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# THE CLEAN AIR ACT AND MINERAL DEVELOPMENT

Paul D. Phillips  
Holland & Hart

## I. INTRODUCTION: SOME TECHNICAL CONSIDERATIONS.

### A. A Key Distinction: Emission Limits vs. Ambient Standards.

1. Emission limits are limits on the amount of air pollutants which a specific source can emit, usually imposed as a new source permit condition, and usually expressed in units-of-mass per units-of-time (e.g., pounds per hour). (Based on what is deemed technically possible.)

2. Ambient standards are maximum allowable concentrations of air pollutants in the ambient air, usually expressed in units-of-mass per units-of-volume over a given time period (e.g., micrograms per cubic meter for a 24-hour period). (Based on what is deemed needed to protect health and welfare.)

3. Thus, the air we breathe in Denver must meet an ambient air standard for sulfur dioxide of 365 micrograms per cubic meter averaged over a 24-hour period, while a power plant in Denver will have an emission limit of "X" pounds per hour of sulfur dioxide. Ambient air concentrations are in large part determined by what emission limitations are imposed; however, this relationship must be estimated by highly complex air quality models.

### B. A Key Problem: Scientific Uncertainty.

1. The earth's atmosphere is a vast and ill-understood system.

2. Many important phenomena and relationships in the field remain poorly-understood, including the health effects of exposure to various air pollutants (e.g., particulate matter); acid rain; visibility; pollutant transformation; and the relationship between source emissions and ambient air impacts (modeling).

### C. Implications for the Practitioner.

1. Frequent need to retain consultants and to feel comfortable with technical/mathematical details.

2. Nevertheless, lawyer can and should have substantial and creative role in regulatory process.

3. The nagging doubt: cost/benefit analysis exceptionally difficult in the area of air pollutant regulation. Costs can be assessed (EPA has estimated \$229 billion for period 1977-86, or about \$22 billion per year); benefits somewhat more difficult to quantify. How are statistical risks weighed against financial costs?

## II. THE FEDERAL CLEAN AIR ACT AS AMENDED IN 1977 (42 U.S.C. § 7401-7642).

### A. General Organization.

1. Title 1, "Air Pollution Prevention and Control," is the key segment of Act from standpoint of mining industry; establishes permitting requirement for stationary sources.

2. Title 2, "Emission Standards for Mobile Sources," covers motor vehicle emission standards and fuel standards.

3. Title 3, "General", contains definitions and provisions governing judicial review, rulemaking procedures, and other housekeeping matters.

### B. Key Provisions in Title 1 Affecting the Mining Industry.

1. Sections 108 and 109 govern the promulgation by EPA of "national ambient air quality standards" ("NAAQS"). Standards have now been established for sulfur oxides, particulate matter, carbon monoxide, ozone, hydrocarbons, nitrogen dioxide, and lead. See Table 1 and 40 C.F.R. Part 50.

2. Section 107(d) requires the designation of the entire country into either "attainment," "non-attainment" or (temporarily) "unclassifiable" areas. Such designation or re-designation is done by the States with EPA approval. See 40 C.F.R. Part 81 and Table 2.

3. Sections 160 to 169, (Part C), Prevention of Significant Deterioration ("PSD"), establish a complex permitting program for new or modified "major stationary sources" located in attainment (clean air) areas. Key concept: to allow only maximum allowable increases (PSD "increments") in pollution over a "baseline concentration." See 40 C.F.R. § 51.24 and 52.21.

4. Sections 171 to 178, (Part D), Nonattainment Areas, establish onerous permit requirements for new or modified major stationary sources located in non-attainment (dirty air) areas, and other requirements. Key concept: to develop a remedial program of air pollution control which, including any new growth, makes steady progress toward attaining all national primary ambient air quality standards by 1982 (with possible extension until 1987 for certain pollutants) in every non-attainment area. See, e.g., 43 Fed. Reg. 21673 (May 19, 1978); 44 Fed. Reg. 3274 (January 16, 1979); 44 Fed. Reg. 8311 (February 9, 1979); 44 Fed. Reg. 20372 (April 4, 1979); 44 Fed. Reg. 25243 (April 30, 1979); 44 Fed. Reg. 38583 (July 2, 1979).

