

ILLUSTRATION OF CONTAMINATION FLOW

Form G1 . Diagram defective portion of water supply system and illustrate sources of pollution and their likely entrance into the system.
(Specify gradients and pressure differentials that altered flow.)

Complaint No.

Investigator	Title	Agency	Date
[Large grid area for drawing]			

SOURCE AND MODE OF CONTAMINATION OF SURFACE WATERS¹

Form G3

Name of surface supply

Location

Person-in-charge

Phone

Complaint No.

LAND USE OF WATERSHED	RECENT	DATES	TYPE SEWAGE FOR POPULATED AREAS	DISCHARGES INTO SURFACE WATER	TYPES OF ANIMALS IN WATERSHED
<input type="checkbox"/> Cultivated <input type="checkbox"/> Forested <input type="checkbox"/> Irrigated <input type="checkbox"/> Oil fields <input type="checkbox"/> Recreation <input type="checkbox"/> Other (describe) _____	<input type="checkbox"/> Feedlot <input type="checkbox"/> Industrial <input type="checkbox"/> Mining <input type="checkbox"/> Pasture <input type="checkbox"/> Thickly settled	<input type="checkbox"/> Flooding _____ <input type="checkbox"/> Drought _____	<input type="checkbox"/> Primary <input type="checkbox"/> Secondary <input type="checkbox"/> Oxidation pond <input type="checkbox"/> Septic tanks <input type="checkbox"/> Untreated/raw <input type="checkbox"/> Others (describe) _____	<input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No	<input type="checkbox"/> Livestock <input type="checkbox"/> Poultry <input type="checkbox"/> Aquatic mammals <input type="checkbox"/> Waterfowl <input type="checkbox"/> Snails <input type="checkbox"/> Others (list) _____

Sewage outfalls or seepage into source water (give location and distance from water intake or point of use)

Source of Pollution (give location and distance from intake or point of use) Sewage Industrial waste Mining waste Landfill leachate Outfalls/seepage into source water
 Feedlot Slaughterhouse Pasture runoff into surface water

Results of dye test from outlets or seepage to intake or point of use or other means of evaluation of movement of contaminants

Results of any physical/chemical/microbial test of source water (See Form G2)

Factors contributing to surface water pollution/contamination and outbreak*: Ingestion of untreated water Pollution of watershed Use of contaminated water as alternate source
 Overflow of sewage or outfall near water intake Drought Flooding Dead animal in water Animals have direct access to water Other (specify)

Investigator	Title	Agency	Date
--------------	-------	--------	------

¹NOTE ALL THAT APPLY. Explain source/mode of contamination and describe entry in more detail on back or on separate attached sheet.
 *Record on Form L

SOURCE AND MODE OF CONTAMINATION OF GROUND WATERS¹

Form G4

Complaint No. _____

Location _____

Person-in-charge/Owner _____

Phone _____

TYPE OF GROUND SUPPLY
 Well Spring Other (specify) _____

TYPE OF WELL
 Drilled Bored Driven
 Dug Step Other _____

TYPE OF SOIL AND AQUIFER
 Sand Clay Loam
 Peat Gravel Rocky
 Limestone Other (specify) _____

DEPTH
 Static water _____
 Well _____

State source of information: _____

Excreta disposal in vicinity of well which may have contaminated the ground water:

Type: Community primary Community secondary Leaking sewer line Septic tank Cesspool/seepage pit Absorption field Privy Toxic waste disposal

Type: Stream Surface water Animals Feedlot Manure piles Compost Dump/landfill Toxic waste storage

Distance: _____

Observed faults in construction/maintenance/operation of wells/springs/other ground water sources:
 Casing Grouted casing Casing not intact Animal holes around casing Platform/apron not intact Pitless adapter faulty
 Depth _____ Depth _____ Open well/spring Flooding Casing top below grade Other (specify) _____

Type pump: Submersible Jet Turbine
 Reciprocating Hand Gravity Other (specify) _____

Contamination during pumping: Unsafe water for priming Leaks in system under vacuum Well pit flooded Pump not sealed to platform/top bushing not closed Other (specify) _____

Results of dye test from outlets or seepage to intake or point of use; or other means of evaluation of movement of contaminants
 Type repairs made _____ Disinfection following repairs: Yes No

Source of priming water _____

Disinfection None Failure
 Chlorine test Free Total

Date _____

Results of any physical/chemical/microbial test of ground water (give test done, dates, present/absent/count/concentration, as applicable; see Form G2)

Factors contributing to ground water contamination and outbreak*

Overflow or seepage of sewage into well/spring Surface runoff into well/spring Contamination through limestone or fissured rock Flooding/heavy rains
 Chemical/pesticide contamination Seepage from abandoned well Contamination through suction line Improper well/spring construction
 Unsafe water used for priming Other (specify) _____

Investigator _____

Title _____

Agency _____

Date _____

¹NOTE ALL THAT APPLY. Explain source/mode of contamination and describe entry in more detail on back or on separate attached sheet.

