2000 Annual Green Permit Report

LP
Hines, Oregon

This report summarizes the year 2000 environmental activities and achievements of the LP Engineered Wood Products plant in Hines, an Oregon Department of Environmental Quality Green Permit facility. We received one of the first two DEQ Green Permits in December 2000, in recognition of our commitment to superior environmental performance. In accordance with Green Permit requirements, we continued to improve our environmental performance during 2000, achieving results that go beyond compliance. This report summarizes our environmental improvements, environmental compliance and community involvement activities. It also describes our Environmental Management System.

LP Hines Environmental Management System

The LP Hines facility uses softwood veneer to produce Laminated Veneer Lumber (LVL) and I-Joists. LP acquired the plant in March 1997. It became the first LP Engineered Wood Products facility to participate in the company's Environmental Management System (EMS) process.

LP's Environmental Management System is designed to continually evaluate processes to ensure environmental compliance. The EMS process also allows the facility to achieve defined environmental goals that exceed the specified standards of regulatory compliance. The primary goal of the corporate-wide EMS initiative is to create consistent systems to manage environmental risks. The EMS requires systematic review of each aspect of environmental compliance and assigns responsibility to those individuals most directly involved. LP has highly qualified personnel, who are trained in and committed to tracking successes and looking for opportunities for improvement daily. Our EMS program involves every aspect of business management and production. Teams representing various segments of LP's organizational structure form a communication and support network to help guide the progress of the EMS at the facilities. Top-level commitment to the program is reinforced through the Corporate Sponsor Team, while Business Sponsor teams (management level) coordinate program development throughout their respective business lines.

The LP Hines EMS Team effort included, from left: Lauri Travis, Marie Brewer, Ben Denarski, Bill Angleton, Amy Scheen and Jim Campbell.

At the plant level, the Plant Sponsor and EMS Core teams work to implement the EMS by writing Standard Operating Procedures (SOPs), organizing employee and management training, and establishing inspection and process change programs. The goal at each facility is to integrate compliance with identified environmental objectives into the daily work of every employee to ensure that all individuals take personal responsibility for their actions. Once a facility is deemed ready, the EMS Core Team at the plant level receives instruction in environmental permits and regulations specific to facility operations and training in the EMS 26-Step Process, a standardized means of program execution. Employees are also acquainted with programs designed to facilitate the rapid implementation of changes in the workplace. As training continues, the next and most essential step is to generate Standard Operating Procedures (SOPs) that outline how individual job tasks will be carried out. Working with environmental professionals, SOPs are developed by incorporating permits, regulations, LP standard practices and other job-specific criteria. The success of the program lies in matching personnel with job-specific training and safety requirements to carry out individual SOP responsibilities. Once

implementation of the 26-Step Process is complete throughout the facility, a comprehensive self-inspection program is executed to evaluate its effectiveness. SOPs are regularly updated and the overall EMS program is continuously improved. Continuous improvement includes an ongoing process, typically through the plant EMS core team, for identifying new environmental objectives and developing SOPs to accomplish those goals.

With its clear, easy-to-follow process, the EMS allows LP to enhance its environmental record while improving productivity, safety, and shareholder value. Most importantly, in taking an active role in the process, employees experience an exhilarating sense of empowerment. Not only do they realize the benefits of building upon their leadership and job skills, but the workplace is made safer and performance is enhanced.

Local communities near LP's facilities also benefit from the EMS program. Adoptions of SOPs improve environmental controls, which in turn enhance plant performance and product quality, improving long-term economic stability. Implementation of the program at many facilities often is a collaborative effort that involves local regulators, members of the local community, and other interested parties such as environmental interest groups. This is the approach being taken at the Hines facility. The following highlights demonstrate the success of the EMS program:

Environmental Awareness
The enhanced sense of environmental awareness resulting from the EMS program is leading to the development of new and innovative business practices throughout LP. Mill employees report that changes implemented through the EMS have greatly improved individual performance and consequently that of the whole facility. Knowledge of and compliance with environmental regulations is at an all-time high.

