STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

IN THE MATTER OF APPROVING A NEW CONTAMINANT SOURCE FOR IBP, INC.	)))	ORDER No. 02AQER-5074

TO: Ray McGaugh, Plant Manager
IBP, inc.
P.O. Box 4239
Pasco, WA 99301

The IBP, inc. (IBP) Pasco facility requested an emission limitation in a submittal dated December 21, 2001. The plant is located in the Wallula serious particulate non-attainment area, and any facility within the area with potential to emit particulate emissions above 70 tons per year is considered a major source. The facility currently has a potential to emit in excess of 70 tons per year of particulate. To remain below Title V threshold levels the IBP facility has requested production limits on blood drying, inedible rendering, and edible rendering, and has proposed a particulate limit below 70 tons per year. Since the area may be re-designated within several years, it is anticipated that IBP may request a change to particulate emissions limitations from 70 to 100 tons per year.

IBP has identified process equipment that was installed at the facility without Notice of Construction (NOC) approval, and has submitted NOC applications for the equipment. Air pollution control has been proposed for facility process equipment. IBP will install a new venturi scrubber, a new spray chamber scrubber, a new packed bed scrubber, and a new cyclone. IBP will rebuild and modify the existing packed bed scrubber and replace the existing venturi scrubber.

The AQP issued NOC approval Order No. DE 94AQ-E159 on July 28, 1994 for the installation of the Duske dryer and the 7th inedible rendering line cooker. IBP reported that the Duske dryer did not meet the emission limitation as specified in the NOC approval, and proposes to install a venturi scrubber with a wet cyclone filter to control particulate emissions. This approval order both rescinds and supercedes NOC approval Order No. DE 94AQ-E159.

The purpose of this NOC approval order is to:

1. Require a particulate emission limitation below 70 tons per year.
2. Rescind and supercede NOC approval Order No. DE 94AQ-E159 for the Duske dryer and 7th inedible rendering line cooker.
3. Issue an approval order for emission controls and process equipment that were not originally permitted under state air quality regulations.

In relation to the above, the Department of Ecology, State of Washington, pursuant to RCW 70.94.152, RCW 70.94.153, and WAC 173-400-110, makes the following determinations:

1. The proposed project if constructed and operated as herein required will be in accordance with applicable rules and regulations as set forth in Chapters 173-400 WAC and 173-460 WAC, and facility operation will not result in violations to ambient air quality standards.

2. The proposed project if constructed and operated as required will provide all known, available, and reasonable methods of emission control, i.e., best available control technology (BACT).

I. FINDINGS:

1. LAWS AND REGULATIONS

The proposal by IBP to operate a beef processing facility that includes blood drying, edible and inedible rendering, and associated processes shall comply with all requirements in:

1.1 Chapter 70.94 Revised Code of Washington (RCW), **Washington Clean Air Act**.
1.2 Chapter 173-400 Washington Administrative Code (WAC), **General Regulations for Air Pollution Sources.**
1.3 Chapter 173-460 WAC, **Controls for New Sources of Toxic Air Pollutants**.

Specifically, the IBP proposal to install new sources of air pollution is regulated under:

1.4 WAC 173-400-110, **New source review (NSR).**
1.5 WAC 173-400-112, **Requirements for sources in nonattainment areas.**
1.6 WAC 173-460-040, **New source review.**

All state and federal regulations, statutes, and laws referenced in this order are the current version upon the date of issuance of this Order.

