

Source Water Assessment for
Hillside Park Subdivision
Anchorage, Alaska

A Hydrogeologic Susceptibility and Vulnerability Analysis

DRINKING WATER PROTECTION PROGRAM REPORT 408
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Source Water Assessment for Hillside Park Subdivision’s Source of Public Drinking Water, Anchorage, Alaska

A Hydrogeologic Susceptibility and Vulnerability Analysis

By Heather A. Hammond

Drinking Water Protection Program Alaska Department of Environmental Conservation

EXECUTIVE SUMMARY

The primary water source for Hillside Park Subdivision is a Class A (community) water system consisting of one well in the Anchorage area. Identified potential and current sources of contaminants for Hillside Park Subdivision includes: approximately 200 acres of residential area, residential septic systems, paved roads, a public utility easement, and recreation trails. These identified potential and existing sources of contamination are considered sources of bacteria and viruses, nitrates and/or nitrites, volatile organic chemicals, heavy metals, synthetic organic chemicals, and other organic chemicals. Overall, the public water source for Hillside Park Subdivision received a vulnerability rating of **low** for volatile organic chemicals, heavy metals, synthetic organic chemicals, and other organic chemicals; **medium** for bacteria and viruses; and **high** for nitrates and/or nitrites.

INTRODUCTION

The purpose of this environmental assessment is to provide public water system owners and/or operators, communities, and local governments with information they can use to preserve the quality of Alaska’s public drinking water supplies. This assessment was completed for the source of drinking water serving Hillside Park Subdivision. This water system consists of one well in the Anchorage area (see Figure 1). This assessment, known under the Alaska Drinking Water Protection Program as the *Source Water Assessment*, has combined a review of the natural hydrogeologic sensitivity with potential and existing contaminant risks to arrive at an overall vulnerability of the drinking water source to contamination. This assessment has been completed as a basis for local voluntary protection efforts and to assist agencies in their efforts to reduce risk to this public drinking water supply.

DESCRIPTION OF THE ANCHORAGE AREA, ALASKA

Location

Anchorage, located in southcentral Alaska, encompasses 1,698 square miles of land and 264 square miles of water. The area containing a majority of the urban development, commonly referred to as the Anchorage Bowl, encompasses approximately 180 square miles [Partick, Brabets, and Glass, 1989] and envelopes the low lands of the area. This area is bounded on the east by the Chugach Mountains and the north, west, and south by the Knik and Turnagain Arms of Cook Inlet (Figure 1). In recent times, urban development has extended eastward along the flanks of the Chugach Mountains. This area, known locally as the Anchorage Hillside, contains development at elevations exceeding 3,700 feet in elevation above sea level.



Figure 1. Index map showing the location of Anchorage, Alaska

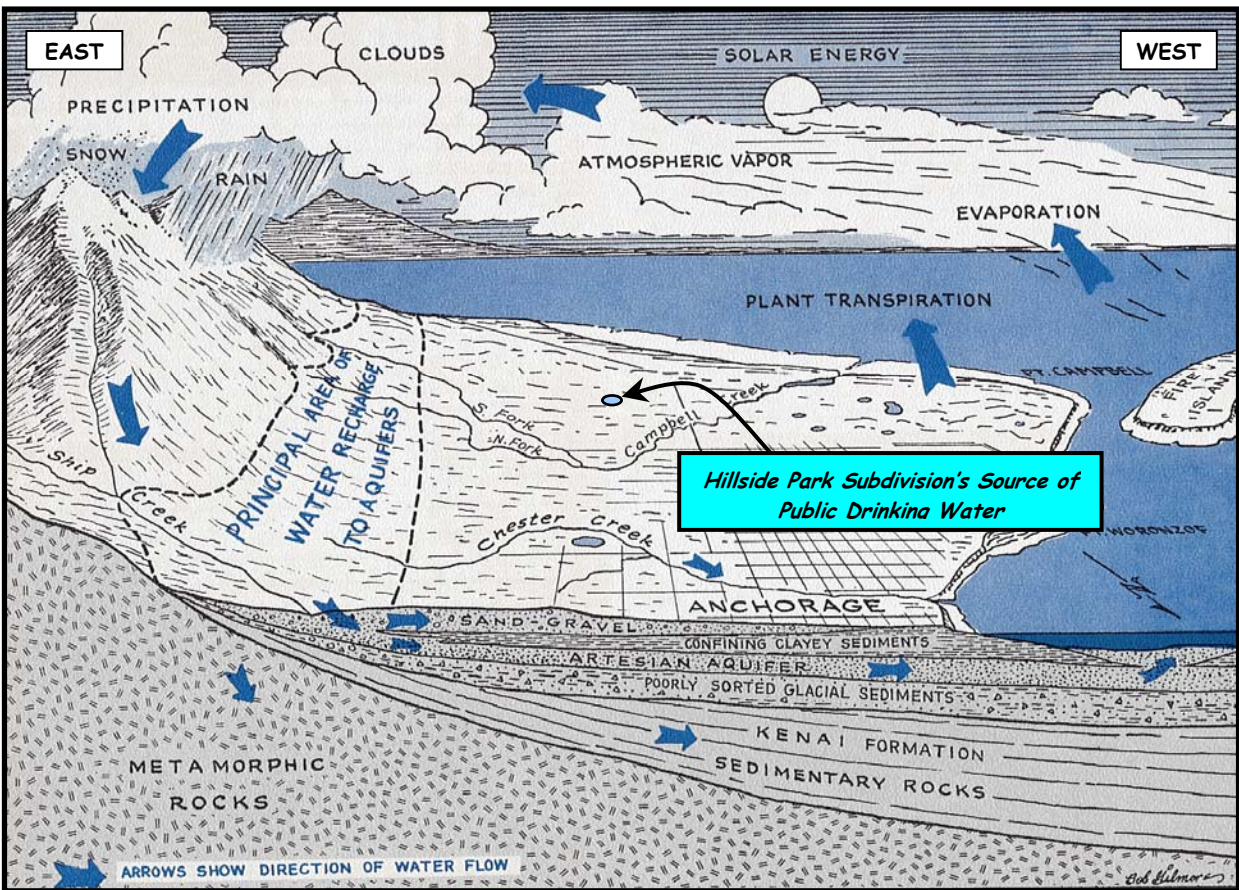


Figure 2. Generalized hydrologic cycle in the Anchorage area [Barnwell, George, Dearborn, Weeks, and Zenone, 1972].

