Preparing For Your Next IEPA Inspection

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What is and Inspection/Engineering Evaluation/Sanitary Survey?

- In Illinois, an Inspection is synonymous with Sanitary Survey and/or Engineering Evaluation
- Sanitary Surveys are required by the Safe Drinking Water Act
  - Every three years for Community Water Supplies
  - Every five years for groundwater systems determined to be "Outstanding Performers" –or- provide 4-log treatment of viruses (not used in Illinois).
  - Every five years for Non-community water supplies (jurisdiction of IDPH)

Sanitary Surveys - Purpose

A Sanitary Survey is a review of a public water system to assess their capability to supply safe drinking water.

Ensure that a system's operational, monitoring, reporting, and recordkeeping practices are compliant with applicable drinking water regulations

Identify significant deficiencies

A Sanitary Survey is a proactive public health measure that allows primacy Agencies to better understand system needs and progress.

Illinois Field Operations Section (FOS)

- Primary responsibility is to conduct Sanitary Surveys, provide support during enforcement activities, respond to citizen complaints, provide assistance regarding operation and maintenance, and update State and Federal data systems.
- In Illinois, there are six regional offices where Field Operations Section personnel perform duties:
  - Rockford
  - Elgin
  - Springfield
  - Champaign
  - Collinsville
  - Marion

Preparing for the Inspection: How does the process start?

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- The IEPA Regional office will contact you to schedule a time for the inspection.
- Allow enough time in your schedule for the inspection to include visual inspection of all components of your system (e.g. wells/intakes, treatment facility(s), storage tanks, distribution pumping, etc.)
- Have all necessary documentation available for the inspection – discussion later. DON'T JUST ANSWER QUESTIONS => TELL YOUR STORY

Components of the Sanitary Survey

- Source
- Treatment
- Distribution System
- Finished Water Storage
- Pumps
- Monitoring & Reporting
- Management & Operation
- Operator Compliance

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Source Evaluation

- Review of Sanitary Defects associated with well construction and maintenance
- Visual inspection of Surface Water Intake structures and protection of structures
- Review of raw water quality data (VOCs/SOCs/metals, etc.)
- AMMONIA in source water?
- Capacity of source water
- Adequate protection from sources of contamination (page 34)

Section 604.150 Protection of Community Water Supply Structures

a) Each community water supply must protect its wells, clear water reservoirs, suction lines, gravity filters, iron removal, chlorine reaction and wet salt storage basins from sources of contamination by maintaining the following minimum distances:

Source of Contamination	Distance for Clay or Loam Soils	Distances for Soils with Higher Permeability than Clay or Loam
Cesspools, leaching sewage disposal pits	150'	300'
Privies	150'	300'
Septic tanks and subsurface septic tanks effluent disposal tile	75'	150'
Livestock, grazing areas or feedlots	50'	100'
Sewers (non-watertight)	50'	50'
Sewers (cast iron pipe, with leaded or mechanical joints)	25'	25'
Sewers (extra-heavy cast iron pipe, asbestos-cement pressure pipe, prestressed concrete pipe, or PVC (polyvinyl chloride) pipe meeting water main standards, with pressure tested, leaded, mechanical or slip-on joints	10'	10'
Washwater sumps of reinforced concrete construction	10'	10'
Flood waters – A horizontal distance must be maintained by natural earth or fill. In addition, wells must meet the	15'*	15'*

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Treatment Evaluation

- Visual inspection of all treatment hardware:
  - Overflow screens, cross-connections, structural integrity, O&M practices
  - Chemical Feed Systems – permitted properly, vented, containment, separation of incompatible chemicals
  - Is treatment working properly – adequate coagulation/ sedimentation/filtration/disinfection
  - Adequate protection from sources of contamination (page 34)

Distribution System

- Review of the design, operation, maintenance and management of distribution system to prevent contamination of drinking water delivered to customers
  - Sanitary separation of Finished Water Mains
  - Adequate number of shutoff valves and air-relief valves
  - Adequate number of flushing devices and locational evaluation to prevent degradation of water quality
  - Can the system maintain adequate pressure
  - Water Main vs. Service line issues – see 604.1455

Water Main vs. Service Line

- Section 604.1455 Water Service Line
  - a) A community water supply must not supply water through a service line to more than a single property, dwelling or rental unit.
  - b) If a pipe from the water main or source of potable water supply is accessible to more than one property, dwelling or rental unit, the pipe will be considered a water main subject to all permitting requirements of 35 Ill. Adm. Code 602.
  - A pipe is accessible when it crosses the property boundary of another landowner to reach the property, dwelling or rental unit being served.

Finished Water Storage

- Review of the design and major components of finished water storage facilities in order to prevent water quality problems from developing.
  - clearwells, hydropneumatics tanks, ground storage tanks, elevated storage tanks, and standpipes
    - Properly permitted and constructed consistent with permit
    - Inspection of overflow (screened), access hatches, vents (screened), level controls, painting & coatings, and structural integrity of storage facility
    - Comprehensive inspection of interior and exterior should be conducted at least every five years
    - Evaluation of storage capacity vs. usage (is there excess storage where water quality can be impacted?)

