

**Navajo Nation Environmental Protection Agency
Public Water Systems Supervision Program**

Pollution Prevention — SUSCEPTIBILITY ASSESSMENT SURVEY FORM

IMPORTANT! PLEASE COMPLETE ONE FORM FOR EACH GROUNDWATER SOURCE (WELL, WELLFIELD, OR SPRING) USED IN YOUR WATER SYSTEM.

FORM COMPLETED BY: **DATE Completed:**

PART I: System Information

Water System Name: PWSID #:
Well Owner:
Name of Well Operators:
Address: City: State: Zip Code:
Work Phone: Fax Number: E-mail:

PART II: Well Construction Information * Please refer to Assistance Packet for detail and explanations of all question in Parts II to V.

Tribal Well ID No.: IHS Project No. (if available):
Well Owner: Well driller unknown
Address: City: State: Zip Code:
Work Phone: Fax Number: E-mail:

1) Source: Groundwater Surface Water Groundwater Under the Direct Influence (GWUDI) of Surface Water

Date well originally constructed: Latest reconstruction: Information unavailable

Well Depth (feet): Casing Diameter (inches): Blank Casing Interval (ft/bgs):

First Screen/Open Interval (ft/bgs): Grouting (ft/bgs):

2) Type of Well: Drilled Rotary Bored Cable (percussion) Dug Well Spring(s) Unknown
 Later collector (Ranney) Driven Jetted Other _____

3) How was UTM method determined?

Global Positioning System (GPS) Survey Map Other _____

Township: North/South: Range: East/West: Section: Quarter/Half:

UTM X (East): UTM Y (West): UTM Zone:

Number of Connections: Population Served: County:

4) Well Report Available? Yes (attach copy to form) No

If no well log is available, please attach any other records documenting well construction; ex. Boring logs, "as-built" sheets, engineering reports, well construction logs.

5) Average pumping rate (gpm): Source of information:

If not documented, how was pumping determined? _____

Pumping rate unknown

6) Is this source treated? If so, what type of treatment:

- Disinfection Filtration Carbon filter Air stripper Other

Purpose of treatment (describe materials to be removed or controlled by treatment):

7) If source is chlorinated, is a chlorine residual maintained: Yes No

Residual level (mg/l): (At the point closest to the source)

8) Wellhead Construction:

- Wellhead enclosed in a wellhouse
 Controlled access (describe): _____
 Other uses for wellhouse (storage for treatment materials, etc.): _____
 No wellhead control
 Pitless adaptor

PART III: Hydrogeologic Information

1) Depth to groundwater [static water level - SWL] (feet): Flowing well/spring (Artesian)

2) How was the water level determined? Well log Other: _____
 Depth to groundwater unknown

3) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source?
 Yes No If yes, give the location: _____

4) Wellhead elevation [height above mean sea level] (feet):
 How was elevation determined? Topographic map Drilling/well log Global Positioning System (GPS)
 Altimeter Information unknown Other _____

5) Confining layers: (This can be completed only for those sources with a drilling log, well log geologic report describing subsurface conditions. Please refer to assistance package for example).

- Evidence of a confining layer in well log
 No evidence of a confining layer in well log

6) Sanitary Control Zone: (A zone or area which includes major potential contaminant sources-fence, building, vault, surface drainage away from well, etc.):

- <100 ft* 100-120 ft 120-200 ft >200 ft

* if less than 100 ft, then describe the site conditions:

7) Does the well casing terminate at least 24-inches above ground level? Yes No

8) Does the well vent terminate at least 18-inches above ground and oriented downward? Yes No

9) Is there a concrete pad around the wellhead? Yes No

If yes, provide dimensions [length (ft) X width (ft) X thickness (inches)]:

Annual rainfall: <10 in/ft 10-25 in/ft >25 in/ft

PART IV: Mapping Your Groundwater Resources

PWSID#: Tribal Well ID:

1) Annual volume of water pumped: (gallons)

How was this determined?

- Meter Estimate: Pumping rate _____ Pumping capacity _____
- Other Calculated by: _____ Gal/min X 60 min/hr X Hr/day X Day/yr = Gal/yr
- # of service X gallons per day X average use days/
connection per connection year (365 for most) = Estimate average pumping rate
per year.

2) Information available on length of screened/open interval?

Yes No Indicate the length(s) per interval: _____

3) Is there a river, lake, pond, stream, or other obvious surface water body within the ½ - mile radius boundary?