Climate

The Anchorage area climate is somewhat transitional in that it does not experience large daily and annual temperature fluctuations like those experienced in the interior of Alaska nor does it experience high amounts of precipitation typified by gulf coast regions. Mean annual precipitation at the Anchorage International Airport is approximately 16 inches per year. On average, Anchorage receives a total snow accumulation of 69 inches per year. Precipitation generally increases inland toward the Chugach Mountains where annual precipitation may exceed 160 inches per year [Barnwell, George, Dearborn, Weeks, and Zenone, 1972]. Mean daily temperature ranges from 65° F during July to 8° F in January [Western Regional Climate Center, 2000].

Physiography and Groundwater Conditions

Surface elevations in the Anchorage area range from sea level at Knik and Turnagain Arms to well over 5,000 feet in the peaks that bound the area. Glacial moraine and outwash deposits primarily mantle the surface of the Anchorage Bowl.

The backbone of the Chugach Mountains is composed primarily of metamorphic marine and volcanic rocks

(bedrock). These high peaks that bound Anchorage's east side are flanked with colluvium or slope deposits. These slope deposits eventually grade into the glacial and stream deposits at lower elevations in the Anchorage Bowl.

In the Anchorage area, two principal groundwater flow systems or aquifers exist (see Figure 2). The upper unconfined aquifer or water-table aquifer is separated from a lower confined aquifer system by layers of silty, clayey glacially derived sediments (confining layer) [Ulery and Updike, 1983]. The lower confined aquifer system consists of a series of hydrologically interconnected layers and lenses of gravel, sand and silt that, collectively, form the confined aquifer. The confining layer ranges from 0 to 270 feet thick throughout the Anchorage area and generally thins with increasing distance from Cook Inlet, thus pinching out at the mountain front [Patrick, Brabets, and Glass, 1989].

Water enters or recharges these two aquifer systems in several different ways. Along the front of the Chugach Mountains, groundwater seeps from fractures in bedrock into the sediments. At these higher elevations, rain and snowmelt also enter the sediments. This area along the mountain front is considered the principal recharge area

for wells in the Anchorage area. Precipitation in the low lands may also percolate directly into the ground. Lastly, aquifers may also be recharged by streams where surface water percolates into surrounding permeable sediments (losing reaches of streams). Groundwater flow in the confined aquifer is generally east to west from the mountain front toward Cook Inlet and Turnagain Arm, except in areas where the direction of flow is influenced by large municipal or industrial production wells. The direction of groundwater flow in the upper unconfined aquifer is more variable due to the influence from surficial topography as well as its close connection with surface water bodies.

HILLSIDE PARK SUBDIVISION'S SOURCE OF PUBLIC DRINKING WATER

The source of drinking water serving Hillside Park Subdivision is a Class A (community) water system, which is owned and operated by Hillside Park Homeowner's Association.

The system consists of one well, which is located off of O'Malley Road and Crooked Tree Drive (Hillside Park Subdivision, Tract C), at an elevation of approximately 800 feet above sea level (see Figure 3).

According to the most recent Monitoring Waiver Application (3/2/98) most of the area surrounding the well is wooded with spruce, birch and alder. The Monitoring Waiver Application also indicates that the well is sealed by a cap and the land surface surrounding the well is graded so that surface water is diverted from entering the source waters along the casing. Installation of the well occurred July 17, 1979 to a total depth of 283 feet below ground surface and was completed in a 6" well casing. The driller's log does not indicate that the well was grouted at the time of installation. Proper grouting provides added protection against contaminants traveling along the well casing and into source waters.

This system operates year round and serves 136 residents through 38 service connections.

