State of Utah

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DIVISION OF AIR QUALITY

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May 17, 1996

DAQS-0061-96

Richard R. Long, Director
Air Programs
EPA Region VIII - 8P2-AP
999 18th Street Suite 500
Denver, Colorado 80202-2466

Dear Mr. Long:

Re: Extension Year Request for the Utah County PM10 Nonattainment Area

Section 188(d) of the Act allows the States to petition the Administrator for a one-year extension of the attainment date for an initial moderate PM10 nonattainment area, provided that all SIP elements have been implemented and that the ambient data collected in the area during the year preceding the extension year indicates that the area is on-target to attain the NAAQS. Presumably, this is because the statutory attainment date for initial moderate PM10 nonattainment areas occurs only one year after the statutory implementation date for RACM, the central control element of all implementation plans for such areas, and because three consecutive years of "clean" ambient data are required in order for an area to demonstrate that it has attained the standard.

Enclosed, please find Utah's request for a second extension year for the Utah County nonattainment area for PM10. As this report will attest, the SIP in Utah County has indeed been implemented, and ambient data collected in 1994 and 1995 supports the notion that such implementation is in fact having a positive effect on air quality in the area. The State feels that it qualifies for a second one-year extension of the attainment date, as provided for in Section 188(d) of the Act, and hereby requests that such extension year be granted by the Administrator. Such extension of the attainment date will provide Utah the opportunity to collect a third year of post-RACM ambient data, and to thereby demonstrate compliance with the NAAQS for PM10 in Utah County.

Sincerely,

Russell A. Roberts, Director

RAR:BR:sbq

Attachment

Document Date 5/17/1996

DAQ-1996-001641

EXTENSION YEAR REQUEST FOR UTAH COUNTY

Summary: In accordance with Section 188(d) of the Clean Air Act (CAA), Utah is requesting a second one-year extension of the attainment date for Utah County; an initial moderate area for PM10.

In order to qualify for such an extension a State must demonstrate that: 1) all SIP measures have been implemented, including a demonstration that Reasonable Further Progress (RFP) has been made toward attainment of the standard and 2) the ambient data in the year preceding the extension year shows no more than one exceedance of the 24-hour standard, and no violation of the annual standard.

Utah County has met each of the criteria necessary to make such a request.

Background: The statutory attainment date for the initial Moderate Areas for PM10 was December 31, 1994. In making a determination of whether or not an area has attained the NAAQS for PM10, the Administrator will rely entirely on ambient data. In accordance with 40 CFR Part 50 Appendix K, attainment of the annual PM10 standard is achieved when the annual arithmetic mean concentration is equal to 50 $\mu g/m^3$ or less. Attainment of the 24-hour standard is determined by calculating the expected number of exceedances per year. The 24-hour standard is attained when the expected number of exceedances is 1.0 per year or less. Three consecutive years of ambient air quality data is generally necessary to show attainment of the 24-hour standard for PM10.

Section 189(a)(1) of the CAA outlines plan provisions for Moderate Area PM10 SIPs. It requires that Reasonably Available Control Measures (RACM) be implemented no later than December 10, 1993 in areas classified upon enactment (initial Moderate Areas). Thus, the ambient air quality data collected between January 1, and December 31, 1994, the attainment date for initial Moderate Areas, should be the first year's worth of data representative of SIP controls. However, since three years of data are necessary to demonstrate attainment of the 24-hr standard, two years worth of data representing pre-SIP conditions would be factored into any determination made as of the statutory attainment date.

Because of the dilemma outlined above, the Act (Section 188(d)) has allowed states to apply for a one-year extension of the attainment date, provided that:

1) The State has complied with all requirements and commitments in the applicable implementation plan, and

2) no more than one exceedance of the 24-hour standard has occurred at any one monitor in the area in the year preceding the extension year, and the annual mean concentration of PM10 for such year is less than or equal to the standard at all monitors in the area.