5. Section 169A establishes a program to remedy existing and prevent future visibility impairment in certain areas, by means of retroactive imposition of "best available retrofit technology" ("BART") on sources constructed after 1962, and other measures. See proposed regulations at 45 Fed Reg. 34762 (May 22, 1980) and Table 3.

6. Section 111 requires EPA to establish specific emission limitations or "new source performance standards" ("NSPS") for categories of stationary sources. See 40 C.F.R. Part 60. Section 112 requires EPA to establish emission standards ("NESHAPS") for hazardous air pollutants. See 40 C.F.R. Part 61.

7. Section 110 requires the States to develop State Implementation Plans ("SIPS"), which implement each of the foregoing programs by statute and regulation, and thereby allow State administration of these programs, provided EPA approves the State's plan. See 40 C.F.R. Parts 51 and 52.

### III. AIR QUALITY PERMITTING OF MINING PROJECTS.

#### A. A Suggested Methodology.

##### 1. Detailed description of project.

- a. Location: Attainment/Nonattainment? Class I, II or III? Distance to nearest Class I or non-attainment area? Terrain?
- b. Identify and Quantify Air Pollution Emissions: Annual and hourly. Fugitive and non-fugitive. Entails detailed understanding of source design.

##### 2. Identify all applicable federal, state and local air pollution regulatory requirements, substantive, procedural and data-collection. "Applicability" questions and exemptions have key importance. See Table 4.

##### 3. Identify and consult with key officials in federal, state and local government. See Table 4.

##### 4. Coordinate pre-construction data collection requirements (e.g. monitoring, modeling) with other regulatory requirements. Develop "critical path" chart.

##### 5. Apply for necessary federal, state and local permits.

#### B. Applying the Method: A Case Study.

Consider: Western Slope shale oil facility, designed to mine and process 50,000 tons per day of oil shale, located in Garfield County.

1. Source Description.

- a. Location: Class II area; a Class I area (Flattops Wilderness) and a Nonattainment Area (Grand Junction) are in general vicinity.
- b. Emissions: See flow chart (Table 5).

2. Air Pollution Regulatory Requirements: Colorado.

- a. Reg. No. 3 of Colorado Air Quality Control Commission requires a preconstruction Emission Permit for construction or modification of any "building, facility, structure or installation" or installation of any "machine, equipment or other device" which constitutes a "new stationary source" (Reg. 3.III.A.1.) Interpretation: One Permit per Emission Point.
- b. Division must grant such Permit if: (i) proposed source will meet "all applicable [Colorado] emission control regulations"; (ii) proposed source will meet applicable requirements of Colorado "attainment program"; (iii) proposed source will not cause an exceedance of any NAAQS in any attainment area; (iv) where no NAAQS exist for pollutant, proposed source will meet all applicable Colorado regulations and will not violate any State Ambient Air Quality Standard. (Reg. 3.III.D.1.)
- c. "Meet all applicable emission control regulations."
  - (i) Reg. 1.I: 20% opacity standard.
  - (ii) Reg. 1.II.A: Process/weight limits on particulate matter emissions from fuel-burning equipment (lbs/million BTU).
  - (iii) Reg. 1.III.D: Fugitive dust abatement requirements.
  - (iv) Reg. 1.III.B.4.f and g: Sulfur dioxide emission limits on production of oil from shale and refining of oil produced from shale (0.3 lbs. sulfur dioxide from entire facility per barrel of oil processed).