Wood Waste Recycling
As an outgrowth of the EMS program, LP's Laminated Veneer Lumber and I-Joist plant in Hines, Oregon began recycling planer shavings in early 1998. The wood "waste" material, originally disposed of at a cost to the company, is now being used in the production of other wood products such as medium density fiberboard. In February and March 1998, an estimated $12,900 was generated as a result of recycling the material rather than sending it to the local landfill. Total revenue from planner shavings is estimated at $90,000 for 1998.

Plastic Wrap Recycling
In 1999, the Hines plant EMS team identified recycling product inner wrap as a desirable environmental goal. The team worked with the LP supplier to identify recycling opportunities for the shrink-wrap used internally. The first shipment of wrap—48,000 pounds—was sent off for recycling in the fall of 1999. The Hines EMS team is now working on recycling the plastic wrap used to protect product shipments to LP customers. This could eventually involve retrieving the wrap from LP customers and sending it to one of LP's plastics plants.

This is an example of how the plant EMS team works to identify new environmental objectives that extend beyond regulatory compliance. Among longer-term projects, the Hines team is looking at the environmental practices of the plant's resin suppliers and the sustainable forest practices of all the plant suppliers of wood raw materials.

LP Hines 2000 Objectives & Targets

As part of the Environmental Management System continual improvement process, we identified the following Objectives and Targets for the year 2000:

Reduce particulate emissions from the east and west boiler fuel silos.
Our EMS Team determined that the wood dust from these units was of concern. Although visible emissions were within our DEQ air permit limits, the team felt the wood dust was impacting the environment in a manner that we could control. The maintenance department installed smaller grates over the silo vents that resulted in reduced dust emissions.

Removal of contaminated soil
LP entered the DEQ Voluntary Cleanup Program when it purchased the facility in 1997. Since then, we have been correcting the problems of past practices. One area of the site had been impacted from years of petroleum spills and leaks. The EMS team wanted to see that area cleaned up. In October 2000, we removed approximately 1,600 tons of soil and shipped it to a disposal site.

Reduce particulate emissions from the cyclones by 50%
The facility uses air-handling systems to transport sawdust and wood shavings from various manufacturing areas to several wood waste storage bins. Cyclones were used to separate the wood from the air stream where necessary. The cyclones, although meeting air permit requirements, were still emitting fine particles of wood that could be seen on the ground and in the air. The EMS team suggested that better control devices be installed and the plant management agreed. Baghouse filters were installed, reducing particulate emissions by 80% on a throughput basis.

Improve community relations
The EMS team felt that the facility should work on its involvement in the community. The facility formed a 14 member Community Advisory Committee (CAC) that meets once a quarter. The CAC discusses LPs presence in the community, environmental issues, safety issues, and other topics of concern.

In the spirit of giving back to the community LP formed a Contributions Committee. In 2000, LP sponsored several activities including an essay contest that sent four youths to the 2000 Forestry Leadership Camp.

Reduce landfill items
With landfill space at a premium, the EMS team decided resources should be spent on finding ways to reduce the amount of waste the facility sent to landfills. Several projects such as the wood-wrap recycling project and the metal shavings recycling project contributed to the reduction of landfill waste described in the environmental metrics section of this report.

LP Hines 2001 Objectives and Targets

Through review of the EMS, Objective and Targets for 2000, and the activities, services and products at the facility these Objectives and Targets were set for the year 2001.

Objective	Target	Comments
Improve community relations.	Four CAC Meetings in 2001.	
Contribute to the community and the local environment.	Participate or contribute to two activities that benefit the community and/or the environment.	
Reduce annual water consumption on a production basis.	10% reduction	Map and inventory all water consuming activities.
Reduce fugitive emissions from Truck bins.	No sawdust on the ground around the truck bins.	Increase sawdust cleanup schedule. Evaluate truck bin enclosures.
Reduce spill potential from bulk off-loading areas.	No spills in bulk off-loading areas.	Employees training, written procedures, and vendor training.
Reduce opacity exceedances from the boiler.	50% reduction	Write a startup, shutdown, and emergency plan for the boiler.
Reduction in electricity usage on a production basis.	10% reduction	Map energy usage for the site. Evaluate lighting and other electricity usage.
Move EMS towards ISO 14001 conformance.	Two EMS audits in 2001	
Reduce waste going to the landfill on a production basis.	10% reduction	

LP Hines 2000 Environmental Permit Performance

Water Discharges

Storm Water

The Hines facility maintains a DEQ permit allowing the off-site discharge of storm water. This permit contains requirements to conduct periodic sampling and inspections. The permit does not contain specific limits on the quality of the discharge but instead lists benchmarks that the facility should not exceed. Table 1 lists those benchmarks and our year 2000 sample results for each.