A state may apply for two such one-year extensions, one at a time, in order to collect the

three years of post-SIP ambient data necessary to demonstrate attainment.

EPA, Office of Air Quality Planning and Standards, issued a guidance memorandum concerning extension requests (November 14, 1994), and therein made clear that the authority delegated to the Administrator to extend attainment dates for moderate areas is discretionary. In exercising this discretionary authority, it says, EPA will examine the air quality planning progress made in the area, and in addition to the two criteria specified in Section 188(d), EPA will be disinclined to grant an attainment date extension unless a state has, in substantial part, addressed its moderate PM10 planning obligations for the area. The EPA will expect the State to have adopted and substantially implemented control measures submitted to address the requirement for implementing RACM/RACT in the moderate nonattainment area, as this was the central control requirement applicable to such areas. Furthermore, EPA believes this request is appropriate, as it provides a reliable indication that any improvement in air quality evidenced by a low number of exceedances reflects the application of permanent steps to improve the air quality in the region, rather than temporary economic or meteorological changes. As part of this showing, EPA will expect the State to demonstrate that the PM10 nonattainment area has made emission reductions amounting to reasonable further progress (RFP) toward attainment of the NAAQS, as defined in Section 171(1) of the Act.

Utah County is herein requesting a second such extension so as to fix the attainment date for this area at December 31, 1996. The State is unable to demonstrate attainment of the standard using the current three-year data set of 1993, '94 and '95.

This report will address the necessary criteria and make formal application for an extension year (under CAA Section 188(d)) in Utah County, an initial nonattainment area for PM10.

1. Implementation of SIP Elements:

SIP Overview

Characterization of the PM10 problem in Utah County was based on ambient data collected at three monitoring locations: Lindon, North Provo, and West Orem. A two year data set from April 1988 through March of 1990 was used to select the design days at each monitor site. Although filter profiles from additional days were used to evaluate the selected control strategy, it may help to look at the source apportionment on the design days themselves. By far, the largest contributor in Utah County was Geneva Steel, whose overall impact ranged from 45% to 63%. Its impact from primary PM10 ranged from 33 to 54%, while secondary precursors accounted for 9 to 12%. Other industrial sources made up between 10 and 13% of the filter mass. Mobile source contribution ranged from 10 to 22%; woodsmoke was consistently about 15%, and other means of spaceheating accounted for the remaining 3 or 4%. Of particular significance is the fact that secondary PM10 emissions, from all source categories, was responsible for roughly 25% of all filter mass on the design days.

In light of the source apportionment analysis, the control strategy for Utah County focused heavily on the steel mill. At a cost of approximately 110 million dollars, Geneva Steel

replaced its Open Hearth furnaces with a Quell Basic Oxygen Process furnace (QBOP), applied sulfur removal technology to the coke oven gas, and constructed a water treatment facility which reduced its slag quenching emissions.

Other significant emission control projects within Utah County included; installation of 90% efficient NOx scrubbers at each of LaRoach's (two) nitric acid plants, elimination of coal combustion at Pacificorp's (Hale) power generation station and Brigham Young University's hot water plant, and an aggressive woodburning program with voluntary and mandatory no-burn days.

Point Sources: As discussed earlier, the source apportionment analysis in Utah County identified 60 to 70% of the PM10 impact as belonging to industrial point sources. Thus, a large portion of the control strategy was directed at the group of point sources within the immediate area. All significant sources in existence when this SIP was developed were issued new limitations on emissions of PM10, SO2 and NOx, based on the application of RACT. These new "operating conditions" effectively replaced all conditions involving such pollutants in any pre-existing approval order. In this way, an upper emissions cap was established for existing industrial sources located in the nonattainment area.

The reader seeking additional information concerning the application of source specific RACM/RACT or an assessment of Reasonable Further Progress (RFP) is directed to the State's first milestone report for the Utah County nonattainment area (submitted to EPA on September 30, 1995).