- (v) Reg. 6: New Source Performance Standards-- implements Section 111. NSPS exist for 25 listed sources, not including mining or shale oil processing; however, EPA has expressed intent to develop NSPS for (1) metallic and non-metallic mineral processing, and (2) synthetic fuel plants.
  - (vi) Reg. 7: Emission and equipment requirements on storage and transfer of volatile organic compounds.
  - (vii) Reg. 8: Hazardous Pollutant Standards--implements Section 112, and includes <sub>3</sub> limit on hydrogen sulfide emissions (142 ug/m<sup>3</sup> 1 hr. standard).
- d. "Meet requirements of Colorado attainment program"
- Implements Part D of Act, Sections 171-178.
  - Rigorous preconstruction permit requirements apply to new or modified "major stationary sources" which would "cause or contribute" to NAAQS violation in any nonattainment area. (Reg. 3.IV.D.2. & 3.).
  - Applies to such sources located in attainment (clean air) areas. (Reg. 3.D.3.b.).
- (i) Emission offsets.
  - (ii) Lowest Achievable Emission Rate ("LAER").
  - (iii) All other sources under same ownership in compliance.
- e. "Cause no exceedance of NAAQS."
- Implements Sections 108, 109 and 110 of Act.
  - Will require modeling, and perhaps monitoring, for SO<sub>2</sub>, NO<sub>x</sub>, CO, particulate matter and hydrocarbons.
- f. "Meet any State Ambient Air Quality Standard."
- State standards same as NAAQS except for 700 ug/m<sup>3</sup> 3-hr. standard for SO<sub>2</sub>.

3. Air Pollution Regulatory Requirements: "Federal".

a. PSD permit program (40 C.F.R. §51.24 & 52.21)

(i) Background: 1977 Amendments; June 19, 1978 regulations; Alabama Power Co. v. EPA (December 14, 1979); revised regulations due July 28, 1980.

(ii) Aim: keep clean air areas clean.

(iii) Method:

(a) Classification System (I, II & III).

(b) Increments.

(c) Pre-construction PSD permit requirements.

-Monitor to establish baseline.

-Model to show compliance with NAAQS and PSD increments.

-Perform additional impact analysis including visibility impacts.

-Demonstrate that "best available retrofit technology" ("BACT") will be applied.

(d) 18-30 month lead time needed.

(e) Federal Land Manager for Federal Class I Area can recommend permit denial for source which meets Class I increments based on "adverse impact on air quality related values (including visibility)."

(f) Applicability: (1) "Major stationary sources" with "potential to emit" 100/250 tons per year of any air pollutant; (2) "major modifications" which constitute a "significant net increase" in a source's "potential to emit" any pollutant for which the source is (or thereby becomes) "major." An important side issue: fugitive emissions/fugitive dust not counted unless EPA/State undertakes rulemaking including it in "potential to emit" for source category in question.

(iv) Implications:

Most important single constraint on mineral development. Impact increased by requirement that States make "periodic assessments" of increment consumption. A key unresolved issue: does fugitive dust consume increment?