2. ESTIMATED EMISSIONS

IBP currently operates a beef processing facility and proposes to permit existing processing equipment and add new air pollution controls. Operation of the processing equipment with restricted annual production rates and air pollution controls as contained in this Order has the potential to produce the following estimated annual particulate emissions:

TABLE 1: ESTIMATED EMISSIONS AND CONTROL EQUIPMENT

#	Emission points	PM_{10}*	Control equipment 1	Control equipment 2
2.1	Raw blood tank	1.24	Spray chamber filter	Packed bed 1
2.2	Blood centrifuge		Spray chamber filter	Packed bed 1
2.3	Dry Blood cyclone separators		Spray chamber filter	Packed bed 1
2.4	Blood dryer room air 1		Spray chamber filter	Packed bed 1
2.5	Blood dryer room air 2		Packed bed 1	na
2.6	Inedible cookers 1-7		Spray chamber filter	Packed bed 1
2.7	Flotation centrifuge		Spray chamber filter	Packed bed 1
2.8	Hides centrifuge		Spray chamber filter	Packed bed 1
2.9	Flotation skimming tank		Spray chamber filter	Packed bed 1

2.10	Flotation room air 1		Spray chamber filter	Packed bed 1
2.11	Flotation room air 2		Packed bed 1	na
2.12	Hides fleshing tank		Spray chamber filter	Packed bed 1
2.13	Inedible rotex screen	3.97	Cyclone & Venturi 1	Packed bed 2
2.14	Inedible hammermill		Cyclone & Venturi 1	Packed bed 2
2.15	Milling room air		Packed bed 2	na
2.16	Flotation cell tanks		Venturi 1	Packed bed 2
2.17	Dupps pressors		Venturi 1	Packed bed 2
2.18	Grease centrifuge		Venturi 1	Packed bed 2
2.19	Inedible rendering room 1		Venturi 1	Packed bed 2
2.20	Inedible rendering room 2		Packed bed 2	na
2.21	Duske dryer	4.10	Venturi 2	Wet cyclone filter
2.22	Edible rotex screen	2.47	na	na
2.23	Inedible silo	0.53	na	na
2.24	Packaging vacuum pumps	0.61	Smog Hog ESP	na
2.25	Lo Pro roof airlock	0.61	na	na
2.26	Lo Pro storage bins	0.24	na	na
2.27	Boilers	2.83	na	na
2.28	Back-up fire pump	0.09	na	na
2.29	Spinal vacuum pump	0.16	na	na
2.30	Sani-vacs	0.48	na	na
2.31	Heaters	1.08	na	na
2.32	Propane only heaters	0.13	na	na
2.33	Steam pasteurization cabinet	1.01	na	na
2.34	Post-pasteurization acid cab	0.12	na	na
2.35	PEC cabinet	1.67	na	na
2.36	Carcass wash acid cabinet	0.79	na	na
2.37	Blood silo	0.10	dust bag filter	na
	Total PM_{10} emissions	22.23		

FUGITIVE EMISSIONS		
2.38	Gel Bone truck loadout	0.22 tpy estimated
2.39	Inedible rail loadout	0.42 tpy estimated
2.40	Inedible truck loadout	1.34 tpy estimated

2.41	Blood truck loadout	0.26 tpy estimated
2.42	Paved roads	0.35 tpy estimated
2.43	Salt rail loadout	8.06 tpy estimated

* All particulate is considered PM_{10} and is measured in tons per year. Process emissions only counted towards total emissions, fugitive emissions estimated but not counted in total.

3. BACT

Washington Administrative Code 173-400-112(2)(b) requires the use of Best Available Control Technology (BACT) to control emissions of criteria pollutants. Table 1 identifies each process component and work area that will exhaust to air pollution control equipment at the facility. Information on the air pollution control equipment that constitutes BACT is provided below.

3.1 **Packed bed scrubber 1** controls particulate emissions and odors from rendering, blood, and hide processing areas, and exhausts to the ambient air. **Spray chamber filter** is used upstream of packed bed scrubber 1 to reduce particulate emission concentrations to the packed bed. Packed bed scrubbers 1 and 2 both use a water based liquor utilizing either a 10% solution of sodium hypochlorite to oxidize odorants and a 50% solution of sodium hydroxide (caustic) to maintain a pH of greater than 8, or chlorine dioxide to maintain a chlorine residual of greater than 25 ppmw, and an exhaust air stream temperature of less than 120° F. Scrubber liquor is re-circulated, and makeup water and chemicals are added to maintain volume and operating specifications.

