

**UTAH STATE
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY**

UTAH AIR QUALITY BOARD MEETING

August 1, 2001

PLEASE PRINT

NAME	AFFILIATION
Jan Miller	DAQ
BILL COLBERT	DAQ
MIKE STRONG	EG&G
Steve Thacker	SAIC
Bruce Bird	DAQ
MIKE PARKER	ATK
Kathy Vandam	Wasatch Clean Air Coalition
Joe Martone	Battelle
Lydia Salmon	Kennecott Utah Copper
JAMES BRANDS	S.L. VALLEY HEALTH DEPT.
J. Fahys	Tribune
SUSAN HARDY	DAQ
Lynn R. Menlove	DAQ



State of Utah

Utah Air Quality Board

Michael O. Leavitt
Governor

David B. George
Chair

John M. Veranth
Vice Chair

Richard W. Sprott
Executive Secretary

Karl F. Brooks
David B. George
James R. Horrocks
Dannie R. McConkie
Dianne R. Nielson
Richard R. Olson
Wayne M. Samuelson
JoAnn B. Seghini
Joseph D. Thompson
Jeffrey K. Utley

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AIR QUALITY BOARD MEETING

FINAL AGENDA

Wednesday
August 1, 2001
1:30 P.M.

168 N. 1950 W. (Building #2) Room 101

- I. Call to Order
- II. Date of Next Meeting
- III. Approval of Minutes of the July 11, 2001, Board Meeting
- IV. **Final Adoption:** R307-110-31 and SIP Section X.A, General Requirements and Applicability for Vehicle I/M Programs (**Bill Colbert**)
- V. **Final Adoption:** R307-110-33 and SIP Section X.C, Salt Lake County Vehicle I/M Program (**Bill Colbert**)
- VI. **Final Adoption:** R307-110-33 and SIP Section X.D, Utah County Vehicle I/M Program (**Bill Colbert**)
- VII. Information Items
 - A. Compliance Activities for June 2001 (**Jeff Dean**)
 - B. HAPs Compliance Activities for June 2001 (**Bryce Bird**)
 - C. Monitoring Data for July 2001 (**Bob Dalley**)
 - D. SIPs Update
- VIII. Miscellaneous

- MINUTES -
UTAH AIR QUALITY BOARD MEETING
AUGUST 1, 2001

I. CALL TO ORDER

David B. George, Chair, called the meeting to order at 1:38 p.m.

Board members present:

In person: David B. George
John M. Veranth
Wayne M. Samuelson

Via telephone: Karl F. Brooks
Jeffrey K. Utley
Dannie R. McConkie
Richard R. Olson
JoAnn B. Seghini
Joseph D. Thompson

Executive Secretary: Richard W. Sprott

II. DATE OF THE NEXT AIR QUALITY BOARD MEETING

The next Board meeting will be held Wednesday, September 5, 2001, at 1:30 p.m.

III. APPROVAL OF THE MINUTES OF THE JULY 11, 2001, BOARD MEETING

John Veranth made the motion to approve the minutes of the July 11, 2001, Air Quality Board meeting. Wayne Samuelson seconded the motion. The motion passed.

IV. FINAL ADOPTION: R307-110-31 AND SIP SECTION X.A, GENERAL REQUIREMENTS AND APPLICABILITY FOR VEHICLE I/M PROGRAMS

Presenter: Bill Colbert, Environmental Scientist

SIP Section X.A was amended to postpone mandatory implementation of the on-board diagnostic systems test until January 1, 2002, consistent with recent federal guidance.

A public hearing was held June 21 and no comments were received. Staff recommends adoption as proposed.

- **MOTION:** JoAnn Seghini made the motion to adopt this item. Karl Brooks seconded the motion. The motion passed.

V. FINAL ADOPTION: R307-110-33 AND SIP SECTION X.C, SALT LAKE COUNTY VEHICLE I/M PROGRAM

Presenter: Bill Colbert

This portion of the SIP was amended to include technical documentation demonstrating the program effectiveness of the Salt Lake County program is equivalent to that found in a test-only network. This will allow the program to receive program emissions credit available from EPA. A public hearing was held June 21; two comments were received from Wasatch Front Regional Council supporting the proposed change. Staff recommends adoption as proposed.

- **MOTION:** Dannie McConkie made the motion to adopt this item. The motion was seconded. The motion passed.

VI. FINAL ADOPTION: R307-110-33 AND SIP SECTION X.D, UTAH COUNTY VEHICLE I/M PROGRAM

Presenter: Bill Colbert

This section was amended to reflect recent program changes and would also allow Utah County to receive full program credit from EPA as equivalent to a test-only network. At the June 21 public hearing, no comments were received; however, Utah County submitted 16 technical comments clarifying and correcting minor errors to the text. The most significant change was the request to include a summary of Utah County's Remote Sensing Program capability which the county maintains for additional program flexibility and ability to quantify its program effectiveness. All comments have been incorporated.

Staff recommends adoption with the corrections provided by Utah County.

- **MOTION:** Dannie McConkie made the motion to adopt this item. JoAnn Seghini seconded the motion. The motion passed.

VII. INFORMATION ITEMS

A. Compliance Activities for June 2001

No comments.

B. HAPs Compliance Activities for June 2001

No comments.

C. Monitoring Activities for June/July 2001

Bob Dalley commented that some high values were noted on July 4 for PM10 and PM2.5. These are not exceedances, but they are above the norm for this time of year (these could be due to fireworks).

David George asked if Olympics events might have an effect on the downtown monitors, and is there anything that can be done in case of a big exceedance. Rick Sprott responded that the primary issue of concern to date downtown is carbon monoxide. SLOC's current transportation plan deploys much of the traffic to the perimeter area through park-and-ride lots. Possible fireworks for opening/closing ceremonies could pose a PM problem. SLOC and DAQ will be working with businesses and industry to look at adjustments that could be made in case of a bad inversion.

(Joseph Thompson joined the meeting via telephone at this point.)

Mr. Dalley reported that if EPA agrees to back last year's ozone values out of the data set, the area will not have experienced a violation of the ozone standard.

Mayor Seghini asked if the fire at Camp Williams in July affected the values. Mr. Dalley responded that PM data for July 15 showed low values. Effects of that fire were not very evident.

There was an exceedance of the ozone standard at the West Valley station on July 24.

Mayor Seghini asked if restrictions would ever be placed on fireworks if exceedances continue to occur during the July 4 and July 24 holidays. Rick Sprott responded that it is not certain if the exceedances correlate with the fireworks. If fireworks are planned for the Olympics, discussions will need to take place regarding possible effects and solutions.

Joseph Thompson asked if there is a theory that ozone exceedances might be caused by fireworks. Mr. Sprott responded that he knows of no written evidence that that is the case, especially with the relatively small amount of fireworks used. Fireworks generally go off late at night, which is past the time that ozone is forming.

Kathy Van Dame commented that she has recently heard of a study that showed that light frequencies that fireworks generate cause the progression of the chemical changes that form ozone.

Mr. Sprott commented that with all things considered, it's hard to imagine that any measurable amount of ozone would form from those particular chemical reactions.

D. Miscellaneous

Joseph Thompson asked Mr. Sprott to comment on the national environmental performance program under consideration for implementation in Utah. Mr. Sprott will ask Dianne Nielson, Executive Director of DEQ, to report on this program at the September Board meeting.

The meeting adjourned at 2:00 p.m.



State of Utah

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MEMORANDUM

TO: Air Quality Board

DAQ-066-01

THROUGH: Richard W. Sprott, Executive Secretary

FROM: Bill Colbert, Environmental Scientist

DATE: July 23, 2001

SUBJECT: Final Adoption: R307-110-31 and SIP Section X.A, General Requirements and Applicability for Vehicle I/M Programs

On May 2, you proposed for public comment amendments in SIP Section X.A, General Requirements and Applicability for vehicle I/M programs. These amendments will postpone the requirement to test On-Board Diagnostic Systems until January 1, 2002.

A public hearing was held on June 21; no comments were received and no other comments have been received.

Staff recommendation: Staff recommends adoption as proposed.

R307. Environmental Quality, Air Quality.

R307-110. General Requirements: State Implementation Plan.

R307-110-31. Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability.

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part A, General Requirements and Applicability, as most recently amended by the Utah Air Quality Board on August 1, 2001, pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, small business assistance program*, particulate matter*, ozone

August 1, 2001

19-2-104(3)(e)

Notice of Continuation June 2, 1997

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UTAH STATE IMPLEMENTATION PLAN

SECTION X

VEHICLE INSPECTION AND MAINTENANCE PROGRAM

PART A

GENERAL REQUIREMENTS AND APPLICABILITY

Adopted by the Utah Air Quality Board
August 1, 2001

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1. General Requirements 1
2. Applicability 2

1 establish requirements for county I/M programs after obtaining agreement from the
2 affected counties. The same bill amended Section 41-6-163.6 to allow the counties to
3 subject individual motor vehicles to inspection and maintenance at times other than the
4 annual inspection. This authority was sought in anticipation of adding an on-road testing
5 element to the current I/M programs as soon as funding is available.
6

7 Section 41-6-163 was amended in 1994 to authorize implementation of I/M programs
8 stricter than minimum federal requirements in counties where it is necessary to attain or
9 maintain ambient air quality standards. Section 41-6-163 requires preference be given to
10 a decentralized program to the extent that a decentralized program will attain and
11 maintain ambient air quality standards and meet federal requirements. It also requires
12 affected counties and the Air Quality Board to give preference to the most cost effective
13 means to achieve and maintain the maximum benefit with regard to air quality standards
14 and to meet federal air quality requirements related to motor vehicles. The legislature
15 indicated preference for a reasonable phase-out period for replacement of air pollution
16 test equipment made obsolete by program in accordance with applicable federal
17 requirements, and if such a phase-out does not otherwise interfere with attainment of
18 ambient air quality standards.
19

20 House Concurrent Resolution No. 9 of the 1994 General Session of the legislature
21 (H.C.R. 9) was a concurrent resolution of the legislature and the governor expressing
22 opposition to the EPA position regarding the implementation of enhanced automobile
23 inspection and urging the EPA to recognize the benefits of other automobile inspection
24 program options and to work with the state to develop workable plans for attaining
25 ambient air quality standards and protecting public health. Parts B, C, D and E of this
26 section document state I/M requirements and applicability that are specific to Davis, Salt
27 Lake, Utah and Weber Counties, respectively.
28

29 In 1995, the legislature amended Section 41-6-163.7 to rescind the requirement for I/M
30 program standardization and reciprocity between counties. Consequently, standardization
31 and reciprocity between I/M counties is no longer required, each I/M county is free to
32 develop an I/M program that best meets the respective county's needs.
33

34 **2. Applicability**

35

36 *General Applicability* All of Utah's ozone and carbon monoxide non-attainment and
37 maintenance areas are located in the four counties where Utah's State Implementation
38 Plan for Automotive Inspection and Maintenance (I/M) Program is applicable.

1
2 U.S. BUREAU OF CENSUS POPULATION FOR OZONE NON-ATTAINMENT AREAS

3 Ozone non-attainment Area	1980 Census	1990 Census
4 Salt Lake County	619,066	725,956
5 Davis County	146,540	187,941
6 Total	765,606	913,897

7
8
9 U.S. BUREAU OF CENSUS POPULATION FOR CARBON MONOXIDE NON-ATTAINMENT
10 AREAS

11 CO non-attainment Area	1980 Census	1990 Census
12 Ogden City	64,407	63,909
13 Provo City	74,111	86,835
14 Salt Lake City	163,034	159,936
15 Total	301,552	310,683

16
17 EPA's requirement for minimum mandatory geographic coverage for Basic I/M programs
18 is the urbanized area in which an applicable nonattainment and maintenance area is
19 located. Parts of Utah's carbon monoxide and ozone nonattainment and maintenance
20 areas are geographically located within the following U.S. Bureau of Census urbanized
21 areas. There is no direct correspondence between the geographic boundaries of the
22 nonattainment and maintenance areas, the urbanized areas, and Utah's I/M programs.
23

24 1990 U.S. BUREAU OF THE CENSUS DATA FOR NON-ATTAINMENT URBANIZED AREAS

25 Urbanized Areas	1980 Census	1990 Census
26 Ogden Urbanized Area	205,744	259,147
27 Provo-Orem Urbanized Area	169,699	220,556
28 Salt Lake Urbanized Area	<u>674,201</u>	<u>789,447</u>
29 Total	1,049,644	1,269,150

30
31 Utah's State Implementation Plan for I/M is applicable county-wide in Davis, Salt Lake,
32 Utah, and Weber Counties. The carbon monoxide and ozone nonattainment and
33 maintenance areas and the associated urbanized areas are located completely within these

1 four counties. Utah's carbon monoxide and ozone nonattainment and maintenance areas
2 are located in two metropolitan statistical areas (MSAs), the Provo-Orem MSA and the
3 Salt Lake City-Ogden MSA. The Provo-Orem MSA includes all of Utah County. The
4 Salt Lake City-Ogden MSA includes all of Davis, Salt Lake, and Weber Counties.
5

6 1990 U.S. BUREAU OF THE CENSUS DATA FOR UTAH I/M PROGRAM AREAS

7 County	1980 Census	1990 Census
8 Davis	146,540	187,941
9 Salt Lake	619,066	725,956
10 Utah	218,106	263,590
11 Weber	144,616	158,330
12 Total	1,128,628	1,335,817

13
14 *Enforcement mechanism* The I/M programs are registration-enforced on a county-wide
15 basis. Section 41-6-163.6(1) requires that a certificate of emissions inspection or a
16 waiver or other evidence that the motor vehicle is exempt from the I/M program
17 requirements be presented prior to registration of a motor vehicle in the counties where
18 I/M programs are required.
19

20 *Applicable zip codes* Federal I/M regulations require submittal of a list of ZIP codes for
21 I/M program areas. EPA plans to use ZIP codes to help I/M programs identify vehicles
22 subject to emissions-related recalls by the manufacturer. This I/M program element is
23 only mandatory in areas where enhanced I/M is explicitly required by the Clean Air Act.
24 Participation in the database and access to the information will provide consumer and air
25 quality benefits should Utah's I/M programs elect to participate when the system is
26 developed.
27

28 *Test frequency* Vehicles are tested on an annual basis. A certificate of emissions
29 inspection or a waiver or other evidence that the vehicle is exempt from the I/M program
30 requirements must be presented at the time of, and as a condition precedent to,
31 registration or renewal of registration of a motor vehicles as specified in Section 41-6-
32 163.6 and 41-1a-203(1)(c). The I/M inspection is required within two months prior to the
33 month the registration renewal is due. Owners of vehicles operated without valid license
34 plates or with expired license plates are subject to ticketing by peace officers at any time.
35 Registration status is also checked on a random basis at roadblocks and in parking lots at
36 various locations around the state. Per Section 41-1a-402, Utah license plates indicate the
37 county of registration and the expiration date of the registration.
38

39 *Valid registration required* Per Section 41-1a-1303, it is a Class C misdemeanor for a

1 person to drive or move, or for an owner knowingly to permit to be driven or moved upon
2 any highway any vehicle of a type that is required to be registered in the state that is not
3 registered in the state. Section 41-1a-1315 specifies that it is a second degree felony to
4 falsify evidences of title and registration.
5

6 *Registration schedules* Section 41-1a-215 specifies that vehicle registration dates are
7 staggered throughout the year. Registrations continue for a period of twelve months
8 beginning with the first day of the calendar month of registration and does not expire until
9 the last day of the same month in the following year. Vehicle owners are not able to alter
10 the test frequency by late registration of the vehicle. Section 41-1a-216 says that "the
11 new registration shall retain the same expiration month as recorded on the original
12 registration even if the registration has expired" unless the vehicle has been out of
13 service. This provision ensures that the vehicles are tested on an annual basis.
14

15 *Change of ownership* Vehicle owners are not able to avoid the I/M inspection program
16 by changing ownership of the vehicle. Upon change of vehicle ownership the vehicle
17 must be re-registered by the new owner. The new owner must present an emissions
18 certificate, waiver, or proof of exemption from the I/M program as a condition precedent
19 to registration. The I/M documents must be dated no more than two months prior to the
20 registration date. The new annual registration and I/M inspection dates for the vehicle
21 will be the date of registration.
22



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MEMORANDUM

TO: Air Quality Board DAQ-067-01

THROUGH: Richard W. Sprott, Executive Secretary

FROM: Bill Colbert

DATE: July 23, 2001

SUBJECT: Final Adoption: R307-110-33 and SIP Section X.C, Salt Lake County Vehicle I/M Program

On May 2, you proposed for public comment amendments in SIP Section X.C, Salt Lake County Vehicle Emissions Inspection and Maintenance Program. These amendments will allow Salt Lake County's I/M program to receive full credit from EPA.

