 through March 15 would be the most conservative approach. However, it also appears that it might be appropriate to have different ban periods for different areas (i.e., beginning November 1 in Salt Lake County and November 15 in all other areas; or ending March 15 only in Cache County, and March 1 in all other areas) or exclude certain counties where the data does not support a ban.

It should also be noted that if a total ban is put in place, the current DAQ practice of calling Action Days from October 1 through the last inversion in early spring will continue in all areas. Action Days are not solely to prevent the use of solid fuel burning devices, but they are also used to alert the public to impending / existing poor air quality and encourage other actions that can be taken that have been shown to have a positive impact on air quality.

If proposed by the Board, besides the normal notice in the Utah State Bulletin, the following public notice seeking public comments on this proposal would be published in local newspapers and through social media as follows.

PUBLIC NOTICE
Proposed Seasonal Solid Fuel Burning Ban

As requested by Governor Gary Herbert, the Air Quality Board is seeking public comment on a proposal to ban solid fuel burning in fireplaces and wood/coal stoves from November 1 to March 15, beginning in November of 2015. The ban is being considered as one means of improving wintertime air quality along the Wasatch Front and in the Cache Valley.

The seasonal wood burning ban is being proposed because the Wasatch Front and the Cache Valley routinely violate the federal health-based standard for particulate matter, and solid fuel burning has been found to be a significant contributor to that problem. Additionally, these areas are well served with natural gas and electricity, both of which are significantly cleaner sources of energy for home heating.

The wood burning ban would apply to:

Box Elder County: From the Wasatch Mountain range west to the Promontory Mountain range and south of Portage, with a possible exemption for sources above 7,000 ft. elevation.

Cache County: Cache Valley

Salt Lake and Davis counties: All areas, with a possible exemption for sources above 7,000 ft. elevation.

Tooele County: From the northernmost part of the Oquirrh Mountain range to the northern most part of the Stansbury Mountain range and north of Route 199, with a possible exemption for sources above 7,000 ft. elevation.

Weber and Utah counties: West of the Wasatch mountain range, with a possible exemption for sources above 7,000 ft. elevation.

Homeowners whose homes are heated solely by wood and are registered with the Division of Air Quality as a sole source residence would be permitted to continue heating with wood.

The Air Quality Board is specifically seeking comment on the appropriateness of having a single ban period applicable in all areas, or if each area (county or nonattainment area) could have a different ban period that could have the same air quality impact. It is also seeking comment on the possibility of exempting counties where data may not support such a ban.

The 40-day public comment period will be from January 1 to February 9, 2015. Public hearings will be held at:

Salt Lake location
Provo location
Davis County location
Ogden location
Logan location
Tooele location

DAQ-092-14

Page 4

Brigham City location

[DATES, TIMES AND LOCATIONS WILL BE INCLUDED IN THE NOTICE]

Oral and written comments will be considered equally. You may submit written comments via electronic mail to mberger@utah.gov, DAQ Rules Coordinator, or mailed to:

Mark Berger
Division of Air Quality
P.O. Box 144820
Salt Lake City, Utah 84114-4820

1 **R307. Environmental Quality, Air Quality.**

2 **R307-302. Solid Fuel Burning Devices in Box Elder, Cache, Davis,**
3 **Salt Lake, Tooele, Utah, and Weber Counties.**

4 **R307-302-1. Purpose and Definitions.**

5 (1) R307-302 establishes emission standards for fireplaces and
6 solid fuel burning devices used in residential, commercial,
7 institutional and industrial facilities and associated outbuildings
8 used to provide comfort heating.

9 (2) The following additional definitions apply to R307-302:

10 "Sole source of heat" means the solid fuel burning device is
11 the only available source of heat for the entire residence, except
12 for small portable heaters.

13 "Solid fuel burning device" means fireplaces, wood stoves and
14 boilers used for burning wood, coal, or any other nongaseous and
15 non-liquid fuel, both indoors and outdoors, but excluding outdoor
16 wood boilers, which are regulated under R307-208.

17
18 **R307-302-2. Applicability.**

19 (1) R307-302-3 and R307-302-6 shall apply to any solid fuel
20 burning device in PM10 and PM2.5 nonattainment and maintenance areas
21 as defined in 40 CFR 81.345 (July 1, 2011) and geographically described
22 as all regions of Salt Lake and Davis counties; all portions of the
23 Cache Valley; all regions in Weber and Utah counties west of the Wasatch
24 mountain range; in Box Elder County, from the Wasatch mountain range
25 west to the Promontory mountain range and south of Portage; and in
26 Tooele County, from the northernmost part of the Oquirrh mountain
27 range to the northern most part of the Stansbury mountain range and
28 north of Route 199.

29 (2) R307-302-4 shall apply only within the city limits of Provo
30 in Utah County.

31 (3) R307-302-5 shall apply in all portions of Box Elder, Cache,
32 Davis, Salt Lake, Tooele, Utah and Weber counties.

33 (4) The following exemptions apply to R307-302:

34 (a) R307-302 does not apply to restaurant and institutional
35 food preparation.

