Appendix 4 - SIP Checklist

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Y / N or N/A	SIP Submittal Checklist for Regional Haze SIPs Submitted under 40 CFR 51.308			
	Regulation Citation	**Regulation Summary (not verbatim)**	**Location in SIP**	**References**
	Administrative Requirements from Appendix V to Part 51			
	2.1(a)	Has a letter of submittal from the governor / designee, requesting EPA approval of the SIP been received?	Not Available	
	2.1(b)	Has the State provided evidence it has adopted the legally enforceable portions of the plan in the State code or body of regulations; or issued the necessary permits, orders, consent agreements in final form?	Not Available	
	2.1(c)	Has the State provided evidence it has the necessary legal authority under State law to adopt and implement the plan?	Not Available	
	2.1(d)	Has the official State regulation /document been signed/stamped/dated by the appropriate State official indicating that it is fully enforceable by the State?	Not Available	
	2.1(e)	Has the State provided evidence it followed all of the procedural requirements of the State's laws and constitution in the adoption/issuance of the plan?	Not Available	
	2.1(f)	Has the State provided evidence that public notice was given of the proposed change consistent with procedures approved by EPA, including the date of publication of such notice?	Not Available	
	2.1(g)	Has the State provided a certification that public hearings(s) were held in accordance with the information provided in the public notice and the State's laws and constitution, if applicable?	Not Available	
	2.1(h)	Has the State provided a compilation of public comments and the State's response thereto?	Not Available	
	Technical Requirements from 40 CFR 51.308			
	(b)	Was the SIP submitted no later than December 17, 2007?	No	
	(d)	Did the State provide a table identifying each mandatory Class I Federal area located within the State and in each mandatory Class I Federal area located outside the State affected by emissions from within the State?	Section 4.2	Visibility Monitoring Guidance

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		Regulation Citation	**Regulation Summary (not verbatim)**	**Location in SIP**	**References**
	*	(d)(1)	Did the State establish RPGs for each Class I area that provide for an improvement in visibility for the most impaired days over the period of the SIP, and ensure no degradation in visibility for the least impaired days over the same period?	Section 4.2	p. 35730 of the 1999 RHR p. 1-6 of the Tracking Guidance Attainment Guidance draft RPG Guidance
	*	(d)(1)(i)(A)	In establishing RPGs for each Class I area, did the State consider the costs of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance, and the remaining useful life of any potentially affected sources, and include a demonstration showing how these factors were taken into consideration in selecting the goal?	Section 4.2	p. 35731-33 of the 1999 RHR draft RPG Guidance
	*	(d)(1)(i)(B)	Did the State submit the glidepath (i.e., rate of progress needed to attain natural visibility conditions by 2064) for each Class I area?	Section 4.2	p. 35727-33, 35 of the 1999 RHR Natural Visibility Guidance p. 39124, 39143 of the 2005 BART rule The Baseline Memo
	*	(d)(1)(i)(B)	In establishing the RPG for each Class I area, did the State calculate the uniform rate of improvement in visibility and the emission reduction measures needed to achieve it for the period covered by the SIP?	Section 4.2	p. 35732 of the 1999 RHR draft RPG Guidance
	*	(d)(1)(ii)	If the State establishes a RPG < the glidepath, has it demonstrated, based on the factors in (d)(1)(i)(A), the rate of progress for the SIP to attain natural conditions by 2064 is not reasonable, and its RPG is reasonable?	Section 4.2	p. 35732 of the 1999 RHR

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		Regulation Citation	**Regulation Summary (not verbatim)**	**Location in SIP**	**References**
	*	(d)(1)(ii)	If the State establishes a RPG < the glidepath, did it provide to the public for review as part of its SIP, an assessment of the number of years it would take to attain natural conditions using its RPG?	Section Section 4.2	p. 35732 of the 1999 RHR
		(d)(1)(iv)	In developing its RPG, has the State consulted with those States that may reasonably be anticipated to cause or contribute to visibility impairment in the Class I areas?	Section Section 4.3	p. 35735 of the 1999 RHR
		(d)(1)(iv)	If the State cannot agree with another State(s) that a goal provides for reasonable progress, has the State described in its submittal the actions taken to resolve the disagreement?	Section 7.9	p. 35732 of the 1999 RHR
	*	(d)(1)(vi)	Has the State adopted RPGs that represents at least the visibility improvement expected from implementation of other CAA programs during the applicable planning period?	Not Applicable	p. 35733 of the 1999 RHR
	*	(d)(2)(i)	Has the State calculated baseline visibility conditions for each Class I area for the most impaired and least impaired days using 2000 to 2004 monitoring data?	Section 6	p. 35728-30 of the 1999 RHR Natural Visibility Guidance Attainment Guidance Tracking Guidance
	*	(d)(2)(i)	In calculating the baseline visibility conditions, did the State estimate the average degree of visibility impairment for the most and least impaired days for each calendar year from 2000 to 2004, and then determine the average of these annual values?	Section 6	
	*	(d)(2)(i)	If the State has Class I areas without onsite monitoring data for 2000 - 2004, did the State use the most representative available monitoring data for 2000 - 2004 to establish baseline values, in consultation with the EPA Regional Office?	Not Applicable	p. 35728-29 of the 1999 RHR Visibility Monitoring Guidance

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		Regulation Citation	**Regulation Summary (not verbatim)**	**Location in SIP**	**References**
	*	(d)(2)(iii)	Did the State calculate natural visibility conditions for the most impaired and least impaired days by estimating the degree of impairment based on available monitoring information and appropriate data analysis techniques?	Section 6	p. 35764, 35729-30 of the 1999 RHR Natural Visibility Guidance
	*	(d)(2)(iv)A	Did the State calculate the number of deciviews by which baseline conditions exceed natural visibility conditions for the most impaired and least impaired days for the first planning period?	Section 6	p. 35732 of the 1999 RHR
		(d)(3)	Did the State submit a LTS that addresses visibility impairment for each Class I area, inside and outside the State, which may be affected by the State's emissions?	Section 9	p. 35734-35 of the 1999 RHR
		(d)(3)	Does the LTS include enforceable emissions limitations, compliance schedules, and other measures as necessary to achieve the RPGs established by States having Class I areas?	Section 9	p. 35734-35 of the 1999 RHR
		(d)(3)(i)	In establishing its LTS, did the State consult with other State(s) to develop coordinated emission management strategies for cases in which it has emissions that are reasonably anticipated to contribute to visibility impairment in any Class I area located in those State(s)?	Section 9	p. 35735 of the 1999 RHR
		(d)(3)(i)	In establishing its LTS, did the State consult with other State(s) to develop coordinated emission management strategies for cases in which those State(s) have emissions that are reasonably anticipated to contribute to visibility impairment in any Class I area located within the State?	Section 9	
		(d)(3)(ii)	In establishing its LTS, where multiple State(s) cause or contribute to impairment of the same Class I area, did the State include all measures necessary to obtain its share of the emission reductions needed to meet the RPG for the area?	Section 9	p. 35735 of the 1999 RHR
		(d)(3)(ii)	In addressing (d)(3)(ii), above, if the State participated in a RPO, did it ensure it included all measures needed to achieve its apportionment of emission reduction obligations agreed upon through that process?	Section 2	p. 35735 of the 1999 RHR

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	Regulation Citation	**Regulation Summary (not verbatim)**	**Location in SIP**	**References**
	(d)(3)(iii)	In establishing its LTS, did the State document the technical basis, including modeling, monitoring and emissions information, on which it is relying to determine its apportionment of emission reduction obligations necessary for achieving reasonable progress in each Class I area it affects?	Section 7	p. 35735 of the 1999 RHR EI Guidance
	(d)(3)(iii)	In addressing (d)(3)(iii), above, did the State identify the baseline emissions inventory on which its strategies are based?	Section 5	p. 35728 of the 1999 RHR Baseline Memo EI Guidance
	(d)(3)(iv)	Did the State identify all anthropogenic sources of visibility impairment considered by it in developing its LTS, including consideration of major and minor stationary sources, mobile sources, and area sources?	Section 5	p. 35735 of the 1999 RHR EI Guidance
	(d)(3)(v)(A)	In developing its LTS, did the State consider the emission reductions due to ongoing air pollution control programs, including measures to address RAVI?	Section 5	p. 35737 of the 1999 RHR
	(d)(3)(v)(B)	In developing its LTS, did the State consider measures to mitigate the impacts of construction activities?	Section 9	p. 35737 of the 1999 RHR
	(d)(3)(v)(C)	In developing its LTS, did the State consider emissions limitations and schedules for compliance to achieve the reasonable progress goal?	Section 5	p. 35737 of the 1999 RHR
	(d)(3)(v)(D)	In developing its LTS, did the State consider source retirement and replacement schedules?	Section 5	p. 35737 of the 1999 RHR

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		Regulation Citation	**Regulation Summary (not verbatim)**	**Location in SIP**	**References**
		(d)(3)(v)(E)	In developing its LTS, did the State consider smoke management techniques for agricultural and forestry management purposes, including plans as currently exist within the State for these purposes?	Section 9.2	p. 35736 of the 1999 RHR Interim Fire Policy
		(d)(3)(v)(F)	In developing its LTS, did the State consider enforceability of emissions limitations and control measures?	Section 9.3	p. 35737 of the 1999 RHR
		(d)(3)(v)(G)	In developing its LTS, did the State consider the anticipated net effect on visibility due to projected changes in point, area, and mobile source emissions over the period addressed by the LTS?	Section 6	p. 35737 of the 1999 RHR
	*	(d)(4)	Did the State submit with the SIP a monitoring strategy for measuring, characterizing, and reporting of regional haze visibility impairment representative of all Class I areas within the State?	Not Applicable	p. 35744 of the 1999 RHR Attainment Guidance Tracking Guidance Visibility Monitoring Guidance
	*	(d)(4)	Did the State coordinate the above monitoring strategy with the RAVI monitoring strategy in § 51.305?	Not Applicable	p. 35717, 37, of the 1999 RHR
	*	(d)(4)(i)	Did the SIP provide for the establishment of any additional monitoring sites or equipment needed to assess whether RPGs to address regional haze for all Class I areas within the State are being achieved?	Not Applicable	p. 35744 of the 1999 RHR Attainment Guidance Tracking Guidance Visibility Monitoring Guidance

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		Regulation Citation	**Regulation Summary (not verbatim)**	**Location in SIP**	**References**
	*	(d)(4)(ii)	Did the SIP establish procedures by which monitoring data and other information are used in determining the contribution of emissions from within the State to regional haze visibility impairment at Class I areas both within and outside the State?	Section 9	p. 35744 of the 1999 RHR Attainment Guidance Tracking Guidance Visibility Monitoring Guidance
		(d)(4)(iii)	For a State with no Class I areas, did the SIP establish procedures by which monitoring data and other information are used in determining the contribution of emissions from within the State to regional haze visibility impairment at Class I areas in other States?	Section 9	p. 35744 of the 1999 RHR Attainment Guidance Tracking Guidance Visibility Monitoring Guidance
	*	(d)(4)(iv)	Did the SIP provide for the reporting of all visibility monitoring data to EPA at least annually for each Class I area in the State?	Not Applicable	p. 35744-45 of the 1999 RHR Visibility Monitoring Guidance
		(d)(4)(v)	Did the SIP include a statewide EI of pollutants that are reasonably anticipated to cause or contribute to visibility impairment in any Class I area?	Section 5	Attainment Guidance
		(d)(4)(v)	Did the EI include emissions for a baseline year, emissions for the most recent year for which data are available, and estimates of future projected emissions?	Section 5	p. 35728-29 of the 1999 RHR Visibility Monitoring Guidance Attainment Guidance

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	(d)(4)(v)	Did the SIP include a commitment to update the EI periodically?	Section 5	EI Guidance
	(d)(4)(vi)	Did the SIP include other elements necessary to assess and report on visibility (e.g., reporting, recordkeeping, etc.)?	Not Applicable	
	(e)	Did the State submit a SIP containing emission limitations representing BART, and schedules for compliance with BART, for each BART eligible source that may reasonably be anticipated to cause or contribute to any impairment of visibility in any Class I area?	Section 8	BART Guidelines
	(e)(1)(i)	Did the SIP include a list of all BART-eligible sources within the State with supporting documentation?	Section 8	BART Guidelines
	(e)(1)(ii)	Did the SIP include a determination of BART for each BART-eligible source in the State that emits any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility in any Class I area?	Section 8	BART Guidelines
	(e)(1)(ii)(A)	Did the SIP include a determination of BART based on an analysis of the best system of continuous emission control technology available, and associated emission reductions achievable for each source subject to BART within the State?	Section 8	BART Guidelines
	(e)(1)(ii)(A)	In the BART analysis, did the State take into consideration the technology available, the costs of compliance, the energy and nonair quality environmental impacts of compliance, any pollution control equipment in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology?	Section 8	BART Guidelines p 39107, 127 of the 2005 BART Rule
	(e)(1)(ii)(B)	Did the State determine BART for fossil-fuel fired power plants > 750 megawatts pursuant to the BART guidelines?	Section 8	BART Guidelines p 39108 of the 2005 BART Rule

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	(e)(1)(iii)	If the State has determined that technological or economic limitations on the applicability of measurement methodology to a particular source would make the imposition of an emission standard infeasible, has the State prescribed a design, equipment, work practice, or other operational standard, to require the application of BART, as an alternative to a BART emission standard?	Section 8	BART Guidelines
	(e)(1)(iii)	If the State adopted a design, equipment, work practice, or other operational standard alternative to BART, did the State, to the degree possible, set forth the emission reduction to be achieved, and provide for compliance by means which achieve equivalent results?	Section 8	BART Guidelines p 39172 of the 2005 BART Rule
	(e)(1)(iv)	Has the State required each source subject to BART to install and operate BART as expeditiously as practicable, but no later than 5 years after approval of the SIP?	Section 8	p 39158, 70, 72 of the 2005 BART Rule
	(e)(1)(v)	Has the State required each BART source to maintain the required control equipment and establish procedures to ensure such equipment is properly operated and maintained?	Section **Error! Reference source not found.**	p 39172 of the 2005 BART Rule
	(e)(4)	If the State is using its participation in CAIR to exempt BART-eligible EGU's from BART, has it included supporting documentation?	Section 8	p 39136-42 of the 2005 BART Rule
	(e)(4)	If the State is using its participation in CAIR to exempt BART-eligible EGU's from BART, did it include provisions for a geographic enhancement to the program to address RAVI BART under § 51.302(c)?	Section 8	p 39143, 57 of the 2005 BART Rule
	(e)(6)	If a facility is seeking an exemption under §51.303(a)(2)–(h) for any of its BART-eligible emission units, has the appropriate documentation been included in the SIP?	Section 8	§51.303(a)(2)–(h)

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	(f)	Has the State included a commitment it will submit its SIP revision, as specified in 51.308(f), by July 31, 2018, and every ten years thereafter?	Section 9.3	p 35745 of the 1999 RHR Section 110(a)(2)(H) of the CAA
	(g)	Has the State included a commitment it will submit its SIP report, as specified in 51.308(g), by an exact date named, that is within 5 years from submittal of the initial SIP?	Section 9	p 35745 of the 1999 RHR Section 110(a)(2)(F) of the CAA
	(h)	Has the State included a commitment it will, at the time of the submission of the SIP report, also submit a determination of the adequacy of that SIP report, as specified in 51.308(h)?	Section 9	p 35745 of the 1999 RHR Section 110(a)(2)(F) of the CAA
	(i)(1)(i)-(ii)	Did the State, by November 29, 1999, identify in writing to the FLMs the title of the official to which any FLM can submit recommendations on the implementation 51.308 including, (i) identification of impairment of visibility in any Class I area(s); and (ii) identification of elements for inclusion in the visibility monitoring strategy required by §51.305 and 51.308?	Not Applicable	p. 35747-48 of the 1999 RHR
	(i)(2)	Did the State provide the FLM an opportunity for consultation, in person and at least 60 days prior to holding any public hearing on the SIP (or its revision)?	Not Applicable	p. 35747-48 of the 1999 RHR
	(i)(2)(i)-(ii)	Did the above consultation include the opportunity for the FLMs to discuss their: (i) assessment of impairment of visibility in any Class I area; and, (ii) recommendations on the development of the RPG and on the development and implementation of strategies to address visibility impairment?	Not Applicable	p. 35747-48 of the 1999 RHR
	(i)(3)	Did the State include in the SIP a description of how it addressed any comments provided by the FLMs?	Section 3	p. 35747-48 of the 1999 RHR

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	(i)(4)	Does the SIP provide procedures for continuing consultation between the State and FLMs on the implementation of 51.308, including development and review of SIP revisions and 5-year progress reports, and on the implementation of other programs having the potential to contribute to impairment of visibility in Class I areas?	Sections 3 and 9	p. 35747-48 of the 1999 RHR

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Appendix 5 - BART Eligible Units