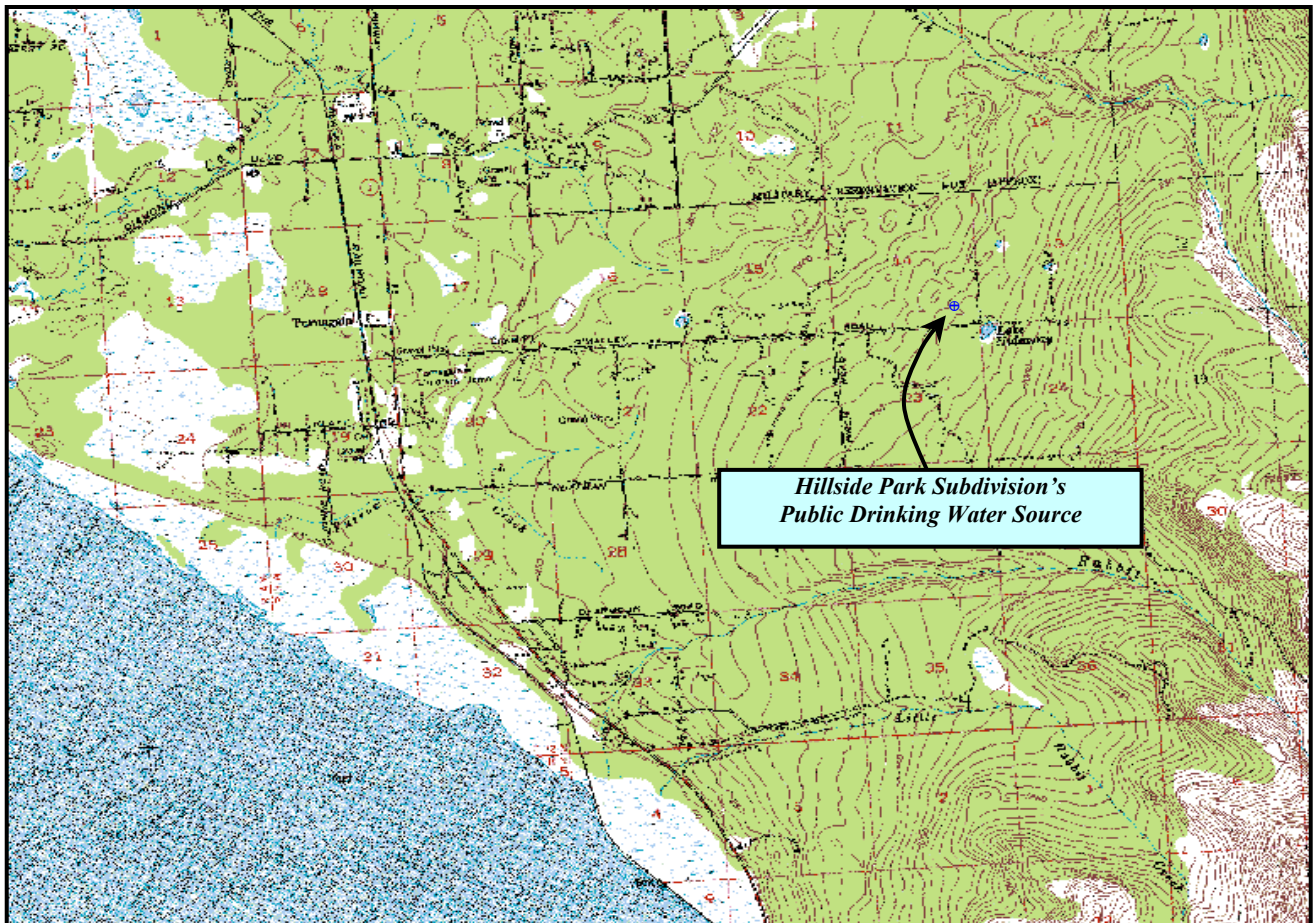


Figure 3. Map showing the location of the drinking water source for Hillside Park Subdivision [Base: USGS Anchorage A8].

ASSESSMENT AND PROTECTION AREA FOR HILLSIDE PARK SUBDIVISION'S SOURCE OF PUBLIC DRINKING WATER

The Drinking Water Protection and Assessment Area that has been established for the primary source of public drinking water serving Hillside Park Subdivision is the area that is most sensitive to contamination. This area serves as a basis for assessing the risk of the drinking water source to contamination. The zones around the drinking water source outline the most critical area for the preservation of the quality of the drinking water for this system. For simplicity, this area will be known as your Drinking Water Protection Area and will serve as the focus for voluntary protection efforts.

Conceptually, groundwater enters the aquifer systems along the front range of the Chugach Mountains (Figure 2) and flows toward Cook Inlet. An analytical calculation was used to determine the size and shape of the area that contributes water to the well. The input parameters describing the attributes of the aquifer in this calculation were adopted from the U.S. Geological Survey [*Patrick, Brabets, and Glass, 1989*]. This analytical calculation was used as a guide as the first step in establishing the protection area for each public drinking water source in Anchorage. Additional methods were further employed to take into account any uncertainties in groundwater flow and aquifer characteristics to arrive at meaningful and conservative protection areas with respect to public health (Please refer to the Guidance Manual for Class A Public Water Systems for additional information).

The Drinking Water Protection Areas established for wells by the Alaska Department of Environmental Conservation are separated into zones. These zones correspond to a time-of-travel. Time-of-travel is the time required for water to move in the saturated zone of the ground from a specific point to the well. The Drinking Water Protection Area for Hillside Park Subdivision contains three zones, Zone A through Zone C (See Map 1 in Appendix A). Zone A corresponds to the area between the wells and the distance equal to $\frac{1}{4}$ of the distance of the 2-year time-of-travel. Depending on where a contaminant source is located within Zone A, travel time for a contaminant to the wells may be on the order of several days to several hours. Zone A also extends downgradient from the wells to take into account the area of the aquifer that is influenced by pumping of the wells. Zone B corresponds to a time-of-travel of less than two years and Zone C corresponds to a time-of-travel of less than 5 years.

INVENTORY OF POTENTIAL AND EXISTING CONTAMINANT SOURCES

The Drinking Water Protection Program has completed an inventory of potential and existing sources of contamination within the Drinking Water Protection Area for the source of public drinking water serving Hillside Park Subdivision. This survey was completed through a search of agency records and other publicly available information. Potential sources of contamination to drinking water supplies cover a wide range of categories and types. Potential drinking water contaminants are found within agricultural, residential, commercial, and industrial areas, but can also occur within areas that have little or no development.

For the basis of this assessment and all Class A public water system assessments, six categories of drinking water contaminants were inventoried. They include:

- Bacteria and viruses
- Nitrates and/or nitrites
- Volatile organic chemicals
- Heavy metals, cyanide, and other inorganic chemicals
- Synthetic organic chemicals
- Other organic chemicals

Maps 2 through 4 in Appendix C depict the Contaminant Source Inventory for the source of public drinking water serving Hillside Park Subdivision. Table 1 in Appendix B lists the inventoried potential sources of contamination within Zones A through C. Below is a summary of the contaminant sources inventoried within the Drinking Water Protection Area:

- Approximately 200 acres of residential area;
- residential septic systems;
- roads;
- a public utility easement;
- and recreation trails.

These potential and existing contaminant sources present risk for all six categories of drinking water contaminants.

RANKING OF CONTAMINANT RISKS

Potential and existing sources of contamination have been identified, sorted, and ranked according to what type and level of risk they represent. Ranking of contaminant risks for a "potential" or "existing" source of contamination is a function of toxicity and volumes of specific

contaminants associated with that source. Contaminant risks are further a function of the number and density of those types of contaminant sources as well as the proximity of those sources to the public drinking water well.

VULNERABILITY OF HILLSIDE PARK SUBDIVISION’S PUBLIC DRINKING WATER SOURCE

Vulnerability of a drinking water source to contamination is a combination of two factors:

- natural susceptibility; and
- contaminant risks.