36 (b) R307-302 does not apply to commercial and industrial boilers
37 subject to an approval order issued under R307-401.

38 (c) R307-302-3 and R307-302-6 do [~~does~~]not apply to sources
39 located above 7000 feet in elevation within Box Elder, Davis, Salt
40 Lake, Tooele, Utah and Weber counties.

41 (d) R307-302 does not apply to firefighting training devices
42 that meet the definition of a solid fuel burning device.

43
44 **R307-302-3. No-Burn Periods for Fine Particulate.**

45 (1) By June 1, 2015, sole sources of residential heating using
46 solid fuel burning devices must be registered with the director in
47 order to be exempt during mandatory no-burn periods.

48 (2) When the ambient concentration of PM10 measured by the
49 monitors in Salt Lake, Davis, Weber, or Utah counties reaches the
50 level of 120 micrograms per cubic meter and the forecasted weather
51 for the specific area includes a temperature inversion which is
52 predicted to continue for at least 24 hours, the director will issue

1 a public announcement and will distribute such announcement to the
2 local media notifying the public that a mandatory no-burn period for
3 solid fuel burning devices and fireplaces is in effect. The mandatory
4 no-burn periods will only apply to those areas or counties impacting
5 the real-time monitoring site registering the 120 micrograms per cubic
6 meter concentration. Residents, commercial, institutional and
7 industrial facilities of the affected areas shall not use solid fuel
8 burning devices or fireplaces except those that are the sole source
9 of heat for the entire residence and registered with the director.

10 (3) PM10 Contingency Plan. If the PM10 Contingency Plan
11 described in Section IX, Part A, of the State Implementation Plan
12 has been implemented, the trigger level for no-burn periods as
13 specified in R307-302-3(2) will be 110 micrograms per cubic meter
14 for that area where the PM10 Contingency Plan has been implemented.

15 (4) Except when the seasonal burn ban in R307-302-6(3) is in
16 effect, [W]hen the ambient concentration of PM2.5 measured by
17 monitors in Box Elder, Cache, Davis, Salt Lake, Tooele, Utah or Weber
18 counties are forecasted to reach or exceed 25 micrograms per cubic
19 meter, the director will issue a public announcement to provide broad
20 notification that a mandatory no-burn period for solid fuel burning
21 devices and fireplaces is in effect. The mandatory no-burn periods
22 will only apply to those counties identified by the director.
23 Residents, commercial, institutional and industrial facilities within
24 the geographical boundaries described in R307-302-2(1) shall not use
25 solid fuel burning devices or fireplaces except those that are the
26 sole source of heat for the entire residence and registered with the
27 director.

28 (5) PM2.5 Contingency Plan. Except when the seasonal burn ban
29 in R307-302-6(3) is in effect, [±]if the PM2.5 contingency plan of
30 the State Implementation Plan has been implemented, the trigger level
31 for no-burn periods as specified in R307-302-3(4) shall be 15
32 micrograms per cubic meter for the area where the PM2.5 contingency
33 plan has been implemented.

34 35 **R307-302-4. No-Burn Periods for Carbon Monoxide.**

36 (1) Beginning on November 1 and through March 1, the director
37 will issue a public announcement and will distribute such announcement
38 to the local media notifying the public that a mandatory no-burn period
39 for solid fuel burning devices and fireplaces is in effect when the
40 running eight-hour average carbon monoxide concentration as monitored
41 by the state at 4:00 PM reaches a value of 6.0 ppm or more.

42 (2) In addition to the conditions contained in R307-302-4(1),
43 the director may use meteorological conditions to initiate a no-burn
44 period. These conditions are:

45 (a) A national weather service forecasted clearing index value
46 of 250 or less;

47 (b) Forecasted wind speeds of three miles per hour or less;

48 (c) Passage of a vigorous cold front through the Wasatch Front;

49 or

50 (d) Arrival of a strong high pressure system into the area.

51 (3) During the no-burn periods specified in R307-302-4(1) and
52 (2), residents, commercial, institutional and industrial facilities

1 in Provo City shall not use solid fuel burning devices or fireplaces
2 except those that are the sole source of heat for the entire residence
3 and are registered with the director or the local health district
4 office.
5

6 **R307-302-5. Opacity for Heating Appliances.**

7 Except during no-burn periods as required by R307-302-3 and 4,
8 visible emissions from solid fuel burning devices and fireplaces shall
9 be limited to a shade or density no darker than 20% opacity as measured
10 by EPA Method 9, except for the following:

- 11 (1) An initial fifteen minute start-up period, and
12 (2) A period of fifteen minutes in any three-hour period in
13 which emissions may exceed the 20% opacity limitation for refueling.
14

15 **R307-302-6. Prohibition.**

16 (1) Beginning September 1, 2013, no person shall sell, offer
17 for sale, supply, install, or transfer a wood burning stove that is
18 not EPA Phase 2 certified or a fireplace that is not EPA qualified.

19 (2) Ownership of a non EPA Phase 2 certified stove within a
20 residential dwelling installed prior to March 6, 2014 may be
21 transferred as part of a real estate transaction, so long as the unit
22 remains intact within the real property of sale.

