

Mexican Industrial Discharge Regulations & Enforcement

For years, business executives in the environmental sector have recognized the need and potential for products and services presented by 500,000 Mexican companies discharging waste into water systems. In 1996, the Mexican Secretary of the Environment (SEMARNAT) passed the first two comprehensive wastewater discharge regulations to meet these needs: NOM 001 for wastewater discharges into federal bodies of water and NOM 002 for wastewater discharges into municipal sewer systems that eventually pass into federal water bodies.

Conagua and municipal enforcement realities

Enforcement of these two standards is somewhat confusing at best. There are about 150 Conagua officials spread across all of the Mexican states, averaging five per state, who are in charge of the implementation of NOM 001 with companies and municipal entities that discharge municipal and/or industrial waste into federal bodies. NOM 002 is regulated exclusively by each municipality without state or federal supervision. Profepa, the Mexican "environmental police," does not have a role in the enforcement of these NOMs.

Conagua currently monitors 1,387 companies that discharge waste into federal bodies of water. These companies register and pay for a right to discharge certain flows and levels of contaminants. Supposedly they also pay fines when the volume or contaminant level of discharge surpasses these limits. While the number of companies that are discharging waste into federal bodies of water is much larger than 1,387, the limited number of officials who monitor these companies and their discharges seem to be doing a reasonably good job with the limited resources.

NOM 002 municipal system monitoring is often described as a pre-treatment phase for NOM 001 federal system implementation, where efforts are focused mostly on removing metals and toxic substances and leaving organic waste in the system for later federal treatment and testing. Unfortunately, monitoring and enforcement of municipal discharges is tricky and very political. NOM 001 establishes that by January 2010, all municipalities with more than 2,500 inhabitants were supposed to be 100% compliant with NOM 001 and all of its 17 parameters. However, Conagua does not have the manpower, legal resources, nor probably the political will, to enforce NOM 001 with the municipalities – or, as mentioned earlier, to ensure that the municipalities are monitoring and enforcing NOM 002.

Article 115 of the Mexican Constitution gives municipalities almost exclusive responsibility for local

water infrastructure development and effectively excludes uninvited state and federal involvement, thus insulating municipalities from federal (Conagua) controls and supervision. Municipalities often lack adequate implementing legislation, knowledge and training, manpower, and/or funding to carry out this function – and to ensure that bribery and corruption are prevented. One Conagua official confirmed that the way the law reads today, the only thing that Conagua can do is fine the municipality since they cannot deny them water nor funding, nor can they threaten anyone in the municipality with penal actions. As a result, under current legislation, if Conagua tried to take legal action against a Mexican municipality, it would be futile and only lead to additional resistance from the municipality to work with Conagua in the future.

Few municipalities are interested in working with Conagua to help with enforcement or to provide statistics from their municipalities. As a result, Conagua officials honestly have no idea about the level of industrial discharges into municipal systems or, for that matter, the level, frequency, or efficiency of municipal enforcement of NOM 002. NOM 001 establishes that municipalities with more than 50,000 inhabitants are expected to test monthly and report results quarterly, with smaller municipalities testing quarterly or twice per year, and reporting twice a year or annually, respectively. However, it appears that municipal cooperation and compliance in this regard is irregular at best.

Testing Procedures and their Problems

Depending on the discharge volumes, a company is "required" to take samples of its discharges quarterly, semi-annually, or annually and provide them to one of 29 private laboratories certified by Conagua. These laboratories run a variety of tests on these discharges, provide the results to the company, and maintain the samples on file. The company is then responsible for sending these results to responsible Conagua officials in each state.

While it is the responsibility of each company to comply with these standards, Conagua officials do make regular visits to targeted and to randomly chosen businesses. Headquarters officials determine 80% of the priority visits while local/state officials are responsible for determining the other 20%. The visits are carried out by the local/state officials.

There are four fundamental problems with the current industrial wastewater monitoring process. First, there is not enough Conagua enforcement staff to adequately visit all of the companies that need to be visited and therefore companies slip through the cracks. One Conagua official said that during the Fox Administration, he believed that Conagua officials were able to visit and adequately monitor all of the companies that are discharging waste into federal water bodies once during the six-year administration rather than once, twice, or three times per year as NOM 001 requires.

Second, there is no supervision of the sampling procedure to ensure that they are the actual discharges of the companies in question. As a result, it is possible that these laboratories are testing samples that are not representative of regular wastewater flows. In fact, one Conagua official said that there is no current way to know if a company is supplying a sample of its water from the coffee machine and submitting it to laboratories as representative of their official industrial discharges.

Third, while NOM 001 provides test parameters for 17 different materials or conditions, in reality Conagua only requires companies to test for and pass two tests, one for BOD (referred to as BDO in Mexico) and one for Total Suspended Solids (referred to as SST). The other 15 materials or conditions mentioned in NOM 001, but not enforced routinely, or at least not in non-priority sectors, are: (1) temperature, (2) fats and oils, (3) floating matter, (4) sediment solids, (5) total nitrogen, (6) total phosphorus, (7) arsenic, (8) cadmium, (9) cyanide, (10) copper, (11) chrome, (12) mercury, (13) nickel, (14) lead, and (15) zinc. The parameters for these 15 categories have different compliance levels or conditions, organized in three areas: rivers, reservoirs, and coastal waters. If you would like to receive information on these details, Wisconsin's Trade Office in Mexico can provide your firm with a translated copy of NOM 001 or NOM 002.

Fourth, even if there is adequate enforcement and if all of the above parameters were tested, the levels permitted in Mexico are well above U.S. minimum standards. As a result, many U.S. products, services and technologies suggest and provide for “overkill” solutions. Please request and consult our English translations of these two wastewater standards to determine to what extent they are similar or dissimilar to U.S. EPA wastewater discharges – Wisconsin's Trade Office in Mexico would appreciate receiving this feedback as well.

Conclusion

We can conclude that Conagua monitoring and enforcement of industry discharges to NOM 002 is improving but still inadequate. It is also difficult for Conagua to monitor and enforce NOM 002 with municipalities due to political and other factors. The good news on this front is that the federal government has proposed changes to legislation that could come on line in 2011 that would allow Conagua and perhaps even states to have a more shared role in municipal water infrastructure development. These legislative changes would allow for more effective penalties for municipalities, and their water utility directors, if they chose to not comply with NOM 002, not enforce NOM 001, and/or not provide access to and information about flows and activities.

The extent of municipal monitoring and enforcement of NOM 002 is difficult to gauge because no one is gathering and/or analyzing this information and it appears that municipalities are unwilling to share this information at this time. Nonetheless, the top 12 states, and in general the municipalities from these states, with the best reputations for wastewater compliance, according to a number of sources, have been the following: Aguascalientes, Chihuahua, Jalisco, Nuevo Leon, Puebla, Queretaro, Quintana Roo, San Luis Potosi, Sinaloa, Tlaxcala, the Yucatan, and the Federal District.