A public hearing was held on June 21; two comments were received and are summarized below. No other comments have been received.

Staff recommendation: Staff recommends adoption as proposed.

Summary of Comments and Responses Salt Lake County I/M SIP

Comment: Wasatch Front Regional Council supports full credit for the Salt Lake County vehicle emissions test and repair program. Salt Lake County has worked diligently over the years to demonstrate that its program is no more prone to fraud and abuse than centralized test-only programs. In fact, Salt Lake County's program had less fraud than a test-only program in Minnesota. As a result of that effort, EPA has now changed their requirement to recognize that test and repair programs can be as effective as test-only programs. Salt Lake County deserves full credit for its program. The staff have worked hard to keep fraud out of their system and high-polluting vehicles off the road with numerous overt and covert audits of participating I/M testing stations. In addition, they have developed a real-time database that has become a model for the industry. (Wasatch Front Regional Council letter of May 31, 2001, signed by Chairman Dannie McConkie and read by Sam Klemm at the public hearing)

Response: Noted.

Comment: In the work on a new PM10 SIP, EPA is urging that computer modeling give full credit for Salt Lake County's I/M program. They recognize, too, that Salt Lake County does a good job of

identifying high-emitting vehicles and getting them repaired. (Oral comment by Kip Billings, Wasatch Front Regional Council, at the public hearing)

Response: Noted.

R307. Environmental Quality, Air Quality.

R307-110. General Requirements: State Implementation Plan.

R307-110-33. Section X, Vehicle Inspection and Maintenance Program, Part C, Salt Lake County.

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part C, Salt Lake County, as most recently amended by the Utah Air Quality Board on August 1, 2001, pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, small business assistance program*, particulate matter*, ozone

August 1, 2001

19-2-104(3)(e)

Notice of Continuation June 2, 1997

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UTAH STATE IMPLEMENTATION PLAN

SECTION X

**VEHICLE INSPECTION
AND MAINTENANCE PROGRAM**

PART C

SALT LAKE COUNTY

Adopted by the Utah Air Quality Board
August 1, 2001

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able to calculate emission factors, grams of a particular pollutant per vehicle mile traveled across the fleet in an area (G/VMT), given information about the fleet, climate, fuel characteristics, and I/M programs in a local area. Table X.C.1 summarizes the modeled VOC, CO and NO_x emission factors specified in Section IX, Part D.2 of the Ozone Maintenance Plan for the UTAH98 I/M program. The modeling demonstrates compliance with both the federal Basic I/M performance standard and the Ozone Maintenance Plan Basic I/M performance standard. Attainment of this performance standard only required I/M emission benefits derived from a test-and-repair network. Subsequent to this demonstration, EPA promulgated Additional Flexibility Amendments to the Vehicle Inspection Maintenance Requirements effective August 23, 2000. This rule change removed the mandatory I/M rule provision establishing the decentralized, test-and-repair network credit discount and permits areas to demonstrate increased I/M program effectiveness of their networks. Future MOBILE modeling of the Salt Lake County I/M program will take advantage of this credit.

SALT LAKE COUNTY UTAH98 I/M PERFORMANCE STANDARD ANALYSIS SUMMARY

pollutant	program modeled	emission factors in grams/mile				
		July 1	1998	2000	2003	2006
VOC	Basic Performance Standard			2.47	2.30	
	UTAH98 Performance Standard		2.09	1.85	1.63	1.47
	UTAH98 Program Target		2.09	1.85	1.63	1.47
NO _x	No I/M, No ATP			2.38	2.23	
	UTAH98 Performance Standard		2.20	1.96	1.81	1.76
	UTAH98 Program Target		2.20	1.96	1.81	1.76
CO	Basic Performance Standard			18.69		
	UTAH98 Performance Standard		15.46	12.65	10.56	9.29
	UTAH98 Program Target		15.46	12.65	10.56	9.29

TABLE X.C.1

The PM₁₀ contingency plan adopted on July 1, 1994, requires implementation of an improved I/M program in Davis and Salt Lake Counties if Salt Lake County violates the PM₁₀ standard. Commitments from the Salt Lake County Commissioners to implement an improved I/M program, as required by the SIP, are in Section IX, Part A, Appendix 1. The improved I/M program can be revised in the future by the Salt Lake County Commissioners as long as the revised program meets all the applicable performance standards documented in the Ozone SIP, Section IX.D.

2. Network type

TSD Tab 2: Letters of opinion from the Utah Attorney General's Office and the Salt

1 *Lake County Attorney's offices verifying the authority to implement the specified*
2 *network in Salt Lake County*

3
4 Salt Lake County's I/M program comprises a decentralized, test-and-repair network
5 with approximately 310 stations. The UTAH98 network provides ASM2 tailpipe
6 inspections in a decentralized test-and-repair network for light duty gasoline vehicles.
7 Vehicles exceeding 8500 lbs GVWR and/or with full-time four wheel or all wheel drive
8 undergo a Two-Speed Idle (TSI) inspection. Salt Lake Valley Health Department
9 regulations administering the program are provided in Appendix C.1.

10
11 **3. Tools and resources**

12
13 *TSD Tab3: Budgets and descriptions of personnel resources, facilities and equipment*

14
15 *Funding mechanisms* Salt Lake County's I/M program is funded through two
16 mechanisms. At the time of registration, a fee of \$3 per car is collected by the Salt
17 Lake County Tax Assessor's Office or Utah Tax Commission Motor Vehicle Customer
18 Service Division. Those monies are remitted to the county and the fees are dedicated to
19 I/M needs. In addition, the County charges fees for various permitting activities. A fee
20 schedule can be found in Appendix C of the Salt Lake City-County Regulation #22A
21 for the UTAH98 I/M program.

22
23 *Funding requirements* Salt Lake County will continue to allocate funding as needed to
24 comply with the relevant requirements specified in Utah's SIP; Utah statutes; county
25 regulations and policies; and the federal I/M program regulation. Program budgets will
26 include funding for resources necessary to adequately: manage the program; conduct
27 covert and overt audits, including repairs as specified in Section 13 below; assist and
28 educate inspectors, repair technicians, station owners, and the public; manage, analyze,
29 and report data; ensure compliance with the program by inspectors, stations, and vehicle
30 owners; and evaluate and upgrade the programs.

31
32 **4. Test convenience**

33
34 There are approximately 310 I/M stations currently permitted within Salt Lake County
35 Operating hours are not specified by the county. However, an I/M technician must be
36 available for at least 40 hours per week at facilities open to the public. Some stations
37 that test and service only one type of vehicle are permitted. Also there are government
38 and private fleet permitted stations that are not open to the public.

39
40 **5. Vehicle Coverage**

41
42 *TSD Tab 4: Sample letter regarding out-of-state exemption.*

1 *Subject fleet* The Salt Lake County health regulations specify that all model year 1968
2 and newer model year light duty vehicles, light duty trucks, and heavy duty trucks
3 registered or principally-operated in Salt Lake County are subject to the I/M program
4 except for exempt vehicles. Vehicle coverage is discussed in greater detail in the Salt
5 Lake County health regulations provided in Section X, Part C, Appendices. The data
6 was compiled for the 1990 emissions inventory and has been subjected to a
7 comprehensive quality assurance effort.

8
9 *Alternative fuels* Vehicles operated on alternative fuels such as propane, alcohol, and
10 natural gas are also subject to the program. Dual-fueled vehicles are tested twice, once
11 on each fuel.

12
13 *Government fleet* Section 41-6-163.6(1)(b) of the Utah Code requires that all vehicles
14 owned or operated in the I/M counties by federal, state, or local government entities
15 comply with the I/M programs. Salt Lake County permits government stations and
16 certifies inspectors to perform I/M inspections. The I/M station permit and inspector
17 certification requirements are the same for government fleets as for private or
18 commercial stations and inspectors. Some government agencies choose to have their
19 vehicles inspected at a commercial I/M station. Salt Lake County requires submittal of
20 a list of subject vehicles and a certificate of compliance or waiver for each vehicle every
21 year.

22
23 *Vehicles owned by students and federal employees* Section 41-6-163.3(5) requires
24 universities and colleges located in Utah's I/M areas to require proof of compliance with
25 the I/M program for vehicles which are permitted to park on campus regardless of
26 where the vehicle is registered. Vehicles operated by federal employees and operated
27 on a federal installation located within an I/M program area are also subject to the I/M
28 program regardless of where they are registered. Proof of compliance consists of a
29 current vehicle registration in an I/M program area or an I/M certificate of compliance
30 or waiver, or evidence of exempt vehicle status as specified in this section.

31
32 *Rental vehicles* The Salt Lake County I/M health regulations require that vehicles
33 available for rent or use in Salt Lake County are subject to its I/M program. To the
34 extent practicable, all vehicles principally-operated in the county are subject to the I/M
35 program.

36
37 *Farm truck exemption* Eligibility for the farm truck exemption from the I/M programs
38 is specified in Section 41-6-163.6(4) and must be verified in writing by Salt Lake
39 County I/M program staff. The owner must sign an affidavit on Utah State Tax
40 Commission form TC-838 that vehicle use will be limited to agricultural activities. A
41 copy of the form is provided in the Technical Support Document for Section X, Part A.
42 Due to past abuses by vehicle owners, Salt Lake County strictly limits use of the farm
43 truck exemption.

1
2 *Diesel vehicle exemption* Diesel vehicles are no longer exempt from I/M. Salt Lake
3 County implemented its diesel I/M program on January 1, 1997 in accordance with Salt
4 Lake County Health Regulation #28.

5
6 *New vehicle exemption* Proof that a vehicle is new and being registered for the first
7 time is established by presentation of a Manufacturer's Statement of Origin (MSO) at
8 the time of registration.

9
10 *Out-of-state exemption* Vehicles registered in Salt Lake County, but operated out-of-
11 state are eligible for an exemption. The owner must complete Utah State Tax
12 Commission form TC-810 in order to be registered without inspection documentation.
13 The owner must explain why the vehicle is unavailable for inspection in Utah.
14 Common situations include Utah citizens that are military personnel stationed outside
15 of the state, students attending institutions of higher education elsewhere, and people
16 serving missions. If the temporary address of the owner is located within another I/M
17 program area listed on the back of the form, the owner must submit proof of
18 compliance with that I/M program at the time of, and as a condition precedent to,
19 registration or renewal of registration. The vehicle owner must identify their
20 anticipated date of return to the state and is required to have the vehicle inspected
21 within 10 days after the vehicle is back in Utah. Salt Lake County maintains a record of
22 such exemptions and requires submission of an I/M inspection certificate or waiver at
23 the indicated time.

24
25 *Exempt vehicles* Motorcycles, farm vehicles and new vehicles being registered for the
26 first time are exempt.

27 28 29 **6. Test procedures and standards**

30
31 *TSD Tab 5: UTAH98 Analyzer specifications.*

32
33 *Specifications* Detailed specifications for the I/M test procedures and standards are
34 described in the Salt Lake County health regulations provided in Section X, Part C,
35 Appendices.

36
37 *I/M Program test procedure and analyzer* Salt Lake County's I/M program uses the
38 ASM2 test procedure in accordance with EPA-AA-RSPD-IM-96-2, Acceleration
39 Simulation Mode Test Procedures, Emission Standards, Quality Control Requirements,
40 and Equipment Specifications, Technical Guidance. The inspection for vehicles will
41 consist of a loaded-mode Emissions test for concentrations of hydrocarbons (HC),
42 carbon monoxide (CO), and oxides of nitrogen (NO_x), a functional inspection of the gas
43 cap and a visual/tampering inspection of the PCV, EGR, AIR and catalytic converter

1 systems. OBDII testing will be performed on 1996 and later model year vehicles in
2 compliance with federal statute. All UTAH98 I/M emissions inspections are
3 performed using the BAR97-compliant UTAH98 Analyzer. The UTAH98 Analyzer
4 calibration specifications and emissions test procedures meet the minimum standards
5 established in above referenced ASM2 Specification. The testing will use a BAR97-
6 compliant dynamometer. Covered vehicles are defined in the Salt Lake Valley Health
7 Department regulations. Gas cap and EGR valve function tests will be included in the
8 UTAH98 program. Full-time and All-wheel four wheel drive and vehicles with a
9 GVWR exceeding 8500 lbs undergo a Two-Speed Idle test unless they are OBD-
10 compliant. All covered vehicles in Salt Lake County are subject to the UTAH98 I/M
11 test procedure which began April 1, 1998.

12
13 *Pre-inspection emissions-related repairs* Inspectors in the county's test-and-repair
14 networks are required to perform the emissions test prior to making any emissions-
15 related repairs when a vehicle is presented for an emissions inspection. All inspectors
16 who conduct test-only inspections, are required to ask the vehicle owner or operator
17 whether a tune-up or other emissions-related repairs have been performed within 6
18 weeks prior to the emissions inspection and to document the owner's response in the
19 UTAH98 I/M computer vehicle information database (VID).

20
21 *Safety issues* Vehicles presented in unsafe condition must be repaired before
22 inspection. Vehicles are also subject to an annual safety inspection administered by the
23 Highway Patrol. Submission of proof of compliance with the safety program is also
24 required as a condition for registration or renewal of registration. Most owners in Salt
25 Lake County's test-and-repair network have the safety and emissions inspection
26 performed at the same time. Data relative to the safety inspection can be recorded in
27 the UTAH98 I/M Analyzers. The Salt Lake County I/M program is administered with
28 close cooperation with the Utah Highway Patrol Safety Program. UTAH98 I/M
29 program equipment, including dynamometers, shall be operated in accordance with
30 manufacturer's specifications to prevent injury or damage to people or equipment.
31 Exhaust gases are to be safely ventilated in accordance with EPA-AA-RSPD-IM-96-2.

32
33 *Exhaust leaks* The UTAH98 analyzer will reject vehicles with leaking exhaust systems
34 in compliance with EPA-AA-RSPD-IM-96-2.

35
36 *UTAH98 I/M program emission standards* The Salt Lake County Health Regulation
37 #22A, Appendix D, includes hydrocarbon, oxides of nitrogen and carbon monoxide
38 emission standards. These emission standards allow for quick adjustment of the
39 standards in case actual failure rates fall below the level specified in the State
40 Implementation Plan. The emission standards for the UTAH98 I/M program were used
41 in the MOBILE5.a.h modeling to demonstrate compliance with the federal Basic I/M
42 performance standard.
43

1 *Stringency* Salt Lake County will adjust tailpipe emission standards as necessary to
2 maintain a stringency rate of at least 22% for pre-81 model year vehicles, the stringency
3 rate used in the UTAH98 I/M performance standard modeling demonstrations.
4

5 *Re-test standards* The same test procedure and emission standards are used for initial
6 tests and retests, regardless of which part a vehicle may have failed during an initial
7 test. The UTAH98 I/M test procedure requires an official test, once initiated, to be
8 performed in its entirety regardless of intermediate outcomes, except in the case of
9 invalid test conditions, unsafe conditions, or the fast pass/fail algorithms.
10

11 *Anti-tampering provisions* Salt Lake County requires a visual emissions control device
12 inspection to determine whether the air system, catalyst, fuel inlet, exhaust gas
13 recirculation (EGR) valve, evaporative system, positive pressure crankcase valve
14 (PCV), and gas cap are present, appear to be properly connected, and appear to be the
15 correct type for the certified vehicle configuration. Regardless of the vehicle model
16 year, Salt Lake County does not allow waivers for tampered vehicles or money spent to
17 repair tampered or missing emission control devices to be applied towards a minimum
18 waiver cost. Salt Lake County requires repair of catalyst, and air pump system for
19 model year 1984 and newer vehicles. The county requires repair of any tampering of
20 the air system, catalyst, exhaust gas recirculation (EGR) valve, evaporative system,
21 positive pressure crankcase valve (PCV), and gas cap on model year 1990 and newer
22 vehicles. 1996 and newer vehicles also are required to have emission-related
23 malfunction indicator lights (MIL) extinguished.
24

25 *Engine changes* The Salt Lake County health regulations have a section that addresses
26 engine changes. After an engine change, vehicles are tested to the tailpipe emission
27 standards and anti-tampering requirements applicable to vehicles of the chassis model
28 year. Mixing vehicle classes (e.g., light-duty with heavy-duty) and certification types
29 (e.g. California with federal) within a single vehicle is considered tampering.
30

31 *Fuel switching* Vehicles that are switched to a fuel type for which there is no certified
32 configuration are tested according to the most stringent emission standards for that
33 vehicle model year and vehicle type.
34

35 **7. Test Equipment**

36
37 *TSD Tab 5: Technical specifications for the UTAH98 Enhanced I/M Analyzer*
38

39 *Analyzer access restrictions* An inspector access code is required to use the analyzer for
40 official tests, a service access code to repair or service the analyzer, and an auditor
41 access code to access the audit functions. DOS functions are not accessible to station
42 owners, inspectors, or analyzer service personnel. Programming changes are made by
43 Salt Lake County I/M auditors from disks supplied by the analyzer manufacturer.