Yes No (mark and identify on map).

4) Is there a stormwater drainage and/or wastewater facility, treatment lagoon, or holding pond located within the ½ - mile radius boundary?

Yes No (mark and identify on map).

Comments: _____

5) Is there a livestock well or windmill located within the ½ - mile radius boundary?

Yes No (mark and identify on map).

Comments: _____

6) Is this livestock well or windmill used as a domestic source (drinking water)?

Yes No Information unknown

Comments: _____

PART V: Assessment of Water Quality

1) Regional sources of risk of groundwater:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the 20-year groundwater travel time or *within a one-half mile radius*:

½ mile radius

½ mile radius

- * Weed Killer, desiccating crops, or control or algae?
- * Forestry or roadside herbicide application
- * Golf courses
- * Farm or Irrigation Sites
- * Likely pesticide/herbicide/fertilizer application
- * Holding ponds (industrial)

- Water well(s) with known quality problems
- Mom-and-pop auto repair
- Residents commonly have septic tanks
- Wastewater or sludge pond/pit
- * Hospital waste or garbage incineration
- * Open dumps, waste disposal areas, solid waste pits

Mark and identify on map any risks listed above which are located within the ½ mile radius boundary. (Please indicate a map of the wellhead and ½ mile radius with this form. Please locate and mark any of the following). ""* Important of Part V, Question 2.D.

If other recorded or potential sources of groundwater contamination exist within the groundwater ½ mile circular zone around your water supply, **please describe**: (Please refer to the NNEPA PWSSP Potential Sources of Contamination [PSOC] Form 2 (**Appendix F**) which includes an extended list of sources for you to choose from *besides the sources listed above*).

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (unless listed on assessment, MCLs are listed in assistance package).

A. Nitrate (Nitrate MCL = 10mg/l)

Results greater than MCL Yes No If yes, when (date)?

Detections of nitrate concentrations Yes No If yes, when (date)?

Nitrate sampling records unavailable (or none were taken)

B. VOCs and/or SOCs (please indicate which)

Results greater than MCL Yes No If yes, when (date)?

VOCs or SOCs detected Yes No If yes, when (date)?

VOCs or SOCs never detected Yes No If yes, when (date)?

VOCs or SOCs sampling records unavailable (or none were taken)

C. EDB/DBCP (and SOC):

EDB/DBCP detected exceeded MCL Yes No If yes, when (date)?

EDB/DBCP detected Yes No If yes, when (date)?

EDB/DBCP never detected Yes No If yes, when (date)?

D. i. Endothall:

Any detection(s) in the past three (3) years Yes No

ii. Glyphosphate:

Any detection(s) in the past three (3) years Yes No

iii. Diquat:

Any detection(s) in the past three (3) years Yes No

iv. Dioxin:

Any detection(s) in the past three (3) years Yes No

v. PCBs:

Any detection(s) in the past three (3) years Yes No

PART VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those groundwater systems which may not be accurately represented by the ½ mile radius described in Part IV. As a system develops its Wellhead Protection Plan for these sources, a more detailed delineation method should be considered.

1) Is there evidence of the obvious hydrologic boundaries within the ½ mile radius zone boundary? Does circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

Yes No If yes, describe with references to map produced in Part IV: _____

2) Aquifer Material:

a) Does the Drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

Yes No

b) Does the drilling log, well log, or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

Yes No

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of rivers, large washes, artesian wells with high water pressure, and/or shallow flowing wells and springs).

Yes No

4) Are there other high capacity wells (agricultural, municipal, and/or industrial) located within the CFRs.

a) Presence of groundwater extraction wells removing more than approximately 500 gal/min within...

½ mile radius Yes No Unknown

b) Presence of groundwater recharge wells (dry wells) or heavy irrigation within...

½ mile radius Yes No Unknown

Please identify or describe other unique hydrologic or geographic conditions that you believe may affect the shape of the zone of the contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

Comments:

SUGGESTIONS AND COMMENTS

Did you attend one of the susceptibility workshops?

Yes No

Did you find it useful?

Yes No

Did you seek outside assistance to complete the assessment?

Yes No

This form and instruction packet are still in process of development. Your comments and suggestions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside assistance? Do you feel the assessment was valuable as a learning experience? Any other constructive criticisms you have would be appreciated.

Comments: