

Your Company Or Logo

Waste Minimization Report
&
Recommendations
For
Your Customer's Name

- Page 1 - 2 Preliminary Survey
- Page 3 - 4 Plant Site Report
- Page 5 Waste-Minimization Analysis & Recommendations
- Page 6 Waste-Minimization Advantages & Benefits
- Page 7 Waste-Minimization Reclamation Report
- Page 8 Final Recommendations & Action Line
- Page 9 - 11 Graphics

**Your Company
Preliminary Waste Minimization
Survey Questionnaire**

One of the key elements of any facilities' Environmental Programming is Waste Minimization. There are many kinds of waste which you might seek to minimize. We would like to help you concentrate on two major areas where we believe we can help you save time and money.

1. Sorbents

a. For maintenance applications.

(Any application where the capture of a liquid is done on a routine basis, usually because of some ongoing process in the plant that releases oil, solvents or other liquids that can not be left unattended to cause safety problems or to drain into monitored sewage systems by Department of Natural Resources .)

b. For spills of hazardous liquids.

(Usually EPA liquids that must be contained and kept from reaching people, equipment or Department of Natural Resources monitored sewage systems.)

2. Secondary Containment

All the various types of containers that may be required to properly handle and meet current and emerging methods for storing, containing and moving (DOT Regulations) hazardous materials of all types.

Our goal will be to:

1. Produce cost savings from clean-up, labor and materials
2. Produce cost savings from disposal process
3. Provide the opportunity for better housekeeping and a safer environment

To be able to give you a proposal of how we can help you to reduce your waste and the cost thereof, we need some basic information. The following Survey will provide the necessary information for us to evaluate and make a full proposal.

	Yes	No	Quantity/ Month (If Known)
1. Are you currently using the following? Check all that apply			
a. Clay granular (kitty liter type) materials	_____	_____	_____
b. Sorbent sheets	_____	_____	_____
c. Sorbent dykes or booms	_____	_____	_____
d. Sorbent rolls that are cut as needed	_____	_____	_____
e. Sorbent rugs or carpets	_____	_____	_____
2. Do you store significant quantities of these materials in your facilities?	_____	_____	
2. Do you know what these sorbents are made of?	_____	_____	
3. Do you know the difference in the various materials			

- that are use to make sorbents and their capacities? ___ ___
4. Have you done a plant survey to identify where you need sorbents and liquids control? ___ ___
5. Which of the following liquids/chemical groups do you have?
Check all that apply
- ___ Acids ___ Caustics ___ Solvents
- ___ Cutting Oils ___ Lube Oils ___ Maintenance Chemicals
- ___ Flammables ___ Machine Coolants ___ Mold Release Fluids
- ___ Other (Specify) _____

6. Do you have a need to reclaim leaked liquids?
(Eg liquids from production runs that would best be returned to production) ___ ___
7. Do you have a Haz-Mat team? ___ ___
8. Are they trained under Osha specifications? ___ ___
9. Do they clean up all spills or only hazardous ones? ___All ___Hazardous
10. Does the Maintenance Department handle your spills? ___ ___
11. Do you have an Environmental Project Manager? ___ ___
12. Have you identified all the various containers that are being used to contain hazardous materials in your facilities? ___ ___
13. Do you have an outdoor storage area for drums with waste in them? ___ ___
14. Do you store incoming chemicals outside of the plant? ___ ___
15. Do you have a waste hauler under contract? ___ ___
16. Does your waste hauler supply DOT approved containers for collection? ___ ___
17. Have you made any contact with the Department of Natural Resources or EPA of your state? ___ ___

When you have completed this questionnaire, please contact _____ at **Your Company & Phone**. We are now ready to arrange for and conduct you on-site survey.