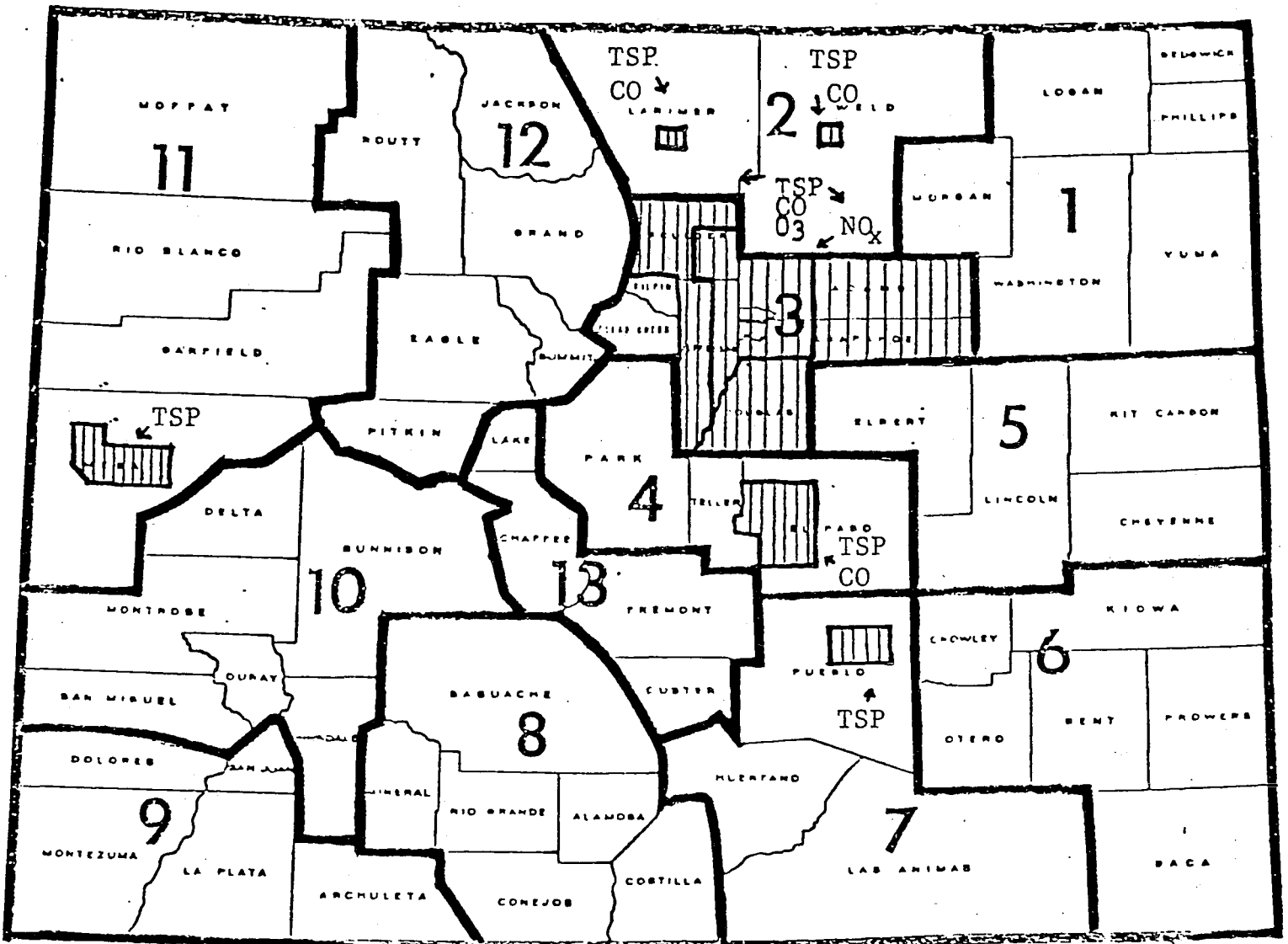
4. Future Regulatory Requirements Affecting Mining.


- a. Visibility Protection (Section 169A). (Regulations proposed 45 Fed. Reg. 34762)
- (i) Aim: prevent future and correct existing impairment to visibility in Federal Mandatory Class I areas.
  - (ii) Method:-"best available retrofit technology", ("BART") on major stationary services less than 15 years old.  
-State develops additional requirements for new and existing sources.
  - (iii) "Integral Vista" concept.
- b. PSD Regulation of Phase II Pollutants (Hydrocarbons, CO, NO<sub>x</sub>, O<sub>3</sub>, lead) Advance Notice of Proposed Rulemaking, 45 Fed. Reg. 30088 (May 7, 1980).
- c. Section 112 Standards for additional hazardous substances (NESHAPS). E.g., radionuclides, listed 44 Fed. Reg 76738 (December 27, 1979); airborne carcinogens, cadmium, arsenic, polycyclic organic matter.
- d. Section 111 NSPS standards for mining and mining-related processing.
- e. Possible Revision to Definition of "Particulate Matter", or to Particulate NAAQS.

TABLE I

Pollutant	National Ambient Air Quality Standards		PSD Increments (ug/m <sup>3</sup> )		
	Primary	Secondary	Class I Area	Class II Area	Class Area
1. Sulfur Oxides (Sulfur Dioxide)					
Annual	80 ug/m <sup>3</sup> (0.03 ppm) (arithmetic mean)	---	2	20	40
24 Hrs.	365 ug/m <sup>3</sup> (0.14 ppm)	---	5	91	182
3 Hrs.	---	100 ug/m <sup>3</sup> (0.5 ppm)	25	512	700
2. Particulate Matter					
Annual	75 ug/m <sup>3</sup> (geometric mean)	60 ug/m <sup>3</sup>	5	19	37
24 Hrs.	260 ug/m <sup>3</sup>	150 ug/m <sup>3</sup>	10	37	75
3. Carbon Monoxide					
8 Hrs.	10 mg/m <sup>3</sup> (9 ppm)	Same as Primary Stds.	--	--	--
1 Hr.	40 mg/m <sup>3</sup> (35 ppm)	Same as Primary Stds.	--	--	--
4. Oxidant (Ozone)					
1 Hr.	235 ug/m <sup>3</sup> (0.12 ppm)	Same as Primary Stds.	--	--	--
5. Nitrogen Dioxide					
Annual	100 ug/m <sup>3</sup> (0.05 ppm) (arithmetic mean)	Same as Primary Stds.	--	--	--
6. Non-Methane Hydrocarbons					
3 Hrs.	160 ug/m <sup>3</sup> (0.24 ppm)	Same as Primary Stds.			
7. Lead					
Quarterly	1.5 ug/m <sup>3</sup> (arithmetic mean)	Same as Primary Stds.	--	--	--