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Indiana's Non-EGUs

Facility	Emission Unit ID	Emission Unit Description	Stack ID
AGC-ALCOA and	Boiler #2	Dry Bottom, pulverized coal-fired boiler	241-242
ALCOA-Warrick	Boiler #3	Dry Bottom pulverized coal-fired boiler	242
	105m.1, 10	POTLINE #3. ROOMS 105 AND 106 gtc	105M
	107M, 108M	POTLINE #4. ROOMS 107 AND 108 GTC	107M
	109M,110M	POTLINE #5, ROOMS 109 AND 110, A-398	109M
	111M,112M,	POTLINE #6	
	130m.1,104	potline #2, Rooms 103 and 104, A-398	103m.1
	134.63	HDC FURNACE COMLEXES	1EH
	134.71	OFFLINES #2	134.71
BP-Whiting	120-05	Process HEATER	001
	13002	PROCESS HEATER	002
	13004	PROCESS HEATERS	003
	16201	INCINERATOR	004
	16203	FLARE	005
	22401	PROCESS HEATER	008
	22402	PROCESS HEATER	009
	22403	PROCESS HEATERS	010
	22404	PROCESS HEATER	011
	22405	PROCESS HEATERS	012
	22406	FLARE	006
	250	PROCESS HEATER	007
	51001	INCINERATOR	013
	ASP HEAT	ASPHALT HEATER	015
	HEATER	MARINE DOCK	017
	PARK HEATE	PROCESS HEATER	016
Carmeuse	EU-1	ROTARY LIME KILN	S1
	EU-2	ROTARY LIME KILN	S2
	EU-3	ROTARY LIME KILN 3	S3
	EU-4	ROTARY KILN 4	S4
	EU-5	ROTARY LIME KILN 5	S5
Eli Lilly-Clinton	006	LIQUID WASTE INCINERATOR	PVC9
	BLR01	Natural Gas /#2 Oil Fired Boiler	pvc21blri
	BLR01	Coal Fired Boiler	pvc31esp
	BLR02	Natural Gas/#2 Oil Fired Boiler	pvc21
	BLR03	NATURAL GAS/#2 OIL FIRED BOILER	pvc21
	BLR04	NATURAL GAS/#2 OIL FIRED BOILER	pvc21
	20	EVAPORATOR	PVC45
	21	TRANSFER BAGHOUSE	PVC47
	Ash Tank	Ash Tank for Coal Fired Boiler	pvc31
	TK05	VIBRATING BIN	PVC44A
	TKF	FERMENTER	PVC41
ESSROC-5 (Logansport)	Kiln #1	Kiln #1	
	Kiln #2	Kiln #2	
ESSROC-8 (Speed)	EU20	Kiln #1	EU20
	EU21	Kiln #2	EU21

Indiana's Non-EGUs

Facility	Emission Unit ID	Emission Unit Description	Stack ID
GE Plastics	08-706	CO AND ORGANIC SULFIDE STREAM FROM PHOSGENE FED	08-706 707
	09-001	B&W NATURAL GAS AND OIL FIRED BOILER	09-001
	09-001	LASKER BOILER	12-001
	12-001	ERIE BOILER	
	09-002	Riley Boiler	09-002
	09-002	Hot Oil Heater	09-002
ISG-Burns Harbor	460-01	#7 Boiler	4
	46002	#8 Boiler	5
	460-03	#9 Boiler	6
	460-04	#10 Boiler	7
	460-05	Boiler #11	8
	460-06	#12 Boiler	9
	512-06	#1 COKE BATTERY PUSHING	11
	512-08	#1 Coke Battery Underfire	13
	512-14	#2 COKE BATTERY PUSHING	12
	512-16	#2 COKE BATTERY UNDERFIRE STACK	14
	520	BLAST FURNACE FUGITIVES	
	520-04	SINTER WINDBOX STACK	25
	520-18	BLAST FURNACE D CASTHOUSE EMISSIONS	33
	520-18	C BLAST FURNACE STOVES	31
	520-19	BLAST FURNACE D STOVES	34
	520-19	BLAST FURNACE C CASTHOUSE	33
	534	STEELMAKING FUGITIVES	
	534-01	STEELMAKING HMD STATION #1	57
	534-02	STEELMAKING HMD #2	59
	534-10	STEELMAKING VESSELS #1 & #2	62
	534-11	STEELMAKING VESSELS	64
	534-23	STEELMAKING FM BOILER	65
	595-24	CASTER #1	80
	670-05	HOT STRIP FURNACE #1	90
	670-07	HOT STRIP #3 FURNACE	92
	670-07	HOT STRIP	91
	673-14	160" OKATE MILL FURNACE #1	112
	673-15	160" PLATE MILL FURNACE #2	113
	673-16.17	160" PLATE MILL FURNACES 4&5	110
	673-18.19	160" PLATE MILL FURNACES 6&7	111
	673-20	160" PLATE MILL FURNACE #8	114
	674.26,27	110" PLATE MILL FURNACES #1	122
ISG-Indiana Harbor		no. 4 Blast Furnace	
		84 INCH HOT STRIL MILL	10
		BASIC OXYGEN FURNACE (BOF)	22
		NO. 2 SHEET MILL	17
		NO. 3 SHEET MILL	
		NO. 8 BOILER	9
		NO. 12 BOILER	9
Ispat Inland	110	80" HOT STRIP MILL: CONDITIONING DOCK	268

Indiana's Non-EGUs

Facility	Emission Unit ID	Emission Unit Description	Stack ID
	113	NO. 3 COLD MILL: NO 6 ANNEAL	
	134	NO. 5 BOILER HOUSE	134
	141	NO. 1 ELECTRIC FURNACE	141
	142	NO. 1 ELECTRIC FURNACE: ROOF MONITOR	142
	144	NO. 1 ELECTRIC FURNACE	144
	147	NO. 2 BOF: #10 FCE OFF GAS FLARE STACK IGNITOR	147
	149	NO.2 BOF SECONDARY VENT	149
	152	NO.2 BOF CHARGE AISLE:RELADLE & DESULFURIZATION	
	153	NO.2 BOF ROOF MONITOR	
	155	NO. 2 BOF CONTINUOUS CASTER TUNDISH PREHEAT	
	157	NO. 2 BOF LADLE PREHEAT & DRYING	
	165	NO. 7 BLAST FURNACE CASTHOUSE SLAG PITS	
	166	NO. 7 BLAST FURNACE: CASTHOUSE BAGHOUSE #2	166
	170	NO. 7 BLAST FURNACE STOVES	170
	171	NO. 7 BLAST FURNACE CASTHOUSE FUGITIVES	
	182	NO. 3 COLD MILL : NO 5 GALVANIZE LINE	182
	193	1 & 2 BOILERS RESEARCH BUILDING	193
	195	NO. 7 BLAST FURNACE BFG FLARE	195
	26	NO.4 BOF HOT METAL PIT: RELADLE & DESULFURIZATION	26
	27	no. 4 bof hot metal pit reladle & desulfurization	27
	29	NO4 BOF ROOF MONITOR	29
	31	NO. 4 BOF TUNDISH PREHEAT & TORCH CUT	
	36	NO. 4 BOF LADLE PREHEAT	36
	37	NO. 4 BOF:SECONDARY VENT SYSTEM	37
	38	NO. 4 BOF STEELMAKING OFFGAS	38
	45	NO. 1 LIME PLANT : NO. KILN	45
	49	NO. 1 LIME PLANT: NO. 2 KILN	49
	86	12" BAR MILL: BAR ANNEALING FURNACE	86
	89	12" BAR MILL: REHEAT FURNACE	89
	150	NO. 2 BOF ADDITIVE HADLING: LADLE ADDITIVE TRUCK D	150
	151	NO. 2 BOF FLUX STORAGE:FLUX STORAGE TRANSFER	151
	158	NO.2 BOF CONTINUOUS CASTER:ROOF MONITOR NON-LEADED	158
	172	STOCKHOUSE COKE HANDLING	172
	176	NO. 3 COLD MILL:PICKLE LINE	176
	28	NO.4 BOF: ADDITIVES TRANSFER HOUSE NO.2 BIN LOADIN	28
	35	TRANSFER HOUSE NO.1	35
	46	NO. 1 LIME PLANT: DUST STORAGE	46
	47	NO. 1 LIME PLANT: STORAGE SILOS	47
	48	NO. 1 LIME PLANT: TRUCK LOADOUT	48
	87	12" BAR MILL GRINDERS	87
Lehigh Cement	EU17	KILN #3	SKP2
	EU01	PRIMARY CRUSHER	SQDC2
	EU02	QUARRY SURGE BIN	SQDC3
	EU03	SECONDARY CRUSHER	SQDC4
	EU05	NORTH SCREEN HOUSE	SQDC5
	EU06	SOUTH SCREEN HOUSE	SQDC6

Indiana's Non-EGUs

Facility	Emission Unit ID	Emission Unit Description	Stack ID
	EU07	BELT #718 CONVEYOR TRANSFER POINT	SQDC7
	EU08	BELT #8/9 CONVEYOR TRANSFER POINT	SQDC8
	EU22	KILN FEED BIN #3	SKDC5
	EU23	CLINKER COOLER #3	SKDC6
	EU25	SOUTH STORAGE DRAG	SFDC1
	EU27	SOUTH CLINKER TOWER	SFDC3
	EU35	FINISH MILL #4	SFDC12
	F01	QUARY DRILLING/BLASTING/STORAGE	
	F02	BELT #9/10 CONVEYOR TRANSFER POINT	
LoneStar	401B	Preheater/Kiln - Stack #2	2
Purdue	Boiler 2	One (1) spreader stoker coal fired boiler	2
	Boiler 2	One (1) spreader stoker coal fired boiler	2
	Boiler 3	1 natural gas and distillate fuel oil fired boiler	
U.S. Steel	#14 FURN	NO. 14 BLAST FURNACE STOVES	ID6184
	3 Pre Carb	No. 3 Coke Battery Precarbonization Facility	CH6028
	CP2B0079	No. 2 Coke Battery Underfiring System	CP6040
	CP30086	NO. 3 COKE BATTERY UNDERFIRING SYSTEM	CP6045
	CP3B0086	NO. 3 COKE BATTERY PUSHING	
	IDBF0369	NO. 14 BLAST FURNACE CASTHOUSE	ID3185
	NO. 4 BLAS	NO. 4 BLAST FURNACE STOVES	IA6160
	NO. 4 FURN	NO. 4 BLAST FURNACE CASTHOUSE	
	O4B30461	BOILER HOUSE NO. 4 BOILER NO. 3	O46270
	OTB60467	TURBOBLOWER BOILER HOUSE NO. 6	OT6276
	Pre Carb	No. 2 Coke Battery Precarbonization Facility	CH6034
	SSDS0201	Number 1 BOP shop No. 1 and No. 2 Desulfurization	SS6100

Indiana's Non-EGUs				NOx (tons/yr)		SOx (tons/yr)		PM10 (tons/yr)	
Facility	**Emission Unit ID**	**Emission Unit Description**	**Stack ID**	**Potential**	**Peak24Hour**	**Potential**	**Peak24Hour**	**Potential**	**Peak24Hour**
AGC-ALCOA and	Boiler #2	Dry Bottom, pulverized coal-fired boiler	241-242	5131.1	5133.1	39310.4	39333.5	16.733	16.758
ALCOA-Warrick	Boiler #3	Dry Bottom pulverized coal-fired boiler	242	5131.1	5133.1	39310.4	39333.5	16.733	16.758
	105m.1, 10	POTLINE #3. ROOMS 105 AND 106 gtc	105M	7.6	N/A	950.4	N/A	1.385	N/A
	107M, 108M	POTLINE #4. ROOMS 107 AND 108 GTC	107M	7.6	N/A	950.4	N/A	1.505	N/A
	109M,110M	POTLINE #5, ROOMS 109 AND 110, A-398	109M	7.6	N/A	950.4	N/A	4.172	N/A
	111M,112M,	POTLINE #6		7.6	N/A	950.2	N/A	4.318	N/A
	130m.1,104	potline #2, Rooms 103 and 104, A-398	103m.1	7.6	N/A	950.2	N/A	4.259	N/A
	134.63	HDC FURNACE COMLEXES	1EH	138.9	N/A	0.9	N/A	3.604	N/A
	134.71	OFFLINES #2	134.71	30.8	N/A	0.1	N/A	0.653	N/A
BP-Whiting	120-05	Process HEATER	001	300.1	300.2	36.1	36.1		
	13002	PROCESS HEATER	002	144.3	144.4	17.3	17.4		
	13004	PROCESS HEATERS	003	177.0	177.9	59.3	59.3		
	16201	INCINERATOR	004	16.3	16.4	5.5	5.5		
	16203	FLARE	005	205.0	205.1	20.9	21.0		
	22401	PROCESS HEATER	008	196.0	196.2	9.8	57.0		
	22402	PROCESS HEATER	009	233.4	233.5	41.3	41.4		
	22403	PROCESS HEATERS	010	291.0	291.2	35.0	35.0		
	22404	PROCESS HEATER	011	164.8	164.9	19.8	41.2		
	22405	PROCESS HEATERS	012	22.3	22.4	7.5	7.5		
	22406	FLARE	006	4468.5	4471.2	274.9	275.1		
	250	PROCESS HEATER	007	15.0	15.0	5.2	5.2		
	51001	INCINERATOR	013	125.0	125.1	7.8	7.8		
	ASP HEAT	ASPHALT HEATER	015	5.2	5.2	1.7	1.9		
	HEATER	MARINE DOCK	017	1.4	1.4	0.0	0.0		
	PARK HEATE	PROCESS HEATER	016	12.0	12.1	4.1	3.9		
Carmeuse	EU-1	ROTARY LIME KILN	S1	N/A	N/A	336.1	350.7	1.21	1.25
	EU-2	ROTARY LIME KILN	S2	N/A	N/A	336.1	350.7	1.21	1.25
	EU-3	ROTARY LIME KILN 3	S3	N/A	N/A	336.1	350.7	1.21	1.25
	EU-4	ROTARY KILN 4	S4	N/A	N/A	336.1	350.7	1.21	1.25
	EU-5	ROTARY LIME KILN 5	S5	N/A	N/A	336.1	350.7	1.21	1.25
Eli Lilly-Clinton	006	LIQUID WASTE INCINERATOR	PVC9	46.0	46.0	200.0	200.2	2.550	2.552
	BLR01	Natural Gas /#2 Oil Fired Boiler	pvc21blri	59.2	59.2	125.4	125.5	0.143	0.143

Indiana's Non-EGUs				NOx (tons/yr)		SOx (tons/yr)		PM10 (tons/yr)	
Facility	**Emission Unit ID**	**Emission Unit Description**	**Stack ID**	**Potential**	**Peak24Hour**	**Potential**	**Peak24Hour**	**Potential**	**Peak24Hour**
	BLR01	Coal Fired Boiler	pvc31esp	N/A	1030.6	4718.0	4720.8	10.404	10.410
	BLR02	Natural Gas/#2 Oil Fired Boiler	pvc21	59.2	59.2	125.4	125.5	0.143	0.143
	BLR03	NATURAL GAS/#2 OIL FIRED BOILER	pvc21	59.2	59.2	125.0	125.5	0.143	0.143
	BLR04	NATURAL GAS/#2 OIL FIRED BOILER	pvc21	104.7	104.8	221.2	221.9	0.253	0.253
	20	EVAPORATOR	PVC45						
	21	TRANSFER BAGHOUSE	PVC47					0.082	0.082
	Ash Tank	Ash Tank for Coal Fired Boiler	pvc31					0.360	0.360
	TK05	VIBRATING BIN	PVC44A					0.114	0.113
	TKF	FERMENTER	PVC41					0.166	0.166
ESSROC-5 (Logansport)		Kiln #1		1958.6		1938.0			
		Kiln #2		2108.5		1225.6			
ESSROC-8 (Speed)	EU20	Kiln #1	EU20	1563.6	N/A	2071.2	N/A	133.7	N/A
	EU21	Kiln #2	EU21	1590.4	N/A	1167.3	N/A	185.4	N/A
GE Plastics	08-706	CO AND ORGANIC SULFIDE STREAM FROM PHOSGENE FED	08-706 707	4.8	4.8	1689.7	1690.7	N/A	0.006
	09-001	B&W NATURAL GAS AND OIL FIRED BOILER	09-001	784.2	784.7	574.5	574.9	1.531	1.532
	09-001	LASKER BOILER	12-001	372.5	372.7	1689.7	1690.7	10.317	10.323
	12-001	ERIE BOILER		776.1	776.5	1689.7	1690.7	21.494	21.506
	09-002	Riley Boiler	09-002	460.0	460.2	1689.7	1690.7	N/A	0.006
	09-002	Hot Oil Heater	09-002	15.8	15.8	0.1	0.1	N/A	N/A
ISG-Burns Harbor	460-01	#7 Boiler	4	N/A	118.4	N/A	911.8		
	46002	#8 Boiler	5	N/A	162.2	N/A	1030.1		
	460-03	#9 Boiler	6	N/A	166.6	N/A	1315.1		
	460-04	#10 Boiler	7	N/A	153.4	N/A	1056.4		
	460-05	Boiler #11	8	N/A	184.1	N/A	1367.7		
	460-06	#12 Boiler	9	N/A	144.7	N/A	1179.2		
	512-06	#1 COKE BATTERY PUSHING	11	N/A	12.8	1700.4	1700.8		
	512-08	#1 Coke Battery Underfire	13	N/A	219.2	N/A	1985.7		
	512-14	#2 COKE BATTERY PUSHING	12	13.2	13.2	1698.4	1700.8		
	512-16	#2 COKE BATTERY UNDERFIRE STACK	14	N/A	236.7	N/A	2090.9		
	520	BLAST FURNACE FUGITIVES		N/A	0.8	N/A	N/A		
	520-04	SINTER WINDBOX STACK	25	N/A	1547.4	N/A	1753.4		
	520-18	BLAST FURNACE D CASTHOUSE EMISSIONS	33	N/A	455.9	N/A	N/A		