Each of the six categories of drinking water contaminants have been analyzed and an overall vulnerability score of 0 to 100 ultimately assigned:

$$\begin{array}{r}
 \text{Natural Susceptibility (0 – 50 points)} \\
 + \\
 \text{Contaminant Risks (0 – 50 points)} \\
 = \\
 \text{Vulnerability of the} \\
 \text{Drinking Water Source to Contamination (0 – 100).}
 \end{array}$$

A score for the Natural Susceptibility is achieved by analyzing the properties of the well and the aquifer.

$$\begin{array}{r}
 \text{Susceptibility of the Wellhead (0 – 25 Points)} \\
 + \\
 \text{Susceptibility of the Aquifer (0 – 25 Points)} \\
 = \text{Natural Susceptibility (Susceptibility of the Well)} \\
 \text{(0 – 50 Points)}
 \end{array}$$

According to the well log the well was completed in a confined aquifer. There are several impervious layers above the aquifer. The first confining layer consists of clayey hardpan and exists from 54 to 71 feet below ground surface. The second confining layer consists of blue clay and exists from 181 to 199 feet below ground surface. The third confining layer consists of silty hardpan and exists from 210 to 226 feet below ground surface. These confining layers may provide a protective barrier against the movement of contaminants in the subsurface. However, near the base of the Chugach Mountains, these clay layers tend to be discontinuous and thin toward the mountains. Therefore, contaminants that enter the subsurface near the base of the mountains may enter the confined aquifer uninhibited by the absence of

any protective layer.

Combining the susceptibility of the wellhead and the aquifer to contamination leads to a score (0 – 50 points) and rating of overall Susceptibility of the well to contamination (See Appendix D). Table 1 depicts the overall Susceptibility score and rating for the primary source of public drinking water serving Sky Ranch Estates.

Table 1. Natural Susceptibility - Susceptibility of the Wellhead and Aquifer to Contamination

	Score	Rating
Susceptibility of the Wellhead	5	Low
Susceptibility of the Aquifer	18	High
Natural Susceptibility	23	Medium

Contaminant risks to a drinking water source depend on the type, number or density, and distribution of contaminant sources. A score (0 – 50 points) and rating of Contaminant Risks (See Appendix D) is assigned based on the findings of the Contaminant Source Inventory (See Appendix B - Table 1 – Table 7). This portion of the analysis examines any existing or historical contamination that has been detected at the drinking water source through routine sampling. It also reviews contamination that has or may have occurred but has not arrived or been detected at the either well. Table 2 summarizes the Contaminant Risks for each category of drinking water contaminants.

Table 2. Contaminant Risks to Hillside Park Subdivision’s Public Drinking Water Source

Contaminant Risks	Score	Rating
Bacteria and Viruses	25	Medium
Nitrates and/or Nitrites	42	Very High
Volatile Organic Chemicals	12	Low
Heavy Metals, Cyanide, And Other Inorganic Chemicals	12	Low
Synthetic Organic Chemicals	12	Low
Other Organic Chemicals	12	Low

Appendix D contains fourteen charts, which together form the ‘Vulnerability Analysis’ for a Class A public drinking water system. Chart 1 analyzes the ‘Susceptibility of the Wellhead’ to contamination by looking at the construction of the well and its surrounding area. Chart 2 analyzes the ‘Susceptibility of the Aquifer’ to contamination by looking at the naturally occurring attributes of the water source and influences on the groundwater system that might lead to contamination. Chart 3 analyzes ‘Contaminant Risks’ for the drinking water source with respect to bacteria and viruses. The ‘Contaminant Risks’ portion of the analysis considers potential sources of contaminants as well as a review of contamination that has or may have occurred but has not arrived or been detected at the well. Lastly, Chart 4 contains the ‘Vulnerability Analysis for Bacteria and Viruses’. Charts 5 through 14 contain the Contaminant Risks and Vulnerability Analysis for nitrates and nitrites, volatile organic chemicals, heavy metals, synthetic organic chemicals, and other organic chemicals, respectively.

Vulnerability of drinking water sources to contamination is the combination of susceptibility of the aquifer and the well with contaminant risks. Table 3 contains the overall vulnerability scores (0 – 100) and ratings for each of the six categories of drinking water contaminants (See Appendix D). Note: scores are rounded off to the nearest five.

Table 3. Overall Vulnerability of Hillside Park Subdivision’s Public Drinking Water Source to Contamination by Category

Category	Score	Rating
Bacteria and Viruses	50	Medium
Nitrates and Nitrites	65	High
Volatile Organic Chemicals	35	Low
Heavy Metals, Cyanide, and Other Inorganic Chemicals	35	Low
Synthetic Organic Chemicals	35	Low
Other Organic Chemicals	35	Low

Tables 2 through 7 in Appendix B contain the ranking of potential and existing sources of contamination with respect to bacteria and viruses, nitrates and/or nitrites, heavy metals, synthetic organic chemicals, and other organic chemicals, respectively.

Review of the historical sampling data indicates that bacteria and virus contamination has not been detected at the source waters. The most significant sources of

bacteria and viruses within the protection area include residential septic systems, and residential areas.

Nitrates and/or nitrites are found in natural background concentration throughout Alaska. Nitrate concentrations in uncontaminated groundwater are typically less than 2 milligrams per liter (mg/L) and are derived primarily from the decomposition of organic matter in soils [Wang, Strelakos, Jokela, 2000].

Sampling history for Hillside Park Subdivision indicates that nitrates have been detected (See Chart 5 – Contaminant Risks for Nitrates and/or Nitrites in Appendix D). Existing nitrate concentration is approximately 35% of the Maximum Contaminant Level or MCL. The MCL is the maximum level of contaminant that is allowed to exist in drinking water and still be consumed by humans without harmful health effects. Due to the high solubility and weak retention by soil, nitrates are very mobile, moving at approximately the same rate as water.

Throughout the past 5 years nitrate and/or nitrite concentrations at this site have slightly increased (See Chart 5 – Contaminant Risks for Nitrates and/or Nitrites in Appendix D). It is unknown how much of the existing nitrate concentration can be attributed to natural or human-made sources. Each residence up-gradient of the well has a septic system. Residential septic systems, because of their effluent discharge, pose significant potential contaminant risk to the source of public drinking water for nitrates and/or nitrites. The concentration of nitrates and/or nitrites detected in the source waters serving Hillside Park Subdivision could be related to the density of residential septic systems located within the protection area.

Historical sampling data for volatile organic chemicals indicate that none have been detected at the well within the past five years. Dirt and paved roads as well as residential areas within the protection area are the most significant sources of potential volatile organic chemical contamination to Hillside Park Subdivision’s drinking water source. Because roads do pose a potential for fuel spills to occur, major routes were ranked as low for volatile organic chemicals.