COLORADO AIR QUALITY CONTROL REGIONS  
 NON-ATTAINMENT AREAS  
 of the  
 NATIONAL AMBIENT AIR QUALITY STANDARDS



 - Non-Attainment Areas

- Ozone - O<sub>3</sub>
- Carbone Monoxide - CO
- Total Suspended Particulate - TSP
- Nitrogen Oxide - NO<sub>x</sub>

# MANDATORY CLASS I AREAS

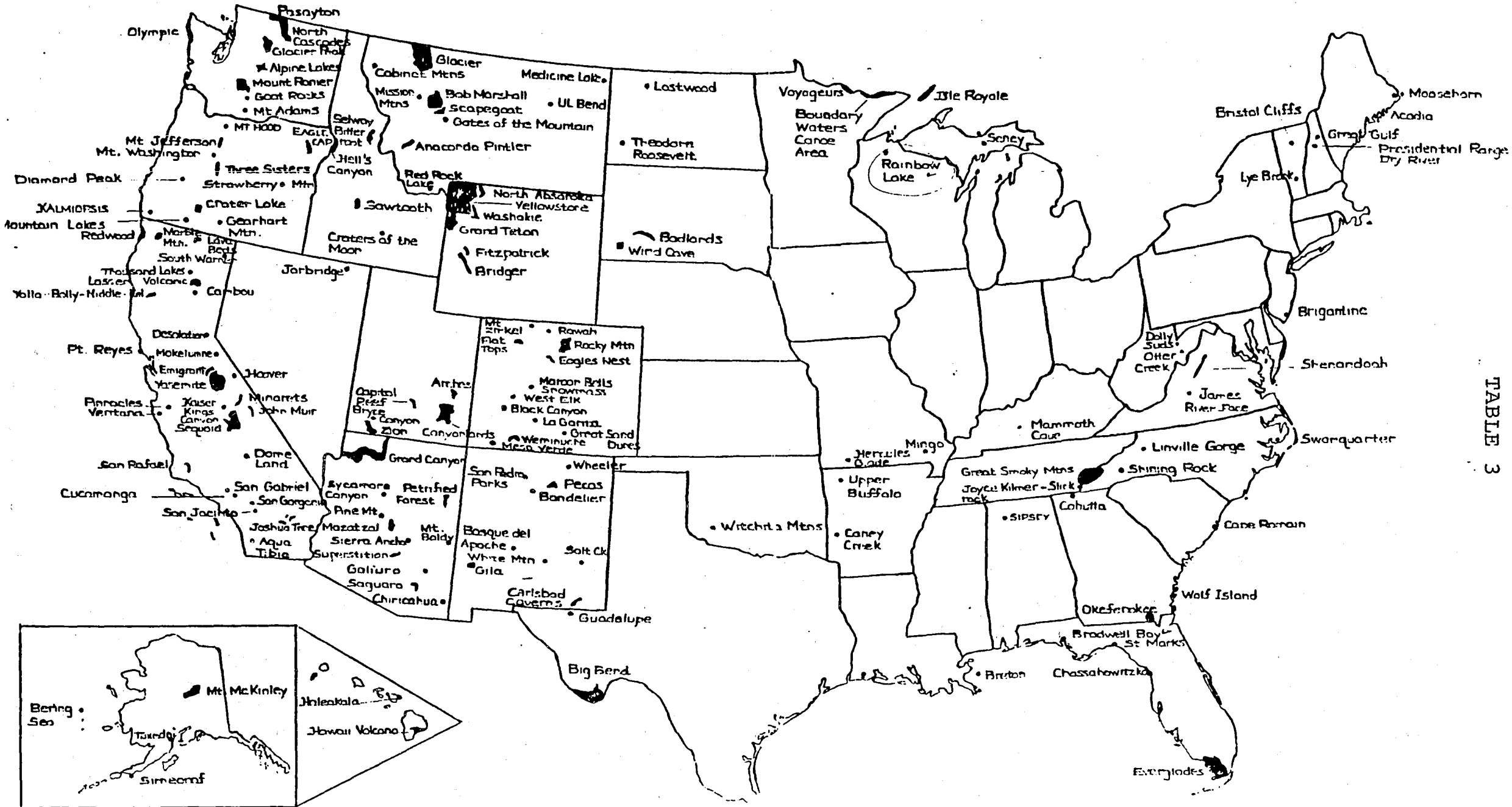
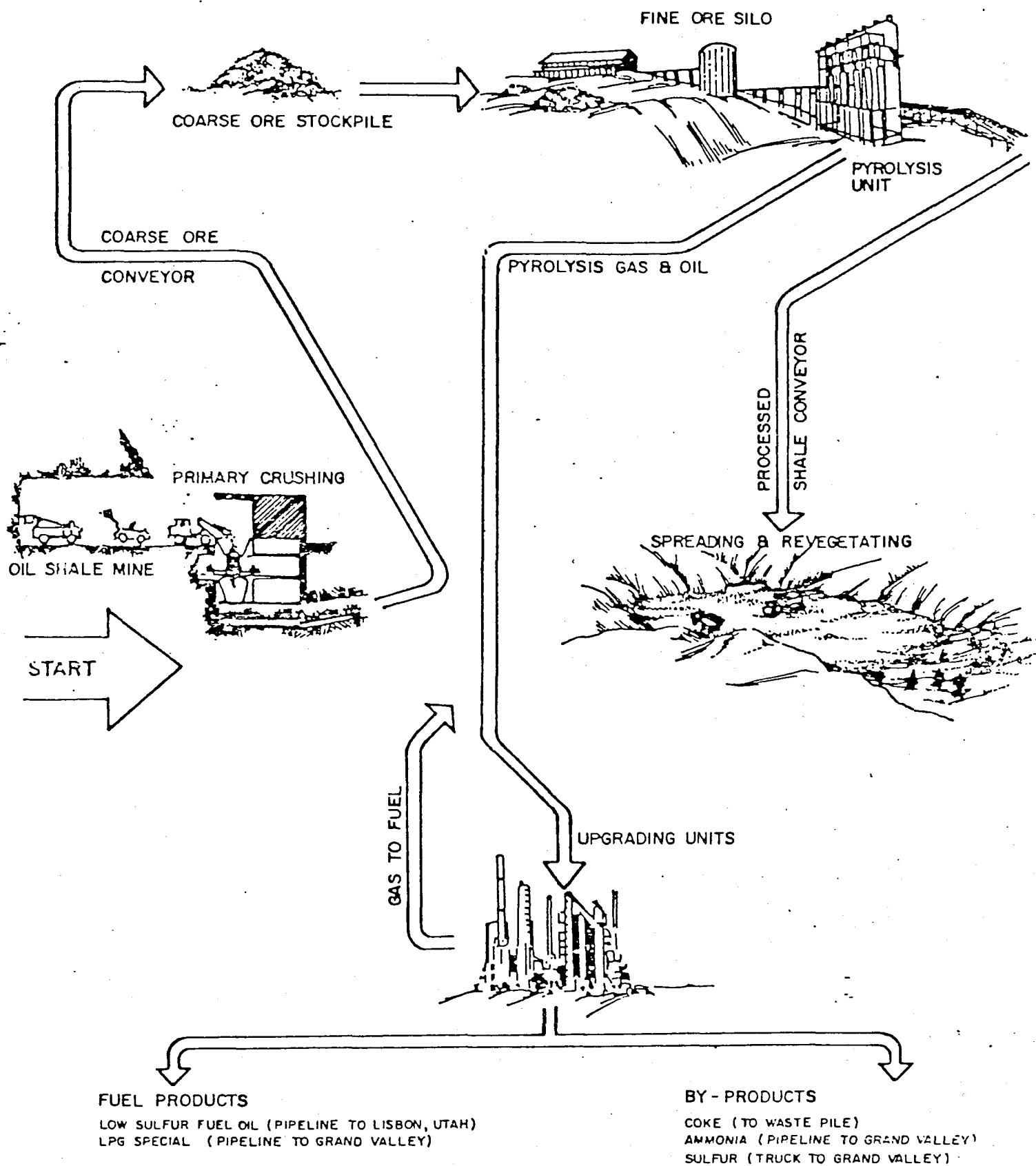