Indiana's Non-EGUs				NOx (tons/yr)		SOx (tons/yr)		PM10 (tons/yr)	
Facility	**Emission Unit ID**	**Emission Unit Description**	**Stack ID**	**Potential**	**Peak24Hour**	**Potential**	**Peak24Hour**	**Potential**	**Peak24Hour**
	520-18	C BLAST FURNACE STOVES	31	N/A	604.9	N/A	1139.7		
	520-19	BLAST FURNACE D STOVES	34	N/A	455.9	N/A	1801.6		
	520-19	BLAST FURNACE C CASTHOUSE	33	N/A	37.9	N/A	N/A		
	534	STEELMAKING FUGITIVES		N/A	10.0	N/A	0.0		
	534-01	STEELMAKING HMD STATION #1	57	N/A	2.0	N/A	10.1		
	534-02	STEELMAKING HMD #2	59	N/A	1.2	N/A	10.0		
	534-10	STEELMAKING VESSELS #1 & #2	62	N/A	83.4	N/A	N/A		
	534-11	STEELMAKING VESSELS	64	N/A	46.4	N/A	N/A		
	534-23	STEELMAKING FM BOILER	65	N/A	21.4	N/A	0.1		
	595-24	CASTER #1	80	N/A	46.5	N/A	N/A		
	670-05	HOT STRIP FURNACE #1	90	N/A	482.2	N/A	186.3		
	670-07	HOT STRIP #3 FURNACE	92	N/A	462.5	N/A	188.1		
	670-07	HOT STRIP	91	N/A	482.2	N/A	172.1		
	673-14	160" OKATE MILL FURNACE #1	112	N/A	97.1	N/A	105.8		
	673-15	160" PLATE MILL FURNACE #2	113	N/A	100.2	N/A	97.0		
	673-16.17	160" PLATE MILL FURNACES 4&5	110	N/A	45.2	N/A	928.0		
	673-18.19	160" PLATE MILL FURNACES 6&7	111	N/A	21.3	N/A	0.0		
	673-20	160" PLATE MILL FURNACE #8	114	N/A	28.7	N/A	32.6		
	674.26,27	110" PLATE MILL FURNACES #1	122	N/A	245.3	N/A	278.2		
ISG-Indiana Harbor		no. 4 Blast Furnace		26.1	28.6	N/A	30.5		
		84 INCH HOT STRIL MILL	10	N/A	458.7	N/A	0.9		
		BASIC OXYGEN FURNACE (BOF)	22	N/A	36.3	N/A	N/A		
		NO. 2 SHEET MILL	17	N/A	5.0	N/A	0.0		
		NO. 3 SHEET MILL		N/A	3.0	N/A	0.0		
		NO. 8 BOILER	9	N/A	259.4	N/A	429.3		
		NO. 12 BOILER	9	N/A	259.4	N/A	429.3		
Ispat Inland	110	80" HOT STRIP MILL: CONDITIONING DOCK	268	N/A	N/A	N/A	0.1		
	113	NO. 3 COLD MILL: NO 6 ANNEAL		N/A	64.5	N/A	0.3	N/A	0.025
	134	NO. 5 BOILER HOUSE	134	N/A	337.2	N/A	511.6	N/A	0.402
	141	NO. 1 ELECTRIC FURNACE	141	N/A	83.9	N/A	306.1	N/A	1.508
	142	NO. 1 ELECTRIC FURNACE: ROOF MONITOR	142	N/A	0.1	N/A	0.4	N/A	0.101
	144	NO. 1 ELECTRIC FURNACE	144	N/A	2.0	N/A	0.0	N/A	0.030

Indiana's Non-EGUs				NOx (tons/yr)		SOx (tons/yr)		PM10 (tons/yr)	
Facility	**Emission Unit ID**	**Emission Unit Description**	**Stack ID**	**Potential**	**Peak24Hour**	**Potential**	**Peak24Hour**	**Potential**	**Peak24Hour**
	147	NO. 2 BOF: #10 FCE OFF GAS FLARE STACK IGNITOR	147	N/A	181.4	N/A	90.2	N/A	1.941
	149	NO.2 BOF SECONDARY VENT	149	N/A	25.8	N/A	18.0	N/A	0.884
	152	NO.2 BOF CHARGE AISLE:RELADLE & DESULFURIZATION		N/A	2.6	N/A	10.3	N/A	0.292
	153	NO.2 BOF ROOF MONITOR		N/A	0.8	N/A	0.5	N/A	1.767
	155	NO. 2 BOF CONTINUOUS CASTER TUNDISH PREHEAT		N/A	2.6	N/A	0.0	N/A	0.001
	157	NO. 2 BOF LADLE PREHEAT & DRYING		N/A	20.0	N/A	0.1	N/A	0.010
	165	NO. 7 BLAST FURNACE CASTHOUSE SLAG PITS		N/A	15.3	N/A	355.5	N/A	5.657
	166	NO. 7 BLAST FURNACE: CASTHOUSE BAGHOUSE #2	166	N/A	23.6	N/A	169.0	N/A	0.496
	170	NO. 7 BLAST FURNACE STOVES	170	N/A	708.4	N/A	247.6	N/A	0.231
	171	NO. 7 BLAST FURNACE CASTHOUSE FUGITIVES		N/A	2.3	N/A	19.1	N/A	0.849
	182	NO. 3 COLD MILL : NO 5 GALVANIZE LINE	182	N/A	71.1	N/A	0.1	N/A	0.012
	193	1 & 2 BOILERS RESEARCH BUILDING	193	N/A	0.1	N/A	N/A		
	195	NO. 7 BLAST FURNACE BFG FLARE	195	N/A	407.8	N/A	166.1	N/A	0.119
	26	NO.4 BOF HOT METAL PIT: RELADLE & DESULFURIZATION	26	N/A	1.7	N/A	6.8	N/A	0.097
	27	no. 4 bof hot metal pit reladle & desulfurization	27	N/A	1.7	N/A	6.8	N/A	0.097
	29	NO4 BOF ROOF MONITOR	29	N/A	1.1	N/A	0.1	N/A	2.136
	31	NO. 4 BOF TUNDISH PREHEAT & TORCH CUT		N/A	1.5	N/A	0.0	N/A	0.070
	36	NO. 4 BOF LADLE PREHEAT	36	N/A	22.0	N/A	0.1	N/A	0.012
	37	NO. 4 BOF:SECONDARY VENT SYSTEM	37	N/A	32.1	N/A	1.6	N/A	1.727
	38	NO. 4 BOF STEELMAKING OFFGAS	38	N/A	49.6	N/A	46.1	N/A	7.864
	45	NO. 1 LIME PLANT : NO. KILN	45	N/A	267.0	N/A	20.2	N/A	0.292
	49	NO. 1 LIME PLANT: NO. 2 KILN	49	N/A	267.0	N/A	20.2	N/A	0.292
	86	12" BAR MILL: BAR ANNEALING FURNACE	86	N/A	1.9	N/A	0.0	N/A	0.093
	89	12" BAR MILL: REHEAT FURNACE	89	N/A	379.7	N/A	0.4	N/A	0.038
	150	NO. 2 BOF ADDITIVE HADLING: LADLE ADDITIVE TRUCK D	150					N/A	0.028
	151	NO. 2 BOF FLUX STORAGE:FLUX STORAGE TRANSFER	151					N/A	0.019
	158	NO.2 BOF CONTINUOUS CASTER:ROOF MONITOR NON-LEADED	158					N/A	0.122
	172	STOCKHOUSE COKE HANDLING	172					N/A	0.017
	176	NO. 3 COLD MILL:PICKLE LINE	176					N/A	0.073
	28	NO.4 BOF: ADDITIVES TRANSFER HOUSE NO.2 BIN LOADIN	28					N/A	0.004
	35	TRANSFER HOUSE NO.1	35					N/A	0.028
	46	NO. 1 LIME PLANT: DUST STORAGE	46					N/A	0.036

Indiana's Non-EGUs				NOx (tons/yr)		SOx (tons/yr)		PM10 (tons/yr)	
Facility	**Emission Unit ID**	**Emission Unit Description**	**Stack ID**	**Potential**	**Peak24Hour**	**Potential**	**Peak24Hour**	**Potential**	**Peak24Hour**
	47	NO. 1 LIME PLANT: STORAGE SILOS	47					N/A	0.036
	48	NO. 1 LIME PLANT: TRUCK LOADOUT	48					N/A	0.011
	87	12" BAR MILL GRINDERS	87					N/A	0.093
Lehigh Cement	EU17	KILN #3	SKP2	1469.4	1563.2	1039.9	1040.5	12.1	12.1
	EU01	PRIMARY CRUSHER	SQDC2					0.024	0.086
	EU02	QUARRY SURGE BIN	SQDC3					0.018	0.063
	EU03	SECONDARY CRUSHER	SQDC4					0.026	0.091
	EU05	NORTH SCREEN HOUSE	SQDC5					0.006	0.023
	EU06	SOUTH SCREEN HOUSE	SQDC6					0.028	0.100
	EU07	BELT #718 CONVEYOR TRANSFER POINT	SQDC7					0.016	0.055
	EU08	BELT #8/9 CONVEYOR TRANSFER POINT	SQDC8					0.016	0.055
	EU22	KILN FEED BIN #3	SKDC5					0.003	0.003
	EU23	CLINKER COOLER #3	SKDC6					0.009	0.009
	EU25	SOUTH STORAGE DRAG	SFDC1					0.059	0.059
	EU27	SOUTH CLINKER TOWER	SFDC3					0.212	0.212
	EU35	FINISH MILL #4	SFDC12					0.412	0.412
	F01	QUARY DRILLING/BLASTING/STORAGE						7.796	10.949
	F02	BELT #9/10 CONVEYOR TRANSFER POINT						0.004	0.006
LoneStar	401B	Preheater/Kiln - Stack #2	2	2700.6	3033.4	1170.2	1095.9	5.1	5.7
Purdue	Boiler 2	One (1) spreader stoker coal fired boiler	2	720.2	720.7	6518.0	6521.9	0.7	0.7
	Boiler 2	One (1) spreader stoker coal fired boiler	2	720.2	720.7	6518.0	6521.9		
	Boiler 3	1 natural gas and distillate fuel oil fired boiler		375.9	376.1	17.3	17.4	0.3	0.3
U.S. Steel	#14 FURN	NO. 14 BLAST FURNACE STOVES	ID6184	63.9	6.4	75.5	7.5	1.1	0.1
	3 Pre Carb	No. 3 Coke Battery Precarbonization Facility	CH6028	64.6	6.4	9.5	0.9	4.2	0.4
	CP2B0079	No. 2 Coke Battery Underfiring System	CP6040	988.7	98.9	266.2	26.6	12.3	1.2
	CP30086	NO. 3 COKE BATTERY UNDERFIRING SYSTEM	CP6045	988.7	98.9	266.2	26.6	12.3	1.2
	CP3B0086	NO. 3 COKE BATTERY PUSHING		18.1	1.8	34.2	3.4	1.5	0.2
	IDBF0369	NO. 14 BLAST FURNACE CASTHOUSE	ID3185	10.5	1.1	210.3	21.0	0.2	0.0
	NO. 4 BLAS	NO. 4 BLAST FURNACE STOVES	IA6160	38.7	3.9	45.8	4.6	0.7	0.1
	NO. 4 FURN	NO. 4 BLAST FURNACE CASTHOUSE		26.3	2.6	13.6	21.0	1.5	0.2
	O4B30461	BOILER HOUSE NO. 4 BOILER NO. 3	O46270	72.6	7.2	114.5	11.4	3.3	14.5
	OTB60467	TURBOBLOWER BOILER HOUSE NO. 6	OT6276	103.1	10.3	162.5	16.2	2.4	0.2

Indiana's Non-EGUs				NOx (tons/yr)		SOx (tons/yr)		PM10 (tons/yr)	
Facility	**Emission Unit ID**	**Emission Unit Description**	**Stack ID**	**Potential**	**Peak24Hour**	**Potential**	**Peak24Hour**	**Potential**	**Peak24Hour**
	Pre Carb	No. 2 Coke Battery Precarbonization Facility	CH6034	64.3	6.4	9.5	0.9	7.1	0.7
	SSDS0201	Number 1 BOP shop No. 1 and No. 2 Desulfurization	SS6100	159.8	16.0	99.9	10.0	1.5	0.2

Indiana's EGU				NOx (tons/yr)		SOx (tons/yr)		PM10 (tons/yr)	
Facility	**Emission Unit ID**	**Emission Unit Description**	**Stack ID**	**Potential**	**Peak24Hour**	**Potential**	**Peak24Hour**	**Potential**	**Allowable**
AEP - Tanners Creek	Unit 4	Tanners Creek Unit 4	TC4	26416.1	26431.8	114550.8	114619.1	1420.5	1421.3
AES/IPALCO Petersburg	002	UNIT 2	2-1S	1725.4	12329.0	11305.4	226228.7	290.1	28987.4
ALCOA - Warrick Power Plt	Boiler #4	Dry Bottom, pulverized coal-fired boiler	243	10691.3	10695.8	66219.1	66257.2	9635.0	9639.4
Citizen's Thermal	EU17	Oil-fired Boiler #17	CS001	171.2	N/A	299.7	N/A	N/A	15.0
	EU18	Oil Fired Boiler #18	CS001	171.2	N/A	299.6	N/A	N/A	15.0
Crawfordsville E.L.&P.	4911	Unit 6	1	402.1	403.3	2376.5	2378.1	75.0	74.5
Hoosier Energy - Merom	Unit #2	One pulverized coal-fired dry bottom boiler	SV2	11145.1	11151.7	26748.2	26764.1	2229.0	2230.3
	Unit#1	One pulverized coal-fired dry bottom boiler	SV1	11145.1	11151.7	26748.2	26764.1	2229.0	2230.3
Hoosier Energy - Ratts	Boiler #1	PULVERIZED COAL FIRED DRY BOTTOM BOILER	1	2295.5	2296.8	30491.3	30509.4	1778.7	1779.7
	BOILER #2	PULVERIZED COAL FIRED DRY BOTTOM BOILER	2	2295.5	2296.8	30491.3	30509.4	1778.7	1779.7
IPALCO - Harding St.	Unit 70	COMBUSTION ENGINEERING BOILER #70	0013	4100.0	74213.8	21755.8	417621.0	830.9	1807.3
	UNIT GT1	DISTILLATE OIL FIRED STATIONARY GAS TURBINE GTI	0014	263.1	15.3	0.0	397.1	0.3	17.1
Logansport Municipal L&P	4911	Unit 6	2	628.1	N/A	3712.8	3715.1	2.0	N/A
NIPSCO - Schahfer		No survey received							
NIPSCO - Mitchell		No survey received							
NIPSCO - Michigan City		No survey received							
NIPSCO - Bailley		No survey received							
PSI - Cayuga	Boiler 1	Dry Bottom Pulverized coal-fired boiler	stack 1	6742.4	6746.4	92563.7	92619.8	1079.2	1079.9
	boiler 2	Dry Bottom pulverized coal fired boiler	stack 2	6742.4	6746.4	92563.7	92619.8	1079.2	1079.9
PSI - Gibson	boiler #2	Dry Bottom Pulverized Coal-Fired Boiler	Stack A	13109.8	13117.6	82104.4	82153.3	710.2	710.6
	Boiler No.	Dry Bottom Pulverized Coal-Fired Boiler	Stack A	13109.8	13117.6	82104.4	82153.3	710.2	710.6
PSI - Wabash River	UNIT 6	TANGENTIAL FIRED COAL ELECTRIC UTILITY BOILER	STACK A	9844.1	19699.6	51326.9	51344.4	391.1	391.3
Richmond P&L	A.2(b)	Unit #2	CS12	1439.3	3892.6	12632.7	23026.7	474.1	391.3
SIGECO - A.B.Brown		No survey received							
SIGECO - F.B.Culley		No survey received							

Average Stack Parameters for BART eligible non-EGU and EGU sources

Non-EGUs			Base Elevation	Stack Height	Stack Diameter	Stack Gas Temperature	Velocity
Facility	**X**	**Y**	**m**	**m**	**m**	**K**	**m/sec**
AGC-ALCOA #2-#3	844.09	-185.30	121.40	132.07	5	425	19.00
BP-Whiting	787.83	225.64	177.00	50.18	2.03	849.86	6.69
Carmeuse	817.00	225.95	177.00	26	2	471.8	3.4
Eli Lilly-Clinton	817.40	13.77	185.41	26.82	1.30	425.00	19.00
ESSROC-5	886.17	132.63	204.22	63.4	4.766	405.22	7.11
ESSROC-8 (revised)	974.63	-114.71	137.50	50.76	2.71	467.88	19.24
GE Plastics (revised)	793.80	-187.17	116.37	45.23	1.76	574.17	23.52
ISG-Burns Harbor	816.60	225.21	177.00	46.75	4.21	597.55	11.90
ISG-Indiana Harbor	790.14	225.8	177.00	53.96	6.15	626	10.36
Ispat Inland (Mittal East)	791.56	225.83	177.00	36.87	3.25	560.54	15.29
Lehigh Cement	909.58	-86.8	210.24	30.48	1.68	430.78	20.36
LoneStar	862.23	5.67	230.01	68.58	3.51	458	30.48
Purdue	850.05	93.32	195.72	76.17	2.59	430.78	22.40
U.S. Steel (revised)	803.96	220.28	177.00	48.9	3.1	402.3	10.1

EGUs			Base Elevation	Stack Height	Stack Diameter	Stack Gas Temp	Velocity
Facility	**X**	**Y**	**m**	**m**	**m**	**K**	**m/sec**
AEP - Tanners Creek	1041.62	-31.84	150.62	121.92	7.16	408.3	16.34
ALCOA	843.99	-185.31	120.40	152.4	4.42	434	21.3
PSI - Gibson	801.18	-138.90	124.36	152.40	9.75	415.22	14.42
IPALCO - Harding St.	919.31	22.72	208.00	172.00	6.00	415.00	23.00
Hoosier Energy - Ratts	842.19	-118.45	132.58	91.44	3.35	411.88	24.38
AES/IPALCO Petersburg	843.78	-117.26	132.30	189.30	6.28	324.10	23.87
Hoosier Energy - Merom	815.14	-59.89	150.57	214.57	5.79	327.44	31.39
PSI - Cayuga	812.42	34.58	150.27	152.4	5.94	416.33	27.53
PSI - Wabash River	812.59	34.60	145.08	137.16	7.62	410.78	28.42
Richmond P&L	1028.04	46.82	306.31	99.06	3.58	421.89	18.30
Logansport Municipal L&P	891	136.03	183	45.72	2.13	447	13.40
Crawfordsville E.L.&P.	855.01	52.96	223	60.4	2.4	472.00	7.70
Citizen's Thermal	921.81	29.47	213.4	82.91	4.42	566.00	4.62
NIPSCO - Schahfer							
NIPSCO - Mitchell							
NIPSCO - Michigan City							
NIPSCO - Bailley							
SIGECO - A.B.Brown							
SIGECO - F.B.Culley							

Non-EGUs	Number of Days above 0.5 DV			Maximum DV			Number of Days above 0.5 DV			Maximum DV		
	NOx/SO_2 modeling			NOx/ SO_2 modeling			PM modeling			PM modeling		
Facility	**2002**	**2003**	**2004**	**2002**	**2003**	**2004**	**2002**	**2003**	**2004**	**2002**	**2003**	**2004**
AGC-ALCOA	**244**	**319**	**286**	**6.698**	**7.932**	**7.808**		0			0.406	
BP-Whiting	0	2	4	0.465	**0.95**	**1.062**		Not Modeled				
Carmeuse	0	0	0	0.161	0.253	0.297		0			0.013	
Eli Lilly-Clinton	0	1	3	0.48	**0.982**	**0.817**		0			0.022	
ESSROC-5 (Logansport)	1	1	1	**0.589**	**0.504**	**0.577**		Not Modeled				
ESSROC-8 (Speed)	**10**	**8**	7	**0.793**	**1.091**	**1.254**		Not Modeled				
GE Plastics	**9**	**12**	7	**1.617**	**1.077**	**1.058**		0			0.158	
ISG-Burns Harbor	**37**	**41**	**44**	**1.521**	**1.978**	**2.36**		Not Modeled				
ISG-Indiana Harbor	0	0	0	0.115	0.198	0.207		Not Modeled				
Ispat Inland	0	2	1	0.41	**0.518**	**0.661**		0			0.059	
Lehigh Cement	1	0	0	**0.656**	0.319	0.465		0			0.115	
LoneStar	0	1	0	0.224	**0.725**	0.343		0			0.009	
Purdue	1	1	2	**0.565**	**0.958**	**0.674**		0			0.001	
U.S. Steel	0	0	1	0.278	0.437	**0.552**		0			0.083	
EGUs	**Number of Days above 0.5 DV**			**Maximum DV**			**Number of Days above 0.5 DV**			**Maximum DV**		
	NOx/ SO_2 modeling			**NOx/ SO_2 modeling**			**PM modeling**			**PM modeling**		
Facility	**2002**	**2003**	**2004**	**2002**	**2003**	**2004**	**2002**	**2003**	**2004**	**2002**	**2003**	**2004**
AEP - Tanners Creek		**64**			**2.937**			0			0.072	
ALCOA		**288**			**7.173**			**9**			**0.952**	
PSI - Gibson		**321**			**8.5**			0			0.039	
IPALCO - Harding St.		**39**			**3.685**			0			0.067	
Hoosier Energy - Ratts		**96**			**3.48**			0			0.219	
AES/IPALCO Petersburg		**16**			**7.67**			0			0.015	
Hoosier Energy - Merom		**102**			**4.225**			0			0.161	
PSI - Cayuga		**317**			**7.596**			0			0.097	
PSI - Wabash River		**199**			**5.2**			0			0.017	
Richmond P&L		**58**			**2.969**			0			0.019	
Logansport Municipal L&P	0	0	0	0.293	0.292	0.284		0			0.001	
Crawfordsville E.L.&P.	0	0	0	0.187	0.327	0.233		0			0.003	
Citizen's Thermal	0	0	0	0.11	0.148	0.052						
NIPSCO - Schahfer		Not Modeled						Not Modeled				
NIPSCO - Mitchell		Not Modeled						Not Modeled				
NIPSCO - Michigan City		Not Modeled						Not Modeled				
NIPSCO - Bailley		Not Modeled						Not Modeled				
SIGECO - A.B.Brown		Not Modeled						Not Modeled				
SIGECO - F.B.Culley		Not Modeled						Not Modeled				

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Appendix 6 - Smoke Management

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App. 6 1. Indiana Burning Regulations

TITLE 326 AIR POLLUTION CONTROL BOARD

ARTICLE 4. BURNING REGULATIONS

Rule 1. Open Burning

326 IAC 4-1-0.5 Definitions

Authority: IC 13-15-2-1; IC 13-17-3-4
Affected: IC 13-12; IC 13-17-9; IC 36-9-27-2

Sec. 0.5. Unless otherwise stated, the following definitions apply to this rule:

(1) "Adequate fire fighting equipment" means equipment sufficient and appropriate under the circumstances to extinguish the fire.

(2) "Clean petroleum products" means an uncontaminated, refined petroleum product, such as kerosene or diesel fuel, not previously used in any application.

(3) "Clean wood products" means wood products, including vegetation, that are not coated with stain, paint, glue, or other coating material.

(4) "Drainage ditch" shall have the meaning of regulated drain or open drain under IC 36-9-27-2.

(5) "Emergency burning" means the burning of clean wood waste or deceased animals caused by a natural disaster or an uncontrolled event such as the following:

(A) A tornado.
(B) High winds.
(C) An earthquake.
(D) An explosion.
(E) A hail storm, a rain storm, or an ice storm.

(6) "Open burn" means the burning of any materials wherein air contaminants resulting from combustion are emitted directly into the air, without passing through a stack or chimney from an enclosed chamber.

(7) "Open burning approval" means an authorization allowing an activity that otherwise is not exempt or allowed by law.

(Air Pollution Control Board; 326 IAC 4-1-0.5; filed Jul 30, 1996, 2:00 p.m.: 19 IR 3340; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477)

326 IAC 4-1-1 Scope

Authority: IC 13-15-2-1; IC 13-17-3-4
Affected: IC 13-12; IC 13-17-9-3

Sec. 1. The requirements of this rule establish standards for open burning that would result in emissions of regulated pollutants. This rule applies to all open burning except for the following:

(1) Open burning by and at a source that has obtained a registration or permit under 326 IAC 2-5.1, 326 IAC 2-6.1, 326 IAC 2-7, or 326 IAC 2-8 that specifically regulates the open burning to be performed by and at the source. This rule does apply to open burning not addressed in such a registration or permit, or if the registration or permit requires compliance with this rule.

(2) Except as provided in IC 13-17-9-3, where open burning allowed under this rule is prohibited by other state or local laws, regulations, or ordinances.

(Air Pollution Control Board; 326 IAC 4-1-1; filed Mar 10, 1988, 1:20 p.m.: 11 IR 2419; filed Jul 30, 1996, 2:00 p.m.: 19 IR 3340; filed Nov 25, 1998, 12:13 p.m.: 22 IR 1067; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477)

326 IAC 4-1-2 Prohibition against open burning

Authority: IC 13-15-2-1; IC 13-17-3-4
Affected: IC 13-12; IC 13-17-9

Sec. 2. Open burning is prohibited except as allowed in this rule. The department encourages alternatives to open burning, such as sale or reuse. *(Air Pollution Control Board; 326 IAC 4-1-2; filed Mar 10, 1988, 1:20 p.m.: 11*

IR 2419; filed Jan 6, 1989, 3:30 p.m.: 12 IR 1126; filed Jul 30, 1996, 2:00 p.m.: 19 IR 3341; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477)

326 IAC 4-1-3 Exemptions

Authority: IC 13-15-2-1; IC 13-17-3-4
Affected: IC 13-12; IC 13-17-9

Sec. 3. (a) IC 13-17-9 exempts certain types of open burning for maintenance purposes listed as follows:

(1) A person may open burn the following:

(A) Vegetation from any of the following:

(i) A farm.
(ii) An orchard.
(iii) A nursery.
(iv) A tree farm.
(v) A cemetery.
(vi) A drainage ditch.
(vii) Agricultural land, if the open burn occurs in an unincorporated area.

(B) Wood products derived from the following:

(i) Pruning or clearing a roadside by a county highway department.
(ii) The initial clearing of a public utility right-of-way so long as the open burn occurs in an unincorporated area.

(C) Undesirable:

(i) wood structures on real property; or
(ii) wood remnants of the demolition of a predominantly wooden structure originally located on real property;

located in an unincorporated area.

(D) Clean petroleum products for the purpose of maintaining or repairing railroad tracks, including the railroad rights-of-way, but not including railroad ties.

(2) All open burning that is allowed under this subsection must comply with the following conditions:

(A) A person who open burns shall extinguish the fire if the fire creates a nuisance or fire hazard.

(B) Burning may not be conducted during unfavorable meteorological conditions such as any of the following:

(i) High winds.
(ii) Temperature inversions.
(iii) Air stagnation.

(C) All fires must be attended at all times during burning until completely extinguished.

(D) All asbestos-containing materials must be removed before the burning of a structure.

(E) Asbestos containing materials may not be burned.

(b) The types of fires identified in subsection (c) are allowed under this rule. Unless specified otherwise, the following conditions apply to any fire allowed by this subsection:

(1) Fires must be attended at all times and until completely extinguished.

(2) If at any time a fire creates a:

(A) pollution problem;
(B) threat to public health;
(C) nuisance; or
(D) fire hazard;

it shall be extinguished.

(3) No burning shall be conducted during unfavorable meteorological conditions such as any of the following:

(A) High winds.
(B) Temperature inversions.
(C) Air stagnation.
(D) When a pollution alert or ozone action day has been declared.

(4) All burning shall comply with other federal, state, and local laws, rules, and ordinances.

(5) Adequate firefighting equipment shall be on-site for extinguishing purposes during burning times.

(6) Burning shall be conducted during daylight hours only, and all fires shall be extinguished before sunset.

(c) The following types of fires are allowed:

(1) Recreational or ceremonial fires, such as fires for scouting activities, and fires used for cooking purposes, such as camp fires, subject to the conditions in subsection (b)(1) through (b)(5) and the following conditions:

(A) Only:

(i) clean wood products;

(ii) paper;

(iii) charcoal; or

(iv) clean petroleum products;

may be burned.

(B) The local fire department and health department must be notified at least twenty-four (24) hours before any burning where the size of the pile being burned is more than one hundred twenty-five (125) cubic feet.

(C) Fires shall:

(i) not be ignited more than two (2) hours before the recreational activity is to take place; and

(ii) be extinguished upon conclusion of the activity.

(D) The pile to be burned shall be less than or equal to one thousand (1,000) cubic feet and only one (1) pile may be burned at a time.

(E) The fires shall not be used for disposal purposes.

(F) Fires shall not take place within five hundred (500) feet of any fuel storage area or pipeline.

(2) Private residential burning, where the building contains four (4) or fewer dwelling units. Burning is prohibited in apartment and condominium complexes and mobile home parks. Beginning June 23, 1995, residential open burning is prohibited in the counties listed in section 4.1(c) of this rule. Burning shall be subject to the conditions in subsection (b) and the following conditions:

(A) Burning shall be in a noncombustible container that:

(i) is sufficiently vented to induce adequate primary combustion; and

(ii) has enclosed sides and a bottom.

(B) Only clean wood products and paper may be burned.

(3) Waste oil burning where waste oil originates from spillage during testing of an oil well and has been collected in a properly constructed and located burn off pit as prescribed in 312 IAC 16-5-11 in the natural resources commission rules. Burning shall be subject to the conditions in subsection (b) and the following conditions:

(A) Each oil pit may be burned once every two (2) months.

(B) The fire must be extinguished within thirty (30) minutes of ignition.

(4) Department of natural resources (DNR) burning, to facilitate prescribed burning on DNR controlled properties for wildlife habitat maintenance, forestry purposes, natural area management, and firefighting or prevention; United States Department of the Interior burning, to facilitate a National Park Service Fire Management Plan for the Indiana Dunes National Lakeshore, for example; and United States Department of Agriculture, Forest Service burning, to facilitate wildlife habitat maintenance, forestry purposes, natural area management, ecosystem management, and fire-fighting or prevention. Burning shall be subject to conditions in subsection (b)(1) through (b)(5) and the following conditions:

(A) If the fire creates a:

(i) nuisance;

(ii) fire hazard; or

(iii) pollution problem;

it shall be extinguished.

(B) No burning shall be conducted during unfavorable meteorological conditions, such as any of the following:

(i) High winds.

(ii) Temperature inversions.

(iii) Air stagnation.

(iv) When a pollution alert or ozone action day has been declared.

(C) Only vegetation and clean petroleum products may be burned.

Burning by the U.S. Forest Service for firefighting or prevention is not subject to the conditions in subsection (b) or this subdivision.

(5) Burning of marijuana by federal, state, and local law enforcement offices. Burning shall be subject to the conditions in subsection (b) and only clean petroleum products shall be used for ignition purposes.

(6) Burning, for the purpose of heating, using clean wood products or paper in a noncombustible container that is sufficiently vented to induce adequate primary combustion, and has enclosed sides and a bottom. Burning shall be subject to the conditions in subsection (b)(1) through (b)(5) and the following conditions:

(A) Burning shall only occur between October 1 and May 15.

(B) Burning shall not be conducted for the purpose of disposal.

(7) Burning of vegetation by fire departments and firefighters to create fire breaks for purposes of extinguishing an existing fire. Such burning is not subject to the conditions in subsection (b).

(8) Burning of clean petroleum products, natural gas, methane, or propane for fire extinguisher training, subject to the conditions in subsection (b) and the following conditions:

(A) The local fire department and health department must be notified at least twenty-four (24) hours in advance of the date, time, and location of the burning.

(B) Except as provided in clause (C), daily fuel volume amounts burned are limited to one (1) of the following:

(i) Fourteen (14) gallons of clean petroleum products.

(ii) Two hundred twelve (212) gallons of propane.

(iii) Twenty-nine thousand seven hundred (29,700) cubic feet of natural gas or methane.

(C) A combination of the fuels listed in clause (B) may be burned each day. The amount of each fuel that can be burned each day shall be determined as follows:

(i) The volume of each fuel to be burned each day shall be calculated as a percentage of the maximum volume allowed in clause (B) for that fuel.