*Record on Form L

DISINFECTION FAILURES THAT ALLOWED SURVIVAL OF PATHOGENS OR TOXIC SUBSTANCES¹

Form G5a

Name of facility		Location		Person-in-charge		Complaint No.	
Type disinfection: <input type="checkbox"/> None <input type="checkbox"/> Simple chlorination <input type="checkbox"/> Super chlorination <input type="checkbox"/> Breakpoint chlorination <input type="checkbox"/> Ultraviolet <input type="checkbox"/> Hypochlorite <input type="checkbox"/> Chloramines <input type="checkbox"/> Chlorine dioxide <input type="checkbox"/> Ozone <input type="checkbox"/> Other (specify) _____						Phone	
Deficiencies in: <input type="checkbox"/> Disinfection equipment <input type="checkbox"/> Disinfection operation <input type="checkbox"/> Chlorine contact time		Interruptions in: <input type="checkbox"/> Disinfection equipment <input type="checkbox"/> Disinfection operation		Comments		Chlorine demand	
Dates _____							
Disinfection tests at plant (give minimum values) Location: _____		During investigation day before _____ 2 days before _____ last week (date) _____ last month (date) _____		Free: _____		Total: _____	
Disinfection rate applied = disinfectant used per day / flow rate				<input type="checkbox"/> Sudden changes in disinfectant demand, if yes, date(s) _____			
Disinfectant demand (usage) = disinfectant dosage applied · disinfectant concentration measured downstream							
Sequence	Disinfectant concentration C (mg/L)	Disinfectant contact time T (minutes)	CT calc CXT	pH	Water temperature (°C)	CT 99.9 (from Table H)	CT calc/CT 99.9
1st							
2nd							
3rd							
4th							
5th							
Sum							
Factors contributing to survival of pathogen or failure of inactivation of toxin during treatment and outbreak* <input type="checkbox"/> Inadequate prefiltration treatment <input type="checkbox"/> Inadequate filtration <input type="checkbox"/> Inadequate chemical feeding <input type="checkbox"/> No disinfection <input type="checkbox"/> Inadequate disinfection <input type="checkbox"/> Interruption of disinfection <input type="checkbox"/> Other (specify) _____							
Investigator	Title			Agency		Date	

¹ Explain treatment failure and describe entry in more detail on back or on separate attached sheet.

* Record on Form L

SOURCE OF CONTAMINATION AND TREATMENT FAILURES THAT ALLOWED SURVIVAL OF PATHOGENS OR TOXIC SUBSTANCES¹
Form G5b

Complaint No.

Name of facility

Location

Person-in-charge

Phone

Raw water intake

- Excessive pollution in relation to treatment potential Bypass connection by which raw or partially treated water gets into distribution system
 Nearby uncontrolled pollution Other (specify)

Fluoridation feed deficiencies

- Sedimentation deficiencies: No sedimentation before filtration Turbidity not removed Tank not cleaned High population of microorganisms remain Retention time
 Other deficiencies (specify)

Sedimentation rate: Depth of water / Transit time from inlet to outlet = _____

Record review: Coagulant dose _____ Residual coagulant _____ pH _____ Turbidity _____ Other tests (specify) _____
 Date/Value: _____ / _____ / _____

Records show routine monitoring of measurements: Yes No

- Turbidity performance criteria: Media loss Media deterioration Mud ball formation Channeling Surface cracking Under drain failure Cross connections
 Chemical deficiencies (specify)

- Type filtration: Conventional (rapid) Direct (rapid) Pressure Slow
 Bag cartridge Diatomaceous earth Other (specify)

Average filtered water turbidity: Filter 1 _____ Filter 2 _____ Filter 3 _____ Filter 4 _____ Filter 5 _____ Filter 6 _____ Other filters (list on back) _____

Combined filter effluent _____ Clearwell effluent _____ Plant effluent _____

Nature of recent illnesses of staff (name of illness or major symptoms) _____ Name of employee _____

Other observations or measurement of treatment plant operations

Factors contributing to survival of pathogen or failure of inactivation of toxin during treatment and outbreak *

- Inadequate prefiltration treatment Inadequate filtration Inadequate chemical feeding No disinfection Inadequate disinfection Interruption of disinfection
 Other (specify)

Investigator _____ Title _____ Agency _____ Date _____

