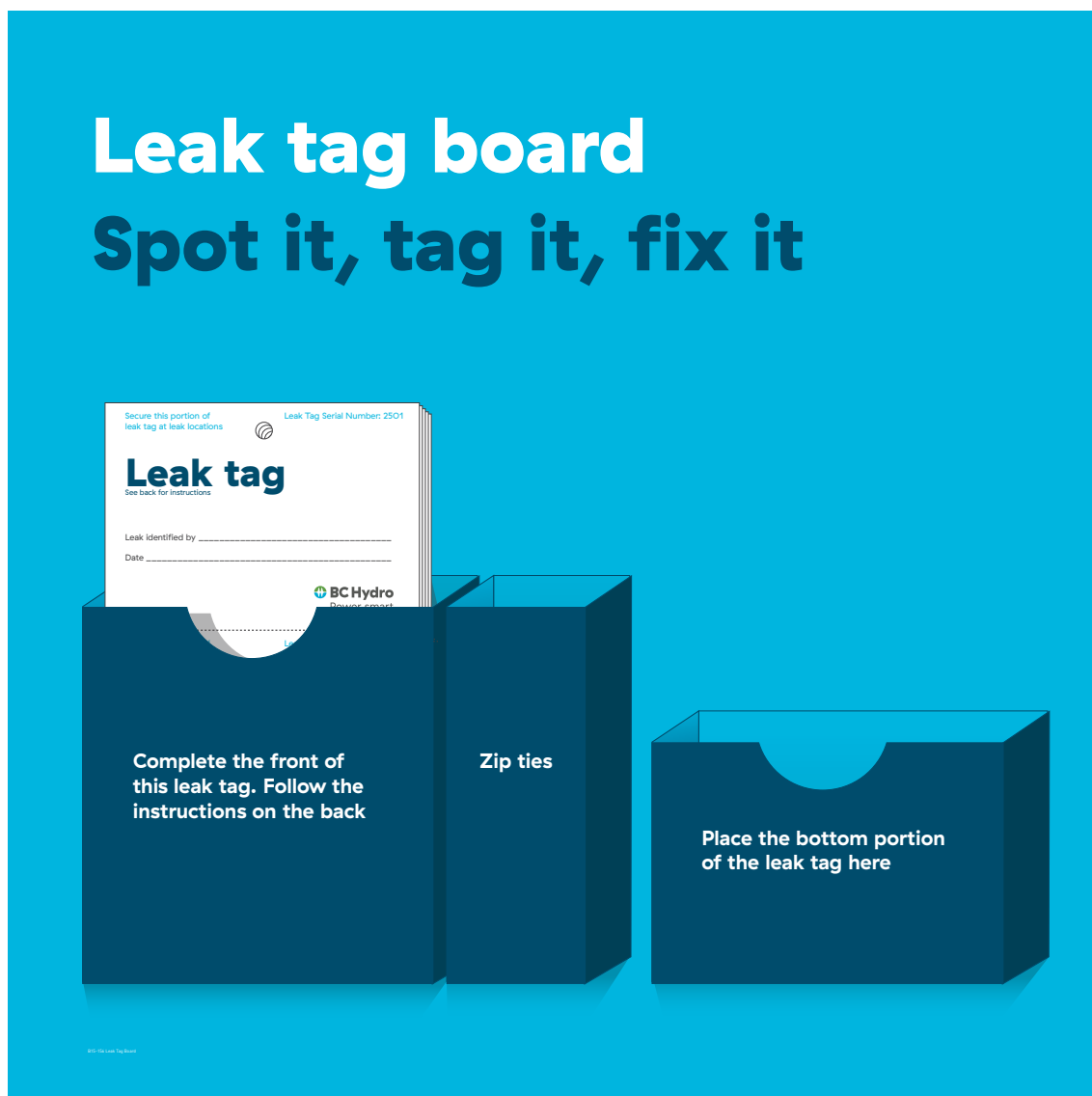


A guide to your leak tag board

Identifying wasted energy in your facility

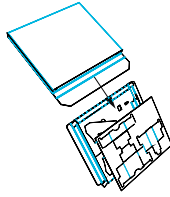
Air, steam and oil are easy to take for granted. But in industrial facilities, producing and distributing them requires a significant amount of electricity. A single ¼ inch leak can cost you approximately \$7,500 annually from your steam system and \$10,000 from your compressed air system. Oil leaks not only cost thousands of dollars per year, they can also result in environmental damage.

Luckily, dealing with leaks doesn't have to be complicated. All it requires is a workforce with a keen eye for waste, and a system for managing repairs. Our leak tag board was designed to help you make the process simple.

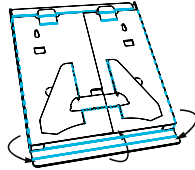


Set up your leak tag board

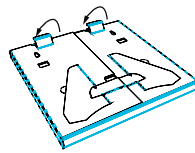
- 1** Remove all pieces from the box and separate the pocket pieces.



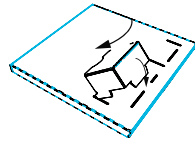
- 2** Fold in small side tabs, then tuck in end panels.



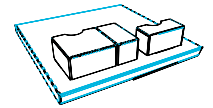
- 3** Fit lock tabs into the slots at the top of the display.



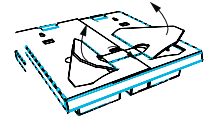
- 4** Fold sides of pocket pieces and insert side tabs into slots. Rotate the pocket into place and lock in bottom tab.