(ii) The sum of the percentages for each fuel burned each day shall not exceed one hundred percent (100%).

(D) All burning of clean petroleum products shall take place in a noncombustible container or enclosure that has enclosed sides and a bottom.

(E) All burning shall be conducted in such a manner so as to prevent any possibility of soil contamination or uncontrolled spread of the fire.

(F) Only one (1) fire may be allowed to burn at a time.

(Air Pollution Control Board; 326 IAC 4-1-3; filed Mar 10, 1988, 1:20 p.m.: 11 IR 2419; filed May 24, 1995, 10:00 a.m.: 18 IR 2408; filed Jul 30, 1996, 2:00 p.m.: 19 IR 3341; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477; filed Mar 21, 2007, 2:48 p.m.: 20070418-IR-326050268FRA)

326 IAC 4-1-4 Emergency burning

Authority: IC 13-15-2-1; IC 13-17-3-4

Affected: IC 13-12; IC 13-17-9

Sec. 4. Emergency burning with prior oral approval of the commissioner or the commissioner's designated agent may be authorized for the following:

(1) spilled or escaping liquid or gaseous petroleum products when all reasonable efforts to recover the spilled material have been made and failure to burn would result in an imminent fire or health hazard or air or water pollution problem; or

(2) clean wood waste, vegetation, or deceased animals resulting from a natural disaster where failure to burn would result in an imminent health or safety hazard.

The commissioner or the commissioner's designated agent shall issue a written approval within seven (7) days of the oral approval. The written approval shall contain any conditions on emergency burning that the commissioner established in the oral approval. *(Air Pollution Control Board; 326 IAC 4-1-4; filed Mar 10, 1988, 1:20 p.m.: 11 IR 2420; filed Jul 30, 1996, 2:00 p.m.: 19 IR 3343; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477)*

326 IAC 4-1-4.1 Open burning approval; criteria and conditions

Authority: IC 13-15-2-1; IC 13-17-3-4

Affected: IC 4-21.5; IC 13-12; IC 13-17-9

Sec. 4.1. (a) Burning not exempted by section 3 or 4 of this rule may be authorized by the issuance of an approval by the commissioner or the commissioner's designated agent after consideration of an approval application. Such burning may be authorized for, but not limited to, the following:

(1) Burning for the purpose of fire training.

(2) Burning of natural growth derived from a clearing operation, such as removal of natural growth for change in use of the land.

(3) Burning of highly explosive or other dangerous materials for which no alternative disposal method exists or where transportation of such materials is hazardous.

(4) Burning of clean wood products.

(5) Burning of natural growth for the purpose of land management.

(b) The following criteria may be considered for approval under this section:

(1) The applicant has demonstrated that alternative methods for disposal are impractical or prohibitively expensive.

(2) There are not more than five (5) residences or structures within five hundred (500) feet of the proposed burning site.

(3) There have been no open burning violations at the site of the proposed burning or by the applicant.

(4) If the application involves a structure for fire training, the structure has not been demolished prior to training activities.

(5) The burning site is located in a county not designated as a nonattainment area for PM_{10} or ozone and is not located in Clark or Floyd County. The commissioner or the commissioner's agent may allow open burning in these areas, subject to conditions necessary to protect air quality.

(c) No approval shall be granted at any time for residential burning in Clark, Floyd, Lake, or Porter County.

(d) Any approval shall be subject to the following conditions unless otherwise stipulated in the open burning approval letter:

(1) Only clean wood products shall be burned.

(2) No asbestos-containing material shall be burned.

(3) No burning shall be conducted during unfavorable meteorological conditions, such as:

(A) high winds, temperature inversions, or air stagnation; or

(B) when a pollution alert or ozone action day has been declared.

(4) Burning shall be conducted during daylight hours only and all fires shall be extinguished prior to sunset.

(5) If at any time the fire creates:

(A) an air pollution problem;

(B) a threat to public health;

(C) a nuisance; or

(D) a fire hazard;

the burning shall be extinguished.

(6) The local fire department and health department must be notified at least twenty-four (24) hours in advance of the date, time, and location of the burning.

(7) The approval letter shall be made available at the burning site to state and local officials upon request except during emergency burning.

(8) Adequate fire fighting equipment shall be on-site for extinguishing purposes during burning times.

(9) No burning shall take place within:

(A) one hundred (100) feet of any structure or powerline; or

(B) three hundred (300) feet of a frequently traveled road, fuel storage area, or pipeline.

(10) Fires must be attended at all times until completely extinguished.

(11) All burning must comply with other federal, state, or local laws, regulations, or ordinances, including 40 CFR 61, Subpart M* (National Emissions Standards for Asbestos).

(12) No waste that is regularly generated as a result of a routine business operation shall be burned.

(13) The material to be burned shall not exceed one thousand (1,000) cubic feet.

(e) An approval letter shall be valid for no longer than one (1) year from the date of issuance. However, an approval letter may be valid for as long as five (5) years if the approval application is accompanied by an open burning plan. The plan shall:

(1) contain a description of the open burning proposed for the period of time for which an approval letter is sought; and

(2) be incorporated as a condition of the approval letter under subsection (d) or (f).

Any change in the plan must receive an additional approval letter, unless the change is to reduce open burning or the change is to conduct burning exempted under section 3 of this rule. The plan shall be available for review upon the request by the department.

(f) The commissioner or the commissioner's designated agent may add conditions to an approval letter, as necessary, to prevent a public nuisance or protect the public health or the environment. Such conditions may be based on local air quality conditions, including whether the area is a nonattainment county as defined in 326 IAC 1-4-1 or has been redesignated from nonattainment to attainment status.

(g) A decision on the open burning approval letter is subject to IC 4-21.5 (Administrative Orders and Procedures Act).

*This document is incorporated by reference. Copies may be obtained from the Government Printing Office, 732 North Capitol Street NW, Washington, D.C. 20401 or are available for review and copying at the Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center-North, Tenth Floor, 100 North Senate Avenue, Indianapolis, Indiana 46204. *(Air Pollution Control Board; 326 IAC 4-1-4.1; filed Jul 30, 1996, 2:00 p.m.: 19 IR 3343; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477; filed Nov 15, 2002, 11:17 a.m.: 26 IR 1077)*

326 IAC 4-1-4.2 Open burning; approval revocation

Authority: IC 13-15-2-1; IC 13-17-3-4

Affected: IC 13-12; IC 13-17-9

Sec. 4.2. The commissioner or the commissioner's designated agent may revoke an approval letter if the applicant:

(1) violates any requirement of section 4.1(d) of this rule;

(2) violates any condition added to the approval letter under section 4.1(f) of this rule; or

(3) falsifies information on an application for an approval.

(Air Pollution Control Board; 326 IAC 4-1-4.2; filed Jul 30, 1996, 2:00 p.m.: 19 IR 3344; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477)

326 IAC 4-1-4.3 Open burning approval; delegation of authority

Authority: IC 13-15-2-1; IC 13-17-3-4

Affected: IC 4-21.5; IC 13-12; IC 13-17-9

Sec. 4.3. The commissioner may delegate the authority to issue open burning approval letters in accordance with this section to a local health department, fire department, solid waste management district, or other agency upon a demonstration that the agency:

(1) has the necessary legal authority and resources to implement an approval program that is at least as protective of the public health, welfare, and the environment as the provisions of this rule; and

(2) commits to implement the program described in subdivision (1) and to follow the public notification procedures of IC 4-21.5 in the issuance of approval letters.

The commissioner may establish conditions for the delegation and may revoke any such delegation if the commissioner determines that any condition has not been satisfied or the circumstances under which the delegation was issued have changed. *(Air Pollution Control Board; 326 IAC 4-1-4.3; filed Jul 30, 1996, 2:00 p.m.: 19 IR 3344; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477)*

326 IAC 4-1-5 Liability for fire

Authority: IC 13-1-1-4; IC 13-7-7

Affected: IC 13-1-1

Sec. 5. Any person who allows the accumulation or existence of combustible material which constitutes or contributes to a fire causing air pollution may not refute liability for violation of this rule (326 IAC 4-1) on the basis that said fire was set by vandals, accidental, or an act of God. *(Air Pollution Control Board; 326 IAC 4-1-5; filed Mar 10, 1988, 1:20 pm: 11 IR 2420; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477)*

326 IAC 4-1-6 Air curtain destructors; approval; exemptions

Authority: IC 13-15-2-1; IC 13-17-3-4

Affected: IC 13-12; IC 13-17-9

Sec. 6. (a) An owner or operator of an air curtain destructor as defined in 326 IAC 1-2-2.5 shall submit an application to the department to obtain a letter of approval from the commissioner or the commissioner's designated agent prior to its installation or operation at a new site. The owner or operator:

(1) shall not operate the air curtain destructor unless the owner or operator holds a valid letter of approval; and

(2) shall maintain the letter of approval at the air curtain destructor site at all times for verification by state or local officials.

(b) Burning exempted under section 3 of this rule does not require a letter of approval from the commissioner under this section. However, the burning shall comply with the conditions set forth in section 7 of this rule. *(Air Pollution Control Board; 326 IAC 4-1-6; filed Jan 6, 1989, 3:30 p.m.: 12 IR 1126; filed Jul 30, 1996, 2:00 p.m.: 19 IR 3345; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477)*

326 IAC 4-1-7 Air curtain destructors; approval conditions

Authority: IC 13-15-2-1; IC 13-17-3-4

Affected: IC 4-21.5; IC 13-12; IC 13-17-9

Sec. 7. (a) To obtain an air curtain destructor letter of approval, the owner or operator shall ensure that installation and operation of such air curtain destructor will comply with subdivisions (1) through (22) as follows. Burning shall be terminated immediately at any air curtain destructor site that does not comply with this section.

(1) Only untreated wood products shall be burned, except for minimal amounts of uncontaminated petroleum products that may be used for ignition.

(2) Burning shall not be conducted during unfavorable meteorological conditions, such as high winds or air stagnation or when a pollution alert or ozone action day has been declared.

(3) The air curtain destructor shall not be operated prior to one (1) hour after official sunrise, the fire shall not be fed after two (2) hours before official sunset, the fire must be completely extinguished by official sunset, and at least one (1) foot of dirt must be placed over the ashes in the pit by official sunset.

(4) An air curtain destructor site shall be located no less than two hundred fifty (250) feet from any private residence, public roadway, power line, or structure, and no less than five hundred (500) feet from any pipeline or fuel storage area.

(5) An air curtain destructor site shall not be located within one thousand (1,000) feet of a solid waste land disposal facility as defined in 329 IAC 10-2-176 or transfer station as defined in 329 IAC 11-2-47.

(6) An air curtain destructor shall not be permanently located at any site.

(7) An air curtain destructor shall be attended at all times while burning and until combustion is complete. Adequate firefighting equipment shall be maintained at an air curtain destructor site at all times during operation.

(8) Burning shall not create or contribute to:

(A) an air pollution problem;

(B) a nuisance; or

(C) a fire hazard.

(9) An air curtain destructor and pit shall be maintained and operated according to the manufacturer's specifications and recommendations.

(10) The fan blades of the air curtain destructor shall be regularly cleaned to reduce buildup of dirt and debris.

(11) All canisters must be properly aligned, connected, and maintained so as to prevent leaks between adjacent canisters.

(12) The nozzles must be maintained in good working condition. The minimum average velocity at the nozzle must be nine thousand fifty (9,050) feet per minute, and the air flow at the nozzle must be a minimum of seven hundred fifty (750) cubic feet per minute per foot of length.

(13) The engine running the air curtain destructor fan must be maintained in proper working condition.

(14) The width of the pit shall not extend beyond the length of the nozzle action.

(15) The distance from the air curtain destructor to the opposite wall of the pit shall not exceed ten (10) feet.

(16) The depth of the pit shall be of such distance to allow all burning material to be below the curtain of air created by the air curtain destructor.

(17) All nozzles shall be aligned and directed toward the opposite wall so that the air strikes the opposite wall at least three (3) feet below the grade upon which the air curtain destructor is located so that the air tumbles in the pit.

(18) The air curtain destructor shall not be at a higher elevation than the elevation of the opposite wall.

(19) The pit shall be enclosed on four (4) sides, and the walls shall be perpendicular to level ground.

(20) Material being loaded into the pit shall be picked up and dropped into the pit, and at no time shall the material protrude through the curtain of air while burning.

(21) The approval letter shall be made available at the burning site to state or local officials upon request.

(22) The owner or operator of an air curtain destructor shall provide twenty-four (24) hour notification in advance to the local fire department and the local health department of the dates and times that the air curtain destructor will be in operation.

(b) An air curtain destructor letter of approval shall be valid for no longer than one (1) year.

(c) The commissioner or the commissioner's designated agent may add conditions to an air curtain destructor letter of approval as necessary to prevent a public nuisance or protect the public health.

(d) A decision on the air curtain destructor letter of approval is subject to IC 4-21.5 (Administrative Orders and Procedures Act (AOPA). *(Air Pollution Control Board; 326 IAC 4-1-7; filed Jan 6, 1989, 3:30 p.m.: 12 IR 1127; filed Jul 30, 1996, 2:00 p.m.: 19 IR 3345; errata filed Oct 3, 2000, 2:31 p.m.: 24 IR 381; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 147*

326 IAC 4-1-8 Air curtain destructors; approval revocation

Authority: IC 13-15-2-1; IC 13-17-3-4

Affected: IC 13-12; IC 13-17-9

Sec. 8. The commissioner or the commissioner's designated agent may revoke an air curtain destructor letter of approval if the owner or operator:

(1) violates any requirement of section 7(a) of this rule;

(2) violates any condition added to the letter of approval under section 7(c) of this rule;

(3) violates any other state or local rule or ordinance pertaining to the installation or operation of air curtain destructors;

(4) falsifies information on an application for a letter of approval; or

(5) operates an air curtain destructor in a manner that is hazardous to the public health.

(Air Pollution Control Board; 326 IAC 4-1-8; filed Jan 6, 1989, 3:30 p.m.: 12 IR 1127; filed Jul 30, 1996, 2:00 p.m.: 19 IR 3346; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477; errata filed Dec 12, 2002, 3:35 p.m.: 26 IR 1567)

App. 6 2. Indiana Department of Natural Resources Prescribed Burning Policy

INDIANA DIVISION OF FISH & WILDLIFE

Prescribed Burning

Habitat Management Fact Sheet

Introduction

Prescribed burning can be defined as the thoughtful and skillful application of fire to a specific site under selected weather conditions to accomplish specific land management objectives. Prescribed burning is one of the most cost effective methods for managing plant communities and controlling natural succession. It can be used to reduce the invasion of woody growth in grassland habitats; control the spread of exotic and aggressive plants; remove thick litter layer accumulations that can inhibit wildlife mobility or smother the growth of beneficial grasses, forbs and legumes; stimulate the germination of beneficial plants like wildflowers through seed scarification (breaking down of the seed coat); reduce the accumulation of hazardous ***fuel*** loads; boost pasture productivity by releasing nutrients bound to dead organic material, and reduce the spread of plant diseases. Prescribed burning can also be used as a precursor to herbicide and tillage treatments to remove thick standing vegetation that would otherwise impede the efficient application of these practices.

Prescribed burning has been used as a tool throughout history. Native Americans used fire to maintain clearings and encourage the growth of plants for later harvest. Farmers have used fire to revitalize pasture, aid in crop harvest, and maintain fencerows and ditch banks. Forest managers have used prescribed burning to reduce hazardous fuel loads and encourage the growth of preferred tree species, and naturalists have used it to maintain natural communities such as prairies and savannahs. Wildlife managers, as well, have utilized prescribed burning to maintain early successional habitats for a wide variety of wildlife species. Prescribed burning can be a very useful, cost-effective and safe tool when properly planned and implemented.

Prescribed burns differ greatly from wildfires. Wildfires are accidental and uncontrolled. They threaten lives and property and can do great harm. Prescribed burns, on the other hand, are set intentionally after considering the safety of people and property. Prescribed burns are planned to achieve specific objectives in a specific area under specific weather conditions and at the right time of year. Fire control equipment and fire crews, as well as the use of natural or manmade barriers, are used to keep the fire under control.

Understanding Fire Behavior

In order to implement a safe and successful prescribed burn, it is important to understand how various factors influence fire behavior. Wind, relative humidity, temperature, soil moisture, fuel moisture, air mass stability, and topography are important elements to understand and consider when planning and implementing a burn. These elements influence flame height, rate of fire spread, how smoke produced from the burning vegetation will dissipate, and the overall success of meeting the burn objectives.

Wind - Prescribed fires behave in a more predictable manner when wind speed and wind direction are steady. Wind speed generally increases to a maximum in the early afternoon and then decreases to a minimum after sunset. Ideal ***transport wind speed***, wind measured at 20 feet above ground level, should range from 6 to 18 mph for good smoke dispersion. The 20-foot wind speed, mentioned above, is the wind speed typically forecasted by local weather stations. However, the **preferred surface wind, or wind speed at eye level, should range from 1 to 3 mph** for most fuel and topographic situations. When conducting prescribed burning in vast, wide-open spaces, wind speed at surface or eye level can approach the 20-foot wind speed because there is nothing in the way to slow the surface winds down. Conversely, when conducting prescribed burning in areas where the landscape is dominated by forest cover, surface winds will most often be significantly lower than the 20-foot wind speed.

Of greater importance than wind speed is the length of time the wind blows from one direction. Persistent wind directions occur most frequently following the passage of a cold front when winds are typically from the west or northwest. As these winds slowly shift clockwise over the next few days, they become weaker and less steady. Winds with an easterly component are generally considered undesirable for prescribed burning. However, topography, natural firebreaks, and locations of smoke sensitive areas may have a bearing on which wind directions are most favorable. Regardless of wind direction, wind steadiness is very important and should be forecasted to occur throughout the planned burn time.

Relative Humidity - Relative humidity has a strong influence on the moisture content of the vegetation (fuels) being burned. As relative humidity decreases, fuels become drier. As relative humidity increases, fuels retain more moisture and are less apt to burn. Relative humidity is an expression of the amount of moisture in the air compared to the total amount the air is capable of holding at that temperature and pressure. For each 20^0 rise in temperature (which often occurs during the morning hours on a clear day), relative humidity is reduced by about one-half. Likewise, for each 20^0 drop in temperature (which often occurs in early evening), relative humidity roughly doubles. When a cold front passes over an area, the air behind the front is cooler and drier. The result is a drop in both temperature and humidity. Preferred relative humidity for prescribed burning ranges from 30 to 55 percent. When relative humidity drops below 30 percent, prescribed burning can become dangerous. Fires are more intense under low humidity ranges and sparks from burning fuels may be transported outside the burn area and ignite surrounding vegetation, causing unwanted spot fires. When relative humidity exceeds 55 percent, a fire may leave unburned islands or may not burn hot enough to achieve the desired results. For most situations where a landowner is conducting a prescribed burn without professional assistance on-site, **preferred relative humidity should range from 40 to 55 percent.**

Temperature - Temperature can also strongly influence the moisture content of fuels being burned. High temperatures help dry fuels quickly. In addition, when fuels are exposed to direct solar radiation (sunlight), they become much warmer than the surrounding air. Moisture will move from the warmer fuels into the air even though the relative humidity of the air is high. Air temperature can also directly impact the heat intensity of the fire. Cool fires are typically not hot enough to kill woody vegetation. Under most prescribed burning objectives, the **air temperature for a late winter to early spring burn should range from 20^0 to 60^0 Fahrenheit.** When the objective of the burn is to control woody vegetation, air temperatures above 60^0F may be necessary to raise woody stem tissue to lethal temperature levels.

Rainfall and Soil Moisture - Because rainfall affects both fuel and soil moisture, it's important to have a good idea of how much rain has recently fallen on the area to be burned. The importance of adequate soil moisture can't be overemphasized. Damp soil protects the root zone of grasses, forbs and trees from being killed during a fire. It also protects soil microorganisms. Even when burning to expose a mineral soil seedbed it is desirable to leave a thin layer of organic material to protect the site from erosion. Prescribed burning should cease during periods of drought and resume only after a good soaking rain of at least 1 inch. On clay soils, much of the rainfall is lost through surface runoff, therefore, duration of the rainfall is more important than the amount that falls. For most prescribed burning objectives, **the soil should be damp to moderately wet.**

Fuel Moisture - Fuel moisture, especially the moisture content of fine fuels such as grassy and weedy material, is strongly influenced by relative humidity, temperature, and rainfall. **Fine-fuel moisture (FFM) should range from 10 to 20 percent for optimum burning conditions.** A rough estimate can be obtained by taking the relative humidity (RH) and dividing it by 2: (RH ÷ 2 = FFM). When fine-fuel moisture is below 6 or 7 percent, burning can result in damage to plant roots, microorganisms and even the soil. When fine-fuel moisture nears 30 percent, fires tend to burn slowly and irregularly, often resulting in incomplete burns that do not meet the desired objectives. Fine-fuel moisture is usually at its lowest value when the maximum temperature has been reached for the day (usually in the late afternoon). As the sun sets, the temperature drops and the relative humidity increases. Fine-fuel moisture can also vary considerably depending on the height of the vegetation. Typically, moisture content will increase from the upper portion of the vegetation down to the litter layer. However, a light rain or morning dew following a dry spell can give the false impression that the litter layer and underlying soils are also moist. The bottom of the litter layer should always be checked prior to burning to make sure it feels damp. This is especially important when conducting prescribed burning on organic soils. If the fire dries the surface layer of peat, the organic soils will ignite. These fires are very dangerous and can burn under ground for many weeks in spite of the best control efforts and cause extensive smoke problems. People that have not had extensive training in prescribed fire management should not attempt burning on peat or muck soils.

Airmass Stability - Atmospheric stability is the resistance of the atmosphere to vertical movement and has an important influence on smoke management. A prescribe fire generates vertical air movement as the air is heated. If the atmosphere is unstable, the hot combustion products and smoke will rise rapidly and disperse into the upper atmosphere. Unstable atmospheric conditions promote rapid smoke dispersion. Indicators of unstable conditions include wind gusts, clouds with vertical growth, clear skies, and sometimes dust devils. Under stable atmospheric conditions smoke will be held close to the ground and can cause severe smoke problems and reduced visibility. Indicators of stable conditions include poor visibility due to haze, layered clouds, no wind, or very steady (not gusty) low wind.

Topography - Topography, or the lay of the land, also influences fire behavior and is the most constant of the environmental elements. It is much easier to predict the influences which topography will have on a fire than the influences of fuel characteristics and weather.
Aspect, slope and terrain are the three characteristics of topography that can influence fire behavior. Aspect refers to the direction a slope faces. This determines the amount of heating the fuel gets from solar radiation, as well as the condition and types of fuels present. South and southwest slopes are normally more directly exposed to sunlight, and generally have sparser fuel loads, higher temperatures, lower humidity, and lower fuel moisture. North and northeast slopes generally receive less direct sunlight, and typically have heavier fuel loads, lower temperatures, higher humidity, and higher fuel moisture.
Slope is the degree of incline of a hillside. Fires burn more rapidly uphill than downhill. The steeper the slope, the faster and hotter the fire burns. This is because the fuels above the fire are brought into closer contact with the upward moving flames. Heat from the flames reduces fuel moisture and allows the fuels to catch on fire quickly. Conversely, a fire started at the top of a slope will move down slope slower and cooler.
Terrain refers to the shape, or lay of the land, and can influence the direction and rate of fire spread. Fire in steep narrow ravines can easily spread to fuels on the opposite slope by radiant heat and wind blown sparks. Likewise, fires started at the bottom of ravines may react similar to a fire in a chimney. Air drawn from the bottom of the ravine will create very strong upslope drafts. These upslope drafts will spread the fire rapidly and result in extreme fire behavior that can be very dangerous. In addition, fires immediately adjacent to woodland edges may be affected by wind eddies that may move the fire in the opposite direction of normal wind flow.

Planning a Prescribed Burn

There are four primary components to planning a prescribed burn. These components include: 1) regulation review; 2) an evaluation of the prospective burn site; 3) preparation of a burn plan for the site; and 4) pre-burn site and equipment preparation.

1) Regulation Review - The first step in the planning process should be to review the applicability and requirements of any state, county, and local ordinances that might regulate prescribed burning in your locality. State regulations pertaining to prescribed burning may be obtained by contacting the Indiana Department of Environmental Management, Air Quality Section or by visiting the following website addresses:
http://www.in.gov/legislative/iac/title326.html and
http://www.ai.org/legislative/ic/code/title13/ar17/ch9.html.
A good place to obtain local information is from your county sheriff or local fire department. You might also contact your county's health department.

2) Prospective Burn Site Evaluation - The second step to planning a successful prescribed burn is to evaluate the proposed site. Preferably, this should be done 6 months to a year prior to the intended burning period. This will provide ample time to address any problem areas, establish needed fire breaks, make contacts with neighbors and plan for equipment needs.
The pre-burn evaluation should be used to determine what type of fire prescription is needed. In other words, what is the intended objective of the burn and what conditions are needed to meet the objective. Setting a burn objective will help determine the time frame within which the burn should be conducted and the type of firing method or methods that should be used. Table 1 provides information on the timing of prescribed burning in relation to the site objective.
The pre-burn evaluation should also be used to collect specific information about the site that will be needed for burn plan preparation. Information about the amount and type of fuels to be burned, the amount and type of fuels outside the intended burn area, as well as information on topography and the location of property boundaries should be noted. Take an aerial photo or

map with you and walk the entire site. Mark the location of roads, trails, water bodies, natural fire breaks, smoke sensitive areas, utility lines, utility poles, fences, buildings, homes, fuel tanks, trash piles, poison ivy patches, and other important features.

Table 1. Burn Objective and Relationship to Burning Time Frame

Burn Objective	Time of Burn	Comments
• Prepare tall fescue or other cool season grasses for fall herbicide application	September/October	Time burn to allow fescue to re-grow 6" prior to herbicide appl.
• Prepare tall fescue or other cool season grasses for spring tillage.	September/October February/March	Time burn to reduce the amount of residual regrowth prior to tillage
• Thin a stand of cool season grasses and remove litter layer buildup.	March/April	Burn when cool season grasses begin to green-up
• Thin a stand of native grasses and remove excessive litter layer buildup.	January through April	Burning in March/April will reduce wild flower component
• Control cool season grass invasion in established native grasses.	March/April	Burn when cool season grasses begin to green-up
• Increase forb component in established native grasses.	September/October	Low humidity is needed. Thick thatch needed to obtain a complete burn.
• Revitalize a wildflower planting.	January/February	Burn prior to green-up
• Control woody invasion in cool season grass stand.	March through May	Hot fire required. May need lower relative humidity and higher temperatures to achieve good results.
• Control woody invasion in native grass stand.	March through May	Hot fire required. May need lower relative humidity and higher temperatures to achieve good results.

3) Burn Plan Preparation - The third step is to prepare a burn plan. A burn plan should always be developed for every proposed prescribed burn. A burn plan is an all-inclusive document that includes a description of the site to be burned, the objectives of the burn, preparation needs, areas of special concern or potential hazard, a list of pre-determined parameters within which the burn will be conducted (fire prescription), information on precisely how the burn is going to be accomplished (firing sequence), and detailed maps of the area. A burn plan not only helps the landowner carefully and thoughtfully prepare for a prescribed burn, but the plan also provides detailed information to others that might be involved in implementing the burn or affected by implementation of the burn, such as members of your fire crew, the local fire department, sheriff's department, and neighbors. In addition, there are usually only a few days during most burning seasons when weather conditions meet burn prescription parameters. By developing a burn plan and addressing site and equipment needs prior to the burning season, the landowner can quickly take advantage of burning opportunities when they arise.

The following information should be included in every burn plan:

Maps: Each map should show the boundaries of the planned burn area, adjacent landowners, topography, control lines (both natural fire breaks and those that are to be

constructed), smoke sensitive areas, roads, homes, utility lines, fuel and storage tanks, and other potentially hazardous or combustible materials. One map should be prepared for each acceptable wind direction under which the prescribed burn may be safely conducted. Each of these maps should then show the location and appropriate sequence of fires to be set based on each map's assigned wind direction.

Burn Objective: State as precisely as possible the objective(s) for the burn. This will help you set the parameters (fire prescription) under which the burn should be conducted.

Burn Unit Description: Describe the types of fuels that are proposed to be burned within the burn area as well as the site's topography. Note if there are significant differences between vegetation types and heights within the burn area. Also note if there are areas that typically remain wet or exceedingly dry. All of these factors will influence fire behavior and determine other planning needs and parameters.

Adjacent Land Description: Describe the types of fuels and topography that are adjacent to the proposed burn unit. Specifically note any areas adjacent to or in close proximity to the proposed burn area that might easily catch fire as a result of wind blown sparks.

Areas of Special Concern: Describe all areas in and outside the burn area that might pose safety, health or smoke hazards and list the appropriate measures that will need to be taken to mitigate the concerns. Once again, making note of these areas will assist you and others reading the burn plan to be aware of problem areas and how those concerns will be addressed.

Pre-Burn Site Preparation: Describe exactly what site preparation will need to be completed before the burn can be safely conducted. Do control lines (fire breaks) need to be constructed? If so, are they to be planted to a green crop such as winter wheat, clover, annual rye grass, or spring oats; or are they to be plowed, disked or mown? Do control lines need to be placed around utility poles? Are there tree branches or brush extending over any firebreaks that might catch fire and cause the fire to spread to unintended areas?

Equipment Needs: List all the equipment that should be on-site at the time of the burn. Include things such as cellular phones, 2-way radios, hoses, backpack sprayers, truck-mounted water tanks, vehicles, quad runners, leaf rakes, flappers, drip torches and/or fusees. Never skimp on equipment needs.

Personnel Needs: List all the personnel that will be needed to safely and efficiently carry out the prescribed burn. Never skimp on personnel needs. In general, there should be 3 to 4 people for each control line: one to lay fire, one or two to control the line, and one to assist wherever needed. Additional people may be needed to assist with traffic control if smoke will blow across public roadways.

Persons To Be Contacted: List all neighbor, local law enforcement, and local fire department names and telephone numbers. Each of these entities should be contacted as part of burn plan preparation phase. It is important to contact local law enforcement and fire department personnel during the planning stage to ensure the burn will be in

compliance with local ordinances. It also affords these agencies the opportunity to develop their own advanced planning, coordination, and scheduling. It is also important to contact each neighbor to help assess smoke sensitive areas and address other concerns that they might have. In addition, it affords neighbors the opportunity to potentially coordinate, schedule, and assist each other in conducting prescribed burns in the local area.

Each of the entities on the contact list should also be called the day before the burn is anticipated to occur, and then immediately prior to actually conducting the burn. Again, this notification helps keep local authorities advised and prepared to respond in case of an emergency. It also is a courtesy to neighbors so that they can anticipate seeing and reacting appropriately to any potential smoke that might come their way.

Acceptable Burning Parameters: List in this section the range of conditions that must be met at the time the prescribed burn is to take place. The following parameters should be included in this section:

Time of Year - Generally the best time to conduct a prescribed burn in Indiana is from February 1 to April 15. This is when weather conditions and fuel moisture are most often conducive for conducting prescribed burns. The exact time frame within which the burn should occur will depend on the objective of the burn.

Time of Day - Time prescribed burning so that the entire job, including all follow-up work, can be completed before sunset. Remember, as the sun sets, temperature drops and relative humidity increases. Both of these conditions will increase the likelihood of having smoke management problems. When conditions are favorable, try to start burning between 10 a.m. and noon.

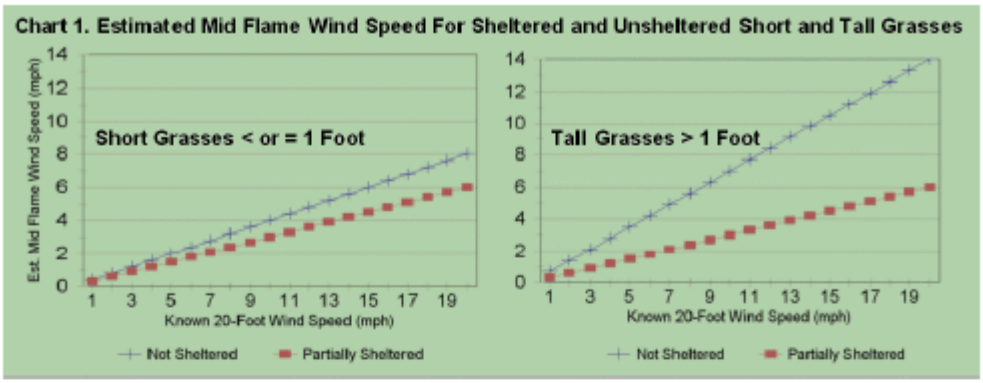
Relative Humidity Range - As stated earlier, relative humidity should range between 40 and 55 percent under most situations where the landowner is conducting a prescribed burn without professional assistance. Burning when relative humidity drops below 30 percent can become dangerous even for experienced prescribed fire crews.

Wind Speed Range - In most situations, the preferred 20-foot wind speed should range between 6 and 18 mph for good smoke dispersion, however, the mid-flame wind speed should generally fall between 1 and 3 mph. See Chart 1 for estimating mid-flame wind speed for sheltered and unsheltered short and tall grasses.

Temperature Range - Under most prescribed burning objectives, air temperature for a late winter to early spring burn should range from 20^0 to 60^0 Fahrenheit.

Soil Moisture - The importance of adequate soil moisture can't be overemphasized. Damp soil protects the root zone of grasses, forbs and trees from being killed during a fire. It also protects soil microorganisms. For most prescribed burning objectives, the soil should be damp to moderately wet.