1
2 *Data security provisions* Manual data entry is minimized. For initial inspections, the
3 inspector enters vehicle registration and vehicle information from the keyboard. For
4 retests, the inspector calls up the initial test file, compares the vehicle and owner data,
5 and confirms the VIN/license plate data. Data regarding inspections, analyzer
6 calibration and service, lock-out activities, and audit information are transmitted via
7 phone line to the county every night.
8

9 *UTAH98 Automated test procedure* The UTAH98 analyzer automatically reads all test
10 measurements, records test results in the computer database, determines whether the
11 vehicle has passed or failed a test, and prints vehicle inspection reports and inspection
12 certificates for all subject vehicles. The analyzers are capable of simultaneously
13 sampling dual exhaust vehicles. The UTAH98 analyzer will measure carbon monoxide,
14 carbon dioxide, nitric oxide and hydrocarbon emissions. The test procedure is
15 automated to the highest degree practical to minimize the potential for intentional fraud
16 and/or human error in compliance with ASM2.
17

18 *Security lockouts* The analyzers are programmed to trigger lock-outs when abuse or
19 tampering occur. Lock-outs occur after any security system is tampered, failure to
20 conduct or pass periodic calibration tests, or the data recording medium is full. The
21 analyzer can not be used until the lock-out has been cleared by a Salt Lake County I/M
22 auditor. The analyzer automatically keeps an electronic record of all lock-outs
23 including the date of the lock-out, the reason for the lock-out, and the date and person
24 that cleared the lock-out.
25

26 *UTAH98 I/M certified analyzer use restriction* Since January 1, 1998, Salt Lake
27 County has required official emissions tests to be conducted only on registered
28 UTAH98 I/M analyzers. The UTAH98 I/M analyzer is certified in compliance with
29 BAR97. Updates to the UTAH98 I/M Analyzer specifications may occur, as necessary,
30 to accommodate new technology vehicles and changes to the program.
31

32 *UTAH98 I/M certified analyzer design and certification* The UTAH98 analyzer is
33 BAR97 designed and certified. The UTAH98 analyzer performs ASM2 testing in
34 compliance with the Acceleration Simulation Mode Test Procedures, Emission
35 Standards, Quality Control Requirements, and Equipment Specifications Technical
36 Guidance, EPA-AA-RSPD-IM-96-2, July 1996 and 40 CFR 51.358.
37

38 **8. Quality Control**

39

40 *General quality control specifications* The UTAH98 analyzer specification was
41 carefully designed to insure that emission measurement equipment is calibrated and
42 maintained properly, and that inspection, calibration records, and maintenance records
43 are accurately created, recorded, and maintained.

1 *Automatic electronic quality assurance features* Operational analyzer quality assurance
2 measures such as analyzer calibration, zero and span check, hydrocarbon hang-up
3 check, and leak check are mandatory automatic analyzer capabilities. Gas accuracy
4 tolerances, dilution limits, analyzer warm up requirements, system response time
5 requirements, optical correction factors, and interference effects are also addressed in
6 the analyzer specifications. If the checks are not performed on schedule or identify
7 measurements outside of acceptable limits established in the specifications, a lock-out
8 occurs preventing use of the analyzer until such problems are corrected. Records of all
9 quality assurance activities with respect to the analyzer are automatically recorded in
10 the analyzer's electronic database and evaluated by Salt Lake County I/M auditors on a
11 regular basis. The analyzer specifications discuss requirements for assurance that
12 unauthorized access to the I/M database in the analyzer is prevented. Attempts to
13 deliberately avoid or defeat analyzer or inspection quality assurance provisions result in
14 disciplinary action against the I/M mechanic and/or station. The automatic electronic
15 quality assurance features of the UTAH98 I/M analyzer are in compliance with the
16 referenced ASM2 specification, EPA-AA-RSPD-IM-96-2.

17
18 *Analyzer maintenance* The UTAH98 Analyzer specifications describes required
19 services, warranty provisions, and documentation that analyzer manufacturers must
20 provide to customers. It includes ensuring that the analyzer meets the quality assurance
21 specifications at the time of delivery, that routine quarterly preventative maintenance is
22 performed, training on how to use, maintain, and operate the analyzer is provided by the
23 manufacturer, and that if repair of defects can not be made promptly a temporary
24 analyzer replacement is provided. Service activities are recorded in the analyzer's
25 electronic database. Maintenance of the UTAH98 I/M Analyzer is in compliance with
26 the Salt Lake County Health Regulation #22A.

27
28 *Document security* Document security for the UTAH98 I/M Analyzer is in compliance
29 with the Salt Lake County Health Regulation #22A.

30
31 *Analyzer certification* Sound engineering practices were followed during the design
32 and certification of the UTAH98 analyzer to insure accurate and repeatable inspections
33 under a range of environmental conditions. Manufacturer owner's manuals, operating
34 instructions, and warranty provisions were also reviewed during the certification
35 process. Comprehensive records of the certification process have been maintained.

36
37 *General analyzer security provisions* The Salt Lake County Health Regulation #22
38 requires use of a certified and registered UTAH98 I/M analyzer for official inspections.
39 Inspection records include the analyzer registration number. The regulations make it
40 illegal to alter analyzer software or hardware without written approval. Analyzer
41 calibration requirements, maintenance, and warranty provisions are also specified in the
42 above Salt Lake County health regulations.

1 **9. Waivers**
2

3 *Waiver rate* Salt Lake County will take corrective action as needed to maintain a
4 maximum waiver rate of 1% of the initially failed vehicles or the Utah Air Quality
5 Board will revise the SIP and emission reductions claimed based on the actual waiver
6 rate. The conditions for issuing waivers legally authorized and specified in the Salt
7 Lake County health regulations meet the minimum waiver issuance criteria specified in
8 40 CFR Subpart S 51.360.
9

10 *Waiver procedures* The Vehicle Inspection Report (VIR) printed by the I/M analyzer
11 after each inspection and provided to the vehicle owner/operator includes warranty and
12 waiver information, if the vehicle failed the emissions inspection. A waiver document
13 may be issued only by Salt Lake County I/M Technical Center staff and only after
14 verification of required documentation. Any tampered, missing, or inoperable emission
15 control devices must have been replaced or repaired. At least \$100 for 1968 through
16 1980 model year vehicles and \$200 for 1981 and newer model year vehicles must have
17 been spent on acceptable emission repairs as verified by a Salt Lake County I/M
18 program auditor by physical examination of the vehicle and review of the repair
19 documentation. Repair documentation, such as receipts, are copied and retained by
20 auditor to prevent reuse. Salt Lake County requires signed documentation on official
21 stationery of a business involved in the automotive repair industry to include labor
22 costs. In Salt Lake County, the retest must reflect a reduction of carbon monoxide
23 oxides of nitrogen and/or hydrocarbon emissions after repairs. Emissions defects
24 indicated by On Board Diagnostics II (OBD II) fault codes must be repaired for the
25 vehicle to qualify for a waiver. Vehicles still under the federal emissions warranty are
26 not eligible for a waiver until all warranties are exhausted. Warranted repair and
27 tampering repair may not be applied to the repair cost waiver limits. Waivers are only
28 valid for one test cycle. The vehicle owner surrenders the original waiver document at
29 the time of registration; copies are not accepted for registration purposes. Specific
30 provisions regarding waivers may be found in the Salt Lake County health regulations
31 and the Utah Tax Commission Division of Motor Vehicle policy manual which is
32 available upon request. Salt Lake County does not provide for time extensions to
33 relieve economic hardships in obtaining emission-related repairs.
34

35 **10. Motorist compliance enforcement**
36

37 *Registration denial* Salt Lake County's I/M program is enforced by means of
38 registration denial. Vehicle owners must present proof of compliance with the I/M
39 program, a waiver, or evidence of exemption from the I/M program as a condition
40 precedent to vehicle registration or registration renewal. Citations are routinely issued
41 to operators of vehicles with expired or missing license plates during routine traffic
42 stops, parking lot inspections, and roadblocks. As specified in Section 41-1a-1303 of
43 the Utah Code, driving without registration is a Class C misdemeanor. The penalty for

1 a Class C misdemeanor is imprisonment of no more than 90 days and \$750 for persons
2 or up to \$1000 for corporations, associations, partnerships, or government
3 instrumentalities. In addition to paying a fine, the motorist must register the vehicle. It
4 is currently a Class B misdemeanor to violate a County health regulation. The penalty
5 for a Class B misdemeanor is an imprisonment not exceeding six months and for
6 persons a fine of up to \$1000 or for corporations, associations, partnerships, or
7 government instrumentalities a fine of up to \$5000. In Utah, the magnitude of such
8 penalties is a judicial rather than an administrative decision. Per Section 41-1a-1315
9 falsification of evidences of title and registration is a second degree felony.

10
11 *Certificate of Compliance* The Certificate of Compliance is dated by the I/M analyzer
12 immediately after a passing inspection is completed. The certificate is only valid for
13 registration purposes for two months. At the same time the analyzer also prints the
14 following information on the certificate to ensure unambiguous vehicle identification:
15 the vehicle identification number (VIN), license number, model year, make, and model.
16 A sample of the Certificate of Compliance is in the UTAH98 specifications. The
17 certificates are only printed in the event that the vehicle passed the emissions
18 inspection. Separate documentation, including the same vehicle information, is used
19 for waivers.

20
21 *Fuel changes to non-subject status* Vehicle changes that would result in registration
22 changes from a subject to exempt status require physical confirmation by Salt Lake
23 County I/M program personnel at the I/M technical center. Falsification of registration
24 or title information is a felony offense.

25
26 *Title transfers* Proof of compliance with the I/M program is required for a title transfer.
27 The system ensures that owners are not able to avoid the program by extending the
28 inspection date through manipulation of the title and registration system.

29
30 Salt Lake County I/M program staff, peace officers, and Utah Tax Commission Motor
31 Vehicle Customer Service Division routinely work together to ensure that motor vehicle
32 owners that move into an I/M program area complete registration transfer including
33 compliance with the I/M program. Except for higher education students and active duty
34 military personnel, people are required to register their vehicles in the county in which
35 they are domiciled. As discussed in the Vehicle Coverage section, although these two
36 exempted classes of vehicle owners do not have to register their vehicles in Utah, they
37 do have to comply with the I/M programs. Employment status, maintenance of a
38 residence, enrollment of children in local schools, and voting districts are considered
39 when identifying persons in violation of this requirement.

40
41 Salt Lake County I/M program staff work with citizens, the Utah Motor Vehicle
42 Customer Service Division and county attorneys to identify and prosecute people that
43 illegally transfer registration to a non-subject area to avoid the I/M program. The

1 process is very labor intensive. There are many legitimate reasons to be operating a
2 vehicle in an I/M program area that is registered elsewhere. Violators must be dealt
3 with on a case-by-case basis. Persons caught to date have been subject to fines of
4 around \$700. Those prosecuted and convicted could end up with a criminal record and
5 actual jail time. Fraudulent registration of a motor vehicle is a felony offense. Most
6 people confronted with evidence of their guilt and the seriousness of their offense, to
7 date, have complied promptly. The involved agencies are developing more efficient
8 methods of dealing with illegal registrations that result in exemption from the I/M
9 program.

10
11 Salt Lake County is committed to a cooperative aggressive effort to ensure that vehicles
12 operated in the county comply with the I/M program to ensure a compliance rate of at
13 least 96%.

14 **11. Motorist compliance enforcement program oversight**

15
16 *Utah Tax Commission, tax assessors, and county roles* The Utah Tax Commission
17 Motor Vehicle Customer Service Division and Salt Lake County tax assessor deny
18 application for vehicle registration or renewal of registration without submittal of a
19 valid certificate of compliance, waiver, or verified evidence of exemption. Proof is
20 retained by the tax clerk, micro-photo-copied, and then destroyed. Altered or hand-
21 written documents are not accepted. All certificate data is collected by Salt Lake
22 County I/M program auditors and subjected to scrutiny for evidence of any
23 improprieties.
24

25
26 *Database quality assurance* The vehicle registration database is maintained and quality
27 assured by the Motor Vehicle Customer Service Division. The I/M inspection database
28 is maintained and quality assured by the Salt Lake County I/M program staff. The Salt
29 Lake County I/M program has access to the Motor Vehicle Customer Service Division
30 database and utilize it on a regular basis for quality assurance purposes. The database is
31 subject to regular auditing, cross-referencing, and analysis. The database is also
32 evaluated using data obtained during roadblocks and parking lot surveys. Evidence of
33 program effectiveness problems trigger additional joint enforcement activities.
34

35 *Oversight provisions* The oversight program includes verification of exempt vehicle
36 status through inspection, data accuracy through automatic and redundant data entry for
37 most data elements, an audit trail for program documentation to ensure control and
38 tracking of enforcement documents, identification and verification of exemption-
39 triggering changes in registration data, and regular audits of I/M inspection records, I/M
40 program databases, and the Motor Vehicle Customer Service Division database.
41

42 *Enforcement staff quality assurance* I/M program auditors and tax clerks involved in
43 vehicle registration are subject to regular performance audits by their supervisors. All

1 enforcement personnel (direct and indirect) involved in the motorist enforcement
2 program are subject to disciplinary action, additional training, and termination for
3 deviation from procedures. Specific provisions are outlined in the Motor Vehicle
4 Customer Service Division procedures manual which is available upon request.
5

6 *Co-operative enforcement oversight effort* The Motor Vehicle Customer Service
7 Division, Utah Division of Air Quality, Utah Highway Patrol and Salt Lake County I/M
8 program staff meet at least once per month to ensure on-going high quality oversight of
9 joint motorist compliance program. EPA audit of this process is authorized if measures
10 to protect tax-payer confidentiality acceptable to Motor Vehicle Customer Service
11 Division are exercised.
12

13 **12. I/M Program quality assurance**

14
15 *TSD Tab 6 : Salt Lake County auditor training.*
16

17 *Station/inspector audits* Salt Lake County's I/M program regularly audits all certified
18 I/M inspectors and stations to ensure compliance with Salt Lake County health
19 regulations and policies. Particular attention is given to identifying and correcting any
20 fraud or incompetence with respect to vehicle emissions inspections. Compliance with
21 recordkeeping, document security, analyzer maintenance, and program security
22 requirements are scrutinized. The inspector's skill level is also evaluated during audits.
23 Another major purpose of the audits is to retrain inspectors, as necessary, as soon as
24 problems are identified. Documentation sufficient to support a legal case to suspend or
25 revoke a certification is also collected in the event of serious and/or repeated violations.
26 Most stations and inspectors are audited every month and all at least quarterly.
27

28 *Covert audits* Salt Lake County, to the extent possible, performs a covert audit of each
29 inspector and station at least once a year. The number of covert audits at least equals
30 the number of certified inspectors. Covert audits are performed using a variety of
31 vehicles that are representative of the subject fleet that are set to fail across a full range
32 of malfunctions. Suspected problem stations and inspectors are targeted for earlier and
33 more frequent audits. Complaints also trigger additional audits.
34

35 Covert performance audits shall include:
36

37 Remote visual observation of inspector performance, which may include the use
38 of aids such as binoculars or video cameras, at least once per year per inspector
39 in high-volume stations (i.e., those performing more than 4000 tests per year);
40

41 Site visits at least once per year per number of certified inspectors (per inspector
42 FTE) using covert vehicles set to fail (this requirement sets a minimum level of
43 activity not a requirement that each inspector be involved in a covert audit); and

1 For stations that conduct both testing and repairs, at least one covert vehicle visit
2 per station per year including purchase of repairs and subsequent retesting if the
3 vehicle is initially failed for tailpipe emissions.
4

5 *Electronic audit capabilities* The Salt Lake County I/M program equipment performs
6 various analyses to identify statistically inconsistent data indicative of problem stations
7 and inspectors. Overt audit records are maintained electronically in the analyzer. After
8 overt audits, the auditor retrieves the data on the analyzer diskette containing the audit,
9 vehicle inspection, and analyzer service, maintenance, and calibration records dating
10 back to the previous audit. The data from each audit is added to the comprehensive
11 central Salt Lake County I/M database. Further analysis of the central database results
12 in identification of stations and inspectors for which additional audits are performed.
13

14 *Auditor quality assurance* Auditors receive 24 hours of formal classroom instruction
15 and are provided on-the-job training in: the use of the UTAH91 analyzer; the Salt Lake
16 County I/M health regulations, basic air pollution control; basic principles of emissions-
17 related motor vehicle engine repair; emission control systems; evidence gathering;
18 administrative procedures and laws; quality assurance practices; and covert audit
19 procedures. Salt Lake County sends auditors to additional automotive emissions-
20 related training and meetings on a regular basis. Auditor supervisors audit the I/M
21 program auditors by reviewing their documentation and also auditing a number of their
22 stations at least once every year.
23

24 *Written audit procedures* Copies of the Salt Lake County I/M program overt and covert
25 audit procedures are provided in Section X, Part C, Appendices. A detailed description
26 of the audit capabilities of the UTAH91 analyzer are found in Section 3.9 of the
27 UTAH98 analyzer specifications.
28

29 **13. Enforcement against stations and inspectors** 30

31 *General enforcement provisions* The Salt Lake County I/M program is responsible for
32 enforcement action against incompetent or dishonest stations and inspectors. The Salt
33 Lake County health regulations include a penalty schedule. For serious or repeated
34 offenses, auditors are authorized to immediately suspend the station or inspector by
35 locking out their UTAH98 analyzer. The County does not have legal authority to
36 impose direct fines on stations or inspectors, but suspension or revocation of a station
37 permit results in a substantial loss of income that is far in excess of \$100 fine suggested
38 by the EPA guidance. Fee settlements are at least as much the station's anticipated
39 income for emissions testing for the time during which the station would be suspended.
40 A station permit may be suspended or revoked even if the owner/operator had no direct
41 knowledge of the violation. In the case of incompetence, re-training is required before
42 the permit is restored.
43

1 Salt Lake County revised its penalty schedules to comply with the more stringent
2 specifications included in 40 CFR 51.364; it is found in Appendix E of Salt Lake
3 County Ordinance 22A. At a minimum, inspector certification and station permit
4 suspension shall be imposed for at least 6 months (or a fee retainage or settlement
5 penalty equivalent to the inspector's salary for that period) whenever a vehicle is
6 intentionally improperly passed for any portion of the required test.