Finished Water Storage: Be Careful

Pumps

- Review of the design and use of water supply pumping facilities to determine overall reliability
  - Capacity evaluation of pumps (with largest pump out of service)
  - Is redundancy provided
  - Sanitary defects associated with pump stations that may impact water quality
  - Adequate separation from potential sources of contamination (previous table)

Monitoring & Reporting*

- Determine water system conformance with regulatory requirements through the review of water quality monitoring plans and system records; verification of data reported to Agency is consistent with system records.
  - Review of sample site plans (coliform/DBPs/Pb-Cu)
  - Review of monthly operating reports content and submittals
  - Review of water quality data pursuant to compliance requirements
  - Review of monitoring data used for process control (NAP)*
  - IMPORTANT: Do not report the same chlorine residual on every day for several years! That can't happen

Monitoring & Reporting* Nitrification Action Plans

- Section 604.140 Nitrification Action Plan

Any community water supply distributing water without a free chlorine residual must create a Nitrification Action Plan (NAP). The NAP must:

a) contain a plan for monitoring total ammonia-N, free ammonia-N, nitrite-N, nitrate-N, monochloramine residual, dichloramine residual, and total chlorine residual

b) Contain system specific levels of chemicals in subsection (a) when action must be taken

c) Contain specific corrective actions to be taken if the levels in subsection (b) are exceeded: and

d) Be maintained on site and made available to the Agency

Monitoring & Reporting* Nitrification Action Plans

- IMPORTANT!!! (for systems that may have ammonia in the source water that use free chlorine as a disinfectant)
  - Be prepared to demonstrate that breakpoint chlorination is consistently practiced
  - Provide data showing that free chlorine is present at the point of entry and/or first customer
    - Use total and free chlorine data, monochloramine data, and free ammonia data
    - Use chlorine demand information related to raw water quality to demonstrate that the Cl:NH4 ration is greater than 7:1 after water quality demand is taken into accout.
- TELL YOUR STORY!

Monitoring & Reporting* Nitrification Action Plans

- For system that chloraminate by adding ammonia or by being unable to reach breakpoint chlorination.
  - Be prepared to provide the data generated from the NAP and provide the monitoring equipment used to generate the data.
  - Ensure that adequate data is generated to demonstrate that nitrification is not taking place within the system (Remember: this is process control data – not compliance sampling data)
  - Make sure that the plan contain specific levels of chemicals where corrective actions will be taken
  - Identify the specific actions that will be taken when those levels are exceeded
  - SEE IRWA WEBSITE FOR WORKSHEETS

Monitoring & Reporting Emergency Operations Plans

- Risk and Resiliency Assessment (RRA) and Emergency Response Plan (ERP) requirements of Section 2013 of the America's Water Infrastructure Act (AWIA). AWIA requires water systems serving more than 3,300 people to develop and routinely update RRAs and ERPs.

- 35 Ill. Adm. Code 604.135 "Repair Work and Emergency Operation."
  - Community water supplies must have emergency operations plans (EOP) for the provision of water under emergency circumstances.
  - https://www.ilrwa.org/Downloads/VAERPhtml.html
- The ERP (EOP) must be updated every three years to comply with Illinois regulations. Further, water systems over 3,300 must recertify every five years to US EPA that its RRA and ERP has been reviewed and modified, as necessary.

TELL YOUR STORY

Monitoring & Reporting Cross-connection Control Program

- 1) For any new service connection, the community water supply must evaluate the risk of cross connection whereby an unsafe substance may enter a community water supply.
- 2) A community water supply must conduct a cross connection control survey of the distribution system at least every three years.
- 3) From each completed survey, the community water supply must develop an inventory of the following:
- 4) An ordinance, tariff, or required condition for service, whichever is applicable, that meets the Illinois Plumbing Code (77 Ill. Adm. Code 890), must be adopted and enforced.
- 5) The community water supply must maintain records of all backflow preventers that require annual testing under 77 Ill. Adm. Code 890 and identified in subsections (b)(2) and (b)(3).

TELL YOUR STORY

MANAGEMENT & OPERATIONS

Evaluation of the water systems performance in terms of management and operation, including its long-term viability in meeting water quality goals

- Complete and submit the capacity development form provided by the Agency (changes are coming)
- Provide a copy of the Emergency Response Plan
- Be prepared to provide copies of Construction/Operating Permits for projects
- Confirm that the Notification of Responsible Personnel form is up-to-date. (has a new mayor been elected or a new operator hired?)

MANAGEMENT & OPERATIONS

- Generally: Is your system a viable and sustainable system to provide a safe and adequate water supply?
  - Are water rates adequate to generate a revenue source for proper long-term operation and maintenance?

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Operator Compliance

Ensures that water systems have qualified professionals that meet all applicable operator certification requirements

- Is the operational personnel properly certified for the treatment provided?

- has the Agency been notified of personnel changes?

- DON'T FORGET THE CEUs

SUMMARY

- Remember: You are a professional and no one knows your system better than you do.
- Tell your story and be proactive in demonstrating compliance with regulatory requirements during the inspection
- Provide documentation supporting compliance
- Take the opportunity to educate the inspector about your system.
- Use the inspection as a way to develop a working relationship with your regional office personnel and the Agency
- BE PREPARED FOR THE INSPECTION!

FINALLY

- An Evaluation Report, Non-Compliance Advisory, or Violation Notice will be provided subsequent to the inspection that outlines deficiencies noted during the inspection (Attachment A) and recommendations for improvements to your system (Attachment B)
- IMPORTANT: Provide a response to that correspondence within 45 days. DO NOT IGNORE THIS CORRESPONDENCE!
- The response must include specific dates when deficiencies will be addressed
- Reach out to the Agency inspector if additional time is need for completion of that response
- Additional enforcement actions (referral to AG's office) may occur for non-response or inadequate response

Questions?

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