Waste Minimazation Survey

Company _____

Date ___/___/___

Page ___ of ___

Contact _____

Phone _____

Location _____

Time _____

Sorbents:

- a. Clay granular (kitty liter) materials _____
- b. Sorbent sheets _____
- c. Sorbent dykes or booms _____
- d. Sorbent rolls that are cut _____
- e. Drip pans _____
- f. Other _____

Materials Sorbed/Collected

_____ Acids	_____ Caustics	_____ Solvents
_____ Cutting Oils	_____ Lube Oils	_____ Maint Chemicals
_____ Flammables	_____ Machine Coolants	
_____ Other (Specify)	_____	_____

Notes: _____



Location _____

Time _____

Sorbents:

- a. Clay granular (kitty liter) materials _____
- b. Sorbent sheets _____
- c. Sorbent dykes or booms _____
- d. Sorbent rolls that are cut _____
- e. Drip pans _____
- f. Other _____

Materials Sorbed/Collected

_____ Acids	_____ Caustics	_____ Solvents
_____ Cutting Oils	_____ Lube Oils	_____ Maint Chemicals
_____ Flammables	_____ Machine Coolants	
_____ Other (Specify)	_____	_____

Notes: _____

(Your Customer's Name)
Plant Site Report

Plant Location	Conditions	Sorbent Used
EE 33, 25, 20 Body Shop	Throughout this area there were a number of customized drip pans. These are primarily on the floor, but we did see one built on a riser. They are as long as 30' in some areas. They catch the liquids coming from the body as it emerges from treatment areas. The pans are meant to have the liquids vacuumed out of them. Currently, many of the pans leak and are covered with clay granules or Speedi Dri. Because of the poor sorbency capabilities of clay, liquid is escaping in some of these areas. The clay is being tracked around the area by worker traffic.	Clay Granules and Speedi Dri
W 26 Body Shop	This area had pile after of pile of either clay granules or Speedi Dri in, on, under and around equipment and machinery. We were informed that this was the practice and that the apparent over use in many areas there was because the clay or Speedi Dri was not applied and worked to be effective.	Clay Granules and Speedi Dri
Maintenance Shop	Most machinery was dry and clean. There were a few machines that could use sorbents. One had some blue booms and another had a yellow boom.	Blue and yellow sorbent booms.
Tractor Repair Shop	This area seemed to be under good control except for the occasional piece of equipment that was leaking liquids onto the floor.	None was immediately visible but I would venture to say they use clay most of all.
D Conveyor Paint Dpt.	An overhead drip cage for the production drive chain is lined with a paper type sorbent. We did not ascertain the change rate but suspect 2 to 3 times a year	A type of paper that looked like it would not hold much oil at all.
V 50 Transfer Paint DD 65 Exit Interior EE 63, EE 55, etc (Frog Pond Area)	The production line drive chains are all lubricated here. Different areas and different lubricators sometimes created different sorbent type needs. This is probably the largest sorbent use area in the plant and is where we need the best solutions for cutting both the amount of waste and the labor involved in maintaining it.	Mostly the Blue Socks and in some areas large quantities of clay and/or Speedi Dry, and in one area there was a felt type material being used as a pad.
ELPO Paint	There didn't seem to be many sorbents used in this area. We only walked through it quickly. We did observe that there were a lot of water type drips coming from booths and overheads. These may not need to be controlled.	Did not see any sorbents in this area.
Drum Pad	Clean area, well maintained. We did not go into the storage area. The spill response truck seemed to not have some of the essential sorbents and drums needed to respond to a significant spill. These materials might have been stored elsewhere. Clay was being used to solidify hazwaste. As best as could be determined, all of the drum pallets would not meet CFR for storage of hazardous waste.	The only sorbents evident was clay.

Your Customer
Plant Site Report

Plant Location

Conditions

Sorbent Used

Power Plant

Gordon Hoffman indicated that they did not have a lot of need for sorbents. His needs are filled from whatever is available at the plant. He uses booms for the settlement pond.

Blue socks, a yellow sock, some clay and the large pond booms.