7
8 *Suspension and revocation* Suspension or revocation effectively bars an individual
9 from further inspections because the auditor removes the inspector's authorization code
10 from the UTAH98 analyzer. Evidence of indirect participation in emissions inspections
11 by an individual while suspended or revoked would result in legal action against the
12 station. If the station is suspended or revoked the analyzer is totally locked-out. The
13 analyzers are initialized by an auditor for use at a single permitted station and only by
14 inspectors certified for that station. A record of the serial numbers of all registered
15 analyzers and their locations is maintained by Salt Lake County.

16
17 *Enforcement records* Salt Lake County keeps comprehensive records of all audit
18 activities, warnings, suspensions and revocations, and enforcement activity statistics to
19 the EPA and the executive secretary annually.

20 21 **14. Data collection**

22
23 *Analyzer inspection data* The UTAH91 analyzer creates a detailed record of each
24 emissions inspection performed including, but not limited to the following data, for
25 each vehicle tested: test record number; inspection station number; inspector number;
26 test system number; date of the test; emission test start time; the time final emission
27 scores are determined; vehicle identification number (VIN); license plate number; test
28 certificate number; gross vehicle weight rating (GVWR); model year, make, and type of
29 vehicle; number of cylinders or engine displacement; transmission type; odometer
30 reading; category of test performed (i.e., initial, first retest, or subsequent retest); fuel
31 type of the vehicle; emission scores for HC, CO, NO and CO₂ at 25 mph and 15 mph;
32 and results (pass/fail/not applicable) for visual inspection of the catalytic convertor, air
33 system, gas cap, evaporative system, and positive crankcase (PCV) valve. The tailpipe
34 emission standards for each type of vehicle is included in a look-up table in the
35 UTAH98 analyzer. The UTAH98 analyzer automatically uses the appropriate standards
36 for the type of vehicle being tested and makes a pass/fail determination. The inspection
37 data is recorded by the UTAH98 analyzer during the inspection procedure.

38
39 *Analyzer quality assurance data* Quality assurance data including a detailed history of
40 all calibration (including the concentration values of the calibration gases), service,
41 lockout, and document security events are also recorded and maintained by the
42 UTAH98 analyzer. Each UTAH98 record includes, as applicable, the station number,
43 mechanic access number, auditor access number, service access number, analyzer serial

1 number, date, and activity time.

2
3 *UTAH98 analyzer data collection* The UTAH98 I/M analyzer data collection system
4 meets the requirements specified under 40 CFR 51.365.
5
6
7

8 **15. Data analysis and reporting**

9

10 *Annual reports* Salt Lake County shall analyze I/M program data and submits annual
11 reports to the U.S. Environmental Protection Agency and the executive secretary upon
12 request. Beginning in July of 1995, Salt Lake County will submit to EPA and the
13 executive secretary an annual report, for January through December of the previous
14 year, which provides statistics on the testing, quality assurance, and enforcement
15 activities of each I/M program. At a minimum the annual reports will include all of the
16 data elements listed 40 CFR Subpart S 51.366.
17

18 *Biennial reports* Beginning in July of 1996, and biennially thereafter, Salt Lake County
19 shall submit a report to EPA and the executive secretary discussing all changes made in
20 the program design, funding, personnel levels, procedures, regulations, and legal
21 authority. The report will also supply a detailed discussion of the impact of such
22 changes upon the program, any weaknesses or problems discovered in the program over
23 the previous two-year period, the steps that were taken to address those problems, the
24 result of those corrective actions, and any future efforts planned.
25

26 **16. Inspector training and certification**

27

28 *TSD Tab 1.b: Inspector training description and tests*

29
30 *Inspector certification and initial training* No person may conduct an official I/M
31 inspection unless they are certified. Salt Lake County requires all persons desiring to
32 become I/M technicians to pass a pretest to insure they have a basic understanding of
33 automotive engine operation and repair. Only about one half of those attempting to
34 become certified pass the pretest and are allowed to take the formal training class. Salt
35 Lake County requires formal training prior to certifying inspectors. Each class includes
36 at least the following information: the causes and effects of air pollution; the purpose,
37 function, and goal of the I/M program; I/M health regulations, policies, and procedures;
38 technical details of the test procedures and the rationale for their design; emission control
39 device function, configuration, and maintenance; quality control procedures and their
40 purposes; public relations; and safety and health issues related to the I/M inspection
41 process. Salt Lake County provides the training directly. Inspector candidates will not
42 be issued a certificate unless they have passed a written test with at least 80% (or lower
43 if an occupational analysis justifies it) correct responses and a hands-on test during

1 which the trainee demonstrates the ability to properly conduct all test procedures,
2 calibrate the analyzer, properly utilize equipment, and to follow other I/M program
3 requirements. Salt Lake County will take appropriate steps to insure the security of the
4 testing process.

5
6 *Inspector certification renewal* Inspector certification is valid for a period of one year,
7 at which point refresher training and testing, are required prior to certification renewal.
8 An auditor enters the inspector's certification expiration date in the analyzer(s) that the
9 inspector is authorized to use. The analyzer locks out the inspector upon expiration of
10 the certification. Auditors will not clear the lock-out until the inspector has renewed the
11 certification. Salt Lake County may require evidence of more comprehensive
12 emissions-related automotive training as a prerequisite to inspector certification
13 renewal.

14
15 *Inspector certification suspension and revocation* A determination of inspector
16 incompetence or failure to comply with I/M program requirements may result in
17 suspension or revocation of an inspector's certification prior to the annual expiration
18 date. A certification to conduct I/M inspections is not a legal right but rather a privilege
19 bestowed by Salt Lake County conditional upon adherence to its I/M program
20 requirements.

21
22 *Inspector training authority and materials* Authority to require mandatory I/M
23 inspector training is established and described in the Salt Lake County health
24 regulations.

25 26 **17. Public information and consumer protection**

27
28 *General public information* Salt Lake County, along with the Utah Department of
29 Environmental Quality, provides a comprehensive public education and protection
30 program including strategies to educate the public on: Utah's air quality problems;
31 ways that people can reduce emissions; the requirements of state and federal law; the
32 role of motor vehicles in the air quality problem; the need for and benefits of a vehicle
33 emissions inspection program; ways to operate and maintain a vehicle in a low-
34 emission condition; how to find a qualified repair technician; and the requirements of
35 the I/M program. Information is provided via direct response to inquiries for
36 information, reports, classes, pamphlets, fairs, school presentations, workshops, news
37 releases, posters, signs, and public meetings.

38
39 *Salt Lake County I/M Technical Center* Salt Lake County operates an I/M Technical
40 Center staffed with trained auditors and capable of performing emissions tests. A major
41 function of the I/M technical center is to serve as a referee station to resolve conflicts
42 between certified I/M inspectors, permitted stations, and motorists. Auditors actively
43 protect consumers against fraud and abuse by inspectors, mechanics, and others

1 involved in the I/M program. Complaints made on a confidential basis are investigated
2 and resolved in a manner that conceals the person's identity to ensure protection of
3 whistle blowers. Auditors advise motorists regarding emissions warranty provisions
4 and assist the owners in obtaining warranty-covered repairs for eligible vehicles.
5 Applications for waivers are evaluated by auditors at the I/M technical center and issued
6 only after visual verification that all the requirements for a waiver have been met. The
7 I/M technical center also provides motorists with information regarding the I/M
8 program, general air pollution issues, and emissions-related automotive repairs.

9
10 *Vehicle inspection report* A vehicle inspection report (VIR) is printed and provided to
11 the motorist after each vehicle inspection. The VIR includes a public awareness
12 statement about automotive emissions and lists additional ways that the public can
13 reduce air pollution. The test results are detailed on the VIR. Information about
14 vehicle emissions warranties and the benefits of emissions-related repairs are printed
15 for vehicles that failed the test. Information about waiver requirements and application
16 procedures are printed on the VIR, if the vehicle has failed a retest, including the
17 address and telephone number of the applicable I/M technical center. A complete
18 description of the VIR is included in the UTAH98 analyzer specifications.

19
20 *Co-operative public education tools* A variety of pamphlets and radio, television, and
21 newspaper advertisements about automotive air pollution issues are developed and
22 distributed by the Salt Lake County I/M program in cooperation with other I/M counties
23 and the Utah Division of Air Quality.

24 25 **18. Improving repair effectiveness**

26
27 *High priority* Salt Lake County implemented a major Basic I/M program revision on
28 September 1, 1991. Shortly thereafter, the Salt Lake County and the Utah Division of
29 Air Quality staff jointly identified improvement of repair effectiveness as a high priority
30 action item. The Governor's Clean Air Commission also recommended making
31 affordable additional emissions-related training available. Full emission reductions will
32 only be realized if the repair industry is able to competently diagnose and repair
33 emissions-related defects.

34
35 *Continuing education* To that end, Salt Lake County's I/M staff has worked with
36 Utah's higher education institutions to develop and provide emissions-related
37 automotive technology classes to technicians. Inspectors are also encouraged to take
38 classes offered by trade organizations, automobile manufacturers, and dealers. Salt
39 Lake County subsidizes the tuition for certified I/M inspectors. The certification
40 renewal tests are difficult enough to make this provision a good incentive. The classes
41 are advertised in the county I/M technical bulletins.

42
43 *I/M program repair support activities* In initiating improved automotive educational

1 opportunities, Salt Lake County works on a day-to-day basis to ensure that repair
2 information is available. I/M stations are required to have available up-to-date relevant
3 automotive diagnostic references and tools as a condition for obtaining a permit. Salt
4 Lake County maintains a hot line to its I/M technical center that any mechanic can call
5 for technical assistance related to vehicle inspection, diagnosis, and repair. Technical
6 bulletins are regularly mailed to each certified inspector with information regarding
7 training schedules, common problems found with particular engine families, and
8 diagnostic tips.
9

10 **19. Improved I/M SIP implementation**
11

12 The I/M program health regulations, policies, procedures, and activities specified in this
13 I/M SIP revision have been implemented. Salt Lake County shall continue to implement
14 and operate the I/M program until a maintenance plan without an I/M program is
15 approved by EPA in accordance with Section 175 of the Clean Air Act as amended.
16
17



State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF AIR QUALITY

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MEMORANDUM

TO: Air Quality Board DAQ-068-01

THROUGH: Richard W. Spratt, Executive Secretary

FROM: Bill Colbert, Environmental Scientist

DATE: July 23, 2001

SUBJECT: Final Adoption: R307-110-33 and SIP Section X.D, Utah County Vehicle I/M Program

On May 2, you proposed for public comment amendments in SIP Section X.D, Utah County Vehicle Emissions Inspection and Maintenance Program. These amendments will allow Utah County's I/M program to receive full credit from EPA.

A public hearing was held on June 21, and no comments were received. However, Utah County did submit 16 technical comments clarifying and correcting minor errors in the text. The most significant change was the request to include a summary of Utah County's Remote Sensing Program capability which the county maintains for program flexibility and ability to quantify its program effectiveness.

Staff recommendation: Staff recommends adoption with the corrections provided in the attached comments.

Summary of Comments and Responses
Utah County I/M SIP

1
2
3
4 **Comment 1:** Page 5, 3. **Tools and resources.** We collect a \$9 air pollution control fee on diesel
5 fueled vehicles registered in the county. The \$1 air pollution control fee is collected on all non-
6 diesel fueled vehicles registered in the county, not just the passenger vehicles. (Utah County
7 Environmental Health)

8
9 *Response:* Changed in SIP text.

10
11 **Comment 2:** Page 7, **Exempt vehicle;** Other vehicles exempt from the I/M Program include
12 1968 model year and older, electric powered, farm equipment, construction equipment or other
13 off-road vehicles. (Utah County Environmental Health)

14
15 *Response:* Changed in SIP text.

16
17 **Comment 3:** Page 10, **Anti-tampering provisions.** We do not require a visual inspection nor
18 repair of the fuel inlet. (Utah County Environmental Health)

19
20 *Response:* Changed in SIP text.

21
22 **Comment 4:** Page 10, last paragraph, pre-91 engine changes are tested to engine year standards,
23 not chassis model year. (Utah County Environmental Health)

24
25 *Response:* Changed in SIP text.

26
27 **Comment 5:** Page 11, **Data security provisions.** Analyzer data is downloaded daily but not
28 from every station. Data from each station analyzer is downloaded once or twice a week. (Utah
29 County Environmental Health)

30
31 *Response:* Changed in SIP text.

32
33 **Comment 6:** Page 12, **Certified analyzer use restriction.** The UTAH2000 analyzer has been
34 required for I/M testing since March 1, 2000. The UTAH91 analyzer was required September 1,
35 1991. (Utah County Environmental Health)

36
37 *Response:* Changed in SIP text.

38
39 **Comment 7:** Page 14, 2nd paragraph, VIR does not include warranty and waiver info. (Utah
40 County Environmental Health)

41
42 *Response:* Changed in SIP text.