Allowable Wind Directions - Allowable wind directions will ultimately depend on several factors including: the location of smoke sensitive areas, control lines, and structures; the type of fuels inside and outside the burn area; and topography. Only those wind directions that will achieve the burn objective in a safe manner should be listed.



Firing Methods - Prescribed burns can be conducted using several different firing techniques (alone or in combinations) to achieve specific results. Only those firing methods that will achieve the burn objective in a safe manner should be listed. Specific firing techniques are discussed later in this publication.

Fire Escape Contingency Plan - Write down a step-by-step contingency plan as to who will do what in case fire escapes the burn site. At the minimum, the plan should include (1) the telephone numbers for the local fire department, sheriff's department, and each of the adjacent neighbors; and (2) a section that identifies escape routes and safety zones for your fire crew. All crewmembers should review this section of the plan before the prescribed burn is initiated.

4) Pre-Burn Preparation - Finally, the forth step to planning a successful prescribed burn involves finalizing all the legwork and groundwork necessary to legally, safely and efficiently carry out the burn. Pre-burn preparation includes: fulfilling any requirements mandated by local ordinances; rounding up the proper equipment and making sure it works properly; completing any work that needs to be performed on control lines; enlisting personnel to assist with the burn; and communicating with neighbors, local fire and sheriff's departments.

Establishing Control Lines

Control lines, frequently called firebreaks, are features of the landscape used to stop, slow, or control the spread of a prescribed fire. To be effective, firebreaks should be at least 15 to 20 feet wide and border the entire burn area. Four types of firebreaks are most commonly used. **Natural firebreaks** are existing physical features that inherently do not contain combustible fuels, such as rivers, streams, lakes, ponds, and roads. Caution should be used when using certain wetlands as control lines. Wetlands containing dense stands of emergent vegetation, such as cattails, can carry fire across the top of the water surface. **Constructed firebreaks** are areas where the vegetation has either been completely removed by tillage practices, sprayed with water or a fire retardant, or frequently mown so as to remove any buildup of fine dead fuels within the control line from previous growing seasons and, thereby, consists only of standing "green" vegetation. **Green-crop firebreaks** are control lines that utilize a fire resistant crop, such as winter wheat, barley, annual rye grass, or clovers that are typically "green" during the burning period. As the name implies, green-crop firebreaks consist of bare soil control lines that have been planted recently to an actively growing "green" crop. Existing, crop (corn or soybean) stubble should not be used a firebreak. Although standing crop stubble may be interspersed with copious quantities of bare soil, the fact still remains that the stubble is dead and fire can be transported from one standing stalk to another. Even crop stubble that appears to be wet from a

morning dew can quickly dry out as daytime temperature increases and humidity falls. Convective heat from the advancing fire can also assist in drying and curing the stubble.

If crop fields are going to be used as firebreaks, the edges should either be planted to a green crop or conventionally tilled so as to completely remove or bury all crop residues. Caution should be taken not to just turn the crop stubble over into furrows. Stubble, turned over and concentrated in this fashion, can ignite and burn the entire length of the furrow, even when lightly covered with soil. All stubble should be well incorporated into the soil. The best time of the year to prepare crop field edges for a late winter or spring burn is during the fall prior to the intended burn as part of the crop harvest and tillage operations. This allows an extended period during which crop residue can breakdown and become further incorporated into the soil.

Firebreaks may also be created by establishing **black lines**. Black lines are typically created by setting fire to the leeward portion of a fuel bed, allowing the fire to slowly advance in a controlled fashion against the wind. Once the fuel has been burned off to a specified width the fire is extinguished.

Firing Techniques

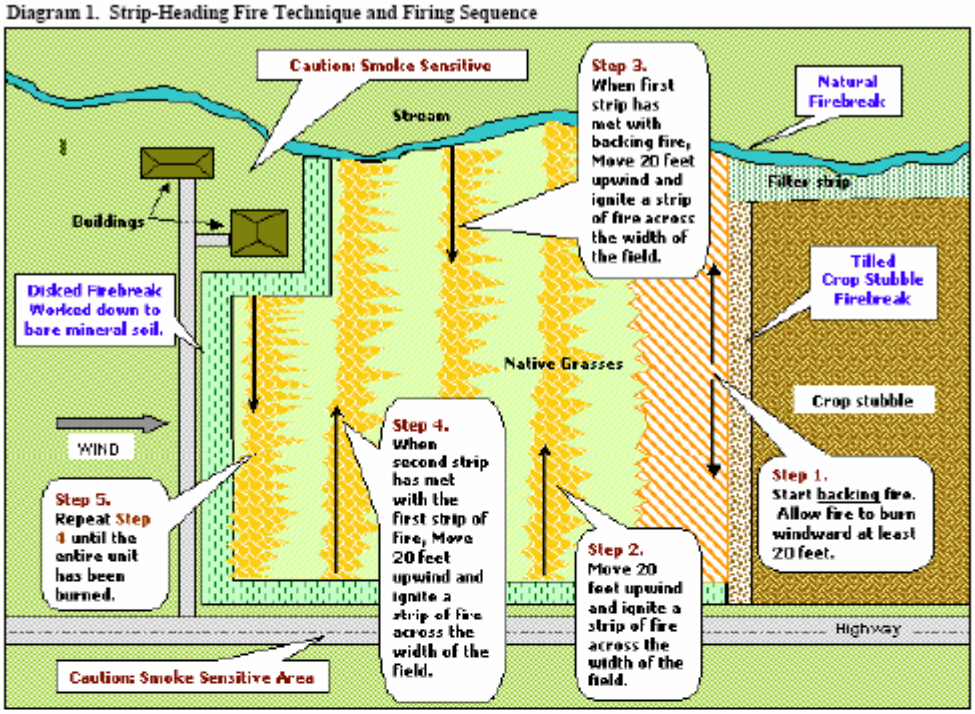
There are many different techniques that can be used to complete a controlled burn. When and where fires are started in relation to the area to be burned and the direction of the wind, can determine how hot the fire becomes and how fast the fires moves. Firing techniques allow the person conducting the fire to control the fire to some extent. The four firing techniques most commonly used are: 1) the backing fire, 2) the strip-heading fire, 3) the flanking fire, and 4) the ring fire.

1) Backing Fire – This firing technique is the easiest and safest method for completing a prescribed burn, provided wind speed and wind direction remain steady. It is generally used by novices of prescribed burning because the rate of spread is relatively slow compared to other firing techniques and more easily controlled. The backing fire is also the most common firing technique use, and should always be the first line of fire set in any prescribed burning sequence. A backing fire is always started along a firebreak or other barrier at the most leeward (downwind) edge of the burn area and allowed to back into the wind. This method can be used successfully provided that a wind is consistently blowing in one direction, relative humidity is low, and there is a continuous source of fine dead fuels throughout the area to carry the burn. Because a backing fire burns slowly against the wind, completing the prescribed burn using only a backing fire may take several hours.

When used with other firing techniques, the backing fire is set first and allowed to burn an area at least equal in width to the expected average flame length, prior to setting any other fires. This helps ensure that any fire moving in a windward direction as a result of additional fires ignited upwind will be contained within the blackened area created behind the backing fire. In general, backing fires should be allowed to burn windward a distance of at least 20 feet from the leeward control line before employing other firing techniques to complete the prescribed burn.

2) Strip-Heading Fire – This technique employs the use of a backing fire, followed by a series of strip fires set in sequential order along lines upwind from the control line and perpendicular to the wind. The timing of ignition and distance between the firing lines are adjusted so that no strip of fire becomes too robust before it meets a downwind firebreak or another line of fire and dissipates. Strip fires are typically set 20 to 50 feet apart. The distance between strip fires is used to control the average flame length, which is dependent on topography, wind speed, fuel height, and fuel load. When using this method, the first step is to set a backing fire along the downwind control line and allow it to burn a strip wide enough to control and contain any upwind strip fires. Strip-heading fires can be used to reduce the amount of time needed to perform a complete burn or help carry fire through areas having low fuel loads or high relative humidity and high fuel moisture.

Diagram 1. Strip-Heading Fire Technique and Firing Sequence

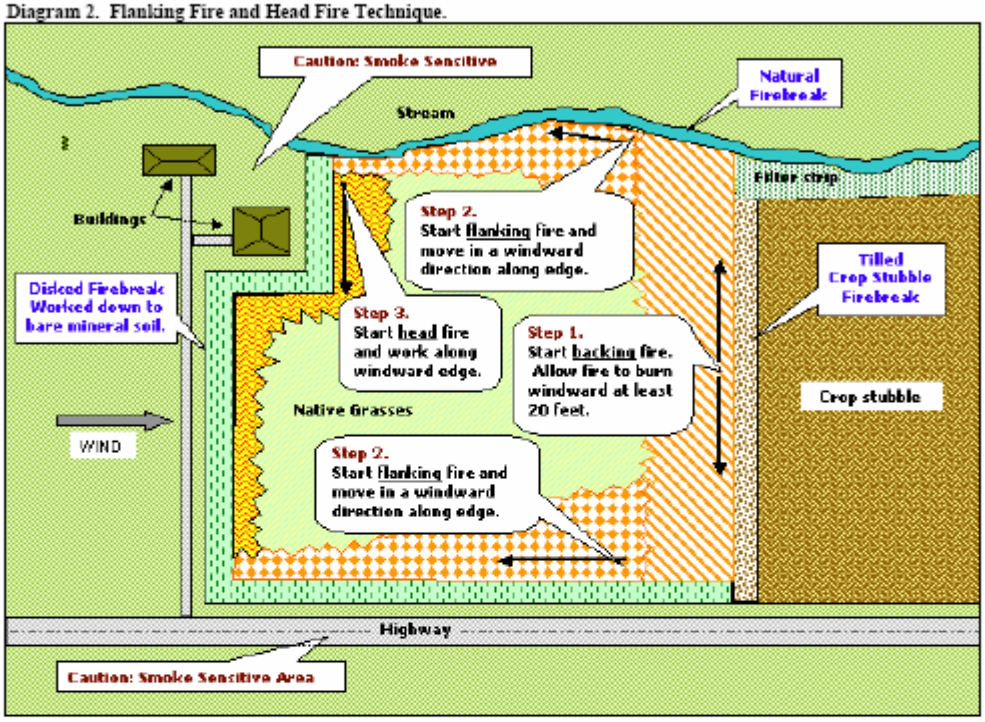


3) Flanking Fire – The flanking fire technique employs the use of fire set in lines parallel (flanking) to the wind. Although flanking fires can be ignited within the central portions of the burn area, extensive knowledge of fire behavior and experience is required, and therefore, it is not recommended for use by most landowners. For the purpose of this fact sheet, discussion is limited to the use of flanking fires along the outer flanks of the area to be burned, along established firebreaks. Flanking fires are typically used along the flanking control lines (firebreaks) to burn vegetation within the burn area away from the control lines, similar to the results obtained by a backing fire. Flanking fires should not be ignited until a backing fire has burned and blackened a strip wide enough along the baseline to control and contain any upwind fire resulting from the ignition of flanking fires. Flanking fires are frequently used in between the ignition of strip-heading fires to reduce flame height along the flanking firebreaks. The use of flanking fires also reduces the amount of time necessary to complete a prescribed burn. To properly employ the flanking fire technique, at least two persons carrying their own ignition source, are needed to simultaneously set the flanking fires.

4) Ring Fire – This firing technique creates the hottest fire and is best used when the burn objective is to control the invasion of woody stems. The ring fire technique is first initiated by using a backing fire to establish a wide, blackened control line at the downwind edge of the burn area. Once the baseline is secured with a wide blackened area, the remainder of the perimeter is ignited, starting at each end of the backing fire and moving in a windward direction. As the perimeter fires merge, flame height and temperature become quite intense and can create a very strong convection column, capable of carrying fire a considerable distance downwind. As a result, ring fires are more apt to start wildfires in neighboring fields. The ring

fire technique should only be used by experienced personnel or where the downwind landscape is composed primarily of bare mineral soils, such as plowed crop fields. To properly employ the ring fire technique, at least two persons carrying their own ignition source, are needed to simultaneously set the fires about the perimeter.

Diagram 2. Flanking Fire and Head Fire Technique.



Smoke Management

It is the responsibility of those conducting a prescribed burn to minimize any detrimental effects that smoke from the fire might create. In fact, persons conducting prescribed burning can be held liable for damages or accidents that occur as a result of smoke from the burn. Therefore, it is very important to make sure smoke management is addressed in all phases of planning a prescribed burn as well as during the actual burn. The following guidelines should be used to reduce the detrimental effects of smoke.

1. Consider all on-site and off-site impacts that smoke might impact when planning a prescribed burn.
2. Use the most up-to-date weather information prior to the burn to help assess smoke behavior and movement.
3. Conduct prescribed burns on days when conditions will allow the smoke to rise and dissipate quickly. Visual indicators of favorable atmospheric conditions include: clouds growing vertically; gusty winds blowing in a consistent direction; smoke from other sources rises quickly and to great heights; good visibility; and the formation of cumulus clouds. Indicators of poor atmospheric conditions include: clouds forming dense layers; steady or little wind; smoke from other sources drifts apart, hangs, or moves downward; poor visibility or haze; fog; and the formation of stratus clouds.

4. Use extreme caution when smoke-sensitive areas are adjacent to or downwind of the proposed burn area. Burning should not be done when the wind will carry the smoke across roadways, airports, dwellings, populated areas, and areas where domestic animals are confined or sensitive to smoke. As a general rule, do not burn if smoke-sensitive areas are downwind of the burn area and within one-half mile.
5. Check the area to be burned for combustible materials that might produce toxic fumes such as tires, asbestos, PCBs, and solvents. Either remove the items from the burn area or adjust the burn area to prevent the area around them from being burned. Remember that poisonous plants, such as poison ivy, can be rendered more toxic as the heat mobilizes the irritating oils and are transported along with the smoke. If poison ivy is present, make sure all members of the fire crew are advised, so that they may judge their own susceptibility.
6. Prior to conducting the actual burn, a small test fire involving the fuels to be burned should be set to evaluate smoke behavior. The test fire should be conducted in an open area away from woodland edges or structures that might create atypical wind currents.
7. Use backing fires whenever possible. Backing fires consume dead fuels more completely and create less smoke.
8. When possible, burn during the middle of the day. Atmospheric conditions at that time of the day tend to be most favorable for smoke dissipation.
9. Try to complete all burns prior to 5:00 pm. As the sun sets, temperature falls, relative humidity increases, and winds decline or cease altogether. Under these conditions, smoke will tend to hang close to the ground in and around the burn area.
10. If conducting a prescribed burn under less than ideal smoke transport conditions, consider breaking the larger burn unit into smaller units and allowing the smoke to dissipate prior to burning each successive unit.
11. Notify adjacent landowners, homeowners, the local fire department, and local law enforcement agencies several days prior to the burn and again on the day the burn is to be implemented. It is not only common courtesy, but local statutes may require an official notification procedure. Response to the notification may also bring unknown problems associated with the proposed burn plan to the burner's attention, such as a neighbor with respiratory problems or a family gathering planned next door. Local authorities need to be notified so that they know it is not a wildfire. It also gives local authorities advanced opportunity to review the burn plan, be better prepared in case the fire escapes, and perhaps coordinate a planned training opportunity for firefighters and other first responders.
12. As part of the actual burn plan, prepare an emergency plan that addresses changes in smoke management. Be prepared to extinguish the fire if the burn is not going according to the plan. Be prepared to contact local law enforcement officials if wind direction changes and the smoke is expected to blow across public roadways, so that traffic can be safely controlled until the smoke dissipates and is no longer a threat.
13. Never conduct prescribed burns on organic soils. Fires on organic soils are almost impossible to put out and can continue to burn underground and create smoke problems for many days if not weeks. Changing weather conditions during that time can create serious smoke problems for miles around.

Appropriate Burning Apparel

All persons assisting with the burn should wear the following apparel at all times during the prescribed burn:

- Hard hat
- Leather gloves
- Eye protection
- Leather boots (lace-up, 8-inch minimum height)
- Handkerchief (for covering mouth and nose)

- Fire resistant trousers and shirt. Use clothing that is 100% natural fiber, such as cotton or wool. Do not use clothing that is 100% synthetic fiber or synthetic fiber/natural fiber blends. Synthetic materials will melt and can cause serious burns.