As stated before, Utah feels it has been successful in implementing the PM10 SIP for Utah County. Included as attachment 1 to this report is a summary table of emission levels belonging to each of the point sources. The table outlines: baseline (1988) emissions for each of the sources, post-SIP allowable emission levels reflecting RACM, and the most recent estimation (1994 inventory) of source activity. The summary indicates that, collectively, these point sources are well below the emission levels deemed acceptable by the SIP. Source inspections for 1995 indicate continued compliance with the SIP.

Area Sources:

1. Solid Fuel Burning Devices

The State began its woodburning program on a voluntary basis in September of 1992. Early efforts focused on the details of the notification system and conditioning the residents to the routine of the program. The State now implements a mandatory no-burn program within three counties along the Wasatch Front. The structure of the program is very similar to the proposal outlined in the SIP, and the rule has been codified in the State Rules at UACR 307-1-4.12. Program elements are outlined below.

The "no-burn" area for Utah County is north of the southernmost border of Payson City and east of State Route 68.

Mandatory no-burn days are called when the ambient air contains 120 micrograms/cubic meter or more as measured by the real time monitor in Lindon, and the forecasted weather for the area includes a temperature inversion which is predicted to last for at least 24 hours. During a mandatory no-burn (red) day, no person is allowed to burn unless their solid burning device is certified as a sole source of heat or unless there are no visible emissions.
Voluntary no-burn (yellow) days are triggered when the ambient levels reach 100 $\mu g/m^3$.

The red/yellow/green status for the day appears in the newspapers and is broadcast over the T.V. and radio.

Enforcement of the no-burn rule is conducted by the DAQ. Patrol cars are assigned to each county on a no-burn day. When a violation is identified the individual is informed of the violation and of the DAQ penalty policy. If appropriate, a citation is sent to the address of the offender. Additional inspectors are on call to investigate complaints. First-time offenders are encouraged to attend an educational session at the DAQ as an alternative to paying the fine. Sites found in violation are reinspected within 24 hours, or on the next red day, and issued another notice of violation if still in noncompliance.

To bolster public awareness of the program the State has produced two information pamphlets which outline the rules of the woodburning program and provide information on the health effects of woodsmoke, its impact on our nonattainment areas, proper stove operation, and the selection of clean-burning stoves. These pamphlets are made available at the DAQ as well as local health departments, and inspectors routinely distribute them while on shift. DAQ has also staffed an information booth at the State Fair in each of the last several years, where proper use of woodstoves and compliance with the voluntary no-burn periods is encouraged. The newspaper also publishes a number to call for answers to questions regarding the status for the day or the woodburning program in general. Phone logs indicate that over 128,000 calls were received during the program's first season. Most importantly, media broadcasts of the woodburning status during every day of the last four winter seasons have not only conditioned the public to consider the woodburning status before lighting a fire, but have ingrained in the residents the notion that each of our fireplaces can have an effect on the quality of the air.

Information gathered in order to assess the effectiveness of the program as implemented suggests a compliance rate that is very good. A report of compliance activity for the 1995/'96 woodburning season has been included as attachment 2 to this report.

Also, as part of SIP development, the maximum allowable opacity from solid fuel burning devices was changed from 40% to 20%. This requirement has been incorporated into the Utah Air Conservation Rules (UACR) at R307-1-4.12.2, and applies to residential solid fuel burning devices and fireplaces on any day other than a "no-burn" day.

2. Road Salting and Sanding

UACR 307-1-3.2.7 was amended to require the application of salt that is at least 92% sodium

chloride on all arterial roadways. The rule stipulates that any other material applied to such roadways must be proven to be at least as clean as salt (92% NaCl) or be vacuum swept off of the roadways within three days of the storm. As revised, the rule no longer requires the submittal of a plan and schedule to reduce street loading of particulate matter by 25%, nor does it require an annual submittal of compliance verification. The rule does however require, as an enforcement mechanism, the maintenance of records of the material applied by those who are responsible for its application. For salt, the records are to include the quantity applied, the percentage that represents insoluble solids and the percentage that is NaCl. For sand or grit, the records are to include the quantity applied and the percent of the fine material that will pass the number 200 sieve in a standard gradation analysis. All records must be made available to the Executive Secretary upon request.