1
2 **Comment 8:** Page 14, **Waiver procedures.** At the present time we do not require that repairs be
3 performed by a Certified Emissions Technician. However, repairs must be performed by a
4 licensed automotive repair business in order to count the labor costs. Also before a waiver may
5 be issued the CO levels must meet a specific waiver cutpoint. It is more stringent than simply
6 having an improvement in their CO readings. (Utah County Environmental Health)

7
8 *Response:* Changed in SIP text.
9

10 **Comment 9:** Page 18, 3rd paragraph, **Electronic audit capabilities.** No analyzer diskette is
11 retrieved. Data collection is accomplished via a dialer accessing the station analyzer. (Utah
12 County Environmental Health)

13
14 *Response:* Changed in SIP text.
15

16 **Comment 10:** Page 19, **General enforcement provisions.** Station fee settlements are based on
17 50% of the expected revenue from I/M testing during the suspension time with a \$3000.00
18 maximum. Fee settlements for the inspectors is \$100 for any portion of 15 day period up to a
19 maximum of \$500. Inspector suspensions may not be reduced by more than 75 days through a
20 negotiated fee settlement. (Utah County Environmental Health)

21
22 *Response:* Changed in SIP text.
23

24 **Comment 11:** Page 22, **Inspector permit renewal.** Annual refresher training is not always
25 required. Annual testing is required. (Utah County Environmental Health)

26
27 *Response:* Changed in SIP text.
28

29 **Comment 12:** Page 23, 1st full paragraph: should read revocation "of" not "or". (Utah County
30 Environmental Health)

31
32 *Response:* Changed in SIP text.
33

34 **Comment 13:** Page 23, **Vehicle inspection report;** We no longer print the public awareness
35 statement because there is not enough room on the VIR. (Utah County Environmental Health)

36
37 *Response:* Changed in SIP text.
38

39 **Comment 14:** Page 24, 1st paragraph, "The test results are detailed on the VIR. Information
40 about vehicle emissions warranties and the benefits of emissions-related repairs are printed for
41 vehicles that failed the test. Information about waiver requirements and application procedures
42 are printed on the VIR, " (These statements are not accurate.) (Utah County Environmental
43 Health)

1 *Response:* Deleted from the SIP text.
2

3 **Comment 15:** Page 25, **I/M program repair support activities.** Technical bulletins are mailed
4 to the stations and not each permitted inspector. (Utah County Environmental Health)
5

6 *Response:* Changed in SIP text.
7

8 **Comment 16:** Remote Sensing is an integral part of our program. We ask that it be restored to
9 the SIP, even though we do not currently claim credit for emissions reductions from the program.
10

11 *Response:* A new section 20 has been added at the end to restore Remote Sensing to the
12 SIP.
13
14
15
16
17

R307. Environmental Quality, Air Quality.

R307-110. General Requirements: State Implementation Plan.

R307-110-34. Section X, Vehicle Inspection and Maintenance Program, Part D, Utah County.

The Utah State Implementation Plan, Section X, Vehicle Inspection and Maintenance Program, Part D, Utah County, as most recently amended by the Utah Air Quality Board on August 1, 2001, pursuant to Section 19-2-104, is hereby incorporated by reference and made a part of these rules.

KEY: air pollution, small business assistance program*, particulate matter*, ozone

August 1, 2001

19-2-104(3)(e)

Notice of Continuation June 2, 1997

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UTAH STATE IMPLEMENTATION PLAN

SECTION X

**VEHICLE INSPECTION
AND MAINTENANCE PROGRAM**

PART D

UTAH COUNTY

Adopted by the Utah Air Quality Board
August 1, 2001

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SECTION X, PART D
UTAH COUNTY
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- 1 Vehicle Emissions Inspection/Maintenance Program, Ordinance 2000-31,
revised 10-31-00.
- 2 Vehicle Emissions Inspection/Maintenance Program, Ordinance 1999-28,
revised 12-29-99
- 3 County Commission Resolution 1994-26, July 14, 1994
- 4 Provo I/M Ordinance 1994-106, December 12, 1994
- 5 Audit Policies
- 6 Utah County Remote Sensing Ordinance, April 30, 1997

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UTAH STATE IMPLEMENTATION PLAN
SECTION X
AUTOMOTIVE INSPECTION AND MAINTENANCE (I/M) PROGRAM
PART D
UTAH COUNTY

1. I/M performance standard

Technical Support Documentation (TSD) Tab1: MOBILE5.a input-output files, Basic and Enhanced; description of Basic I/M program improvements

Federal requirements EPA's I/M regulation, 40 CFR Part 51, Inspection and Maintenance Program Requirements last amended at 66 FR 18156, April 5, 2001, specifies a model Basic I/M program. Utah is required by Section 182 of the Clean Air Act to implement an I/M program in Utah County that is at least as effective as the EPA's Basic Performance Standard. The Basic I/M performance standard is specified in 40 CFR 51.352. While local governments have flexibility to implement programs best suited for their area, EPA's regulations require a performance demonstration that local I/M programs result in automotive emissions equal to or less than predicted for the EPA model I/M program. State and local governments may choose options best suited for their area to meet the performance standard.

I/M Program MOBILE modeling The performance standard demonstration is made by use of the most recent release of EPA's MOBILE model. The MOBILE5.a model is able to calculate emission factors, grams of a particular pollutant per vehicle mile traveled across the fleet in an area (G/VMT), given information about the fleet, climate, fuel characteristics and I/M programs in a local area. Version MOBILE5.a was used for the Basic I/M performance standard demonstration analysis. The MOBILE5.a input and output files for the modeling performed to evaluate the emission reduction benefits for Utah County's Basic I/M program are found in the Utah County I/M Program Technical Support Document (TSD). Table X.D.1 summarizes the attainment milestones, the applicable performance standard and program target emission factors for VOC and CO emission factors specified in 40 CFR 51.

UTAH COUNTY I/M PERFORMANCE STANDARDS ANALYSIS SUMMARY

pollutant	program modeled evaluated at 32 degrees F at 35 mph	emission factors in grams/mile				
		January 1	1996	1997	2000	2003
VOC	Basic Performance Standard			2.70	2.47	2.30
	Basic Program Target			2.65	2.42	2.22
CO	Basic Performance Standard		22.85		18.69	
	Basic Program Target		21.89		17.83	
	Enhanced Performance Standard		20.50		13.70	
	Enhanced Program Target		21.30		12.70	

TABLE X.D.1

I/M Program Performance Standard Utah County's I/M program exceeds the Basic I/M performance standard for all pollutants, although the EPA only requires the demonstration for each pollutant which caused an area to be subject to an I/M program. Utah County is a moderate carbon monoxide (CO) National Ambient Air Quality Standard (NAAQS) non-attainment area.

I/M Program Improvements On December 18, 1995, the Utah County Commission adopted Ordinance No. 1995-29, which adopted the Diesel Vehicle Emissions Inspection/Maintenance Program Rules and Regulations and the Vehicle Emissions Inspection/Maintenance Program Rules and Regulations in book form. Ordinance 1999-28 was adopted by the Utah County Commission on December 29, 1999 and modified on October 31, 2000 to accommodate a new analyzer and data network that are Year 2000 (Y2K) and On-Board Diagnostics (OBD) compliant. These regulations require individuals whose primary residence in Utah County to register their motor vehicles in Utah County, removes the exemption for diesel vehicles older than model year 1968 (except for vintage vehicles), establishes waiver cut points, allows the county to recall specific vehicles for quality assurance testing, and allows the county to require repair of vehicles following the additional testing. Provo City ordinance requires that the vehicles operated by people staying in Provo for more than sixty days be inspected and repaired as specified in the Utah County I/M ordinance regardless of where the vehicle is registered. These ordinances are provided in Section X, Part D, Appendix D.1.

Enhanced I/M Program requirement The Utah County Commission resolution committing to implement emission reduction programs that will achieve the reductions that are necessary to attain the standard by December 31, 1995, as required by the SIP, is in Section X, part D, Appendix 3. On January 25, 1995, the Utah County Commissioners adopted Ordinance No. 1995-02, which adopts the Enhanced and Basic Vehicle Emission Inspection and Maintenance Program Rules and Regulations and specifies they shall be in effect and enforced only if the County Commission is unable to implement alternative

1 emission reduction strategies that result in the required emission reduction credits as
2 provided for in the State Implementation Plan for Carbon Monoxide for Utah County.

3
4 *I/M Program Improvements MOBILE modeling* The performance standard
5 demonstration is made by use EPA's MOBILE model. The MOBILE model is able to
6 calculate emission factors, grams of a particular pollutant per vehicle mile traveled across
7 the fleet in an area (G/VMT), given information about the fleet, climate, fuel
8 characteristics, and I/M programs in a local area. Version MOBILE5.a was used for the
9 performance standard demonstration analysis. Table X.D.1 summarizes the attainment
10 milestones, the applicable performance standard and program target emission factors for
11 CO.

12
13 *Improved I/M Program Performance Standard* Utah County's Improved I/M program
14 exceeds the federal Basic I/M performance standard for all pollutants, although the EPA
15 only requires the demonstration for each pollutant which caused an area to be subject to
16 an I/M program. Utah County has incorporated Basic I/M improvements to demonstrate
17 compliance with the Enhanced I/M performance standard for carbon monoxide. The
18 performance demonstration summary and Mobile 5.a input and output files for the
19 performance demonstration analysis for the Enhanced I/M program for Utah County will
20 be added after the county adopts specific Enhanced I/M requirements.

22 2. Network type

23
24 *TSD Tab 2: Letters of opinion from the Utah Attorney General and the Utah County Attorney*

25
26 Utah County's I/M program is a basic, decentralized, test-and-repair network. Beginning
27 July 1, 1995, Utah County's network was required to be Enhanced and test-only unless a
28 test-and-repair network was approved by EPA as being equivalent to a test-only network
29 regarding emission reduction effectiveness. Letters of opinion from the Utah Attorney
30 General's Office and the Utah County Attorney's office validating the authority to
31 implement the specified network in Utah County are provided in the TSD.

32
33 During 1995, Utah County submitted a state implementation plan (SIP) for an enhanced
34 I/M program following the provisions of Section 348 of the National Highway System
35 Designation Act of 1995 (NHSDA). The NHSDA allowed I/M programs to bypass the
36 50% credit reduction that is normally given to a decentralized I/M program. The Act
37 allowed areas to use good engineering judgement to determine the benefits of a specific
38 program design. Accordingly, Utah County re-evaluated the emission reductions for an
39 enhanced decentralized I/M program. Utah County demonstrated its decentralized I/M
40 program with enhancements would provide equal or greater emission reductions than a
41 centralized test-only program.

42
43 Utah County had previously conducted an extensive evaluation of the emission reduction
44 credits for a decentralized I/M program. In an effort known as the Utah Protocol, EPA ran

1 a detailed analysis of the Utah data in comparison to the Minnesota data concluding that
2 the Utah programs were equivalent to a centralized program. This analysis alone was not
3 sufficient to meet the requirements of the NHSDA. In order to meet the requirements of
4 the Act, Utah County performed additional testing and analysis following a methodology
5 developed by the Environmental Council of the States (ECOS), State and Territorial Air
6 Pollution Program Administrators (STAPPA) and EPA I/M Workgroup in response to the
7 NHSDA. The proposed evaluation procedure allowed states considerable flexibility in
8 determination of the specific data and analysis techniques to be used to quantify I/M
9 program effectiveness.

10
11 Utah County's NHSDA analysis was submitted to EPA on May 27, 1999. EPA
12 responded in a letter dated July 26, 1999, that Utah County had provided an adequate
13 qualitative analysis and that EPA intended to convert the interim approval of Utah
14 County's I/M Program to a proposed full approval. Final approval is anticipated through
15 a rulemaking action executed via a federal register notice.

17 **3. Tools and resources**

18
19 *TSD Tab 3: Budgets, description of resources*

20
21 *Funding mechanisms* Utah County's I/M program is funded through several mechanisms
22 including a \$1 air pollution control fee for each [passenger]non-diesel-fueled vehicle
23 registered in the county. I/M Certificates are sold to I/M test stations for \$2.25 each. The
24 county also charges fees for various permitting activities. The fees are dedicated to the
25 I/M program. A fee schedule can be found in an Appendix to the Utah County's I/M
26 Program ordinance.

27
28 *I/M program funding requirements* Utah County will allocate funding as needed to
29 comply with the relevant requirements specified in Utah's SIP; Utah statutes; county
30 ordinances, regulations and policies; and the federal I/M program regulation. Budgets and
31 descriptions of personnel resources, facilities, and equipment for Utah County's I/M
32 program are included in the TSD.

34 **4. Test convenience**

35
36 There are approximately 140 permitted Basic I/M stations within Utah County. Specific
37 operating hours are not specified by the county. Some stations that test and/or service
38 only one type of vehicle are permitted. There are also government and private fleet
39 permitted stations that are not open to the public.

41 **5. Vehicle Coverage**

42
43 *TSD Tab 4: sample letter to owners. (Farm truck exemption form and Tax Commission*
44 *form are found with SIP Section X.A)*

1 *Subject fleet* All model year 1968 and newer model year light duty vehicles, light duty
2 trucks, and heavy duty trucks registered or principally-operated in Utah County are
3 subject to the I/M programs except for exempt vehicles as specified in Section 6.6 of the
4 Utah County I/M Ordinance.

5
6 *Alternative fuels* Vehicles operated on alternative fuels such as propane, alcohol, and
7 natural gas are also subject to the program. Dual-fueled vehicles are tested twice, once on
8 each fuel.

9
10 *Government fleet* Section 41-6-163.6(1)(b) of the Utah Code requires that all vehicles
11 owned or operated in the county by federal, state, or local government entities comply
12 with the I/M programs.

13
14 *Vehicles owned by students and federal employees* Section 41-6-163.3(5) of the Utah
15 Code requires universities and colleges located in Utah's I/M areas to require proof of
16 compliance with the I/M program for vehicles which are permitted to park on campus
17 regardless of where the vehicle is registered. Vehicles operated by federal employees and
18 operated on a federal installation located within an I/M program area are also subject to
19 the I/M program regardless of where they are registered. Proof of compliance consists of
20 a current vehicle registration in an I/M program area or an I/M certificate of compliance
21 or waiver, or evidence of exempt vehicle status as specified in this section.

22
23 *Farm truck exemption* Eligibility for the farm truck exemption from the I/M programs is
24 specified in Section 41-6-163.6(4) of the Utah Code and must be verified in writing. The
25 owner must sign an affidavit on Utah State Tax Commission form TC-838 that vehicle
26 use will be limited to agricultural activities.

27
28 *Diesel vehicles* A light and heavy duty diesel I/M program was implemented in 1994 and
29 is defined in SIP Section XXI.

30
31 *New vehicle exemption* Proof that a vehicle is new and being registered for the first time
32 is established by presentation of a Manufacturer's Statement of Origin (MSO) at the time
33 of registration.

34
35 *Out-of-state exemption* Vehicles registered in an I/M county but operated out-of-state are
36 eligible for an extension. The owner must complete Utah State Tax Commission form
37 TC-810 in order to be registered without inspection documentation from Utah County.
38 The owner must explain why the vehicle is unavailable for inspection in Utah. Common
39 situations include Utah citizens that are military personnel stationed outside of the state,
40 students attending institutions of higher education elsewhere, and people serving
41 missions. If the temporary address of the owner is located within another I/M program
42 area listed on the back of the form, the owner must submit proof of compliance with that
43 I/M program at the time of, and as a condition precedent to, registration or renewal of
44 registration. The vehicle owner must identify their anticipated date of return to the state

1 and is required to have the vehicle inspected within 10 days after the vehicle is back in
2 Utah, unless they can demonstrate that the vehicle had passed an I/M inspection in
3 another area. Utah County maintains a record of such exemptions and requires
4 submission of an I/M inspection certificate or waiver at the indicated time.
5

6 *Exempt vehicle* [~~Motorcycles, farm vehicles, and new vehicles being registered for the~~
7 ~~first time are exempt as well as diesel powered vehicles less than three years old.~~] The
8 following vehicles are exempt from inspection: motorcycles, electric powered vehicles,
9 new vehicles registered for the first time, model year 1968 and older vehicles, farm
10 vehicles and equipment, construction equipment, and other off-road vehicles.
11

12 *Unregistered vehicles* I/M ordinances and regulations require that vehicles available for
13 rent or use in Utah County are subject to its I/M program. To the extent practicable, all
14 vehicles principally-operated within the county are subject to the I/M program.
15

16 **6. Test procedures and standards**

17 *TSD Tab 5: UTAH2000 analyzer specification*
18

19
20 *Specifications* Detailed specifications for the I/M test procedures and standards are
21 described in the Utah County I/M ordinance provided in Section X, Part D, Appendix
22 D.1. Specifications for the test procedure and equipment were developed according to
23 good engineering practices to ensure test accuracy.
24

25 *Test procedure and analyzer* The Basic I/M program is compatible with EPA's
26 PRECONDITIONED TWO SPEED IDLE TEST as specified in EPA-AA-TSS-I/M-90-3
27 March 1990, Technical Report, "Recommended I/M Short Test Procedures for the 1990's:
28 Six Alternatives." 1996 and newer vehicles are tested using OBD II test procedures. All
29 Basic emissions inspections are performed using the UTAH2000 Analyzer, a BAR97-
30 type emissions analyzer. The UTAH2000 Analyzer calibration specifications and
31 emissions test procedures meet the minimum standards established in Appendix A of the
32 EPA's I/M Guidance Program Requirements, 40 CFR Part 51 Subpart S.
33

34 Covered vehicles are defined in Section 5 above. All covered vehicles in Utah County
35 are subject to the Basic test procedure and inspected using the UTAH2000 analyzer as
36 specified in this section.
37

38 *Pre-inspection emissions-related repairs* Inspectors in the county's test-and-repair
39 networks are required to perform the emissions test prior to making any emissions-related
40 repairs when a vehicle is presented for an emissions inspection. All inspectors who
41 conduct test-only inspections, are required to ask the vehicle owner or operator whether a
42 tune-up or other emissions-related repairs have been performed within 6 weeks prior to
43 the emissions inspection and to document the owner's response in the UTAH2000
44 computer database.