A natural gas pipeline transverses the Zone A and B Protection Areas. Natural gas does not pose a threat to drinking water supplies. However, this area is an active public utility corridor. This utility corridor, through not heavily used represents a very low contaminant risk from

volatile organic chemicals due to activities along the corridor.

Residential areas, residential septic systems, and roads within the protection area present the most significant source of potential contamination, from heavy metals, synthetic organic chemicals, and other organic chemicals to the well. Historical sampling data for all three contaminant categories indicate that none have been detected at the well site.

SUMMARY

A *Source Water Assessment* has been completed for the source of public drinking water serving Hillside Park Subdivision. The overall vulnerability of this source to contamination is **low** for volatile organic chemicals, heavy metals, synthetic organic chemicals, and other organic chemicals; **medium** for bacteria and viruses; and **high** for nitrates and/or nitrites. This assessment of contaminant risks can be used as a foundation for local voluntary protection efforts as well as a basis for the continuous efforts on the part of Hillside Park Subdivision to protect public health. It is anticipated that *Source Water Assessments* will be updated every five years to reflect any changes in the vulnerability and/or susceptibility of Hillside Park Subdivision's source of public drinking water.

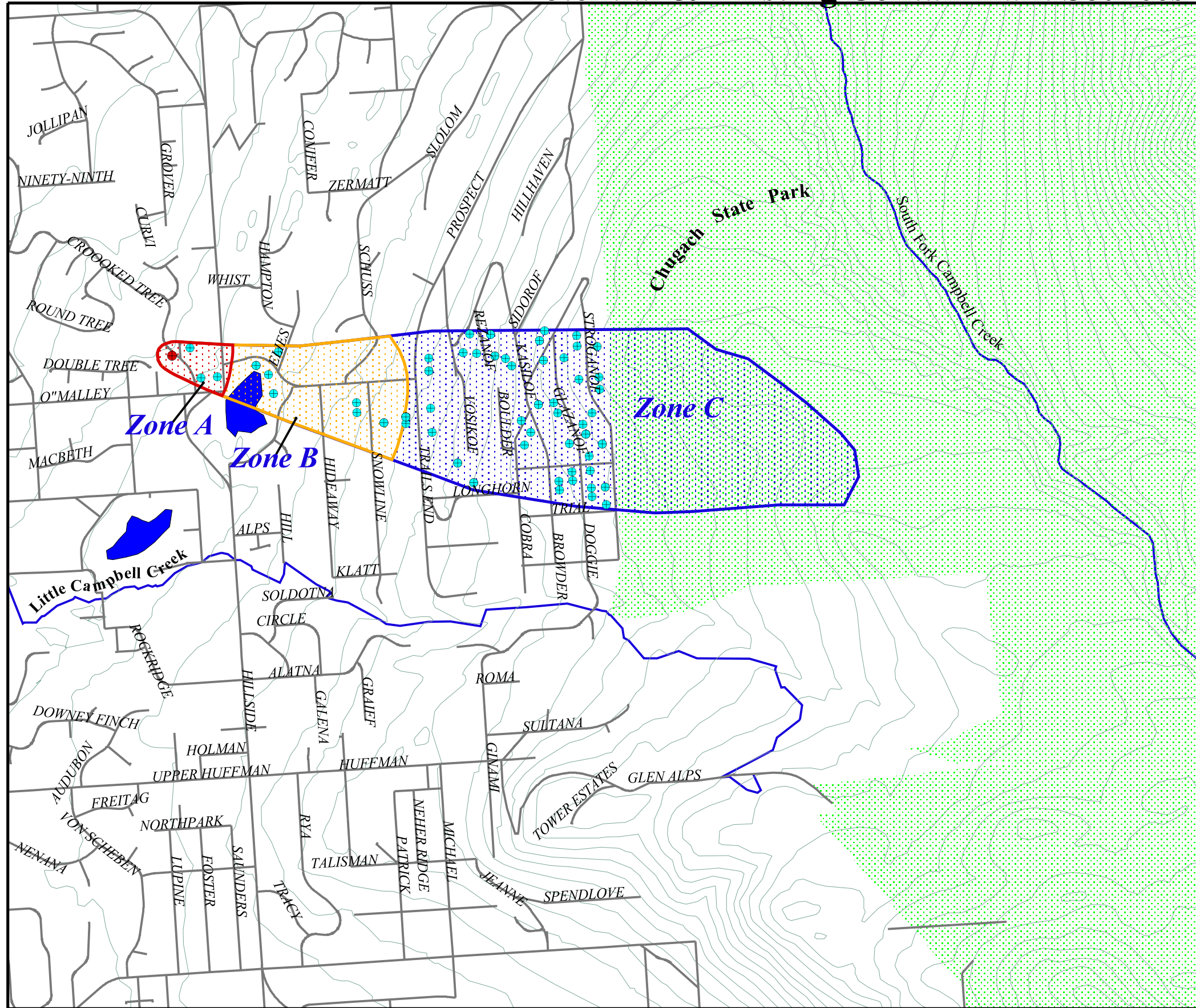
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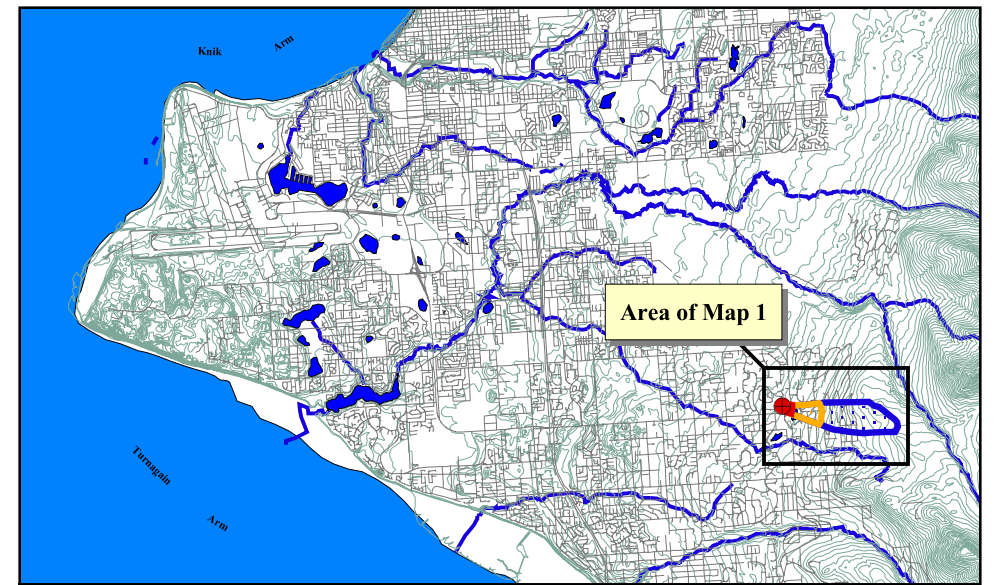
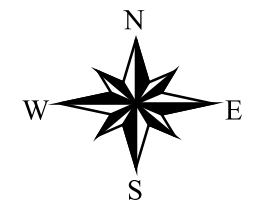
APPENDIX A