Mobile Sources:

Diesel Inspection and Maintenance Program

Davis, Salt Lake and Utah Counties were required to implement a Diesel I/M program as part of the PM10 SIP. Not only was it considered necessary to inspect and maintain the diesel fleet in an effort to minimize PM10 emissions, but a diesel I/M program was also perceived as an equity issue since owners of gasoline powered vehicles had been required to have their vehicles inspected and repaired for a number of years.

At that time, Utah County had already submitted a draft diesel I/M ordinance. This draft ordinance was used as a template in the SIP for the proposed program. It was stated that the program would be modified as more effective methods were identified, and that any changes would be consistent with the DAQ's goal of a 20% reduction in PM10 emissions.

Testing for vehicles registered in PM10 nonattainment areas began on December 1, 1994. The details of the program are now part of the Utah SIP (Section XXIII).

Other Provisions of the SIP:

1. Maintenance

The PM10 SIP for Utah County demonstrates that the PM10 NAAQS will be achieved by December 31, 1993. The plan must also demonstrate maintenance of the standard in the years to follow. The following list outlines the "safety margin" built into the SIP for maintenance purposes.

a. The federal standard for sulfur in diesel fuel became .05% in 1993. A standard of 40 C-tane was also proposed. This has been implemented at the federal level.

b. EPA promulgated emission standards for diesel transit bus engines (1991 and newer) and for heavy duty truck engines (1994 and newer). This has been implemented at the federal

level.

c. With commercial growth originally estimated at 1.5% per year, local planning agencies are required to review construction projects to assure consistency with SIP requirements. Any adverse impacts must be mitigated. Offset requirements represent one way to do this, and since most of the emissions associated with commercial development come from boilers or burners for space heating, the State now requires low NOx burner technology in an effort to mitigate commercial growth. Both strategies have been implemented through the State's New Source Review program. Specifically, emissions offsets at 1:1 are required of any new or modified source which emits between 25 tons per year (tpy) and 50 tpy of combined PM10, SO2 and NOx, and is located in or impacts a nonattainment area. Any source of 50 tpy or more is required to obtain a 1.2:1 credit prior to receipt of an approval order. Also, Best Available Control Technology (BACT) is required on all new source construction. When burners are replaced at existing sources, low-NOx burners (or whatever is determined as BACT at the time of replacement) will be required if technologically and economically feasible.

2. Contingency Measures

The State adopted a contingency plan for Utah County on July 12, 1995, and it became effective on October 2, 1995. Plan elements include: 1. Lowering the "red" and "yellow" thresholds for woodburning alerts, 2. Banning the sale or installation of previously used solid fuel burning devices which are not certified by EPA, 3. Implementation of an enhanced I/M program, 4. Implementation of an employer-based trip reduction program, and 5. An evaluation of the oxygenated fuels program and its effect on NOx emissions. The contingency plan was submitted to EPA on July 18, 1995.

2. Ambient Air Quality Data:

Ambient data for PM10 is collected at three sites in Utah County: Lindon, North Provo, and West Orem. Although the data for calendar year 1995 has been compiled and submitted to EPA, via the AIRS system, within the time frame outlined in the State/EPA Agreement, it has been included as an attachment to this report (attachment 3). In addition, it will be briefly summarized below. This summary indicates that the ambient data collected for calendar year 1995, the year preceding the extension year, is in agreement with the necessary criteria for obtaining an extension year as outlined in Section 188(d)(2) of the Act.

The State and Local Air Monitoring Station (SLAMS) report indicates the following:

At the North Provo site:

> There were 0 exceedances of the 24-hour standard in 1995, and no values in excess of 100 $\mu g/m^3$.

The annual arithmetic mean for 1995 was 26 $\mu g/m^3$.