3.2 **Packed bed scrubber 2** (rebuilt) controls particulate emissions and odors from rendering, blood, and hide areas, and exhausts to the ambient air. **Venturi scrubber 1** is used upstream of packed bed scrubber 2 to reduce particulate emission concentrations to the system. The **Cyclone** is used upstream of the venturi scrubber to control particulate emission concentrations from the Inedible Rotex Screen and the Inedible Hammermill.

3.3 **The Smog Hog** is used to control oil that is discharged from eleven (11) Beach Russ vacuum pumps that are used to evacuate the chambers in the cryovac packaging machines. The Smog Hog consists of a reuseable aluminum mesh filter, an ionizer section that contains tungsten wires, a collecting cell with parallel aluminum plates, and an aluminum mesh after filter.

3.4 The Duske dryer is vented to **venturi scrubber 2** and **wet cyclone filter** to control particulate. The Duske dryer exhaust air will vary between 16,000 and 20,000 scfm. Plant air will be used to balance the flow at 20,000 scfm to venturi scrubber 2 and cool the Duske dryer exhaust gases. Immediately downstream from venturi scrubber 2 is second stage 26,000 scfm wet cyclone filter. Plant air will be used to supplement the venturi scrubber exhaust to the wet cyclone filter.

TABLE 2: BEST AVAILABLE CONTROL TECHNOLOGY FOR PARTICULATE

#	Control equipment	Air flow	Liquor flow	Delta P	Control effic.
3.1	Packed bed scrubber 1 SCP Control, Inc RAS-42	42,000 scfm	>400 gpm >25 ppm Cl pH >8	<5 " WC	95% @ 0.5 um*
	Spray chamber filter SCP Control, Inc SC-24	24,000 scfm	>250 gpm	<3" WC	95% @ 1 um

3.2	Packed bed scrubber 2 SCP Control, Inc RAS-75	75,000 scfm	>700 gpm >25 ppm Cl pH >8	<5" WC	95% @ 0.5 um
	Venturi scrubber 1 SCP Control, Inc VS-10	10,000 scfm	>40 gpm	>4" WC	95% @ 5 um
	Cyclone, high efficiency SCP Control, Inc CS-2.0	2,000 scfm	na	>5" WC	85% @ 5 um
3.3	Smog Hog SH 50 PE-S-T United Air Specialists, Inc	2500 to 5400 scfm	electrostatic precipitator		95%
3.4	Duske Dryer Venturi scrubber 2 SCP Control, Inc VS-20	20,000 scfm	>80 gpm	>5" WC	95% @ 5 um
	Duske Dryer Wet Cyclone filter SCP Control, Inc WCF-26	26, 000 scfm	>200 gpm	<3" WC	95% @ 0.5 um

* um used as the abbreviation for micrometer or micron

~~4. T-BACT~~

~~Operation of the process equipment identified in this order will not result in ambient air quality emissions of toxic air pollutants (TAP) above acceptable source impact levels (ASIL) as contained in Chapter 173-460 WAC.~~

5. ADDITIONAL FINDINGS

5.1 Equipment substitutions or replacements shall be reported to Ecology in writing prior to installation. A NOC application will be required if equipment substitution or replacement results in an increase in production rate or an increase in any air pollutant emission rates.

5.2 The air flow for each individual piece of equipment and process area that is routed to an air pollution control device has been identified in the NOC application. Any increase in air flow above rates identified in this approval Order shall be reported to Ecology in writing prior to modification.