Hillside Park Subdivision's Drinking Water Protection Area

Drinking Water Protection Area and Potential & Existing Contaminant Sources



- Hillside Park Subdivision Well
- Public & Private DW Wells
- Zone A Protection Area**
 - Several Months Travel Time
- Zone B Protection Area**
 - Less Than 2 Years Travel Time
- Zone C Protection Area**
 - Less Than 5 Years Travel Time
- Roads
- Chugach State Park
- Anchorage Lakes
- Elevation Contours
- Anchorage Streams



3000 0 3000 6000 Feet

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Map 1

APPENDIX B

Contaminant Source Inventory and Risk Ranking for Hillside Park Subdivision

Table 1

**Contaminant Source Inventory for
Hillside Park S/D**

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Contaminant Source Type	Contaminant Source ID	CS ID tag	Zone	Location	Map Number	Comments
Residential Areas	R01	R1-1	A	Residential areas located within Zone A	2	Approximately 11 acres of residential area.
Septic systems (serves one single-family home)	R02	R2-1	A	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-10	A	Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-11	A	Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-2	A	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-3	A	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-4	A	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-5	A	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-6	A	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-7	A	Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-8	A	Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-9	A	Off of Hillside Drive	4	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Crooked Tree Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Treeline Court	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	A	Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	A	Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	A	Upper O'Malley Road	2	
Dog walking areas/foot trails	X46	X46-1	A	Trail intersecting Zone A crossing Crooked Creek Drive	2	
Dog walking areas/foot trails	X46	X46-2	A	Trail along east side of Hillside Drive	2	
Public utility easements/corridors	X42	X42-1	A,B	Pipeline with public utility easement/corridor intersecting Zones A and B	2	
Residential Areas	R01	R1-2	B	Residential areas located within Zone B	2	Approximately 64 acres of residential area.
Septic systems (serves one single-family home)	R02	R2-12	B	Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-13	B	Off of Upper O'Malley Road	4	

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one single-family home)	R02	R2-14	B	Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-15	B	Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-16	B	Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-17	B	Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-18	B	Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-19	B	Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-20	B	Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-21	B	Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-22	B	Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-23	B	Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-24	B	Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-25	B	Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-26	B	Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-27	B	Off of Hideaway Trail	4	
Septic systems (serves one single-family home)	R02	R2-28	B	Off of Hideaway Trail	4	
Septic systems (serves one single-family home)	R02	R2-29	B	Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-30	B	Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-31	B	Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-32	B	Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-33	B	Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-34	B	Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-35	B	Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-36	B	Off of Schuss Drive	4	
Septic systems (serves one single-family home)	R02	R2-37	B	Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-38	B	Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-39	B	Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-40	B	Of of Snowline Drive	4	

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one single-family home)	R02	R2-41	B	Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-42	B	Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-43	B	Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-44	B	Off of Schuss Drive	4	
Highways and roads, paved (cement or asphalt)	X20	X20-10	B	Schuss Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Elies Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Hideaway Lake Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Hideaway Trail	2	
Highways and roads, paved (cement or asphalt)	X20	X20-9	B	Snowline Drive	2	
Dog walking areas/foot trails	X46	X46-3	B	Trail along North side of Upper O'Malley Road	2	
Residential Areas	R01	R1-3	C	Residential areas located within Zone C	4	Approximately 125 acres of residential area.
Septic systems (serves one single-family home)	R02	R245-158	C	All septic systems located within Zone C	5	
Highways and roads, paved (cement or asphalt)	X20	X20-11-23	C	All roads located within Zone C	3	
Dog walking areas/foot trails	X46	X46-4	C	Trail along Prospect Drive in Zone C	3	

Table 2

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Bacteria and Viruses*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas located within Zone A	2	Approximately 11 acres of residential area.
Residential Areas	R01	R1-2	B	Low	2	Residential areas located within Zone B	2	Approximately 64 acres of residential area.
Septic systems (serves one single-family home)	R02	R2-1	A	Low	3	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-2	A	Low	4	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-3	A	Low	5	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-4	A	Low	6	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-5	A	Low	7	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-6	A	Low	8	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-7	A	Low	9	Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-8	A	Low	10	Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-10	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-11	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-9	A	Low		Off of Hillside Drive	4	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low		Crooked Tree Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low		Treeline Court	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	A	Low		Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	A	Low		Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	A	Low		Upper O'Malley Road	2	
Dog walking areas/foot trails	X46	X46-1	A	Low		Trail intersecting Zone A crossing Crooked Creek Drive	2	

Table 2 (continued)

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Bacteria and Viruses*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Dog walking areas/foot trails	X46	X46-2	A	Low		Trail along east side of Hillside Drive	2	
Septic systems (serves one single-family home)	R02	R2-12	B	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-13	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-14	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-15	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-16	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-17	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-18	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-19	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-20	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-21	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-22	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-23	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-24	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-25	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-26	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-27	B	Low		Off of Hideaway Trail	4	
Septic systems (serves one single-family home)	R02	R2-28	B	Low		Off of Hideaway Trail	4	

Table 2 (continued)