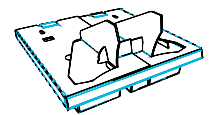
- 5** Repeat for next 2 pockets.



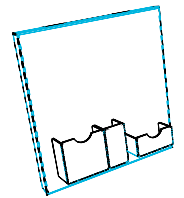
- 6** To use the board as an easel, pull out the stand pieces on the back.



- 7** Fold down the center lock tab to hold stand in place. You can also hang the board on the wall using the mounting holes.



- 8** Place leak tags and zip ties to the two compartments on the left.



Four steps to a successful leak tag campaign

STEP 1: GETTING STARTED

Depending on the size of your facility, you may choose to have one person responsible for all tracking and repairs, or a team of people sharing the duty. In any case, these roles should be established right when the leak tag board is introduced, along with a schedule for collecting new tags.

The team members responsible for tracking and repairs will also be invaluable for establishing a tracking system that works best for your facility. A relatively simple spreadsheet like the following example should be all that's needed. You can track information such as the location and type of leak, the assigned leak tag serial number, and the name of who located the leak, etc. Of course, the specific needs of your facility will differ from the example, but the idea remains the same.

Spreadsheet tracking system for leaks

Leak Tag Serial Number	Area	Shutdown Type	Equipment #	Valve Tag	Date Identified	Identified By	Description and Additional Comments	Parts Required	Severity	Date Repaired	Status	Estimated Annual Savings
0001	A	Line 1	12-101	FCV123-101	25-Jan-15	FB	Replace control valve supply hose between supply line insulation valve and regulator.	None	Moderate		In Progress	
0002	B	Line 2	456-201	N/A	7-Mar-15	PH	Air leaks at top of oiler located near interstage wash press (1/4" diameter leak).	Parts required	Severe	28-Mar-15	Complete	\$10,000
0003	A	Line 1	123-102	SV123-102	25-Jan-15	FB	Hose station on second floor, north wall of RDS building; hose leaks at connection, probably just needs to be tightened.	Parts required	Severe		In progress	\$200

STEP 2: ANNOUNCE AND LAUNCH

Once you have created a team to manage the leak tag board, launching the program is just a matter of holding a brief training session for all of the appropriate staff members. Depending on how comfortable everyone is with your facility's compressed air, steam or hydraulic system, you may also want to incorporate tips on spotting leaks into your training session (for additional resources visit bchydro.com/compressedair). Provide instructions on how to use the tag and propose a challenge or a contest to encourage participation right away.

STEP 3: SPOT IT, TAG IT, FIX IT

Once a leak is spotted by anybody on the floor, opening a repair job is simple. Just retrieve a tag and zip tie from the left storage compartments on the board, fill in the details and then attach the tag as close to the leak as possible. Finally, tear the tag along the perforation and return the bottom portion to the right compartment on the board.

The tag bottoms are collected from the board on a regular schedule, and the details of each leak are entered into a simple job-tracking spreadsheet. At this stage, the leaks can be prioritized by urgency and assigned to an appropriate repair person. The serial number on the bottom portion of the leak tag can be matched with the serial number on the top portion to ensure the correct leak is repaired.

Once the repair has been completed, the repair person collects the top portion of the leak tag and returns it to the appropriate facility/maintenance manager.

STEP 4: REWARD AND REPORT

Recognition goes a long way. To maintain interest in the program, the top portion of the leak tags can be saved and used for a prize draw for employees who have identified leaks. We suggest holding a prize draw around once a month, depending on the volume of repairs. Providing updates on the number of repairs and recognizing staff involvement keeps your staff engaged and reconfirms that management is serious about the program.

Leak tag checklist

- Identify the people in charge of tracking and repairs.
- Create a job-tracking spreadsheet that makes the most sense for your facility.
- Establish clear objectives that everyone can strive to meet.
- Hold a training session to familiarize everyone with the board, your tracking system, and your facility's energy goals.
- Regularly report your team's progress and reward the participants to keep up interest in the initiative.

Cost of compressed air leaks

Leak Size (inches)	Total Cost Per Month	Total Cost Per Year
1/32	\$ 13	\$ 155
1/16	\$ 52	\$ 628
1/8	\$ 209	\$ 2,512
1/4	\$ 837	\$ 10,049
3/8	\$ 1,884	\$ 22,610

Based on 100 psig, 6,000 annual operating hours, blended electricity rate of \$0.08kWh and compressed air generation requirement of approx. 33 kW/100 cfm.

Cost of steam leaks

Leak Size (inches)	Total Cost Per Month	Total Cost Per Year
1/32	\$ 10	\$ 120
1/16	\$ 40	\$ 481
1/8	\$ 160	\$ 1,924
1/4	\$ 641	\$ 7,699
3/8	\$ 1,443	\$ 17,323

Based on 70 psig, 6,000 annual operating hours, steam cost of \$10.00/1,000 lbs.

Cost of oil leaks

Drops Per Second	Daily Loss		Monthly Loss		Yearly Loss	
	Litres	Dollars	Litres	Dollars	Litres	Dollars
1	2.6	\$ 11	78.0	\$ 344	949.0	\$ 4,194
2	5.2	\$ 22	156.0	\$ 689	1,898.0	\$ 8,389
3	7.8	\$ 34	234.0	\$ 1,034	2,847.0	\$ 12,583
4	10.4	\$ 45	312.0	\$ 1,379	3,796.0	\$ 16,778
5	13.0	\$ 57	390.0	\$ 1,723	4,745.0	\$ 20,972

Cost per litre estimated at \$4.42 CAD. Cost of environmental damage not included.