5.3 Particulate emissions from the Duske dryer air pollution control exhaust stack were modeled using TSCREEN, an United States Environmental Protection Agency (EPA) approved screening model. A particulate matter emission concentration of 0.010 grains per dry standard cubic foot (gr/dscf) for the scrubber exhaust stack was modeled and found to be well below the limits contained in Chapter 173-470 WAC. It is assumed that the impacts from particulate matter generated by packed bed scrubbers 1 and 2 are comparable to the Duske dryer scrubber. Cumulative particulate impacts of these three pollution control devices remain below state ambient air quality standards.

THEREFORE, IT IS ORDERED that the project as described in said Notice of Construction and more specifically detailed in plans, specifications and other information submitted to the Department of Ecology in reference thereto, is approved for construction, installation and operation, provided the following conditions are met:

II. APPROVAL CONDITIONS:

1. OPERATING LIMITATIONS

1.1 IBP has requested voluntary **operating limitations** under WAC 173-400-091 to restrict particulate emissions below 70 tons per year. The Wallula serious non-attainment area may be re-designated. At that time IBP may request a change to particulate emissions limitations from 70 to 100 tons per year. Rendering and blood drying operations will be limited by restricting finished product throughput and hours of operation as follows:

TABLE 3: OPERATING LIMITATION

1.1	Operation	Hourly Limit	Annual Limit	Comments
1.1.1	Blood drying	1600 lbs/hr	5990 tons/yr	10% moisture product
1.1.2	Edible rendering	13,200 lbs/hr	49, 421 tons/yr	Gel bone
1.1.3	Inedible rendering	6114 lbs/hr	22,891 tons/yr	Lo pro, crax, tallow
1.1.4	Blood drying & rendering	na	7488 hrs/yr	na

1.2 Each emission unit will be controlled by the air pollution equipment specified in Table 1 under the finding.

1.3 Air pollution control equipment will be required to operate under the specifications as listed in Table 2 under the findings.

1.4 All process and fugitive emission points contained in this approval order shall comply with the applicable requirements contained in **1. Laws and Regulations** under the findings.

2. GENERAL PERFORMANCE TESTING REQUIREMENTS

2.1 **Performance Testing** - Within 270 days after issuance of this Approval Order IBP shall conduct initial performance 40 CFR 60 Appendix A Method 5 and Method 202 particulate testing and Method 9 visible emission testing for the Duske Dryer exhaust and provide a written report within 45 days.

2.3 **Throughput during Testing** - During testing the Duske dryer shall be operated at or near rated finish product capacity. Failure to test at or near rated finish product capacity will result in operational limits placed on the Duske dryer based on the production rate during the initial performance testing.

2.4 **Performance Test Plan Submittal** - A test plan that includes a description of the reference test methods shall be submitted for Ecology's approval at least 30 days prior to any performance testing.

2.5 **Testing Logistics** - The permittee shall provide sampling ports, safe sampling platforms, safe access to sampling platforms, and utilities for sampling and testing.

2.7 **Baseline Operating Parameters** - During testing, the following facility baseline operating parameters shall be recorded:

2.7.1 Duske dryer production rate.

2.7.2 Duske dryer venturi and wet cyclone filter differential pressures.

2.7.3 Duske dryer venturi and wet cyclone filter water flow rates.

3. EMISSION LIMITS & TEST METHODS

3.1 The **particulate matter** (PM_{10}) Method 5 and Method 202 concentration from the packed bed scrubber 1, packed bed scrubber 2, Smog hog, and wet cyclone filter exhaust stack shall be less than or equal to **0.010 grains of PM_{10} per dry standard cubic foot.** The baseline operating parameters recorded during the initial performance testing for the wet cyclone filter will be used to establish operating parameters for the air pollution control systems.

3.2 **Visible emissions shall be no more than 10% opacity** as measured by 40 CFR 60 Appendix A Method 9 from any process emission point at the facility. Visible emissions from fugitive dust sources shall not leave the property boundaries.