Waste Water Discharge

The Hines facility operates a wood-fired boiler to provide steam to its operations. This boiler is permitted to discharge blow-down water provided it meets the listed permit limits. We are required to collect monthly samples of the boiler blow-down and send them to an analytical laboratory for evaluation. In addition to the monthly samples, the boiler operators monitor the quality of the discharge on a regular and in some cases, a continuous basis. Table 2 lists the regulated pollutants, our DEQ permit limits, and our highest and lowest monthly sample results for year 2000.

Air Discharges

Our DEQ Air Contaminant Discharge Permit contains two types of emission limits: short term (monthly) and long term (annual). The types of pollutants released at the facility are summarized below. Chart 1 shows the annual permit limits compared to our actual annual emissions and Chart 2 shows our highest monthly discharge compared to our permit limit. Pollutants shown are particulate matter (PM), particulate matter of 10 microns or less (PM10), sulfur dioxide (SO2), nitrogen oxide (NOX), volatile organic compounds (VOC), and carbon monoxide (CO)

Table 1: Storm Water

Pollutant	Benchmark	Sample Result
Copper	0.1 ppm	ND
Lead	0.4 ppm	ND
Zinc	0.6 ppm	ND
pH	5.5-9.0	7.5
TSS	130 ppm	ND
Oil and Grease	10 ppm	ND
Floating Solids	None	None
Oil Sheen	None	None

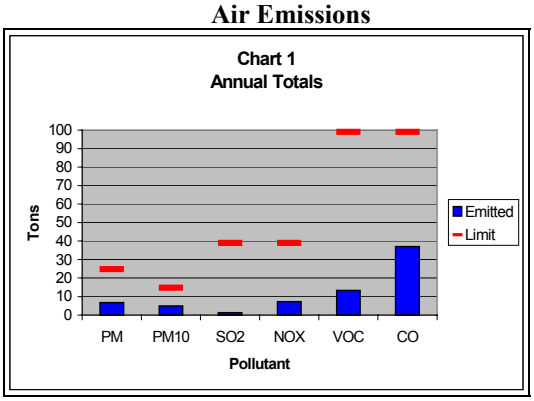
ppm: parts per million
ND: non-detect (below detection limits of prescribed US EPA sampling method)
TSS: Total Suspended Solids

Table 2: Waste Water

Pollutant	Limit	Highest	Lowest
pH	6.0-9.0	8.79	7.72
TSS	50 ppm	27 ppm	ND
Temperature	100°F.	96.4°F.	71.6
Flow	40 gpm	33 gpm	0

ND: Non-Detect gpm: gallons per minute

Air Emissions

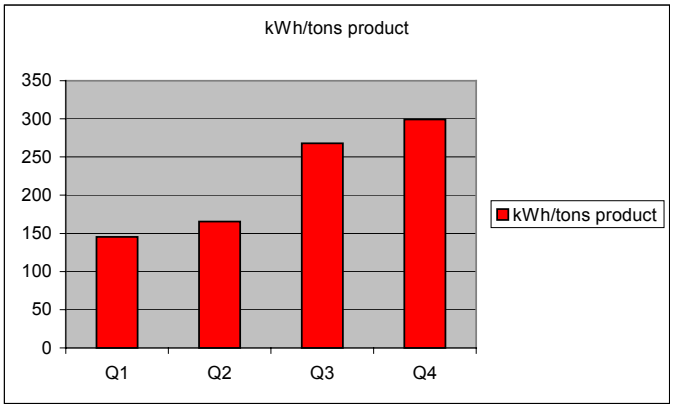


LP Hines 2000 Environmental Performance Metrics

LP Hines established these charts to help monitor and measure key characteristics of its operations and activities that can have an impact on the environment, to track performance related to the facilities objectives and targets, and to help monitor the effectiveness of the Environmental Management System for the year 2000.