1 *Safety issues* Vehicles presented in unsafe condition must be repaired before inspection.
2 Vehicles are also subject to an annual safety inspection administered by the Highway
3 Patrol. Submission of proof of compliance with the safety program is also required as a
4 condition for registration or renewal of registration. Most owners in Utah's test-and-
5 repair networks have the safety and emissions inspection performed at the same time as
6 the emissions inspection. Data relative to the safety inspection can be recorded in the
7 UTAH2000 Analyzer. Utah County's I/M program is administered with close
8 cooperation with the Utah Highway Patrol Safety Program.
9

10 *Exhaust leaks* The UTAH2000 analyzer measures exhaust carbon monoxide (CO) and
11 carbon dioxide (CO₂). Exhaust CO + CO₂ readings of less than 6% indicate a leaky
12 exhaust system and cause the UTAH2000 analyzer to abort the inspection.
13

14 *Emission standards* The Utah County proposed I/M ordinance includes hydrocarbon and
15 carbon monoxide emission standards in an appendix to allow for quick adjustment of the
16 standards in case actual failure rates fall below the level specified in the State
17 Implementation Plan. Vehicles must pass both the hydrocarbon and carbon monoxide
18 emission standard regardless of the NAAQS attainment status of the county of
19 registration. The emission standard for the Basic I/M program was used in the
20 MOBILE5.a modeling that was conducted to demonstrate compliance with the Basic I/M
21 performance standard. Utah County also established waiver emission standard for carbon
22 monoxide that can be found in Appendix F of Utah County's Vehicle Emission
23 Inspection Maintenance Program ordinance.
24

25 *Stringency* The Utah County I/M program will adjust tailpipe emission standards as
26 necessary to maintain a stringency rate of at least 22% for pre-81 model year vehicles, the
27 stringency rate used in the Basic I/M performance standard modeling demonstration.
28

29 *Re-test standards* The same test procedure and emission standards are used for initial
30 tests and retests, regardless of which part a vehicle may have failed during an initial test.
31 Utah County's I/M test procedure requires an official test, once initiated, to be performed
32 in its entirety regardless of intermediate outcomes, except in the case of invalid test
33 conditions, unsafe conditions, or the fast pass/fail algorithms.
34

35 *Anti-tampering provisions* [~~Utah County requires a visual emissions control device~~
36 ~~inspection to determine whether the air system, catalyst, fuel inlet, exhaust gas~~
37 ~~recirculation (EGR) valve, evaporative system, positive pressure crankcase valve (PCV),~~
38 ~~and gas cap are present, appear to be properly connected, and appear to be the correct type~~
39 ~~for the certified vehicle configuration.] Regardless of the vehicle model year, Utah
40 County does not allow waivers for tampered vehicles or money spent to repair tampered
41 or missing emission control devices to be applied towards a minimum waiver cost. Utah
42 County requires repair of any catalyst and air pump system tampering on vehicles of
43 model year 1977 through 1989. The county also requires repair of any tampering of the
44 air system, catalyst, [~~fuel inlet,~~]exhaust gas recirculation (EGR) valve, evaporative~~

1 system, positive pressure crankcase valve (PCV), and gas cap on model year 1990 and
2 newer vehicles.

3
4 *Engine changes* Utah County's proposed I/M ordinance has a section that addresses
5 engine changes performed prior to 1991. After an engine change, vehicles are tested to
6 the tailpipe emission standards and anti-tampering requirements applicable to vehicles of
7 the [~~chassis~~engine] model year. Mixing vehicle classes (e.g., light-duty with heavy-duty)
8 and certification types (e.g. California with federal) within a single vehicle is considered
9 tampering.

10
11 *Fuel switching* Vehicles that are switched to a fuel type for which there is no certified
12 configuration are tested according to the most stringent emission standards for that
13 vehicle model year and vehicle type.

14 15 **7. Test Equipment**

16
17 *TSD Tab 5: Utah2000 analyzer specification; certification procedure*

18
19 *Specifications* The UTAH2000 Analyzer is a BAR97-type computerized emissions
20 analyzer. Additional written technical specifications for Utah County's I/M test
21 equipment are specified in Utah County's I/M ordinance.

22
23 *Analyzer access restrictions* An inspector access code is required to use the UTAH2000
24 analyzer for official tests, a service access code to repair or service the analyzer, and an
25 auditor access code to access the audit functions. DOS functions are not accessible to
26 station owners or inspectors. Programming changes are made by county I/M auditors
27 from disks supplied by the analyzer manufacturer.

28
29 *Data security provisions* Manual data entry is minimized. For initial inspections, the
30 inspector enters vehicle registration and vehicle information from the keyboard. Data
31 elements are described in the UTAH2000 analyzer specifications. For retests, the
32 inspector calls up the initial test file, compares the vehicle and owner data, and confirms
33 the VIN/license plate data. Data regarding inspections, analyzer calibration and service,
34 lock-out activities, and audit information are downloaded to the county vehicle
35 identification database daily; data from each analyzer is downloaded once or twice
36 weekly.

37
38 *Automated test procedure* The UTAH2000 analyzer automatically reads all test
39 measurements, records test results in the computer database, determines whether the
40 vehicle has passed or failed a test, and prints vehicle inspection reports and inspection
41 certificates for all subject vehicles. The analyzers are capable of simultaneously sampling
42 dual exhaust vehicles. The analyzer bench includes two non-dispersive infrared (NDIR)
43 analyzers for carbon monoxide, carbon dioxide, and hydrocarbon measurements (one low
44 range and one high range), and one NDIR analyzer for carbon dioxide measurement. The

1 test procedure is automated to the highest degree practical to minimize the potential for
2 intentional fraud and/or human error.

3
4 *Security lockouts* The analyzers are programmed to trigger lock-outs when abuse or
5 tampering occur. Lock-outs occur after any security system is tampered, failure to
6 conduct or pass periodic calibration tests, or the data recording medium is full. The
7 analyzer can not be used until the lock-out has been cleared by a Utah County I/M
8 auditor. The analyzer automatically keeps an electronic record of all lock-outs including
9 the date of the lock-out, the reason for the lock-out, and the date and person that cleared
10 the lock-out.

11
12 *Certified analyzer use restriction* Since [~~September 1, 1991~~] March 1, 2000, the Utah
13 County Basic I/M program requires that official emissions tests be conducted only on
14 registered UTAH2000 analyzers jointly certified by Utah, Davis and Weber Counties. A
15 description of the certification procedure is provided in the TSD. There have been
16 several updates of the UTAH2000 Analyzer specifications to date and more will follow,
17 as necessary, to accommodate new technology vehicles and changes to the program.

18 19 **8. Quality Control**

20
21 *General quality control specifications* Utah County's I/M Program, the UTAH2000
22 Analyzer specifications, and current I/M program ordinances and regulations were
23 carefully designed to insure that emission measurement equipment is calibrated and
24 maintained properly, and that inspection, calibration records, and maintenance records are
25 accurately created, recorded, and maintained. The specifications meet the test equipment
26 quality assurance practices described in 40 CFR 51 Subpart S Sec. 51.359 and Section X,
27 Appendix A.

28
29 *Automatic electronic quality assurance features* Operational analyzer quality assurance
30 measures such as analyzer calibration, zero and span check, hydrocarbon hang-up check,
31 and leak check are mandatory automatic analyzer capabilities. Gas accuracy tolerances,
32 dilution limits, analyzer warm up requirements, system response time requirements,
33 optical correction factors, and interference effects are also addressed in the analyzer
34 specifications. If the checks are not performed on schedule or identify measurements
35 outside of acceptable limits established in the specifications, a lock-out occurs preventing
36 use of the analyzer until such problems are corrected. See Sections 2.12, 2.13, and 2.18
37 of the UTAH2000 Analyzer specifications. Records of all quality assurance activities
38 with respect to the analyzer are automatically recorded in the analyzer's electronic
39 database and evaluated by Utah County I/M auditors on a regular basis. Section 1.7
40 discusses requirements for assurance that unauthorized access to the I/M database in the
41 analyzer is secure. Attempts to deliberately avoid or defeat analyzer or inspection quality
42 assurance provisions result in disciplinary action against the I/M mechanic and/or station.
43

1 *Analyzer maintenance* Section 1.8 of the UTAH2000 Analyzer specifications describes
2 required services, warranty provisions, and documentation that analyzer manufacturers
3 must provide to customers. It includes ensuring that the analyzer meets the quality
4 assurance specifications at the time of delivery, that routine quarterly preventative
5 maintenance is performed, training on how to use, maintain, and operate the analyzer is
6 provided by the manufacturer, and that if repair of defects can not be made promptly a
7 temporary analyzer replacement is provided. Service activities are recorded in the
8 analyzer's electronic database. Utah County has conducted a survey of analyzer owners to
9 determine compliance with these provisions. Failure of an analyzer manufacturer to meet
10 quality assurance specifications could result in de-certification of the that manufacturer's
11 product for use in Utah.

12
13 *Document security* Document security was a high priority during the UTAH2000
14 analyzer design phase. The analyzer tracks the unique certificate numbers and ensures
15 that the certificate printed matches the test number. Missing certificate numbers are
16 stored in the analyzer database for auditor review. The blank certificates are
17 commercially printed on counterfeit-resistant security paper.

18
19 *Analyzer certification* Sound engineering practices were followed during the design and
20 certification of the UTAH2000 analyzer to insure accurate and repeatable inspections
21 under a range of environmental conditions. Manufacturer owner's manuals, operating
22 instructions, and warranty provisions were also reviewed during the certification process.
23 Comprehensive records of the certification process have been maintained.

24
25 *Analyzer security provisions* Utah County's I/M ordinance requires use of a certified and
26 registered UTAH2000 analyzer for official inspections. Inspection records include the
27 analyzer registration number. The ordinances and regulations make it illegal to alter
28 analyzer software or hardware without written approval. Analyzer calibration
29 requirements, maintenance, and warranty provisions are also specified in the Utah County
30 I/M ordinance.

31 32 **9. Waivers**

33
34 *Waiver rate* Utah County will take corrective action as needed to maintain a maximum
35 waiver rate of 5% of the initially failed vehicles or the Utah Air Quality Board will revise
36 the SIP and emission reductions claimed based on the actual waiver rate. The conditions
37 for issuing waivers legally authorized and specified in the Utah County I/M ordinance
38 meets the minimum waiver issuance criteria specified in 40 CFR Subpart S 51.360.

39
40 *Waiver procedures* [~~The Vehicle Inspection Report (VIR) printed by the UTAH2000~~
41 ~~analyzer after each inspection and provided to the vehicle owner/operator includes~~
42 ~~warranty and waiver information, if the vehicle failed the emissions inspection.] A
43 waiver document may be issued only by Utah County I/M technical center staff and only
44 after verification of required documentation. Any tampered, missing, or inoperable~~

1 emission control devices must have been replaced or repaired. At least \$100 for 1968
2 through 1980 model year vehicles, \$200 for 1981 through 1995 and \$400.00 for 1996 and
3 newer model year vehicles must have been spent on acceptable emission repairs as
4 verified by a Utah County I/M program auditor by physical examination of the vehicle
5 and review of the repair documentation. Repair documentation, such as receipts, are
6 copied and retained by auditor to prevent reuse. Utah County requires that emissions-
7 related repairs be ~~[made by a Certified Emissions Technician (certified under Section~~
8 ~~14.0 of the Utah County I/M ordinance)]~~performed by a licensed auto repair business in
9 order to count the labor costs. Any vehicle that experiences an increase in all emissions
10 levels is not eligible for an emissions repair waiver regardless of the amount spent to
11 repair the vehicle. Also, before a waiver can be issued, the vehicle ~~[must have an~~
12 ~~improvement in carbon monoxide emissions]~~meet a specific waiver cutpoint. Utah
13 County's waiver policy on emission standards for carbon monoxide can be found in
14 Appendix E of Utah County's Vehicles Emission Inspection/Maintenance Program
15 Ordinance. In the state of Utah, vehicles still under the federal emissions warranty are
16 not eligible for a waiver until all warranties are exhausted. Warranted repair and
17 tampering repair may not be applied to the repair cost waiver limits. Waivers are only
18 valid for one test cycle. The vehicle owner surrenders the original waiver document at
19 the time of registration; copies are not accepted for registration purposes. Specific
20 provisions regarding waivers may be found in Utah County's I/M ordinance and the Utah
21 Tax Commission Division of Motor Vehicle policy manual which is available upon
22 request. The I/M program in Utah County does not provide for time extensions to relieve
23 economic hardships in obtaining emission-related repairs.
24

25 **10. Motorist compliance enforcement**

26
27 *Registration denial* Utah County's I/M program is enforced by means of registration
28 denial. Vehicle owners must present proof of compliance with the I/M program, a
29 waiver, or evidence of exemption from the I/M program as a condition precedent to
30 vehicle registration or registration renewal. See sections 4 and 6 above for a more
31 detailed discussion of inspection frequency, inspection scheduling, license plate
32 requirements, and enforcement of the registration requirements. Citations are routinely
33 issued to operators of vehicles with expired or missing license plates during routine
34 traffic stops, parking lot inspections, and roadblocks. As specified in Section 41-1a-1303
35 of the Utah Code, driving without registration is a Class C misdemeanor. The penalty
36 for a Class C misdemeanor is imprisonment of no more than 90 days and \$750 for
37 persons or up to \$1000 for corporations, associations, partnerships, or government
38 instrumentalities. In addition to paying a fine the motorist must register the vehicle. It is
39 currently a Class B misdemeanor to violate a county I/M regulation or ordinance. The
40 penalty for a Class B misdemeanor is a imprisonment of not exceeding six months and
41 for persons a fine of up to \$1000 or for corporations, associations, partnerships, or
42 government instrumentalities a fine of up to \$5000. In Utah, the magnitude of such
43 penalties is a judicial rather than an administrative decision. Per Section 41-1a-1315
44 falsification of evidences of title and registration is a second degree felony.

1 *Certificate of Compliance* The Certificate of Compliance is dated by the UTAH2000
2 analyzer in Utah County immediately after a passing inspection is completed. The
3 certificate is only valid for registration purposes for two months. At the same time the
4 analyzer also prints the following information on the certificate to ensure unambiguous
5 vehicle identification: the vehicle identification number (VIN), license number, model
6 year, make, and model. A sample of the Certificate of Compliance is in Appendix C of
7 the UTAH2000 specifications. The certificates are only printed in the event that the
8 vehicle passed the emissions inspection. Separate documentation, including the same
9 vehicle information, is used for waivers.

10
11 *Fuel changes to non-subject status* Vehicle changes that would result in registration
12 changes from a subject to exempt status require physical confirmation by Utah County
13 I/M program personnel at the I/M technical center. Falsification of registration or title
14 information is a felony offense.

15
16 *Title transfers* Proof of compliance with the I/M program is required for a title transfer.
17 The system ensures that owners are not able to avoid the program by extending the
18 inspection date through manipulation of the title and registration system.

19
20 Utah County I/M program staff, peace officers, and the Utah Tax Commission Motor
21 Vehicle Customer Service Division routinely work together to ensure that motor vehicle
22 owners that move into an I/M program area complete registration transfer including
23 compliance with the I/M program. Except for higher education students and active duty
24 military personnel, people are required to register their vehicles in the county in which
25 they are domiciled. As discussed in the Vehicle Coverage section, although these two
26 exempted classes of vehicle owners do not have to register their vehicles in Utah, they do
27 have to comply with the I/M programs. Employment status, maintenance of a residence,
28 enrollment of children in local schools, and voting districts are considered when
29 identifying persons in violation of this requirement.

30
31 The Utah County I/M program staff work with citizens, the Motor Vehicle Customer
32 Service Division and county attorneys to identify and prosecute people that illegally
33 transfer registration to a non-subject area to avoid the I/M program. The process is very
34 labor intensive. There are many legitimate reasons to be operating a vehicle in an I/M
35 program area that is registered elsewhere. Violators must be dealt with on a case-by-case
36 basis. Persons caught are subject to fines. Those prosecuted and convicted could end up
37 with a criminal record and actual jail time. Fraudulent registration of a motor vehicle is a
38 felony offense. Most people confronted with evidence of their guilt and the seriousness
39 of their offense, to date, have complied promptly. The involved agencies are developing
40 more efficient methods of dealing with illegal registrations that result in exemption from
41 the I/M programs.