TABLE 3

TABLE 4

ADDRESSES & NAMES	STATUTES	REGULATIONS
<p><u>COLORADO</u></p> <p>Dr. James N. Lenz, Director, Air Pollution Control Division Colorado Department of Health, 4210 E. 11th Ave Denver, CO 80220 (303) 320-4180</p>	<p>Colorado Air Quality Act of 1979, Ch.226, 1979 Colo. Laws 1017.</p>	<p>Air Pollution Control Commission Regulations No. 1 to 11, 5 Code Colo. Regs. 1001-3 to 1001-13.</p>
<p><u>WYOMING</u></p> <p>Mr. Randolph Wood Administrator, Air Quality Division, Wyoming Department of Environmental Quality Equality State Bank Bldg 401 W. 19th St. Cheyenne, WY 82002 (303) 777-7391</p>	<p>Wyoming Environmental Quality Act, Wyo. Stat. Ann. §§35-11-101 to 35-11-1104 (1977 repub. ed.).</p>	<p>Wyoming Air Quality Standards and Regulations, §§ 1 to 25.</p>
<p><u>NEW MEXICO</u></p> <p>Mr. Thomas E. Baca, Director, Air Quality Division, Environmental Improvement Agency 725 St. Michaels' Drive Santa Fe, NM 87503 (505) 827-5271</p>	<p>New Mexico Air Quality Control Act, N.M. Stat. Ann., §§ 74-2-1 to 74-2-17 (1978).</p>	<p>New Mexico Environ- mental Improvement Board, Ambient Air Quality Standards and Air Quality Control Regulations Nos. 100-1301.</p>
<p><u>UTAH</u></p> <p>Mr. Brent Bradford, Director, Bureau of Air Quality, Utah Department of Health, 150 W. North Temple, Salt Lake City, UT 84103 (801) 533-6108</p>	<p>Utah Air Conservation Act, Utah Code Ann. §§ 26-24-1 to 26-24- 26 (1976 repl. vol.).</p>	<p>Utah State Division of Health, Air Conservation Regulations, Parts I-VII.</p>
<p><u>MONTANA</u></p> <p>Mr. Michael D. Roach, Chief Air Quality Bureau Montana Dept of Health &amp; Environmental Sciences Cogswell Bldg, Rm 116 Helena, MT 59601 (406) 449-3454</p>	<p>Clean Air Act of Montana, Mont. Code Ann., §§ 75-2-101 to 75-2-429 (1979).</p>	<p>Montana Air Quality Regulations, Admin. Rules Mont. §§ 16-2 .14(1)-S1400 to 16-2.14(1)-S14086.</p>

ADDRESSES & NAMES	STATUTES	REGULATIONS
<u>NEVADA</u> Mr. Richard Serdoz, Air Quality Officer, Air Quality Section of Division of Environmental Protection, Nevada Dept. of Conservation and Natural Resources 201 S. Fall Street Capital Complex, Carson City, NV 89710 (702) 885-4670	Nevada Air Pollution Control Law, Nev. Rev. Stats. Ch. 445.	Nevada Air Quality Regulations § 1-16.



ns/Year	Emissions					
	SO <sub>2</sub>	NO <sub>x</sub>	HC	CO	Particulate Matter	
					Process	Fugitive Dust
	1000	6000	1000	213	1000	80

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