~~3.3 Odor from packed bed scrubbers 1 and 2 exhaust gases shall be controlled by using a water based liquor utilizing either a 10% solution of sodium hypochlorite to oxidize odorants and a 50% solution of sodium hydroxide (caustic) to maintain a pH of greater than 8, or chlorine dioxide to maintain a chlorine residual of greater than 25 ppmw, and an exhaust air stream temperature of less than 120° F.~~

3. TEST METHODS & EMISSION LIMITS				
	POLLUTANT	LIMIT	TEST METHOD	NOTES
3.1.1	PM_{10} Front half	0.010 gr/dscf	EPA Method 5	Filterable PM_{10}
3.1.2	PM_{10} Back half		EPA Method 202	Condensable PM_{10}
3.2.1	Visible emissions	10% opacity	EPA Method 9	na
3.3.1	Odor	na	na	Operating limits

4. O&M MANUAL

A site-specific O&M manual shall be developed and followed for the non-fugitive process emission points contained in this approval order. The O&M manual shall include information on all air pollution controls, monitoring equipment, and any other equipment that has the potential to affect emissions to the atmosphere. Manufacturer's specifications and operating instructions should be included in the O&M manual. The O&M manual shall be updated to reflect any modifications of the facility or its operating procedures. The O&M manual shall at a minimum include:

4.1 Normal operating parameters for the process and air pollution control equipment, including the most recent baseline operating parameters as identified during performance testing.
4.2 A maintenance schedule for process and air pollution control equipment.
4.3 Recordkeeping requirements for process and air pollution control equipment as contained in Approval Condition 5, **MONITORING and RECORDKEEPING.**
4.4 A description of the monitoring instrumentation.
4.5 Quality assurance procedures for maintaining accuracy of the monitoring equipment.

IBP shall provide written notification to Ecology of O&M manual completion within 90 days after installation of all the control systems identified in this approval Order.

5. MONITORING and RECORDKEEPING

Monitoring instrumentation shall be installed and maintained for accuracy for the air pollution control equipment listed in Table 2. At a minimum, monitors shall include differential pressure and scrubber liquor flow rates as applicable for all air pollution control equipment. Packed bed scrubber 1 and 2 liquor shall be monitored for temperature, pH (hydrogen ion activity), and oxidation reduction activity. All monitoring equipment shall be described in the Operations and Maintenance (O&M) manual.

Specific records shall be kept on-site and made available for inspection by Ecology upon request. The records shall be readily accessible, compiled in an organized manner and cover a minimum of the most recent 60-months. The records to be kept shall include the following:

5.1 Annual **production records** to verify that operating rates remain at or below the restrictions contained in Table 3 of this approval order.

5.2 **Air pollution control parameters** shall be recorded, including differential pressure and scrubber liquor flow rates as applicable for all air pollution control equipment contained in this approval order. These parameters shall be recorded at least twice per shift during plant operations.

5.3 **Packed bed scrubber liquor parameters** for both packed bed scrubber 1 and 2 shall be continuously monitored. The scrubber liquor shall be monitored by a temperature gauge, hydrogen ion activity (pH) probe, and oxidation reduction activity probe (ORP).

5.4 **Nature and details of any upset condition or other situation** (date/time, duration, cause, etc.) that results in the facility being operated while the air pollution control equipment was not functioning properly, including upsets in scrubber liquor parameters.

5.5 All **performance testing results and reports.**

5.6 **O&M manual and maintenance records.**

6. REPORTING

All reports and notifications shall be sent within 30 days following the end of the calendar year unless otherwise noted below to:

Air Quality Program
Washington State Department of Ecology
4601 N. Monroe
Spokane, WA 99205-1295

6.1 **Annual production rates** as required in APPROVAL CONDITION 5.1.

6.2 **Annual emission inventory** as required by the Ecology Air Quality Program Registration Program. Note: The information requested under 6.1 and 6.2 may be combined and submitted in a single report.

6.3 The results of any **performance testing** shall be sent to the above address no later than 45 days following such testing.