1 Utah County is committed to a cooperative aggressive effort to ensure that vehicles
2 operated in the county comply with the I/M program to ensure a compliance rate of at
3 least 95%.

4 5 **11. Motorist compliance enforcement program oversight**

6
7 *Utah Tax Commission, tax assessors, and county roles* The Utah Tax Commission Motor
8 Vehicle Customer Service Division and county tax assessors deny application for vehicle
9 registration or renewal of registration without submission of a valid certificate of
10 compliance, waiver, or verified evidence of exemption. Proof is retained by the tax clerk,
11 micro-photo-copied, and then destroyed. Altered or hand-written documents are not
12 accepted. All certificate data is collected by Utah County I/M program auditors and
13 subjected to scrutiny for evidence of any improprieties.

14
15 *Database quality assurance* The vehicle registration database is maintained and quality
16 assured by the Motor Vehicle Customer Service Division. The I/M inspection database is
17 maintained and quality assured by Utah County I/M program staff. See Appendix F of
18 the UTAH2000 analyzer specifications for a file layout description. The Utah County
19 I/M program has access to the Motor Vehicle Customer Service Division database and
20 utilizes it on a regular basis for quality assurance purposes. The databases are subject to
21 regular auditing, cross-referencing, and analysis. The databases are also evaluated using
22 data obtained during roadblocks and parking lot surveys. Evidence of program
23 effectiveness problems trigger additional joint enforcement activities.

24
25 *Oversight provisions* The oversight program includes verification of exempt vehicle
26 status through inspection, data accuracy through automatic and redundant data entry for
27 most data elements, an audit trail for program documentation to ensure control and
28 tracking of enforcement documents, identification and verification of exemption-
29 triggering changes in registration data, and regular audits of I/M inspection records, I/M
30 program databases, and the Motor Vehicle Customer Service Division database.

31
32 *Enforcement staff quality assurance* I/M program auditors and tax clerks involved in
33 vehicle registration are subject to regular performance audits by their supervisors. All
34 enforcement personnel (direct and indirect) involved in the motorist enforcement program
35 are subject to disciplinary action, additional training, and termination for deviation from
36 procedures. Specific provisions are outlined in the Motor Vehicle Customer Service
37 Division procedures manual, the county I/M audit policy documents contained in the
38 Utah County I/M ordinances, and Section 3.9 of the UTAH2000 analyzer specifications.

39
40 *Co-operative enforcement oversight effort* Motor Vehicle Customer Service Division,
41 Utah Division of Air Quality, Utah highway patrol, and Utah County I/M program staff
42 meet as needed to ensure on-going high quality oversight of joint motorist compliance
43 program. EPA audit of this process is authorized if measures to protect tax-payer
44 confidentiality acceptable to Motor Vehicle Customer Service Division are exercised.

1 **12. I/M Program quality assurance**

2
3 *Station/inspector audits* Utah County regularly audits all permitted I/M inspectors and
4 stations to ensure compliance with the Utah County I/M ordinance. Particular attention is
5 given to identifying and correcting any fraud or incompetence with respect to vehicle
6 emissions inspections. Compliance with record keeping, document security, analyzer
7 maintenance, and program security requirements are scrutinized. The inspector's skill
8 level is also evaluated during audits. Another major purpose of the audits is to retrain
9 inspectors, as necessary, as soon as problems are identified. Documentation sufficient to
10 support a legal case to suspend or revoke a permit is also collected in the event of serious
11 and/or repeated violations. Most stations and inspectors are audited every month and all
12 at least quarterly.

13
14 *Covert audits* Utah County, to the extent possible, performs a covert audit of each
15 inspector and station at least once a year. The number of covert audits at least equals the
16 number of permitted inspectors. Covert audits are performed using a variety of vehicles
17 that are representative of the subject fleet that are set to fail across a full range of
18 malfunctions. Suspected problem stations and inspectors are targeted for earlier and more
19 frequent audits. Complaints also trigger additional audits.

20
21 Covert performance audits shall include:

22
23 Remote visual observation of inspector performance, which may include the use
24 of aids such as binoculars or video cameras, at least once per year per inspector in
25 high-volume stations (i.e., those performing more than 4000 tests per year);

26
27 Site visits at least once per year per number of permitted inspectors (per inspector
28 FTE) using covert vehicles set to fail (this requirement sets a minimum level of
29 activity not a requirement that each inspector be involved in a covert audit); and

30
31 For stations that conduct both testing and repairs, at least one covert vehicle visit
32 per station per year including purchase of repairs and subsequent retesting if the
33 vehicle is initially failed for tailpipe emissions.

34
35 *Electronic audit capabilities* The UTAH2000 performs various analyses to identify
36 statistically inconsistent data indicative of problem stations and inspectors. Overt audit
37 records are maintained electronically in the UTAH2000. After overt audits the auditor
38 retrieves the data [~~on the analyzer diskette~~] containing the audit, vehicle inspection, and
39 analyzer service, maintenance, and calibration records dating back to the previous audit.
40 The data from each audit is added to the comprehensive central county I/M database.
41 Further analysis of the central database results in identification of stations and inspectors
42 for which additional audits are performed.

1 *Auditor quality assurance* Auditors receive on-the-job training in: the use of the
2 UTAH2000 analyzer; the I/M program regulations; basic air pollution control; basic
3 principles of emissions-related motor vehicle engine repair; emission control systems;
4 evidence gathering; administrative procedures and laws; quality assurance practices; and
5 covert audit procedure. Utah County sends auditors to additional automotive emissions-
6 related training and meetings on a regular basis. Auditor supervisors audit the I/M
7 program auditors by reviewing their documentation and also auditing a number of their
8 stations at least once every year.
9

10 *Written audit procedures* The Utah County I/M program overt and covert audit
11 procedures are contained in the Utah County I/M ordinances. A detailed description of
12 the audit capabilities of the UTAH2000 analyzer are found in Section 3.9 of the
13 UTAH2000 analyzer specifications.
14

15 **13. Enforcement against stations and inspectors**

16 *TSD Tab ____: Penalty schedule*

17
18
19 *General enforcement provisions* The Utah County I/M program is responsible for
20 enforcement action against incompetent or dishonest stations and inspectors. The Utah
21 County I/M ordinance includes a penalty schedule. For serious or repeated offenses,
22 auditors are authorized to immediately suspend the station or inspector by locking out
23 their UTAH2000 analyzer(s). The County does not have legal authority to impose direct
24 fines on stations or inspectors, but suspension or revocation of a station permit results in a
25 substantial loss of income that is far in excess of \$100 fine suggested by the EPA
26 guidance. ~~[Fee settlements are at least as much the station's anticipated income for~~
27 ~~emissions testing for the time during which the station would be suspended.]~~ Station fee
28 settlements are based on 50% of the expected revenue from I/M testing during the
29 suspension, up to a maximum of \$3,000. Fee settlements for the inspectors are \$100 for
30 any portion of a 15-day period, up to a maximum of \$500. A station permit may be
31 suspended or revoked even if the owner/operator had no direct knowledge of the
32 violation. In the case of incompetence, re-training is required before the permit is
33 restored.
34

35 The County revised its penalty schedule to comply with the more stringent specifications
36 included in 40 CFR 51.364; it is found in Appendix D of Utah County Ordinance 1999-
37 28. ~~[The Utah Air Quality Board adopted the revised penalty schedule for Utah County~~
38 ~~on January 30, 1995. At a minimum, inspector and station permit suspension shall be~~
39 ~~imposed for at least 6 months (or a fee retainage or settlement penalty equivalent to the~~
40 ~~inspector's salary for that period) whenever a vehicle is intentionally improperly passed~~
41 ~~for any portion of the required test.]~~ Inspector suspensions may not be reduced by more
42 than 75 days through a negotiated fee settlement.
43

1 *Suspension and revocation* Suspension or revocation effectively bars an individual from
2 further inspections because the auditor removes the inspector's authorization code from
3 the UTAH2000 analyzer. Evidence of indirect participation in emissions inspections by
4 an individual while suspended or revoked could result in legal action against the station.
5 If the station is suspended or revoked the analyzer is totally locked-out. The analyzers are
6 initialized by an auditor for use at a single permitted station and only by inspectors
7 permitted for that station. A record of the serial numbers of all registered analyzers and
8 their locations is maintained by Utah County.

9
10 *Enforcement records* Utah County keeps comprehensive records on all audit activities,
11 warnings, suspensions, and revocations and report enforcement activity statistics to the
12 EPA and the executive secretary on an annual basis.

13 14 **14. Data collection**

15
16 *I/M data collection* Utah County maintains records regarding inspections, equipment
17 maintenance, and the required quality assurance activities.

18
19 *Analyzer inspection data* The UTAH2000 analyzer creates a detailed record of each
20 emissions inspection performed including, but not limited to the following data, for each
21 vehicle tested: test record number; inspection station number; inspector number; test
22 system number; date of the test; emission test start time; the time final emission scores
23 are determined; vehicle identification number (VIN); license plate number; test certificate
24 number; gross vehicle weight rating (GVWR); model year, make, and type of vehicle;
25 number of cylinders or engine displacement; transmission type; odometer reading;
26 category of test performed (i.e., initial, first retest, or subsequent retest); fuel type of the
27 vehicle; emission scores for HC, CO, and CO₂ at idle and 2500 RPM; and results
28 (pass/fail/not applicable) for visual inspection of the catalytic convertor, air system, gas
29 cap, evaporative system, and positive crankcase (PCV) valve. The tailpipe emission
30 standards for each type of vehicle is included in a look-up table in the UTAH2000
31 analyzer. The UTAH2000 analyzer automatically uses appropriate standards for the type
32 of vehicle being tested and makes a pass/fail determination. The inspection data is
33 recorded by the UTAH2000 analyzer during the inspection procedure.

34
35 *Analyzer quality assurance data* Quality assurance data including a detailed history of all
36 calibration (including the concentration values of the calibration gases), service, lockout,
37 and document security events are also recorded and maintained by the UTAH2000
38 analyzer. Each UTAH2000 record includes, as applicable, station number, mechanic
39 access number, auditor access number, service access number, analyzer serial number,
40 date, and activity time.

41
42 *Analyzer database specifications* The programming criteria for the analyzer database is
43 described in Section 3 of the UTAH2000 analyzer specifications. Appendix A of the
44 UTAH2000 analyzer specifications contains a complete description of the electronic data

1 records. The data containing inspection and quality assurance information is transferred
2 electronically nightly and maintained permanently in the county's central I/M database.
3

4 **15. Data analysis and reporting**

5
6 *Annual Reports* Utah County shall analyze I/M program data and submit annual reports to
7 the U.S. Environmental Protection Agency and the executive secretary upon request.
8 Beginning in July of 1995, Utah County will submit to EPA and the executive secretary
9 an annual report, for January through December of the previous year, which provides
10 statistics on the testing, quality assurance, and enforcement activities of each I/M
11 program. At a minimum the annual reports will include all of the data elements listed 40
12 CFR Subpart S 51.366.
13

14 *Biennial Reports* Beginning in July of 1996, and biennially thereafter, Utah County shall
15 submit a report to EPA and the executive secretary discussing all changes made in the
16 program design, funding, personnel levels, procedures, regulations, and legal authority.
17 The report will also supply a detailed discussion of the impact of such changes upon the
18 program, any weaknesses or problems discovered in the program over the previous two-
19 year period, the steps that were taken to address those problems, the result of those
20 corrective actions, and any future efforts planned.
21

22 *Data link* Utah County requires all certified station owners to provide a computer data
23 link between their station(s) and the Utah County health department in a manner
24 approved by the health department and consistent with the requirements of 40 CFR 51
25 Subpart S.
26

27 **16. Inspector training and permitting**

28
29 *TSD Tab ___: Description of I/M training and testing*

30
31 *Inspector permitting and initial training* No person may conduct an official I/M
32 inspection unless they are certified and subsequently permitted. Utah County requires
33 formal training prior to certifying inspectors. Each class includes at least the following
34 information: the causes and effects of air pollution; the purpose, function, and goal of the
35 I/M program; I/M inspection ordinances, policies, and procedures; technical details of the
36 test procedures and the rationale for their design; emission control device function,
37 configuration, and maintenance; quality control procedures and their purposes; public
38 relations; and safety and health issues related to the I/M inspection process. Inspector
39 candidates will not be issued a permit unless they have passed a written test with at least
40 70% correct responses and a hands-on test during which the trainee demonstrates the
41 ability to properly conduct all test procedures, calibrate the UTAH2000 analyzer, properly
42 utilize equipment, and to follow other I/M program requirements. Utah County will take
43 appropriate steps to insure the security of the testing process.
44

1 *Inspector Training* The Utah County I/M ordinance requires an inspector training
2 program, to include both classroom and hands-on training, with provisions for initial and
3 periodic in-service training. Utah County requires in house training for each inspector
4 before the inspector may perform inspections periodic in-service training, over a period
5 established by the health department.
6

7 *Inspector permit renewal* Inspector permits are valid for a period of one year, at which
8 point refresher [~~training and~~]testing[~~, are~~]is required prior to permit renewal. An auditor
9 enters the inspector's permit expiration date in the UTAH2000 analyzer(s) that the
10 inspector is authorized to use. Starting 60 days prior to the inspector's permit expiration
11 date the analyzer displays the message "Your mechanic permit expires MM/DD/YY".
12 The analyzer locks-out inspectors that attempt to use the UTAH2000 analyzer after their
13 permit expires and displays the following message. "Your mechanic permit expired
14 (date). You are not authorized to perform any emissions inspections at this time. Please
15 contact your local I/M office." Auditors will not clear the lock-out until the inspector has
16 renewed the permit. Utah County may require evidence of more comprehensive
17 emissions-related automotive training as a prerequisite to inspector permit renewal.
18

19 *Inspector permit suspension and revocation* A determination of inspector incompetence
20 or failure to comply with I/M program requirements may result in suspension or
21 revocation [~~or~~]of an inspector's permit prior to the annual expiration date. A permit to
22 conduct I/M inspections is not a legal right but rather a privilege bestowed by Utah
23 County conditional upon adherence to its I/M program requirements.
24

25 *Inspector training authority and materials* Authority to require mandatory I/M inspector
26 training is established and described in the Utah County I/M ordinances.
27

28 **17. Public information and consumer protection**

29

30 *General public information* The Utah County, along with the Utah Department of
31 Environmental Quality, provides a comprehensive public education and protection
32 program including strategies to educate the public on: Utah's air quality problems; ways
33 that people can reduce emissions; the requirements of state and federal law; the role of
34 motor vehicles in the air quality problem; the need for and benefits of a vehicle emissions
35 inspection program; ways to operate and maintain a vehicle in a low-emission condition;
36 how to find a qualified repair technician; and the requirements of the I/M program.
37 Information is provided via direct response to inquiries for information, reports, classes,
38 pamphlets, fairs, school presentations, workshops, news releases, posters, signs, and
39 public meetings.
40

41 *County I/M Technical Center* Utah County operates an I/M Technical Center staffed with
42 trained auditors and capable of performing emissions tests. A major function of the I/M
43 technical center is to serve as a referee station to resolve conflicts between permitted I/M
44 inspectors, stations, and motorists. Auditors actively protect consumers against fraud and

1 abuse by inspectors, mechanics, and others involved in the I/M program. Complaints
2 made on a confidential basis are investigated and resolved in a manner that conceals the
3 person's identity to ensure protection of whistle blowers. Auditors advise motorists
4 regarding emissions warranty provisions and assist the owners in obtaining warranty-
5 covered repairs for eligible vehicles. Applications for waivers are evaluated by auditors
6 at the I/M technical center and issued only after visual verification that all the
7 requirements for a waiver have been met, including retest of the vehicle. The I/M
8 technical centers also provide motorists with information regarding the I/M program,
9 general air pollution issues, and emissions-related automotive repairs.

10
11 *Vehicle inspection report* A vehicle inspection report (VIR) is printed and provided to
12 the motorist after each vehicle inspection. [~~The VIR includes a public awareness~~
13 ~~statement about automotive emissions and lists additional ways that the public can reduce~~
14 ~~air pollution. The test results are detailed on the VIR. Information about vehicle~~
15 ~~emissions warranties and the benefits of emissions-related repairs are printed for vehicles~~
16 ~~that failed the test. Information about waiver requirements and application procedures are~~
17 ~~printed on the VIR, if the vehicle has failed a retest, including the address and telephone~~
18 ~~number of the applicable I/M technical center.] A description of the VIR is included in
19 the UTAH2000 analyzer specifications.~~

20
21 *I/M county co-operative public education tools* A variety of pamphlets and radio,
22 television, and newspaper advertisements about automotive air pollution issues are
23 developed and distributed by the Utah County I/M program in cooperation with other I/M
24 counties and the Utah Division of Air Quality.