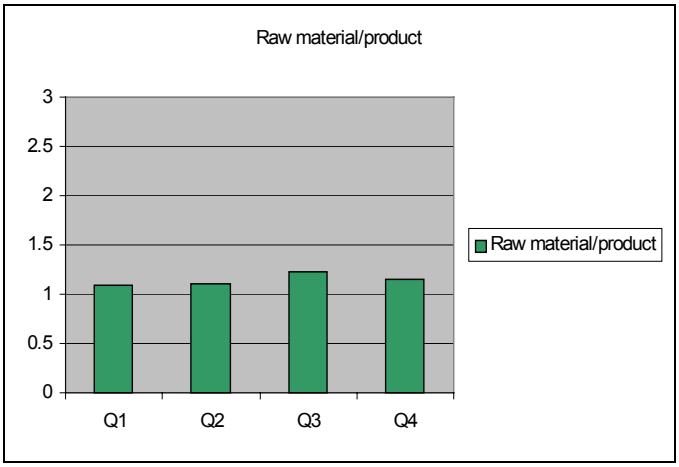
Electrical Consumption

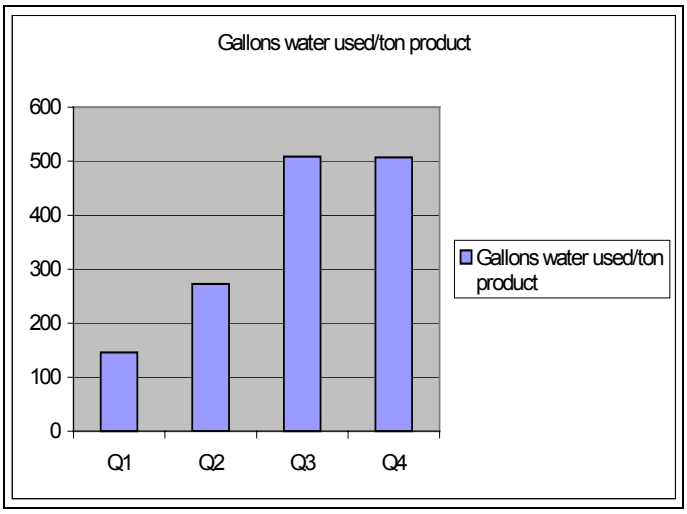
Electrical consumption at the Hines facility includes electricity used for administration and maintenance, as well as production in the Laminated Veneer Lumber (LVL) and I-Joist operations. This environmental metric is normalized to production data to provide a relative efficiency measure. Large amounts of electicity are required to maintain the facility even when operations are down. Significant production cutbacks began in late second quarter. In addition to the production curtailments in the third and fourth quarters, seasonal effects on electrical consumption are also evident.



Raw Material Conversion Rates

The raw material conversion metric is an indication of how well the facility utilizes raw materials. The major raw materials that are used in the production of LVL and I-Joists are wood veneers, Oriented Strand Board (OSB), and adhesives. The raw material conversion rate is calculated by adding the weight of the above listed raw materials and dividing that by the weight of final product produced for customers or inventory. This metric shows that, on average for the year, the facility used 2,288 pounds of raw material to make 2000 pounds of final product. A significant portion of the 288 pounds of raw material not incorporated into our final products is recycled into secondary products. This is accounted for in the recycling metric.





Water Usage

The wise use of our water resources is a major concern at our facility. We recognize the need to measure and manage our use of water in our production process. The major uses for water in our facility are for equipment cooling and boiler operations. Several water conservation projects were completed in 2000. These projects included the installation of heat exchangers on several pieces of equipment that reduced water consumption by up to 500-gallons per hour. This metric is normalized to production data, which explains a portion of the increased water usage compared to production that can be seen in the second half of the year. Additionally, an underground water line ruptured, resulting in a significant amount of water being released.