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Bacteria and Viruses*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one single-family home)	R02	R2-29	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-30	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-31	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-32	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-33	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-34	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-35	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-36	B	Low		Off of Schuss Drive	4	
Septic systems (serves one single-family home)	R02	R2-37	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-38	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-39	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-40	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-41	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-42	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-43	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-44	B	Low		Off of Schuss Drive	4	
Highways and roads, paved (cement or asphalt)	X20	X20-10	B	Low		Schuss Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low		Elies Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low		Hideaway Lake Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low		Hideaway Trail	2	
Highways and roads, paved (cement or asphalt)	X20	X20-9	B	Low		Snowline Drive	2	

Table 2 (continued)

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Bacteria and Viruses*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Dog walking areas/foot trails	X46	X46-3	B	Low		Trail along North side of Upper O'Malley Road	2	
Residential Areas	R01	R1-3	C	Low		Residential areas located within Zone C	4	Approximately 125 acres of residential area.
Septic systems (serves one single-family home)	R02	R245-158	C	Low		All septic systems located within Zone C	5	
Highways and roads, paved (cement or asphalt)	X20	X20-11-23	C	Low		All roads located within Zone C	3	
Dog walking areas/foot trails	X46	X46-4	C	Low		Trail along Prospect Drive in Zone C	3	

Table 3

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Nitrates/Nitrites*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas located within Zone A	2	Approximately 11 acres of residential area.
Residential Areas	R01	R1-2	B	Low	2	Residential areas located within Zone B	2	Approximately 64 acres of residential area.
Septic systems (serves one single-family home)	R02	R2-1	A	Low	3	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-2	A	Low	4	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-3	A	Low	5	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-4	A	Low	6	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-5	A	Low	7	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-6	A	Low	8	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-7	A	Low	9	Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-8	A	Low	10	Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-10	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-11	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-9	A	Low		Off of Hillside Drive	4	
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low		Crooked Tree Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low		Treeline Court	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	A	Low		Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	A	Low		Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	A	Low		Upper O'Malley Road	2	
Dog walking areas/foot trails	X46	X46-1	A	Low		Trail intersecting Zone A crossing Crooked Creek Drive	2	

Table 3 (continued)

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Nitrates/Nitrites*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Dog walking areas/foot trails	X46	X46-2	A	Low		Trail along east side of Hillside Drive	2	
Septic systems (serves one single-family home)	R02	R2-12	B	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-13	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-14	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-15	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-16	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-17	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-18	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-19	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-20	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-21	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-22	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-23	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-24	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-25	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-26	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-27	B	Low		Off of Hideaway Trail	4	
Septic systems (serves one single-family home)	R02	R2-28	B	Low		Off of Hideaway Trail	4	

Table 3 (continued)

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Nitrates/Nitrites*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one single-family home)	R02	R2-29	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-30	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-31	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-32	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-33	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-34	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-35	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-36	B	Low		Off of Schuss Drive	4	
Septic systems (serves one single-family home)	R02	R2-37	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-38	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-39	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-40	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-41	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-42	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-43	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-44	B	Low		Off of Schuss Drive	4	
Highways and roads, paved (cement or asphalt)	X20	X20-10	B	Low		Schuss Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low		Elies Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low		Hideaway Lake Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low		Hideaway Trail	2	
Highways and roads, paved (cement or asphalt)	X20	X20-9	B	Low		Snowline Drive	2	

Table 3 (continued)

Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Nitrates/Nitrites

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Dog walking areas/foot trails	X46	X46-3	B	Low		Trail along North side of Upper O'Malley Road	2	
Residential Areas	R01	R1-3	C	Low		Residential areas located within Zone C	4	Approximately 125 acres of residential area.
Septic systems (serves one single-family home)	R02	R245-158	C	Low		All septic systems located within Zone C	5	
Highways and roads, paved (cement or asphalt)	X20	X20-11-23	C	Low		All roads located within Zone C	3	
Dog walking areas/foot trails	X46	X46-4	C	Low		Trail along Prospect Drive in Zone C	3	

Table 4

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Volatile Organic Chemicals*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas located within Zone A	2	Approximately 11 acres of residential area.
Residential Areas	R01	R1-2	B	Low	2	Residential areas located within Zone B	2	Approximately 64 acres of residential area.
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low	3	Crooked Tree Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low	4	Treeline Court	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	A	Low	5	Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	A	Low	6	Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	A	Low	7	Upper O'Malley Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low	8	Elies Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low	9	Hideaway Lake Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low	10	Hideaway Trail	2	
Septic systems (serves one single-family home)	R02	R2-1	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-10	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-11	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-2	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-3	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-4	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-5	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-6	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-7	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-8	A	Low		Off of Hillside Drive	4	

Table 4 (continued)

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Volatile Organic Chemicals*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one single-family home)	R02	R2-9	A	Low		Off of Hillside Drive	4	
Public utility easements/corridors	X42	X42-1	A,B	Low		Pipeline with public utility easement/corridor intersecting Zones A and B	2	
Septic systems (serves one single-family home)	R02	R2-12	B	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-13	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-14	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-15	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-16	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-17	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-18	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-19	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-20	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-21	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-22	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-23	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-24	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-25	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-26	B	Low		Off of Elies Drive	4	

Table 4 (continued)

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Volatile Organic Chemicals*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one single-family home)	R02	R2-27	B	Low		Off of Hideaway Trail	4	
Septic systems (serves one single-family home)	R02	R2-28	B	Low		Off of Hideaway Trail	4	
Septic systems (serves one single-family home)	R02	R2-29	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-30	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-31	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-32	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-33	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-34	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-35	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-36	B	Low		Off of Schuss Drive	4	
Septic systems (serves one single-family home)	R02	R2-37	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-38	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-39	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-40	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-41	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-42	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-43	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-44	B	Low		Off of Schuss Drive	4	
Highways and roads, paved (cement or asphalt)	X20	X20-10	B	Low		Schuss Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-9	B	Low		Snowline Drive	2	
Residential Areas	R01	R1-3	C	Low		Residential areas located within Zone C	4	Approximately 125 acres of residential area.