25 26 **18. Improving repair effectiveness**

27
28 *High priority* Utah County (along with other I/M counties) and the Utah Division of Air
29 Quality staff jointly identified improvement of repair effectiveness as a high priority
30 action item. The Governor's Clean Air Commission also recommended making
31 affordable additional emissions-related training available. Full emission reductions will
32 only be realized if the repair industry is able to competently diagnose and repair
33 emissions-related defects.

34
35 *Continuing education* I/M program managers have worked with Utah's higher education
36 institutions to develop and provide emissions-related automotive technology classes to
37 mechanics. Inspectors are also encouraged to take classes offered by trade organizations,
38 automobile manufacturers, and dealers. The permit renewal tests are difficult enough to
39 make this provision a good incentive. The classes are advertised in the Utah County I/M
40 technical bulletins.

41
42 *I/M program repair support activities* In initiating improved automotive educational
43 opportunities, Utah County works on a day-to-day basis to ensure that repair information
44 is available. I/M stations are required to have available up-to-date relevant automotive

1 diagnostic references and tools as a condition for obtaining a permit. Utah County
2 maintains a hot line to its I/M technical center so that any mechanic can call for technical
3 assistance related to vehicle inspection, diagnosis, and repair. Technical bulletins are
4 regularly mailed to each permitted [inspector]station with information regarding training
5 schedules, common problems found with particular engine families, and diagnostic tips.
6

7 **19. I/M SIP implementation**

8
9 The I/M program ordinances or regulations, policies, procedures, and activities specified
10 this I/M SIP revision have been implemented and shall continue until a maintenance plan
11 without an I/M program is approved by EPA in accordance with Section 175 of the Clean
12 Air Act as amended.
13

14 **20. On-road Testing**

15
16 Utah County operates Remote Sensing Device (RSD) units to help quantify I/M program
17 effectiveness and provide additional program flexibility in the event additional emission
18 credits and/or contingency measures are required to meet program objectives.
19



State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF AIR QUALITY

Michael O. Leavitt
Governor
Dianne R. Nielson, Ph.D.
Executive Director
Richard W. Spratt
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MEMORANDUM

TO: Air Quality Board DAQC-1019-2001
FROM: Richard W. Spratt, Executive Secretary
DATE: July 2001
SUBJECT: COMPLIANCE ACTIVITIES - June 2001

Annual Inspections Conducted:

A 8
SM 18
B 15

Initial Compliance Inspections Conducted:

A 0
SM 2
B 1

On-Site stack test audits conducted: 3
Stack test report reviews: 7

On-site CEM audits conducted: 2
Emission reports reviewed: 0

Oxy fuels inspections conducted: 2

* Miscellaneous inspections conducted: 57

Complaints received: 39

VOC inspections:

Tankers 7
Degreasers 3
Paint Booths 6

* Miscellaneous inspections include, e.g., surveillance, level I inspections, complaints, onsite training, tanker vapor certifications, dust patrol, smoke patrol, open burning, etc.

Source Compliance Action Notice issued	1
Notices of Violation issued	6
Settlement Agreements resolved	1
Penalties Collected	\$2,800

Notices of Violations issued to:

- Stericycle Inc.
- Wasatch Energy Systems
- Geary Construction
- Brigham Young University
- Payson City Power
- Huish Detergents, Inc.

Settlement Agreements Reached:

Northern Utah Manufacturing	\$ 2,800
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State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF AIR QUALITY

Michael O. Leavitt
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MEMORANDUM

TO: Utah Air Quality Board DAQH-0449-01
FROM: Richard W. Sprott, Executive Secretary
DATE: July 23, 2001
SUBJECT: Hazardous Air Pollutant Section Compliance Activities - June, 2001

	5/01	6/01
Asbestos Demolition/Renovation Inspections.....	20	17
Asbestos in Schools Inspections.....	10	10
MACT Compliance Inspections.....	5	1
Other NESHAP Inspections.....	0	1
State Rules (Only) Inspections.....	0	0
Asbestos Notifications Approved.....	97	98
Asbestos Phone Calls Answered.....	376	333
Asbestos Individual Certifications: Approved/Disapproved.....	38/0	60/0
Company Certifications/Re-certifications.....	1/0	1/0
Alternate Asbestos Work Practices: Approved/Disapproved.....	1/0	0/0
Lead Based Paint (LBP) Inspections.....	0	4
LBP Notifications Approved.....	0	0
LBP Phone Calls Answered.....	141	193
LBP Letters prepared and mailed.....	56	58
LBP Courses Received/Approved.....	0/0	0/0
LBP Course Audits.....	0	0
LBP Certifications Approved/Disapproved.....	6/0	6/0
LBP Company Certifications.....	1	0
Notices of Violation Issued.....	0	0
Notices of Noncompliance (NON).....	0	0
SCANS (warning letters) Issued.....	6	0
Settlement Agreements Finalized.....	0	0
Penalties Agreed to.....	\$0	\$0
Notice of Violation issued to: A-1 Restoration - Asbestos work practices		
Settlement Agreements Reached: None		

The Hazardous Air Pollutants Section (HAPS) is a compliance section within the Division of Air Quality with a main responsibility of conducting inspections and reviewing reports to determine compliance with regulations involving emissions of hazardous air pollutants. The HAPS staff includes 6 Environmental Scientists, 1 Environmental Program Coordinator (certification programs) and 1 Office Tech.

The following programs currently reside within HAPS:

National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 61 (R307-214-1)

- Asbestos (2 stationary sources)
- Beryllium (1 source)
- Benzene waste (7 sources)
- Coke oven byproducts (1 source)
- Equipment in Benzene service (1 source)
- Radon from uranium mill tailings (2 sources)

National Emission Standards for Source Categories - Maximum Achievable Control Technology (MACT) 40 CFR Part 63 (R307-214-2)

- Petroleum refineries (5 sources)
- Bulk gasoline distribution (1 source)
- Off-site waste recovery (1 source)
- Hazardous waste incinerators (4 sources)
- Aerospace manufacturing and rework (3 sources)
- Wood furniture manufacturing (5 sources)
- Printing and publishing (1 source)
- Coke oven batteries (1 source)
- Portland cement manufacturing (2 sources)
- Perchloroethylene dry cleaning (173 sources)
- Chrome electroplating (17 sources)
- Ethylene Oxide commercial sterilizers (1 source)
- Halogenated solvent cleaning (9 sources)

Lead-Based Paint - Toxic Substances Control Act (TSCA) 40 CFR Part 745 (R307-840)

- Accreditation of training programs
- Certification of individuals and firms
- Work practices for lead-based paint activities
- Outreach activities

Asbestos in Schools - Asbestos Hazard Emergency Response Act (AHERA) 40 CFR Part 763 (R307-801)

- Approval of training providers
- Certification of individuals and companies
- Inspections of school buildings (20 per year)
- Inspections of asbestos abatement in schools (20 per year)

Asbestos NESHAP and State asbestos work practices - 40 CFR Part 61, subpart M, R307-801

- Certification of individuals (200 per year) and companies (30 per year)
- Review of asbestos project notifications (400 per year)
- Review of demolition notifications for structures (400 per year)
- Review of alternate work practices (10 per year)
- Inspection of asbestos abatement projects and demolition of structures (130 per year)
- Asbestos outreach activities

UTAH STATE DIVISION OF AIR QUALITY

PM2.5 Actual Concentration (24-hr average) in Micrograms per Cubic Meter
2001
June

Date	BR	BT	BX	CW	GV	HE	HW	HG	HV	LN	LX	L4	NP	N2	OG	SF	WT	WX	WV	VX
06/01							4.6			4.6		5.8								
06/02							7.3			7.6										
06/03	3.2	4.7		4.1	3.4	3.6	3.8	4.2	0.8	4.7		3.3	4.9	4.3		4.4	4.6		3.8	
06/04							2.7			4.7										
06/05							4.9			4.4										
06/06	3.2	5.3	5.7	5.4	3.2	3.9	5.5	6.5	3.9	6.9	6.9	3.9	7.5	6.9		6.0	6.0	6.1		
06/07							4.7			7.6										
06/08							6.1			5.6										
06/09	5.3	7.8		7.4	10.3	8.5	6.7	8.3	5.8	7.1		6.5	8.1	9.0		6.7	8.0			
06/10							6.4													
06/11							5.2			6.8										
06/12	2.4	3.5	3.4	3.8	2.0	2.1	3.0	3.6	2.1	4.6	3.6	2.9	5.0				3.0	2.8	3.8	4.7
06/13							2.1			2.4										
06/14							3.2			3.0										
06/15	3.5	2.8		5.0	2.6	2.6	3.5	3.4	3.9	5.0		4.2	4.6	5.6		3.3	4.6		4.2	
06/16							5.5			5.0										
06/17							4.0			5.8										
06/18	3.3	3.8	3.8	5.0	3.5	3.3	5.2		3.3	6.7	6.3	5.1		6.3		5.3	4.8	4.8	4.3	5.3
06/19							4.9			8.9										
06/20							7.1			8.4										
06/21		5.4		7.9	5.8	5.9	6.2		5.3	9.0		6.0		15.0		9.0	9.7			7.5
06/22							8.1			8.4										
06/23							5.6			5.2										
06/24		6.6	6.6	6.7	6.7	5.5	5.7		6.5	6.0	5.9	6.4		8.0		5.0	8.2		6.5	5.4
06/25							14.1			6.3										
06/26							6.1			4.9										
06/27	4.7	4.5		4.9	3.3	3.3	4.6	5.5	5.3	4.8		6.8		7.2		3.8	5.8		4.0	
06/28										4.7										
06/29							7.6													
06/30	5.5	6.2	6.0	9.5	5.5	4.1	6.2	5.1	5.1	5.5	8.2	7.0	5.7	8.8		3.5			9.3	8.6

Arith Mean	3.9	5.1	5.1	6.0	4.6	4.3	5.5	5.2	4.2	5.9	6.2	5.3	6.0	7.9		5.2	6.1	4.6	5.1	6.3
Max 24-hr Avg	5.5	7.8	6.6	9.5	10.3	8.5	14.1	8.3	6.5	9.0	8.2	7.0	8.1	15.0		9.0	9.7	6.1	9.3	8.6
Std. Dev	1.1	1.5	1.4	1.8	2.5	1.9	2.2	1.7	1.8	1.7	1.7	1.5	1.5	3.1		1.8	2.2	1.7	2.1	1.7
Days of Data	8	10	5	10	10	10	29	7	10	28	5	11	6	9		9	9	3	7	5
Yearly Mean	10.8	11.6	11.3	16.0	8.9	9.4	15.7	11.2	10.6	13.2	11.3	17.7	13.2	16.7		10.2	10.4	11.2	14.8	13.9

UTAH STATE DIVISION OF AIR QUALITY

PM2.5 Actual Concentration (24-hr average) in Micrograms per Cubic Meter

2001 July

Date	BR	BT	BX	CW	GV	HE	HW	HG	HV	LN	LX	L4	NP	N2	OG	SF	WT	WX	WV	VX
07/01							5.6			5.2										
07/02										7.9										
07/03	6.6	8.7		13.2	7.9	6.5	8.8	7.4	6.9			9.2	12.8	16.3		7.6	12.5		22.3	
07/04							27.5			38.1										
07/05					10.8		15.2			17.2										
07/06	6.6	12.2	13.7	10.1		10.0	10.1	9.3		7.5	8.8	7.0	6.7	13.0		6.3			10.8	13.2
07/07							8.2			7.0										
07/08							7.3			7.0										
07/09	4.6	5.5		6.5		5.3	5.8	5.4	4.5	5.4		4.9	5.8	8.2		5.5			8.2	
07/10							5.2			5.3										
07/11										5.5										
07/12		5.7	6.6		5.4	6.3		6.2		7.4	7.1	5.2	6.8	9.2		5.5				
07/13							5.5			5.8										
07/14										4.7										
07/15		4.5		4.7	4.7	3.6	5.3	4.4		3.3		4.5	4.4	5.9		4.4			5.2	
07/16																				
07/17																				
07/18																			6.3	5.8
07/19																				
07/20																				
07/21																				
07/22																				
07/23																				
07/24																				
07/25																				
07/26																				
07/27																				
07/28																				
07/29																				
07/30																				
07/31																				
Arith Mean	5.9	7.3	10.1	8.6	7.2	6.3	9.5	6.6	5.7	9.1	7.9	6.1	7.3	10.5		5.9	12.5		10.6	9.5
Max 24-hr Avg	6.6	12.2	13.7	13.2	10.8	10.0	27.5	9.3	6.9	38.1	8.8	9.2	12.8	16.3		7.6	12.5		22.3	13.2
Std. Dev	1.2	3.1	5.0	3.8	2.8	2.3	6.7	1.9	1.7	9.0	1.2	1.9	3.2	4.1		1.2			6.9	5.2
Days of Data	3	5	2	4	4	5	11	5	2	14	2	5	5	5		5	1		5	2
Yearly Mean	10.6	11.4	11.2	15.6	8.8	9.3	15.5	10.9	10.4	13.1	11.2	17.0	12.8	16.4		10.0	10.4	11.2	14.6	13.7

UTAH STATE DIVISION OF AIR QUALITY

47mm Partisol: PM10 Concentration Adjusted to Sea Level (24-hr average) in Micrograms per Cubic Meter
2001 June

Date	Cottonwood	Hawthorn	Lindon	Logan 4	Magna(W)	Moab	NProvo	NProvo-X	NSL	NSL-X	Ogden
06/01			26						47		
06/02			53						70		
06/03	16		26	21			26		23		
06/04			19		7						
06/05			28						40		
06/06	30		38	17	14	26	34	35	46	40	
06/07			38						53		
06/08			38						57		
06/09	30		32	31	32		30		38		
06/10			30						40		
06/11			41						50		
06/12				5	7	32					
06/13											
06/14									15		
06/15	19			14	6		23		31		
06/16			30						35		
06/17			26						29		
06/18	30		42		12		37		39	40	
06/19			45						35		
06/20			44						52		
06/21	33		52	27			39	35	69		
06/22			54						60		
06/23									51		
06/24	30		25	28			27	25	41	37	
06/25			38		69				86		
06/26			26						31		
06/27	19		20	28		21	21		26		
06/28			29						47		31
06/29			46						56		
06/30	40		40		28		29	29	42	39	

Arith Mean	28		35	21	22	26	30	31	45	39	31
Max 24-hr Avg	40		54	31	69	32	39	35	86	40	31
Std. Dev	8		10	9	22	6	6	5	16	1	
Days of Data	9		25	8	8	3	9	4	27	4	1
Days >150											
Yearly Avg	32		32	31	27	20	29	29	45	49	31

UTAH STATE DIVISION OF AIR QUALITY

47mm Partisol: PM10 Concentration Adjusted to Sea Level (24-hr average) in Micrograms per Cubic Meter

2001 July

Date	Cottonwood	Hawthorn	Lindon	Logan 4	Magna(W)	Moab	NProvo	NProvo-X	NSL	NSL-X	Ogden
07/01			36						32		
07/02			58						66		
07/03	44	39	63	35			46		68		
07/04		68	88						62		
07/05		50	73						82		
07/06	38	42	64		37		36	35	51	50	
07/07		29	27						30		
07/08		22	26						24		
07/09	19	22	19	15	19		20		35		
07/10		25	24						34		
07/11		22	28						30		
07/12	26	21	31	18	17		28	28	39	41	
07/13		19	24						37		
07/14		19	32						25		
07/15	20	21	15	22	16		14		21		
07/16		24	26						36		
07/17		26	24						39		
07/18	22	23	21	24	18		21	23	34	36	
07/19		19	27						32		
07/20		28	24						33		
07/21	24	23	22	26			34		26		
07/22		19	23		16				20		
07/23		22	38						40		
07/24		49	58		32		39	40	50	52	
07/25									50		
07/26											
07/27											
07/28											
07/29											
07/30											
07/31											

Arith Mean	28	29	36	23	22		30	31	40	45	
Max 24-hr Avg	44	68	88	35	37		46	40	82	52	
Std. Dev	10	13	20	7	9		11	8	16	8	
Days of Data	7	22	24	6	7		8	4	25	4	
Days >150											
Yearly Avg	32	32	32	31	27	20	29	29	45	49	