

## WHAT LIES BENEATH

We all know that oil and natural gas lie buried beneath the ground, but also beneath are pipelines that carry these commodities across all areas of the country. We seldom think about how they are transported, although in Michigan we had a dramatic learning experience about a year ago when a pipeline ruptured, spilling over 800,000 gallons of oil into the Kalamazoo River watershed. Are there any pipelines near you? Read on.

Our consumption of petroleum in the U.S. has decreased in recent years, but it is still huge. Big Oil plays a big role in our economy and in our governments. Ostensibly in order to reduce our dependence on oil from the Middle East, oil and natural gas companies are lobbying for greater use of their product whose source is in North America, which, of course, includes Canada and its Alberta Tar Sands. So the pipeline story is an international one.

Altogether the U.S. has 492,924 miles of pipeline, 152,000 transporting petroleum products and 340,924 transporting natural gas. In addition, Canada has 61,232 miles of pipeline. (For comparison Russia has 153,467 miles of pipeline and is second to the U.S.) Some of these pipelines are very old, as pipeline goes, and more are on the drawing board, for example the 1,900-mile “Keystone XL” pipeline to carry crude oil extracted from Alberta’s Tar Sands to refineries in Texas at cost estimates that range from \$7 to \$13 billion. The location of refineries is key—most are located near ports, because a lot of oil is shipped by tanker, and in Texas or Louisiana because of the ports and nearby wells. The refined petroleum is then shipped out to all parts of the country and even back to Canada.

Pipelines are made of plastic or steel, range in interior size from 4 to 48 inches, and are usually buried three to six feet deep. Sometimes they are above ground, as in Alaska so as not to melt the permafrost. Some pipelines run under water, transporting crude from deep-water production platforms. Pipelines are monitored but they are operated remotely using varyingly sophisticated information collection systems. Leaks are missed and accidents do happen. There is government regulation, with most in the U.S. regulated by the Pipeline and Hazardous Materials Safety Administration (PHMSA). Offshore pipelines are regulated by the Minerals Management Service (MMS).

On July 26, 2010 the Enbridge oil pipeline leaked 860,000 + gallons of crude oil into Talmadge Creek near Marshall, Michigan in Calhoun County. The source of that crude oil was the Tar Sands of Alberta, Canada, whose crude is much different from conventional crude oil.\* This crude oil, also called Diluted Bitumen {DilBit}, is toxic, acidic, corrosive and so thick that it requires high pressure and heat to move it through the pipelines. To save money Enbridge began pushing the new kind of crude oil, the raw Tar Sands oil, through the pipelines built for conventional crude oil.

\* Until recently it wasn’t economically feasible to use Tar Sands oil because it was too expensive to extract. Higher oil prices have changed that.

That Tar Sands crude oil that spilled into Talmadge Creek near Marshall flowed into the Kalamazoo River, a river that flows into Lake Michigan at Saugatuck. The Kalamazoo River is now so contaminated as far west as Battle Creek that it is closed to all usage. The cleanup costs to date are so excessive that the insurance coverage will probably run out. So now Enbridge is trying to get out of its legal responsibilities.

There are also natural gas pipeline explosions, such as the one in San Bruno, California last September that killed 8 persons and destroyed 38 homes. Currently the Pacific Gas and Electric Company has not yet compensated all and appears to be stalling.

**Oil pipelines and natural gas pipelines run through Berrien and Cass Counties!** The Enbridge oil pipeline that runs through our counties is connected to the pipeline of Kalamazoo's Calhoun County. It runs to the Canadian border at Port Huron, on into Canada, so all across southern Michigan, which is laced with creeks and small and mid-size lakes, whose waters flow into rivers, which flow into Lake Michigan and other Great Lakes. We also have a natural gas pipeline running through our area.

Pipelines are a fact of life but they must be maintained and monitored. Oil and gas companies must be held accountable for their actions: they cannot be allowed to operate without regard to the potentially enormous costs to the environment and to human life. They must not build and then operate pipelines as cheaply as they can get away with. Pipelines must not be used for new and different kinds of product that they cannot safely transport.

Jean Sharp, Environment Committee Chair and Susan Gilbert, Communications Chair

#### References:

- Enbridge Energy Partners 2010 Annual Review
- Natural Wildlife Federation
- National Resource Defense Council
- Pipeline Safety Trust
- Sierra Club
- Various industry & general source websites

### **Additional Information on Pipelines**

**Pipelines: June 2011** As noted in the League article **What Lies Beneath**, there is a plan to build a 1,900-mile pipeline called the Keystone XL to carry Alberta tar sands crude all the way to refineries in Texas. Price estimates vary from \$7 billion to \$13 billion. Not so clear as to who will pay for this, but ultimately the consumer.

As expected, environmentalists are opposed to the project because the "dirty" Alberta crude requires huge amounts of energy to extract and any pipeline leaks would be disastrous. They are especially concerned about contamination of the massive Ogallala Aquifer that provides water for much of mid-America. In favor of the pipeline are those like Fred Upton, Chair of the House Energy & Commerce Committee, who offers the frequently used arguments that we should use friendly and reliable Canadian oil and that the pipeline will create jobs and lower gas prices. He adds that if we don't secure this source China will try to lock it up. And they may--good friend Canada knows about business too.

An interesting aspect of all this is that because this pipeline would cross international borders the decision to go ahead will be made by the State Department, and Hillary Clinton has made an inspection visit to Alberta. However, one of her top aides during the 2008 election is now a lobbyist for TransCanada, the company planning the pipeline, and some worry about a conflict of interest.

### **Following the Pipelines July 2011**

On July 2 an ExxonMobil pipeline that runs under the Yellowstone River near Billings, Montana ruptured. Approximately 40,000 barrels of oil spilled into the river before the pipeline was shut down. Some people were evacuated because of concern about explosions and the strong fumes. The river is at flood stage and the swift-flowing water may have scoured out the pipe, buried 6 feet below ground, leaving it vulnerable to being hit by debris. The high, swift flowing river is also carrying the oil downstream quickly and leaving deposits of crude in flood plains and generally making clean up more challenging.

Enbridge, the company that owns the pipeline running from Canada through southern Michigan, announced recently that they had replaced a dented section of pipe running under the St. Clair River between Sarnia and Port Huron. Sounds as if we were "lucky" that time.

In our pipeline update last month we noted that Fred Upton, arguing in favor of building the Keystone XL pipeline from Alberta's tar sands to Texas, said if we don't secure this source of oil China might try to lock it up. And it seems that is just what they are trying to do, with a pipeline being proposed from Alberta to a Canadian west coast port. According to the Associated Press, Canada is trying to diversify its oil market--at the moment the U.S. is its only customer for oil--and is looking favorably on China, which has lots of money and fewer environmental scruples. There's plenty of oil for both customers, say the Canadians. See the July-August issue of the Audubon magazine for an article on the Keystone XL pipeline.