7. SPECIFIC CONDITIONS

Fugitive dust control measures have not been prescribed in this order. Failure to maintain adequate fugitive dust control will result in Ecology requiring a fugitive dust control plan (FDCP) for all fugitive dust sources at the facility.

8. GENERAL CONDITIONS

8.1 **Visible Emissions** - No visible emissions shall be allowed beyond the property line.

8.2 **Discontinuing Operations** - This approval shall become void if operation of the facility is discontinued for a period of eighteen (18) months.

8.3 **Compliance Assurance Access** - Access to the source by EPA or Ecology shall be allowed for the purposes of compliance assurance inspections. Failure to allow access is grounds for revocation of this Approval Order approving the NOC application.

8.4 **Availability of Approval Order and O&M Manual** - Legible copies of this Approval Order approving the NOC applications and the O&M manual shall be available to employees in direct operation of the facility and its associated air pollution controls and be available for review upon request by Ecology.

8.5 **Equipment Operation** - Operation of the facility and its associated air pollution controls shall be conducted in compliance with all data and specifications submitted as part of the NOC application and in accordance with the O&M manual, unless otherwise approved in writing by Ecology. Emissions that result from failure to follow the requirements of the O&M manual or manufacturer's instructions will be considered proof that the facility was not properly operated and/or maintained.

8.6 **Obligations under Other Laws or Regulations** - Nothing in this Approval Order shall be construed to relieve IBP of its obligations under any local, state or federal laws or regulations.

8.7 **Fees** - Per WAC 173-400-116, this Approval Order and related regulatory requirements have a fee associated for review and issuance. This Approval Order is effective upon Ecology's receipt any required fees.

All plans, specifications, and other information submitted to the Department of Ecology relative to this project and further documents and any further authorizations or approvals or denials in relation thereto shall be kept at the Eastern Regional Office of the Department of Ecology in the "Air Quality Controlled Source" files and by such action shall be incorporated herein and made a part hereof.

Nothing in this approval shall be construed as obviating compliance with any requirement of law other than those imposed pursuant to the Washington Clean Air Act and the rules and regulations thereunder.

A three-month testing and break-in period is allowed, after any part or portion of this project becomes operational, to make any changes or adjustments required to comply with applicable rules and regulations pertaining to air quality and conditions of operation imposed herein. Thereafter, any violation of such rules and regulations or of the terms of this approval shall be subject to the sanctions provided in Chapter 70.94 RCW.

Authorization may be modified, suspended, or revoked in whole or part for cause including, but not limited to, the following:

1. Violation of any terms or conditions of this authorization;
2. Obtaining this authorization by misrepresentation or failure to disclose fully all relevant facts.

The provisions of this authorization are severable and, if any provisions of this authorization, or application of any provisions of this authorization to any circumstance, is held invalid, the application of such provision to their circumstances, and the remainder of this authorization, shall not be affected thereby.

Any person feeling aggrieved by this ORDER may obtain review thereof by application, within thirty (30) days of receipt of this ORDER to the Pollution Control Hearings Board, P.O. Box 40903, Olympia, WA 98504-0903. Concurrently, a copy of the application must be sent to the Department of Ecology, P.O. Box 47600, Olympia, WA 98504-7600 and to the Department of Ecology, 4601 N. Monroe, Suite 202, Spokane, WA 99205-1295. These procedures are consistent with the provisions of Chapter 43.21B RCW and the rules and regulations adopted thereunder.

DATED at Spokane, Washington, this 6th day of December, 2002.

PREPARED BY:

Gregory S. Flibbert, Unit Manager
Air Quality Program
Department of Ecology

REVIEWED BY:

12/6/02

George Thomas Clark, PE
Air Quality Program
Department of Ecology

GEORGE THOMAS CLARK
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER

EXPIRES: 03-24-03

APPROVED BY:

Grant D. Pfeifer, Section Manager
Air Quality Program
Department of Ecology