Waste Minimization Analysis & Recommendations

Plant Location	Recommendations	Advantages & Benefits
EE 33, 25, 20 Body Shop	<p>Use <i>(Your Product)</i> General Purpose Mini-Booms and/or <i>(Your Product)</i> Universal Sorbents. The booms have the capacity to absorb 50% more.</p> <p>Another possible solution to improving these areas would be the use of sheets or rolls of Universal Sorbent and wringing out and reusing the sorbents.</p>	Advantages of this recommendation. #1,2,3,4.
W 26 Body Shop	<p>Use <i>(Your Product)</i> Oil Only Maintenance Pads or Booms, or General Purpose Mini-Booms if water is to be absorbed also.</p>	Advantages of this recommendation. #1,2,3,4.
Maintenance Shop	<p>Use <i>(Your Product)</i> Oil or General Purpose pads and booms</p>	Advantages of this recommendation #1,2,5.
Tractor Repair Shop	<p>Extensive use of <i>(Your Product)</i> Oil Only pads with The Extractor would bring more efficient control when put under damaged and broken machinery on arrival and during wait cycle.</p>	Advantages of this recommendation. #1,2,3,4.
D Conveyor Paint Dpt.	<p>Use <i>(Your Product)</i> roll sorbent. We can arrange to have bulk rolls cut to the width we want if necessary.</p>	Advantages of this recommendation. #1,2,3,4.
V 50 Transfer Paint DD 65 Exit Interior EE 63, EE 55, etc (Frog Pond Area)	<p>Replace all the currently used sorbents in these areas with <i>(Your Product)</i> Oil Only booms, pads or rolls. There were some places where there were multiple booms used in a very inefficient way. The use of pads or cut pieces from rolls would provide much more effective sorbency with the possibility to further reduce cost dramatically.</p>	Advantages of this recommendation. #1,2,3,4,5.
ELPO Paint	<p>Determine if there is a need to control or absorb the drips in this area.</p>	Advantages of this recommendation. #1,2,3,4,5.
Drum Pad	<p>Immediately purchase an adequate supply of <i>(Your Product)</i> Universal Sorbent booms, pads and rolls to take care of the worst case. Secure and use drum spill pallets that meet EPA regs as necessary. Secure a few Poly Overpack drums to handle the worst case need. Replace use of clay with <i>(Your Product)</i> Sorbent for solidification. Replace clay with <i>(Your Product)</i> Universal Sorbents.</p>	Advantages of this recommendation. #1,2,3,4,5.
Power Plant	<p>Use <i>(Your Product)</i> Oil Only Double booms for the next change of the pond and replace clay with Mini-booms and or pads.</p>	

Waste Minimization Program Advantages & Benefits

#1. Cost Savings From Clean Up

Savings in the labor that is expended to maintain or clean up leaks and spills produces a net gain of efficiency for the plant. Direct saving come from less trips to sites and less work at clean up sites.

#2. Cost Savings From Disposal - Waste Minimization

Because of your current cost as well as the ever escalating cost of disposing of Hazardous Waste, this benefit is most sought after. The immediate and direct benefits are shown in the attached graphics.

#3. Better Housekeeping

The benefits of Better Housekeeping are, 1. Cleaner looking areas, 2. Safer areas from slips and falls, as well as less contact with non desirable liquids, 3. Clay granules and Oil Dry material have the potential of being tracked all over the plant.

#4. Reduces Dusts Created By Granular Sorbents

It is known that the clay in these kinds of sorbents can contribute to premature ware on machinery it is used around. It is especially bad for computer based equipment we would assume that if it contributed to any airborne paint surface defects, that it would be considered particularly expensive to have to repaint products.

#5 Cost Savings From Price Advantage

Because of the pricing we are able to offer or Key Customers, we feel that we may be able to save you money on the recommended products that do more and cost less.