Ignition Sources

Although a properly functioning drip torch is the most efficient tool for setting fires during a prescribed burn, most landowners do not have access to this equipment. Instead, most landowners utilize fusees and signal flares to set the fires. Fusees are elongated signal flares that last longer and allow the user to remain more upright when using the flare to ignite the vegetation. Flares and fusees are ignited by striking the friction cap (attached to one end of the device) against the exposed end. The precautions, listed below, should always be followed when using these devices:

- Always read and follow manufacturer warnings, precautions, and safety instructions that come with the device.
- Fusees and flares drip extremely hot, molten materials that can burn through clothing and cause serious burns. Always hold fusses and flares downward and well away from your body.
- Fusees and flares emit caustic smoke. Do not breathe the fumes.
- The flames of these devices are extremely bright. Do not look directly at the flame.
- When igniting, always hold the device downward and away from your body, and strike the friction cap away from your body.
- Once lit, these devices drop fire constantly. Do not ignite a fusee or flare in an area that you do not intend to burn. Do not ignite the device until you are ready to burn.
- Keeping burning flares well away form other objects and people.
- Never store these devices with or close to other flammables or ignition sources.
- Do not leave burning flares or fusees unattended.

Pre-Burn Check List

Prior to initiating any prescribed fire the burn crew leader should review all aspects of the official burn plan and ask the following series of questions.

___ Does the weather forecast meet the "Acceptable Burning Parameters" specified in the burn plan? If a weather front is expected to pass through the area on the day the burn is planned, DO NOT BURN.
___ Have all neighbors and appropriate law enforcement and fire department personnel been contacted and properly notified?
___ Have all "Pre-Burn Site Preparations" been completed, checked, and are they functional?
___ Is all the equipment needed to safely carry out the burn on site and is it functioning properly?
___ Do all the personnel know how to safely handle and properly use the ignition sources and other equipment?
___ Are all the personnel necessary to carry out the burn on site?
___ Are all personnel physically fit to perform potentially strenuous activity?
___ Have all personnel been briefed on the prescribed burn plan and know their assignments?
___ Are all personnel wearing appropriate burning apparel?
___ Is the weather forecast expected to be favorable throughout the entire proposed burn time?
___ Do you have a working cellular phone with the telephone number of the local fire department entered?
___ In your opinion, can the burn be carried out according to the burn plan in a safe manner?

If the answer to <u>any</u> of the above checklist questions is "NO", then DO NOT BURN!
If the answer to <u>all</u> of the above checklist questions is "YES", then the next step is to conduct a small, test burn to better assess smoke management and how the actual burn might respond under the current conditions.

Conducting the Prescribed Burn

If the test fire performs satisfactorily, begin the prescribed burn by starting a backing fire along the most downwind (leeward) portion of the field, according to the burn plan. Allow the backing fire to burn inward from the control line to a distance of at least 20 feet; making sure the downwind edge of the control line has been secured, and fire has not crept across the firebreak. As the backing fire continues to burn against the wind, lengthen the peripheral edges of the backing fire by igniting short segments of the flanking control lines. Allow the flanking fires to burn inward and away from the flanking control lines. Never set fire to more area along the flanking control lines than what the fire crew can control. At least one crewmember should routinely check back along the burned control lines to make sure fire has not escaped across the lines. At this point, the ignition of additional lines of fire varies according to what type of firing technique is specified in the burn plan.

If only a backing fire is being used to burn the entire unit, continue setting fire in short distances along the flanking control lines to keep ahead of the advancing backing fire. When flanking fires have been set all the way to the most windward (upwind) section of the field and the flanking control lines are secure, lay fire along the windward control line to complete the prescribed burn.

If the strip-heading technique is going to be employed, stop and reassess current conditions. If it is still appropriate and safe to perform a strip-heading fire, move upwind approximately 20 feet from the advancing backing fire and begin laying a strip of fire in a line parallel to the backing fire and perpendicular to the wind direction. Prior to laying each successive strip of fire across the field, check to see if wind speed, wind direction, and the rate of spread at which the backing fire is advancing are such that the strip-heading technique is still appropriate and safe to use.

If the ring fire technique is prescribed, stop and reassess the current conditions. If it is still appropriate and safe to perform a ring fire continue laying fire along the flanking control lines and allow the fire to burn inward and away from the flanking control lines to a width equal to at least twice the height of the flames or twenty feet, which ever is greater. Once these conditions have been attained, lay fire to the most windward control line to complete the prescribed burn. Ring fires can be very hot and create strong convection columns and wind speeds, which can carry hot sparks across control lines and into neighboring fields. Crewmembers should be on constant lookout for spot fires that might erupt in nearby fields or breach control lines.

Once the prescribed burn has been completed, crewmembers need to ensure that the fire is completely out. Smoldering embers can quickly reignite or be blown into neighboring areas and start wildfires. Check all fields adjacent to the burn area at least twice to ensure the fire hasn't escaped. Drench all smoldering debris and hot embers with water. Check the area again that night and the next day, especially if conditions have turned windy and dry.

In Case of an Emergency

In case of an emergency or escaped fire:

- Call 911 or the local fire department.
- Move all persons to safety zones, such as:
    - Man-made firebreaks,
    - Paved, gravel, or dirt roads,
    - Permanent bodies of water, or
    - Areas already blackened by the fire.
- Contact all neighbors that may be potentially affected.

After the Prescribed Burn

After the burn has completed, inspect the area to see if the prescribed burn met its objectives. Ask questions like: Were the firebreaks wide enough? Were the firebreaks effective? Did I have all the equipment and manpower that I needed? Did I get the results that I was expecting? Make a list of things you would do differently the next time.

Of course, the desired vegetation response may not be apparent immediately after the burn. The assessment of changes in vegetation diversity and density will have to be delayed until the entire growing season can be evaluated. So, it is important to return to the site several times during the growing season to fully assess the results.

Related *Habitat Management Fact Sheets*:

Warm Season Grass Establishment
Warm Season Grass Management
Strip Disking
Fescue Eradication
Strip Spraying
Prescribed Burning
Wildflowers

Prepared by the Indiana Department of Natural Resources, Division of Fish and Wildlife. For up-to-date information concerning the Indiana Division of Fish and Wildlife, or for information on the location of your District Wildlife Biologist, visit our website at www.wildlife.IN.gov
March 2005

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Appendix 7 - Indiana BART Rule

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ARTICLE 26. REGIONAL HAZE

Rule 1. Best Available Retrofit Technology

326 IAC 26-1-1 Applicability

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11
Affected: IC 13-15; IC 13-17

Sec. 1. This rule applies to BART-eligible sources in Indiana as defined in 40 CFR 51.301* and as determined in accordance with 40 CFR 51, Appendix Y, "Guidelines for BART Determinations Under the Regional Haze Rule*".

*This document is incorporated by reference. Copies may be obtained from the Government Printing Office, 732 North Capitol Street NW, Washington, D.C. 20401 or are available for review and copying at the Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center-North, Tenth Floor, 100 North Senate Avenue, Indianapolis, Indiana 46204. *(Air Pollution Control Board; 326 IAC 26-1-1; filed Jan 23, 2008, 1:37 p.m.: 20080220-IR-326060208FRA; errata filed Feb 6, 2008, 12:26 p.m.: 20080220-IR-326060208ACA)*

326 IAC 26-1-2 Incorporation by reference

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11
Affected: IC 13-15; IC 13-17

Sec. 2. The air pollution control board incorporates by reference the following:

(1) 40 CFR 51, Appendix Y, "Guidelines for BART Determinations Under the Regional Haze Rule*".

(2) 40 CFR 51.301*, "Definitions".

(3) 40 CFR 51.308(e)*, "Best Available Retrofit Technology (BART) requirements for regional haze visibility impairment".

*These documents are incorporated by reference. Copies may be obtained from the Government Printing Office, 732 North Capitol Street NW, Washington, D.C. 20401 or are available for review and copying at the Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center-North, Tenth Floor, 100 North Senate Avenue, Indianapolis, Indiana 46204. *(Air Pollution Control Board; 326 IAC 26-1-2; filed Jan 23, 2008, 1:37 p.m.: 20080220-IR-326060208FRA)*

326 IAC 26-1-3 Notification

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11
Affected: IC 13-15; IC 13-17

Sec. 3. (a) By the effective date of this rule, the department shall provide a written notification to the owner or operator of each BART-eligible source that identifies each BART-eligible emissions unit evaluated by the department.

(b) If the owner or operator of a BART-eligible source does not receive a notification, the owner or operator of the BART-eligible source shall submit written notification to the department of all BART-eligible emissions units within three (3) months of the effective date of this rule. The notification shall include the following information:

(1) Complete source identification and contact information.

(2) A list of all BART-eligible emissions units at the source.

(3) A description of each BART-eligible emissions unit including applicable:

(A) processes;

(B) potential emissions; and

(C) emissions unit and emission point characteristics.

(4) The date construction commenced and the date of start-up of each BART-eligible emissions unit.

(c) The department may require additional information from BART-eligible sources to be submitted to evaluate emissions units potentially affected by this rule. *(Air Pollution Control Board; 326 IAC 26-1-3; filed Jan 23, 2008, 1:37 p.m.: 20080220-IR-326060208FRA)*

326 IAC 26-1-4 Determination of sources subject to BART

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11
Affected: IC 13-15; IC 13-17

Sec. 4. (a) The department shall determine if a BART-eligible source is subject to BART based upon all of the following criteria:

(1) The source meets the definition of BART-eligible source in 40 CFR 51.301*.

(2) Modeling conducted in accordance with option 1 of the individual source attribution approach as described in 40 CFR 51, Appendix Y*.

(3) The impact on visibility in a Class 1 area as determined by a comparison of the ninety-eighth percentile of the source specific modeling to a 0.5 deciview threshold level. A source causes or contributes to visibility impairment at a Class 1 area when the modeled impacts of that source are equivalent to eight (8) or more days in one (1) year or a total of twenty-two (22) or more days in a three (3) year period that would exceed the 0.5 deciview threshold level.

(b) The department shall provide a written determination to each BART-eligible source indicating if the source has been determined to be subject to BART.

*These documents are incorporated by reference. Copies may be obtained from the Government Printing Office, 732 North Capitol Street NW, Washington, D.C. 20401 or are available for review and copying at the Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center-North, Tenth Floor, 100 North Senate Avenue, Indianapolis, Indiana 46204. *(Air Pollution Control Board; 326 IAC 26-1-4; filed Jan 23, 2008, 1:37 p.m.: 20080220-IR-326060208FRA)*

326 IAC 26-1-5 CAIR participation by electric generating units

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11
Affected: IC 13-15; IC 13-17

Sec. 5. Participation in the CAIR cap and trade program shall satisfy the sulfur dioxide (SO_2) and oxides of nitrogen (NO_x) requirements of this rule. *(Air Pollution Control Board; 326 IAC 26-1-5; filed Jan 23, 2008, 1:37 p.m.: 20080220-IR-326060208FRA)*

326 IAC 26-1-6 BART analysis

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11
Affected: IC 13-15; IC 13-17

Sec. 6. (a) The owner or operator of a source determined to be subject to BART shall submit one (1) of the following:

(1) A BART analysis to the department within two hundred seventy (270) days of the latter of either the:

(A) date of the written notification from the department that the source is subject to BART; or

(B) effective date of this rule.

(2) A description and analysis of the BART-eligible emission units sufficient to demonstrate that the source is not subject to BART within ninety (90) days of the date of the written notification from the department that the source is subject to BART. After the submittal of a description and analysis that the source is not subject to BART, if the source receives notification from the department that the description and analysis are inadequate and that the source is subject to BART, the source shall submit a BART analysis to the department within one hundred eighty (180) days of the date of the notification of inadequacy.

(b) The department shall review the BART analysis for completeness and notify the source of its completeness determination within sixty (60) days of receipt of the BART analysis. A source that is notified that its BART analysis is incomplete shall submit the missing information within sixty (60) days of the date of the notification of the completeness determination.

(c) The BART analysis under subsection (a)(1) must comply with 40 CFR 51, Appendix Y, "Guidelines for BART Determinations Under the Regional Haze Rule*" and must consider the following factors:

(1) The costs of compliance.

(2) The energy and nonair quality environmental impacts of compliance.

(3) Any existing pollution control technology in use at the source.

(4) The remaining useful life of the source.

(5) The degree of visibility improvement that may reasonably be anticipated from the use of BART.

(d) At a minimum, the BART analysis shall address SO_2, NO_x, and particulate matter emissions if emissions of those pollutants are equal to or greater than the following levels for the source:

(1) Forty (40) tons per year of SO_2 or NO_x.

(2) Fifteen (15) tons per year of particulate matter with an aerodynamic diameter less than ten (10) micrometers (PM_{10}).

(e) The department may require additional information from sources subject to BART to complete the review of the BART analysis.

(f) Within two hundred seventy (270) days of the completeness review under subsection (b), the department shall provide a written notification to the owner or operator of a source subject to BART indicating whether the analysis is approved.

(g) For sources required to submit an analysis under this section that do not submit an approveable analysis in accordance with this section, the department shall determine BART for the source within ninety (90) days after the end of the period described in subsection (f).

*This document is incorporated by reference. Copies may be obtained from the Government Printing Office, 732 North Capitol Street NW, Washington, D.C. 20401 or are available for review and copying at the Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center-North, Tenth Floor, 100 North Senate Avenue, Indianapolis, Indiana 46204. *(Air Pollution Control Board; 326 IAC 26-1-6; filed Jan 23, 2008, 1:37 p.m.: 20080220-IR-326060208FRA)*

326 IAC 26-1-7 Alternative to BART

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11
Affected: IC 13-15; IC 13-17

Sec. 7. (a) The department may approve an alternative to the installation of BART that complies with the following:

(1) 40 CFR 51, Appendix Y, "Guidelines for BART Determinations Under the Regional Haze Rule*".

(2) 40 CFR 51.308(e)*, "Best Available Retrofit Technology (BART) requirements for regional haze visibility impairment".

(b) If a source proposes an alternative to BART, the source shall submit to the department the BART analysis of the alternative within two hundred seventy (270) days of the date of the written notification from the department of being subject to BART as described in section 4(b) of this rule and the analysis must include the following:

(1) An analysis of the emission reductions and visibility impacts that would result from the implementation of BART in accordance with 40 CFR 51, Appendix Y, "Guidelines for BART Determinations Under the Regional Haze Rule*".

(2) Emission reductions that are surplus to those reductions resulting from measures adopted to meet requirements of the Clean Air Act prior to the baseline data used for BART.

(3) A method of evaluating compliance with the alternative.

(4) A demonstration that the alternative will achieve greater reasonable progress towards improving visibility than would be achieved by implementation of the BART requirements.

(c) The department shall review the BART analysis for the alternative for completeness and notify the source of its completeness determination within sixty (60) days of receipt of the BART analysis for the alternative. A source that is notified that its BART analysis is incomplete shall submit the missing information within sixty (60) days of the date of the notification of the completeness determination.

(d) Within two hundred seventy (270) days of the completeness review under subsection (c), the department shall provide a written notification to the owner or operator of a source subject to BART indicating whether the analysis is approved.

(e) For sources required to submit a BART analysis that elect to submit a BART analysis for an alternative under this section and that do not submit an approveable analysis in accordance with this section, the department shall determine BART for the source within ninety (90) days after the end of the period described in subsection (d).

*These documents are incorporated by reference. Copies may be obtained from the Government Printing Office, 732 North Capitol Street NW, Washington, D.C. 20401 or are available for review and copying at the Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center-North, Tenth Floor, 100 North Senate Avenue, Indianapolis, Indiana 46204. *(Air Pollution Control Board; 326 IAC 26-1-7; filed Jan 23, 2008, 1:37 p.m.: 20080220-IR-326060208FRA)*

326 IAC 26-1-8 Part 70 permit modifications

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11
Affected: IC 13-15; IC 13-17

Sec. 8. (a) Within five (5) years of the effective date of this rule, the Part 70 permit of a source subject to BART that is required to submit a BART analysis shall be reopened and modified in accordance with 326 IAC 2-7-9 to reflect all approved BART requirements or alternatives to the BART requirements to include the following:

(1) Enforceable emission limits, if applicable.

(2) Design, equipment, work practice, operation standard, or combination of these types of standards, if applicable.

(3) Compliance schedules that require compliance with the requirements in subdivisions (1) and (2) within five (5) years of the effective date of this rule.

(b) Enforceable emission limits and compliance schedules that reflect the BART requirements or an approved alternative to the BART requirements shall be included in the Part 70 permit in accordance with the following:

(1) 40 CFR 51, Appendix Y, "Guidelines for BART Determinations Under the Regional Haze Rule*".

(2) 40 CFR 51.308(e)*, "Best Available Retrofit Technology (BART) requirements for regional haze visibility impairment".

(3) 326 IAC 2-7.

(c) The requirements listed in subsection (a) shall be submitted to U.S. EPA for approval into the state implementation plan.

*These documents are incorporated by reference. Copies may be obtained from the Government Printing Office, 732 North Capitol Street NW, Washington, D.C. 20401 or are available for review and copying at the Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center-North, Tenth Floor, 100 North Senate Avenue, Indianapolis, Indiana 46204. *(Air Pollution Control Board; 326 IAC 26-1-8; filed Jan 23, 2008, 1:37 p.m.: 20080220-IR-326060208FRA)*

*