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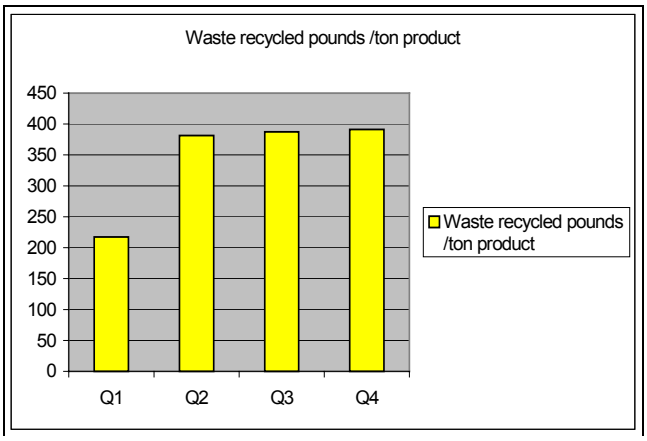
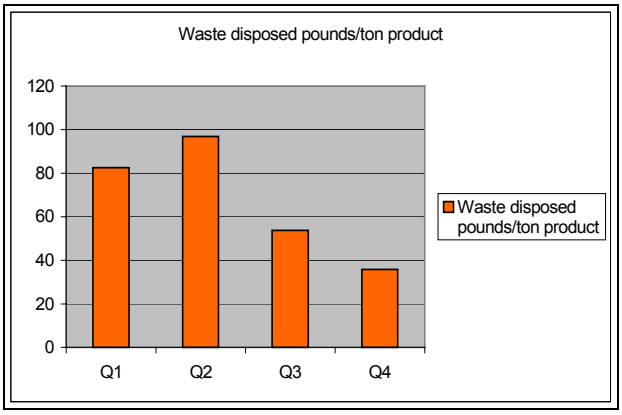
Waste Recycling

The wise reuse of material is a major concern for our facility. If we can't utilize a portion of our raw material in our products, we look for alternative uses for the material. Likewise, when we generate a waste material from our operations, we look for alternative uses for that material. A major component of our waste stream is wood material. By properly handling, separating and marketing this wood waste material, we have turned it into a raw material that is in demand at other locations. In 2000 Hines recycled over 20 million pounds of waste product.



Landfilled Waste

With landfills filling up throughout our state, including Harney County, LP is committed to doing what it takes to minimize our impact. Our commitment to recycling our waste materials is evident in our reduction of waste going to landfills. Quarter to quarter, we have averaged a 20% reduction of tons of waste going to the landfill compared to tons of final products produced. This reduction has kept almost 1 million pounds of waste out of our landfills.



EMS Deficiencies and Corrective Procedures

All environmental incidents at LP Hines are recorded on an incident report form and kept on file. The Environmental Management System (EMS) Team works with plant employees and managers to identify and correct any deficiencies in EMS procedures that may have contributed to specific incidents.

In the year 2000 LP Hines identified 15 internal deficiencies. Ten of these were accidental releases on site. All of these were immediately contained and cleaned up. Five deficiencies were exceedances of visible air emissions and particulate air emissions. All the incidents were taken care of immediately. If needed, corrective action plans were then put in place to modify procedures and to train personnel on the new procedures. No regulatory violations occurred from these internal releases.

Year 2000 Environmental Compliance Summary

LP Hines is committed to full compliance with federal, state and local environmental regulations and works with regulatory agencies and the local community to achieve this important goal. During 2000, LP Hines received no notices of violation from a regulatory agency. During the year we performed regular in-plant self-audits to detect and correct regulatory and internal environmental policy problems. Our in-plant efforts were complemented by comprehensive internal audits conducted by LP environmental management from other outside the Hines facility.

The following sections of this report cover in detail the year 2000 environmental operating information for LP Hines permits from the Oregon Department of Environmental Quality (DEQ).