"Reclamation" A Waste Minimization & Money Saving Opportunity

Another possible way to further reduce waste and either return absorbed fluids for reuse, or, return absorbed fluids to the liquid waste stream is to reclaim them.

Based on an EPA Waste Minimization Study*, completed in late 1991, you can expect to save as much as 56% to 79% in the cost of absorbing and disposing of your oil and chemical liquid waste. Since you sell burnable liquids, this would not only cut down on the actual waste to be processed through the solid waste stream, it might even make a positive contribution.

Realizing that this requires different work practices, our recommendation would be that we take this process and impliment it starting with a new crew of 2 persons to determine the best process for your plant.

* Report Contract # 68-CO-003, Work Assignment 0-06 to Battelle entitled, "A Fluid Sorbent Recycling Device For Industrial Fluid Users Technology Evaluation Report". Report is available from EPA.

The EXTRACTOR™

The Ultimate in Waste Minimization



Save Thousands of Dollars Yearly in Waste Disposal Costs!!

- Instant 80% reduction in disposal and purchase costs.¹
- Mounts to **all** 55-gallon, closed-head drums. Drains directly into bung. Anti-Spill Valve prevents drum overfilling.
- **Both** rollers are gear driven for effortless feeding and cranking. Even oily sorbents are started easily and feed through smoothly.
- Adjustable, grid work shelf. Adjustable roller pressure. Heavy-gauge construction. Non-sparking components.
- Why dispose of sorbents after just one use? THE EXTRACTOR enables shop towels, pads and booms to be used over and over again.

**DON'T THROW DOLLARS AWAY!
WRING OUT FLUIDS AND WRING
MAXIMUM VALUE FROM YOUR SORBENTS.**

¹ Testing shows that polypropylene sorbents may be easily wrung out six or more times, some more than two dozen times. Divide your sorbent costs (disposal and purchase) by six to realize the savings available with THE EXTRACTOR. (Sorbent supplier recommendations available.)

PART # — EX 490

Final Conclusions & Recommended Action Line

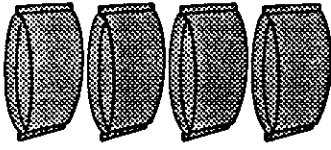
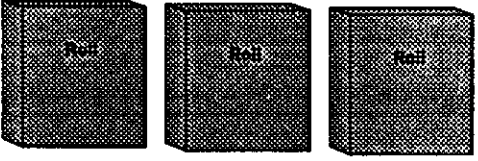
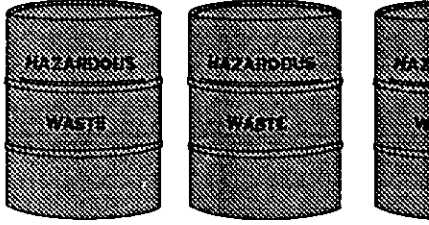
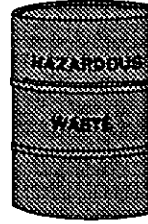


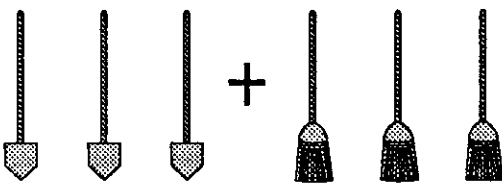
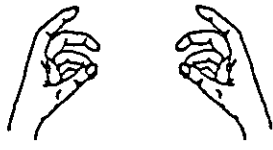
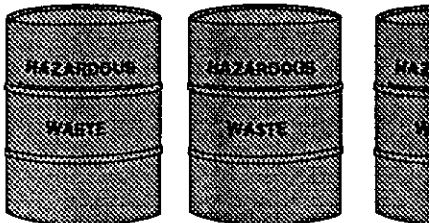
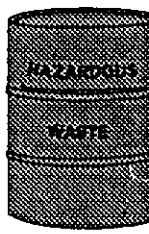
I feel we have shown that substantial savings can be achieved in several ways.

