Managing PCBs in Natural Gas Systems

Guidance for managing PCBs in natural gas pipelines and equipment

What are PCBs?

Polychlorinated biphenyls (PCBs) are not a single chemical, but a class of 209 synthetic compounds often used as insulators in electrical equipment such as transformers, capacitors, and ballasts. Before 1978**,** PCBs also were used as plasticizers in caulking and as thermal stabilizers in hydraulic, lubricating, and corrosion prevention fluids, including those used in natural gas pipelines and distribution equipment.

Regulating PCBs

For more information on identifying potential PCBs and the terminology used in this and other MPCA PCB fact sheets, visit the MPCA at http://www.pca.state.mn.us/publications/w-hw4-48a.pdf to view hazardous waste fact sheet #w-hw4-48a, Identifying, Using, and Managing PCBs.

In Minnesota, PCBs are simultaneously subject to two sets of regulations:

1. The Federal Toxic Substance Control Act (TSCA) Regulations administered by the U.S. Environmental Protection Agency (EPA)
2. The Minnesota Hazardous Waste Rules administered by the Minnesota Pollution Control Agency (MPCA)

Natural gas distribution systems containing PCBs may continue to be used as long as the conditions discussed in this fact sheet are met.

Liquids removed from pipelines and distribution equipment

Pipeline liquids, consisting of a mixture of condensed natural gas hydrocarbons, water, and used lubricating and corrosion prevention oil and fluids accumulate in natural gas pipelines and distribution equipment and may require removal.

In Minnesota, these liquids are considered potential PCB hazardous wastes. You may accumulate and mix natural gas pipeline liquids from different pieces of natural gas distribution equipment at your site before testing it; however, if you cannot show the mixture does not contain PCBs, you must assume all those pieces of equipment are contaminated with PCBs. Do not mix this waste liquid with fuels, used oil from vehicles, or other substance until you have tested the liquid and shown it is not contaminated with PCBs at 50 parts per million (ppm) or more.

EPA divides points where pipeline liquids may be removed from natural gas pipelines or equipment into two categories:

1. **Potential sources** – compressors, scrubbers, filters, and interconnects
2. **Small liquid condensate collection points** – valves, mainline and station drips, drip legs, slug catchers, and pig launcher/receivers

Note: While the designation of only one of these categories with the term *potential sources* may be confusing, Minnesota regulates the actual liquids removed from points in both categories as potential PCB hazardous wastes subject to the same assumption, testing, and disposal requirements.

Pipeline liquids – untested or containing 50 ppm PCBs or more

Manage pipeline liquids as *PCB wastes* if they have not been tested or if they contain PCBs at a concentration of 500 ppm or more.

Manage pipeline liquids as *PCB-Contaminated wastes* if they contain PCBs at a concentration of 50 ppm up to 500 ppm.

Since liquids move sporadically and unpredictably through natural gas pipelines, liquid removed from a point where liquids were previously determined to be free from PCBs cannot be assumed to still be free from PCBs. Test all liquids removed from natural gas pipeline and equipment.

For more information on managing *PCB* and *PCB-Contaminated* wastes, visit the MPCA to view:

- Marking and Labeling PCBs (#w-hw4-48b) at http://www.pca.state.mn.us/publications/w-hw4-48b.pdf
- Storing PCBs (#w-hw4-48c) at http://www.pca.state.mn.us/publications/w-hw4-48c.pdf
- Manifest and Dispose of PCBs (#w-hw4-48d)at http://www.pca.state.mn.us/publications/w-hw4-48d.pdf
- Responding to PCB Leaks and Spills (#w-hw4-48g)at http://www.pca.state.mn.us/publications/w-hw4-48g.pdf

Pipeline liquids containing PCBs below 50 ppm

You may manage natural-gas-pipeline liquids that contain PCBs below 50 ppm as used oil, as long as the liquids are only burned for energy recovery as off-specification used oil by allowed burners.

If pipeline liquid does not contain PCBs at a detectable concentration (less than 2 ppm) and meets all the other used oil specifications, you may manage the liquid as on-specification used oil. A pipeline liquid that does not contain detectable PCBs and that is injected into a crude oil pipeline or into a petroleum refinery at a point prior to crude distillation or catalytic cracking is exempt from used oil requirements after it is injected.

For more information about used oil requirements, visit the MPCA to view Managing Used Oil and Related Wastes (#w-hw4-30) at http://www.pca.state.mn.us/publications/w-hw4-30.pdf.

Using pipelines from which PCB-containing liquids have been removed

If you sell or distribute natural gas to others through your pipeline, ensure you meet these requirements. If you do not sell or distribute natural gas to others through your pipeline, you do not need to meet the requirements in Steps 1 through 6 to continue using your pipeline; however, ensure you meet all the other requirements discussed in this fact sheet.

If the only *potential source* in your pipeline is the interconnect to your natural gas supplier, then:

- If you control the interconnect, you are subject to Steps 1 through 6 below.
- If your supplier controls the interconnect, then you must meet only Steps 5 and 6.

If you sell or distribute natural gas to others through your pipeline, after you remove any *PCB* or *PCB-Contaminated* liquids from your pipeline:

1. Mark the points at which the liquids were removed as *PCB equipment* as described in Marking and Labeling PCBs (w-hw4-48b) at http://www.pca.state.mn.us/publications/w-hw4-48b.pdf.
2. Within 120 days of the discovery, sample the pipeline upstream and downstream to determine the extent of the contamination.