Year 2000 Annual Reporting information is provided for:

- Air Contaminant Discharge Permit No. 13-0016
- NPDES General Permit No. 500-J File No. 108558
- NPDES Storm Water Discharge Permit No. 1200-Z

Note: "NPDES" in our DEQ water quality permits stands for "National Pollution Discharge Elimination System"

LP Hines

Air Contaminant Discharge Permit No. 13-0016

Highest Monthly Emissions

Month	Pollutant	Tons	Short-Term Plant Site Limits
January	PM (Particulate Matter)	0.88	2.1 Tons
January	PM10 (Particulate Matter in 10 microns or less)	0.66	2.1
February	SO2 (Sulfur Dioxide)	0.28	3.3
January	NOX (Nitrogen Oxide)	0.93	3.3
January	CO (Carbon Dioxide)	4.74	8.2
January	VOC (Volatile Organic Compounds)	1.96	8.2

Annual Emission Totals

Pollutant	Tons	Annual Plant Site Emission Limits (Tons)
PM	6.74	24.8
PM10	4.95	14.8
SO2	1.30	39
NOx	7.27	39
CO	36.95	99
VOC	13.25	99

Planned and Unplanned Excess Emissions

Date	Time	Duration	Description	DEQ Log Number
3/23/2000	1009	6-minutes	Fuel silo opacity exceedance.	ERB-00053
4/10/2000	1300	30-minutes	Baghouse caught fire.	ERB-00060
4/21/2000	0900	105-minutes	Boiler Opacity Exceedance.	ERB-00061
6/15/2000	1000	40-minutes	Boiler Opacity Exceedance	ERB-00084
6/21/2000	1745	30-minutes	Boiler Opacity Exceedance	ERB-00086
8/14/2000	0900	25-minutes	Boiler Opacity Exceedance.	ERB-00134

Permanent changes made in the plant process or production that would affect air contaminant emissions.

- An additional LVL line was installed and became operational on 2/27/00. This new line included pneumatic wood waste handling systems, adhesive storage and delivery systems, a radio frequency press, a propane-fired thermal oil heater and a baghouse controlled truck bin.

- A 30-HP furnace was installed on 1/24/00 to add heat to the I-Joist curing chamber.
- Two cyclones were replaced on 1/5/2000 with baghouses.

List of all major maintenance performed on air pollution control equipment.

- LP-6 bags changed on 1-22-2000 and 4-24-2000.
- LP-2 bags changed on 4-10-2000.

LP Hines

NPDES General Permit No. 500-J

File No. 108558

Boiler Blowdown Monitoring Data

Date	Time	pH	TSS (mg/l)	Temp (F)	Flow (gpm)
1/25/2000	0730	7.79	5	78.4	24
2/22/2000	0730	8.29	ND	78.2	23
3/21/2000	0915	8.33	ND	76.5	18
4/24/2000	0730	7.75	27	72.6	24
5/1/2000	Down	Down	Down	Down	Down
6/19/2000	0730	8.79	ND	71.6	28
7/25/2000	0705	8.6	9	96.4	24
8/21/2000	0856	7.85	13	83.6	13
9/18/2000	0823	7.72	ND	71.8	33
10/24/2000	0814	8.36	ND	79.4	8
11/20/2000	0845	8.06	ND	74.3	14
12/18/2000	0820	7.78	3	83.2	0

ND = Non-detect

Waste Discharge Limitations for Surface Water Discharge

Parameters	Limitations-Daily Maximum
Flow	40 gallons per minute (gpm)
Total Suspended Solids (TSS)	50 mg/l
Temperature	100 degrees Fahrenheit
pH	Shall be in the range of 6.0-9.0 S.U.

LP Hines

NPDES Storm Water Discharge Permit

No. 1200-Z

Storm Water Monitoring Results

Sample Collection Date	10/28/99
Sample Collection Time	0915
Season	Fall
Total Copper	ND
Total Lead	ND
Total Zinc	.000017 mg/l
pH	7.28
Total Suspended Solids	9 mg/l
Oil/Grease	5 mg/l
Floating Solids	None
Oil/Grease Sheen	None

Sample Collection Date	5/8/2000
Sample Collection Time	0850
Season	Spring
Total Copper	ND
Total Lead	ND
Total Zinc	ND
pH	7.48
Total Suspended Solids	ND
Oil/Grease	ND
Floating Solids	None
Oil/Grease Sheen	None

ND = Non-detect

Benchmarks

Parameter	Benchmark
Total Copper	0.1 mg/l
Total Lead	0.4 mg/l
Total Zinc	0.6 mg/l
pH	5.5-9.0 S.U.
Total Suspended Solids	130 mg/l
Floating Solids (associated with industrial activities)	No visible discharge
Oil & Grease Sheen	No visible sheen