At the Lindon site:

There were 0 exceedances of the 24-hour standard in 1995. Two values were recorded between 101 and 125 $\mu g/m^3$.

The annual arithmetic mean for 1995 was 32 $\mu g/m^3$.

At the West Orem site:

There were 0 exceedances of the 24-hour standard in 1995. One value was recorded between 126 and 150 $\mu g/m^3$.

The annual arithmetic mean for 1995 was 29 $\mu g/m^3$.

The "Quick Look Report" generated by AIRS reveals that the number of estimated exceedances for each of these three sites was 0.00 in 1995.

State's Request:

Having completed the exercise to demonstrate that Utah has in fact implemented the PM10 SIP for Utah County, and having collected ambient data which supports the notion that such implementation is indeed having a positive effect on air quality in the area; the State of Utah feels that it qualifies for a second extension year, as provided for in Section 188(d) of the Act, and hereby requests that such extension year be granted by the Administrator.

Attachment 1

RFP Emissions Summary (tons/yr) - Utah County

Point Source	1988	Post SIP	Change	Current	notes	Tons +/-
BYU	534.7	348.9	-185.8	281.5	a	-67.4
Consolidated Red E Mix	140.4	39.7	-100.7	0.0	b	-39.7
General Refractories	114.6	134.5	19.9	84.1	a	-50.4
Geneva Rock	54.4	90.0	35.6	24.8	a	-65.2
Geneva Steel	14,297.9	6,862.3	-7,435.6	4,073.5	a	-2,788.8
Heckett	153.9	146.7	-7.2	132.0	a	-14.7
LaRoche	1,215.7	339.3	-876.4	126.0	a	-213.3
Lehi Cogeneration	0.0	305.3	305.3	0.0	b	-305.3
PSCIP	65.0	88.0	23.0	42.3	a	-45.7
Provo City	68.3	272.5	204.2	2.0	a	-270.5
Reilly Industries	15.7	18.3	2.6	3.5	a	-14.8
Springville City	1.3	239.4	238.1	180.5	a	-58.9
UP&L Hale	0.0	800.6	800.6	0.0	b	-800.6
Westrock Highland	33.2	21.3	-11.9	20.6	a	-0.7
Westrock Pleasant Grove	9.2	21.7	12.5	8.6	a	-13.1
Subtotal	16,704.3	9,728.5	-6,975.8	4,979.3		-4,749.2

Overall Tons Reduced: 11,725.0
% of Control Achieved: 168.1%

Notes:

All figures are in tons/year of SO2 + NOx + PM10.

a : Current emissions estimate is from the 1994 annual inventory.
b : Source did not operate in 1994.

Area Sources:

	1988	Proj.'95	Change	Current	notes	Tons +/-
Spaceheating	1,166.2	927.7	-238.5	1,063.8	A	136.2
Subtotal	1,166.2	927.7	-238.5	1,063.8		#REF!

Overall Tons Reduced: 102.4
% of Control Achieved: 42.9%

Notes:

All figures are in tons/year of SO2 + NOx + PM10.

B: 1988 estimate less 60% of woodsmoke PM10, times average growth rate (3.3% per yr.), compounded for 7 years. Note also that actual compliance rate probably exceeds 60%.

Grand Total:	1988	Proj.'95	Change	Current	notes	Tons +/-
	17,870.5	10,656.2	-7,214.3	6,043.1		#REF!