3. Within 120 days of completing Step 2, sample all the *potential sources* upstream from the farthest downstream point at which *PCB* or *PCB-contaminated* liquids were found.
4. Within 365 days of completing Step 2, implement engineering measures (such as replacement of equipment, pigging, in-line filtration, or disassembly and decontamination) to reduce the concentration of PCBs to less than 50 ppm at all points from which *PCB* or *PCB-Contaminated* liquid were removed.
5. After completing Step 4, if the contaminated pipeline or equipment was not removed, repeat sampling at least annually until two successive samples taken at least 180 days apart show that the previously contaminated pipeline remains below 50 ppm PCBs.
6. Keep records of Steps 2 through 5 for at least three years.

Sampling

Ensure that any employees or contractors who sample potentially PCB-contaminated pipeline liquids or equipment are provided with and use appropriate personal protective equipment (PPE). For help determining appropriate PPE for your situation, contact the Minnesota Occupational Safety and Health Administration (MNOSHA). See *More information*, page four.

If your pipeline or equipment contains liquids, test the liquids for total PCB concentration.

If your pipeline or equipment does not contain enough liquids to sample and you are attempting to sample pipelines for:

- Continued use, you may simply document the absence of liquids and check the pipeline or equipment again at the next required sampling interval.

  Note: An absence of liquids does not count as a sampling event to show that contamination in a pipeline is reduced to or remains below 50 ppm PCBs. Wait until liquids are present to count a sampling event.
- Disposal, use wipe samples to determine the presence of PCBs. With EPA approval, you may sample surface areas smaller than 100 square centimeters (100 cm^2) if you convert the results to the equivalent of a 100-cm^2 sample. Pipeline and equipment with a surface concentration below 10µg/100 cm^2 is regulated as *PCB* or *PCB-Contaminated* and equivalent to a PCB concentration of 50 ppm or more. Find more information on testing for PCBs in Identifying, Using, and Managing PCBs (w-hw4-48a) at http://www.pca.state.mn.us/publications/w-hw4-48a.pdf.

Reuse or dispose of pipelines or equipment

Since liquids move sporadically and unpredictably through natural gas pipelines, do not rely on samples taken while a pipeline was still in use to determine its PCB status. Test all pipelines after they are disconnected from the gas stream to determine how they are regulated for reuse or disposal.

When storing (for disposal or reuse) pipeline or equipment that is untested or that you know is *PCB* or *PCB-Contaminated*, follow the requirements in Storing PCBs (w-hw4-48c) at http://www.pca.state.mn.us/publications/w-hw4-48c.pdf.

Dispose of or decontaminate untested or known *PCB* pipeline and equipment.

If you remove all free-flowing liquids, you may reuse known *PCB-Contaminated* pipeline and equipment in your natural gas pipeline, petroleum pipeline, totally enclosed compressed air system, irrigation system, or sewage system, or as industrial structural material. However, the MPCA encourages you to consider whether potential cross-contamination of the system in which you propose to reuse the pipeline or equipment and liability from that contamination outweighs the benefits of reuse.

If you remove all free-flowing liquids and seal each end closed, you may abandon in place *PCB-Contaminated* natural gas pipeline.

You may abandon in place any untested or known *PCB* natural gas pipeline if you remove all free-flowing liquids, seal each end closed, and:

- For pipelines with an internal diameter of four inches or less, either list the abandoned pipeline location with Gopher State One Call, or fill the pipeline to more than half its volume with grout or high-density foam.
- For pipelines with an internal diameter of more than four inches, either decontaminate the interior of the pipeline with an approved solvent, or fill the pipeline to more than half its volume with grout or high-density foam. If you choose to fill the pipeline to abandon it, use cement as filler for any sections of pipeline under surface waters.

Spills of pipeline liquids

Assume any spill of pipeline liquids, including drips from valves or liquids released during equipment removal, is a potential PCB spill. Respond to potential PCB spills as discussed in Responding to PCB Leaks and Spills (w-hw4-48g) at http://www.pca.state.mn.us/publications/w-hw4-48g.pdf.

More information

Guidance and requirements in this fact sheet were compiled from the Code of Federal Regulations, Chapter 40, Part 761; and Minnesota Rules, Chapter 7045. Visit the U.S. Government Printing Office at http://www.gpo.gov/fdsys/ to review the Code of Federal Regulations directly. Visit the Office of the Revisor of Statutes at https://www.revisor.mn.gov/pubs to review the Minnesota Statutes and Rules.

The MPCA has staff available to answer waste management questions. For more information, contact your nearest MPCA regional staff.

Minnesota Pollution Control Agency

Toll free (all offices) 1-800-657-3864
Brainerd 218-828-2492
Detroit Lakes..... 218-847-1519
Duluth 218-723-4660
Mankato 507-389-5977
Marshall 507-537-7146
Rochester..... 507-285-7343
St. Paul 651-296-6300
Willmar 320-214-3786
Website .....http://www.pca.state.mn.us

Minnesota OSHA

Toll free (statewide) 1-800-342-5354
Metro 612- 284-5005
Website http://www.dli.mn.gov/mnosha.asp

Gopher State One Call

Toll free (statewide) 1-800-252-1166
Metro.....651-454-0002
Website http://www.gopherstateonecall.org/

U.S. Environmental Protection Agency, Region 5

Toll free (statewide) 1-800-621-8431
Chicago 312-353-2000
Website http://www.epa.gov/region5/

U.S. Environmental Protection Agency, Headquarters

TSCA Hotline.....202-554-1404
Washington, DC 202-272-0167
Website ..... http://www.epa.gov/