FILTER SOLUTIONS INC

649 Enfield Road, Burlington, Ontario L7T 2X9 Toll Free: 877-352-2301 Fax: 905-637-3031 info@filtersolutions.com www.filtersolutions.com

CONSIDERATION FOR SELECTING THE RIGHT HOUSING AND ELEMENT

INITIAL COST	
FLOW RATE	The flow rate will determine the size of the housing required
HOUSING PRICE	The size and type of filter housing will determine the price of the housing
HOUSING SIZE	The housing size is based on the flow rate of the process stream
THE NUMBER OF ELEMENTS REQUIRED	The number of elements required is directly associated with the size of the housing and the flow rate
PRICE PER ELEMENT	The price per element determines the total cost of replacement per every change out
DIRT LOADING CAPACITY PER ELEMENT	The dirt loading capacity per element determines the frequency of change out required
NOMINAL OR ABSOLUTE RATINGS	Depending on the filter efficiency one wishes to acquire, a nominal or absolute ratings must be determined
CHANGEOUT TIME REQUIRED	The total dirt loading capacity will establish the amount of change out required at a given time
OPERATING COST	
LABOUR COST FOR CHANGE OUT	The labour cost associated with every change out
DISPOSAL COST	The disposal cost is based on the jurisdiction and type of waste (hazardous/non hazardous) being disposed

BAG, CARTRIDGE AND HIGH FLOW COMPARISON

	FLOW RATE	HOUSING		ELEMENT			DIRT LOADING		
	GPM	HOUSING DIA	*HOUSING PRICE RATOI	# OF ELEMENT	COST PER UNIT	***TOTAL COST	DIRT LOADING PER ELEMENT	TOTAL DIRT LOADING CAPACITY	**CHANGEOUT TIME
BAG	300	18"	1.5	3 (P2)	$5	$15.00	1 LB	3 LBS	
CARTRIDGE	300	16"	2	24 (3H)	$10	$240.00	1 LB	24 LBS	
HIGH FLOW	300	8"	1	1 (660HF)	$300	$300.00	20 LBS	20 LBS	

*All material of contruction is based on 316 Stainless Steel and pricing is based on NPT's general pricing

**Change out requirement is based on fluid contamination @ 10 ppm

***Element unit price is based on NPT's general pricing

FILTRATION COSST EFFICIENCY

Filtration Cost Efficiency is based on the direct cost, indirect cost and total cost with removing one pound of solids from a process stream, disregarding equipment depreciation. Direct cost is the price of the filter element (P) and the indirect cost is the labor price during change out operation and the cost for disposal of the filtered waste. The lowest "E" value represents the lowest total cost of filtration.

$$E = P/H + L/H + D/H$$

Filter price and dirt holding capacity are key components in operating cost. The association between filter price and dirt holding capacity can be described by the formula Alpha Factor.

E = FILTRATION COST EFFICIENCY
H = DIRT HOLDING CAPACITY IN POUNDS
L = LABOR COST PER FILTER ELEMENT
P = FILTER ELEMENT PRICE
D = DISPOSAL COST PER FILTER ELEMENT

ALPHA FACTOR (A) = FILTER ELEMENT PRICE (P) / DIRTHOLDING CAPACITY (H)

$$E = A + (L+D)/H$$

The indirect costs shown in the equation are reduced as the dirt holding capacity of the filter increases. Therefore, the Alpha Factor becomes the dominant number in the equation. The lowest Alpha Factor results in the lowest filtration cost