- 1. Reduction of solid waste and therefore a reduction in cost of disposal.**
- 2. Immediate improvement in housekeeping and savings in labor that will have to be identified and training given.**
- 3. Reduction of dust from clay sorbents.**
- 4. Reduction of barrels used in solid waste disposal.**
- 5. Actual reduction of unit cost on current sock sorbent with substantially more efficiency in replacement product.**

Action Line

- 1. Immediately replace the sock sorbent with our new socks**
- 2. Set up a full demonstration and explanation of all these products and recommendations with the plant clean-up and response team to decide which new sorbents will be used where. Start using them as soon as possible.**
- 3. Identify how and when clay sorbents can be eliminated. Work with plant team to provide orientation to accomplish this goal.**

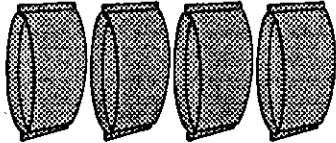
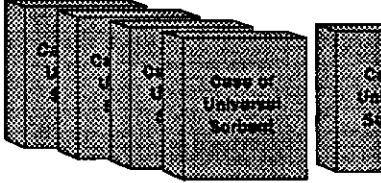
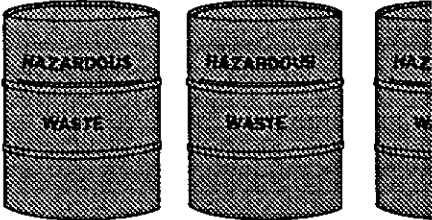
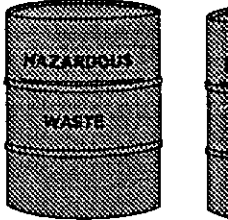


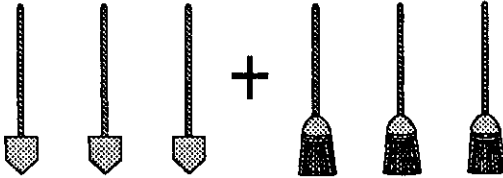

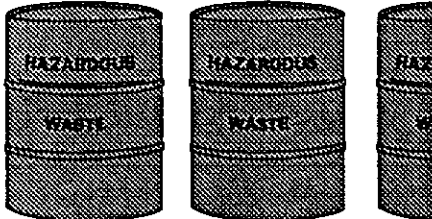
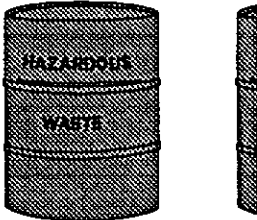
The Cost of 55 Gallons of Absorbed Fluids

	Clay Granules	Rolls
Sorbent Needs		
Cost	<p>*Basic Calculations: Clay cost per gal sorbed = \$1.87 $\\$1.87 \times 55 \text{ gal.} = \\103.00</p>	<p>*Basic Calculations: Cost per gal sorbed = \$2.73 $\\$2.73 \times 55 = \\150.15</p>
Containers Needed for Disposal		
Cost	Requires 2.3 drums @ \$25.00 = \$57.50	Requires .92 drum @ \$25.00 = \$23.00
Labor & Time		
Cost	Cost to be factored in	Cost to be factored in
Materials		
Cost	Cost to be factored in	Cost to be factored in
Disposal		
Cost	Requires 2.3 Drums @ \$615.00/drum = \$1414.50	Requires .92 Drums @ \$615.00 = \$565.80
Total	\$1575.00	\$738.95