Overall Tons Reduced: 11,827.4
% of Control Achieved: 163.9%

Attachment 2

1995-6 SMOKE PATROL

DAVIS COUNTY

City	ZIP	Patrol Hrs.	Violations	Microscale
West Bountiful	84010	2		
Woods Cross	84087	2		
North S.L.	84054	1		Yes
Totals		5	0	0

SALT LAKE COUNTY

City	ZIP	Patrol Hrs.	Violations	Microscale
Cottonwood	84121	1		Yes
Magna	84044	1	1	
Murray	84123	1	1	
Salt Lake	84101	2		Yes
	84103	1		
	84105	3		
	84111	1	1	
	84116	6	1	
Sandy	84094	2	1	
West Valley	84119	1	1	
	84120	2		
Totals		21	6	0

UTAH COUNTY

City	ZIP	Patrol Hrs.	Violations	Microscale
American Fork	84003	4	1	
Lindon	84042	4	1	Yes
Orem	84057	9	4	
	84058	9		
Pleasant Grove	84062	3		
Provo	84601	4	1	
	84604	10	1	
	84606	5		
Springville	84663	3	1 (not issued, address not on record)	
Totals		51	9	1

	Patrol Hrs.	Violations	Microscale
Season Totals 1995-6	**77**	**15**	**1**
1994-5 Totals	44	18	1

Attachment 3

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** PM10 UG/CU.METER 1995 UTAH **
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SITE-ID / STREET ADDRESS / CITY	PARAMETER	POC	EXCEPTIONAL EVENTS DATA	ANNUAL ARITH. MEAN	SAMPLING FREQS. 1 2 3 4	NUMBER OBSERVATIONS 1 2 3 4	# ADDITIONAL SAMP. DAYS 1 2 3 4	DATE SAMPLE FREQUENCY VALID 1 2 3 4	FREQUENCY OF 24-HOUR CONCENTRATIONS VALUE RANGE	NUMBER VALUES
********** UTAH CO **********										
49-049-0002	81102	2	NO	26	1	347		01/01	0-25	191
1355 NORTH 200 WEST PROVO UT									26-50	137
PROVO									51-75	16
									76-100	3
									101-125	0
									126-150	0
									151-175	0
									176-200	0
									> 200	0
49-049-4001	81102	2	NO	32	1	333		01/01	0-25	135
30 NORTH MAIN STREET, LINDON, UTAH									26-50	156
LINDON									51-75	27
									76-100	13
									101-125	2
									126-150	0
									151-175	0
									176-200	0
									> 200	0
49-049-5001	81102	1	NO	29	1	343		01/01	0-25	169
300 NORTH 1200 WEST OREM UTAH									26-50	136
OREM									51-75	34
									76-100	3
									101-125	0
									126-150	1
									151-175	0
									176-200	0
									> 200	0

REPORT ORG: 001 - UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
METHOD(S): 063 - HI-VOL-SA/GMW-1200 GRAVIMETRIC

EXCEEDANCES
DATES

REPORT ORG: 001 - UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
METHOD(S): 063 - HI-VOL-SA/GMW-1200 GRAVIMETRIC

EXCEEDANCES
DATES

REPORT ORG: 001 - UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
METHOD(S): 063 - HI-VOL-SA/GMW-1200 GRAVIMETRIC

EXCEEDANCES
DATES

EPA AEROMETRIC INFORMATION RETRIEVAL SYSTEM (AIRS)
AIR QUALITY SUBSYSTEM
QUICK LOOK REPORT

PM-10 TOTAL 0-10UM (81102) UTAH UNITS: 001 UG/CU METER (25 C)

SITE ID	POC	MT	CITY	COUNTY	ADDRESS	YR	REP ORG	NUM OBS	SCHEDULED NUM OBS	% OBS	NUM REQ	----MAXIMUM VALUES----- 1ST	2ND	3RD	4TH	VALS > 150 MEAS	EST	WTD ARITH MEAN	METH
49-049-0002	2	1	PROVO	UTAH CO	1355 NORTH 200 WEST P	95	001	347	347	95	365	92	82	76	72	0	0.00	26	063
49-049-4001	2	1	LINDON	UTAH CO	30 NORTH MAIN STREET,	95	001	333	333	91	365	111	103	97	97	0	0.00	32	063
49-049-5001	1	3	OREM	UTAH CO	300 NORTH 1200 WEST O	95	001	343	343	94	365	150	98	92	90	0	0.00	29	063