

## Title: Crusher Cabin Exposed to High Cement Dust Concentrations, Quebec, Canada

*Summary* : High Respirable dust concentrations in crusher cabin causes HVAC evaporator core to be cleaned weekly. Air quality in cabin is highly contaminated with rock dust. Results after 1,120 hours, no HVAC breakdowns or clean outs, air quality dramatically improved. Operator very happy with improved air quality in cab.

### Company Information

Company Type:	Quarry, Crushing, Construction
Location:	Boucherville, Quebec

### Test Criteria

Brief Statement of Problem:	Health Risk, High HVAC Maintenance			
What would constitute a successful test completion?	Dust free environment for extend period of time			
Environment(s):	x	Humid	x	Dry Dust
		Muddy		Mixed Debris
		Heavy Debris		Snow
		Extreme Heat	x	Extreme Cold
Other Environment:				
Application:	x	Mining	x	Construction
		Agriculture		Forestry
		Waste Industry - Landfill		Waste Industry - Recycling
		Waste Industry - Transfer Station		
Other Application:				
Notes:				

### Machine Stats: Before RESPA Installation

Manufacturer:	Custom built crusher cab
Model:	
Precleaning/Filtration Equipment Currently Installed:	No Fresh Air filter
Fresh-air Filter Replacement Interval:	
Recirculation Filter Replacement Interval:	Screen filter on HVAC unit
HVAC Breakdown/Repair Frequency:	Evaporator often clogged, must change HVAC system at least once per season.
Cost of HVAC Repairs and Machine Downtime:	Operator must unblock evaporator every week.
Maintenance Includes Blowing Out Filter:	Yes
Operator's Comments on Cab Air Quality:	Cab air quality is extremely dusty and hard to work in.
Notes:	

## RESPA Installation

Total Hours Spent on Installation:	4 Hours		
Machine Hours:			
A/C Serviced:	no		
Initial Cabin Pressure:			
Cabin Sealing Required:	yes		
Cabin Pressure After Sealing:	0.4" W.G. (100 Pascal)		
Installation Location:		Roof	Hood
	x	Side of Cab	
Notes:	RESPA-CF (REV0001) Fresh Air system with Electronic Pressure Monitor and RESPA-CFX (REV0002) Recirculated Air system were installed. The recirculation unit was installed inside the cab, drawing air from the lowest point and exhausting towards the operator's face		

## Performance Results

### Test Period 1

Machine Hours:	160		
Cabin Pressure:	0.4" W.G. (100 Pascal)		
A/C Service Required:		Yes	x No
<i>If Yes, describe service:</i>			
Condition of RESPA unit(s):	Good		
Operator's Comments:	So far we are satisfied; the CFX is a little noisy in the cab, but we would rather keep it inside.		

### Test Period 2

Machine Hours:	1280		
Cabin Pressure:	0.3" W.G. (75 Pascal)		
A/C Service Required:		Yes	x No
<i>If Yes, describe service:</i>			
Condition of RESPA unit(s):	Damaged due to transport and repaired		
Operator's Comments:	The system is fantastic; we have seen drastic improvements. The A/C (residential unit) is still running perfect; usually we would have needed to swap the entire system. We changed the filter once because we lost cabin pressure, but it was not because the filter was blocked; we needed to repair the cab. The interior of the cab remains clean, we never needed to clean the evaporator. The RESPA CFX is a little noisy inside but we prefer having it out of harm's way. Our crushing division has an annual pre-season meeting and I will be recommending the RESPA cab air system to our committee.		

## Machine Stats: After RESPA Installation

Fresh-Air Filter Replacement Interval:	1
Recirculation Filter Replacement Interval:	1
Machine Maintenance Interval:	None to the Cab
HVAC Breakdown/Repair Frequency:	No HVAC break down during test period
Cost of HVAC Repairs and Machine Downtime:	None to the Cab
Operator Comments on Air Quality:	Air quality is excellent, but the CFX installed inside needs to be modified and installed outside due to the Noise

## Testimonials

Job Title:	Mobile Crusher Manager
Comments on Product Performance:	<p>Previously we had to scrape off concrete from the evaporator, the HVAC unit would never have made it past one season. The HVAC unit is a residential type unit and not made for this environment, now that we have installed the RESPA System, the HVAC system is ready for the next season. Also, air quality in the cab is great. I did not expect the system to give this level of performance, the system has done an amazing job of keeping the dirt out of the cab. I am very satisfied and will recommend this system for our other three mobile crushers.</p>

## Images

