Innovative Groundwater Protection Programs of Marion County, Indiana

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Marion County has a population of approximately 900,000 people spread over a 400 square mile area. There are approximately 2,300 active businesses present in the seven wellfields in Marion County. Around 958 of these (41%) have been identified as Potential Groundwater Contaminant sources, meaning that they handle chemicals that pose a potential threat to groundwater quality.

Marion County public health department (MCPHD) has taken the approach that drinking water protection is a public health issue. The MCPHD Wellfield Protection Zoning Ordinance, with the goal of providing voluntary & confidential outreach and education to businesses in the wellfields to help them improve groundwater contamination and handling. The Wellfield Protection Zoning Ordinance was established in 1995 and was initially enforced by a Wellfield Protection Officer, who was replaced with the Technically Qualified Person (TQP) program. The TQP role is fulfilled by qualified environmental professionals.

There are seven active wellfields in Marion County, which pump a collective 11 billion gallons of water from 85 wells every year. The groundwater source constitutes 25% of the municipal water supply for Marion County. There are active wells up to the Marion County - Clinton Energy Group, Speedway Water Works and Lawrence Utilities.

Geology of Marion County Groundwater

The geology of Marion County is dominated by glacial outwash and till material, with prolific sand and gravel deposits extending along the White River and its tributaries. Geologic maps show unconfined aquifers in the area, which are largely unconfined, meaning that they are prone to contamination.

Potential Dangers to Marion County Groundwater

As can be seen, there are active contamination concerns in the wellfields, most of which are the result of historic industrial activity prior to the introduction of modern regulations from the EPA, the State of Indiana and Marion County.

Marion County has developed three programs over time to address potential groundwater contamination or business operations in the municipal wellfields. These programs are listed by date below and will be detailed in the following sections.

1996 - City Wellfield Zoning Ordinance (TQP)
- Allows for groundwater protection to be built into a facility from the beginning, with city enforcement powers.

1997 - MCPHD Outreach Program
- Educates businesses about the importance of groundwater protection.

2017 - Health-Department Wellfield Code
- Requires businesses to report any spills or contamination incidents.

There are 958 Potential Contaminant Sources, close to 760 of them (77%) appear in a regulatory database.

City of Indianapolis Wellfield Zoning Ordinance

Technically Qualified Person (TQP) Program

The Wellfield Protection Zoning Ordinance was established in 1995 and was initially enforced by a Wellfield Protection Officer, who was replaced with the Technically Qualified Person (TQP) program. The TQP role is fulfilled by qualified environmental professionals.

When a business wants to build a new facility or expand an existing facility, they must file for an Improvement Location Permit (ILP) with the City. ILPs for existing wellfields are passed to the TQP program for review to ensure the plans comply with the Wellfield Protection Zoning Ordinance.

As of 8/2018, 308 businesses have completed a TQP review. Of particular focus in a TQP review is chemical and waste storage and handling, in terms of having physical secondary storage built into the plans and having operational elements, such as emergency spill response plans.

Marion County Wellfield Education Corporation (MCWEC)

Non-profit corporation established in 1996 by the Marion County Wellfield Protection Zoning Ordinance with the goal of providing voluntary & confidential outreach and education to businesses in the wellfields to help them improve groundwater contamination and handling.

MCWEC has an active Educational Outreach program that is delivered to businesses in Marion County. The outreach program helps businesses understand their responsibilities under the TQP program and provides voluntary assistance to improve compliance.

MCWEC site visits reveal the reality of chemical handling in the wellfields.

Marion County Public Health Department (MCPHD)

Wellfield Health Code

The MCPHD has taken the approach that drinking water protection is a public health issue. The Wellfield Protection Zoning Ordinance was established in 1995 and was initially enforced by a Wellfield Protection Officer, who was replaced with the Technically Qualified Person (TQP) program.

MCWEC Board has representatives from the city, health department, utilities, wellfield businesses and community representatives. The business outreach services are provided by qualified environmental professionals.

MCWEC site visits reveal the reality of chemical handling in the wellfields. One of the most effective ways that MCWEC has assisted in improving chemical handling is through the deployment of spill containment and cleanup equipment and training available for donating spill and containment equipment. MCWEC also aids the MCPHD on technical issues when requested.

The MCPHD Wellfield Code was based on the TQP City Wellfield Zoning Ordinance, in order to protect the more extensive and consistent regulatory experience for businesses.

MCWEC voluntary program has proven most effective when providing free spill containment equipment to businesses. However, this program originally interacted with only a small number of businesses. After the MCPHD Wellfield Code came into effect, that number has increased substantially. MCPHD also provides technical support to the MCWEC.

Three-Pronged Approach to Wellfield Protection for Marion County

TQP
- City Wellfield Zoning Ordinance builds protections into new construction. Follow-up inspections of sites can lead to enforcement actions to ensure compliance.

MCWEC
- Business-friendly voluntary approach allows MCWEC to see what kind of chemical handling is out there in the wellfields.

MCPHD Wellfield Health Code
- MCPHD Wellfield Health Code is in its first year of enforcement. MCPHD inspections have prompted many more businesses to make use of MCWEC services.