23 (3) Seasonal Burn Ban. From November 1 through March 15 of
24 each year, residents, commercial, institutional and industrial
25 facilities within the geographical boundaries described in R307-302-2
26 shall not use solid fuel burning devices or fireplaces except those
27 that are the sole source of heat for the entire residence and registered
28 with the director.
29

30 **KEY: air pollution, fireplaces, stoves, solid fuel burning**

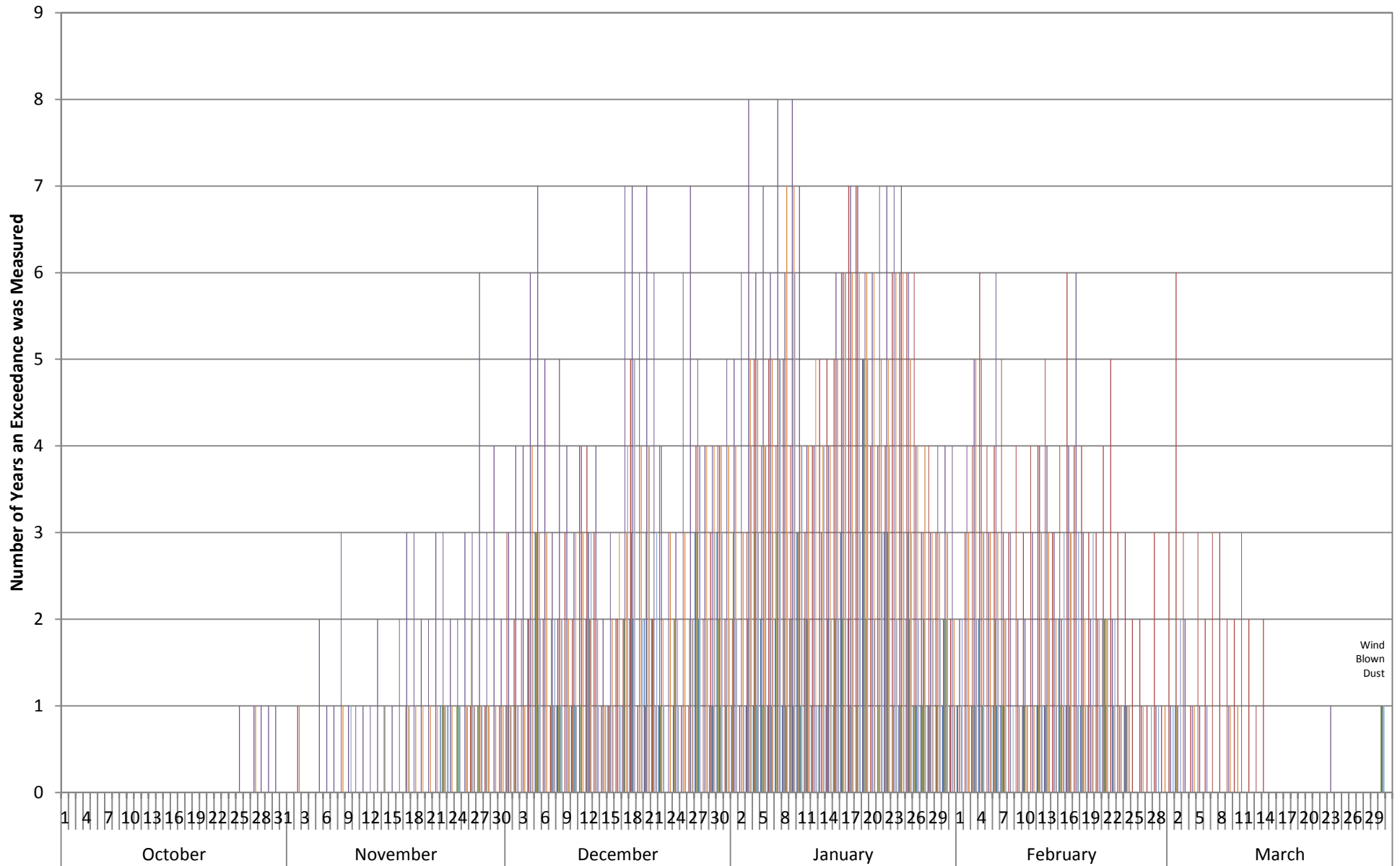
31 **Date of Enactment or Last Substantive Amendment: 2014**

32 **Notice of Continuation: June 2, 2010**

33 **Authorizing, and Implemented or Interpreted Law: 19-2-101; 19-2-104**

PM2.5 Measurements Greater Than 25.4 $\mu\text{g}/\text{m}^3$ October-March; 2000-2013

■ Box Elder ■ Cache ■ Davis ■ Salt Lake ■ Tooele ■ Utah ■ Weber



PM2.5 Measurements Greater Than 35.4 $\mu\text{g}/\text{m}^3$ November-March; 2000-2013

■ Box Elder ■ Cache ■ Davis ■ Salt Lake ■ Tooele ■ Utah ■ Weber