Cost Reduction = 53%

Waste Reduction = 60%

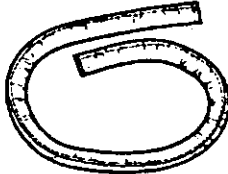
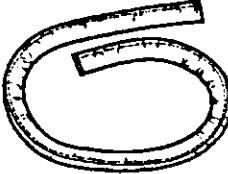
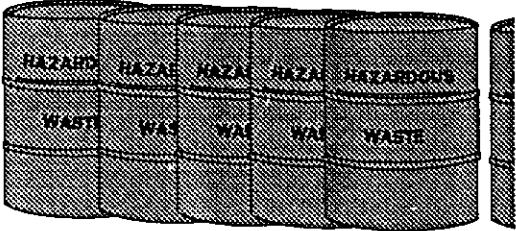
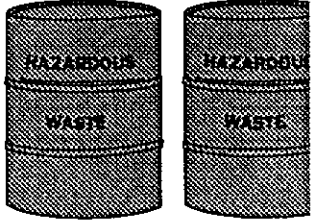


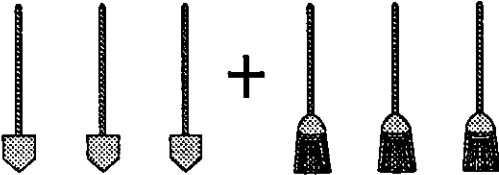
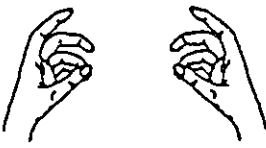
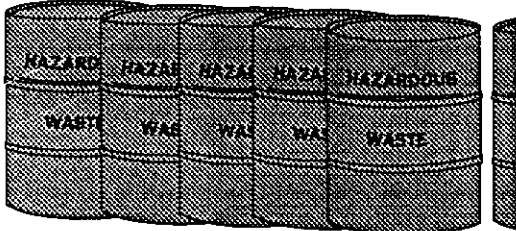
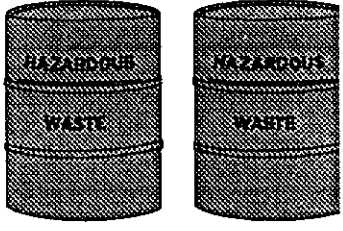
The Cost of 55 Gallons of Absorbed Fluids

	Clay Granules	Universal Sorbent
Sorbent Needs		
Cost	<p>*Basic Calculations: Clay cost per gal sorbed = \$1.87 $\\$1.87 \times 55 \text{ gal.} = \\103.00</p>	<p>*Basic Calculations: Pads cost per gal sorbed = \$6.06 $\\$6.06 \times 55 = \\333.00</p>
Containers Needed for Disposal		
Cost	Requires 2.3 drums @ \$25.00 = \$57.50	Requires 1.1 drums @ \$25.00 = \$27.50
Labor & Time		
Cost	Cost to be factored in	Cost to be factored in
Materials		
Cost	Cost to be factored in	Cost to be factored in
Disposal		
Cost	Requires 2.3 Drums @ \$615.00/drum = \$1414.50	Requires 1.1 Drums @ \$615.00 = \$676.50
Total	\$1575.00	\$1037.00

Cost Reduction = 34%

Waste Reduction = 52%

The Cost of 55 Gallons of Absorbed Fluids

	Moltan Blue Stock	Boom
Sorbent Needs		
Cost	<p>*Basic Calculations: Cost per gal sorbed = \$16.03 \$16.03 x 55 gal. = \$881.65</p>	<p>*Basic Calculations: Cost per gal sorbed = \$3.32 \$3.32 x 55 = \$182.60</p>
Containers Needed for Disposal		
Cost	Requires 5.2 drums @ \$25.00 = \$130.00	Requires 1.85 drums @ \$25.00 = \$46.25
Labor & Time		
Cost	Cost to be factored in	Cost to be factored in
Materials		
Cost	Cost to be factored in	Cost to be factored in
Disposal		
Cost	Requires 5.2 Drums @ \$615.00/drum = \$3198.00	Requires 1.85 Drums @ \$615.00 = \$1137.75
Total	\$4209.65	\$1366.60

Cost Reduction = 67.5%

Waste Reduction = 64.4%