Table 4 (continued)

Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Volatile Organic Chemicals

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one single-family home)	R02	R245-158	C	Low		All septic systems located within Zone C	5	
Highways and roads, paved (cement or asphalt)	X20	X20-11-23	C	Low		All roads located within Zone C	3	

Table 5

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D*

PWSID 212461.001

Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas located within Zone A	2	Approximately 11 acres of residential area.
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low	2	Crooked Tree Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low	3	Treeline Court	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	A	Low	4	Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	A	Low	5	Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	A	Low	6	Upper O'Malley Road	2	
Residential Areas	R01	R1-2	B	Low	7	Residential areas located within Zone B	2	Approximately 64 acres of residential area.
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low	8	Elies Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low	9	Hideaway Lake Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low	10	Hideaway Trail	2	
Septic systems (serves one single-family home)	R02	R2-1	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-10	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-11	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-2	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-3	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-4	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-5	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-6	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-7	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-8	A	Low		Off of Hillside Drive	4	

Table 5 (continued)

Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D

PWSID 212461.001

Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one single-family home)	R02	R2-9	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-12	B	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-13	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-14	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-15	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-16	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-17	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-18	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-19	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-20	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-21	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-22	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-23	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-24	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-25	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-26	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-27	B	Low		Off of Hideaway Trail	4	
Septic systems (serves one single-family home)	R02	R2-28	B	Low		Off of Hideaway Trail	4	
Septic systems (serves one single-family home)	R02	R2-29	B	Low		Off of Snowline Drive	4	

Table 5 (continued)

Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D

PWSID 212461.001

Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals

Contaminant Source Type	Contaminant Source ID	CS ID tag	Zone	Risk Ranking for Analysis	Overall Rank after Analysis	Location	Map Number	Comments
Septic systems (serves one single-family home)	R02	R2-30	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-31	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-32	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-33	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-34	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-35	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-36	B	Low		Off of Schuss Drive	4	
Septic systems (serves one single-family home)	R02	R2-37	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-38	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-39	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-40	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-41	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-42	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-43	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-44	B	Low		Off of Schuss Drive	4	
Highways and roads, paved (cement or asphalt)	X20	X20-10	B	Low		Schuss Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-9	B	Low		Snowline Drive	2	
Residential Areas	R01	R1-3	C	Low		Residential areas located within Zone C	4	Approximately 125 acres of residential area.
Septic systems (serves one single-family home)	R02	R245-158	C	Low		All septic systems located within Zone C	5	
Highways and roads, paved (cement or asphalt)	X20	X20-11-23	C	Low		All roads located within Zone C	3	

Table 5 (continued)

Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D

PWSID 212461.001

Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
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Table 6

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Synthetic Organic Chemicals*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas located within Zone A	2	Approximately 11 acres of residential area.
Residential Areas	R01	R1-2	B	Low	2	Residential areas located within Zone B	2	Approximately 64 acres of residential area.
Septic systems (serves one single-family home)	R02	R2-1	A	Low	3	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-2	A	Low	4	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-3	A	Low	5	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-4	A	Low	6	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-5	A	Low	7	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-6	A	Low	8	Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-7	A	Low	9	Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-8	A	Low	10	Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-10	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-11	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-9	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-12	B	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-13	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-14	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-15	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-16	B	Low		Off of Upper O'Malley Road	4	

Table 6 (continued)

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Synthetic Organic Chemicals*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one single-family home)	R02	R2-17	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-18	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-19	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-20	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-21	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-22	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-23	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-24	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-25	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-26	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-27	B	Low		Off of Hideaway Trail	4	
Septic systems (serves one single-family home)	R02	R2-28	B	Low		Off of Hideaway Trail	4	
Septic systems (serves one single-family home)	R02	R2-29	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-30	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-31	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-32	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-33	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-34	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-35	B	Low		Off of Upper O'Malley Road	4	

Table 6 (continued)

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Synthetic Organic Chemicals*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one single-family home)	R02	R2-36	B	Low		Off of Schuss Drive	4	
Septic systems (serves one single-family home)	R02	R2-37	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-38	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-39	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-40	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-41	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-42	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-43	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-44	B	Low		Off of Schuss Drive	4	
Residential Areas	R01	R1-3	C	Low		Residential areas located within Zone C	4	Approximately 125 acres of residential area.
Septic systems (serves one single-family home)	R02	R245-158	C	Low		All septic systems located within Zone C	5	

Table 7

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Other Organic Chemicals*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Residential Areas	R01	R1-1	A	Low	1	Residential areas located within Zone A	2	Approximately 11 acres of residential area.
Residential Areas	R01	R1-2	B	Low	2	Residential areas located within Zone B	2	Approximately 64 acres of residential area.
Highways and roads, paved (cement or asphalt)	X20	X20-1	A	Low	3	Crooked Tree Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-2	A	Low	4	Treeline Court	2	
Highways and roads, paved (cement or asphalt)	X20	X20-3	A	Low	5	Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-4	A	Low	6	Hillside Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-5	A	Low	7	Upper O'Malley Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-6	B	Low	8	Elies Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-7	B	Low	9	Hideaway Lake Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-8	B	Low	10	Hideaway Trail	2	
Septic systems (serves one single-family home)	R02	R2-1	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-10	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-11	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-2	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-3	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-4	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-5	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-6	A	Low		Off of Crooked Creek Drive	4	
Septic systems (serves one single-family home)	R02	R2-7	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-8	A	Low		Off of Hillside Drive	4	

Table 7 (continued)

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Other Organic Chemicals*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one single-family home)	R02	R2-9	A	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-12	B	Low		Off of Hillside Drive	4	
Septic systems (serves one single-family home)	R02	R2-13	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-14	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-15	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-16	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-17	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-18	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-19	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-20	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-21	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-22	B	Low		Off of Hideaway Lake Drive	4	
Septic systems (serves one single-family home)	R02	R2-23	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-24	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-25	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-26	B	Low		Off of Elies Drive	4	
Septic systems (serves one single-family home)	R02	R2-27	B	Low		Off of Hideaway Trail	4	
Septic systems (serves one single-family home)	R02	R2-28	B	Low		Off of Hideaway Trail	4	
Septic systems (serves one single-family home)	R02	R2-29	B	Low		Off of Snowline Drive	4	

Table 7 (continued)

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Other Organic Chemicals*

PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
Septic systems (serves one single-family home)	R02	R2-30	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-31	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-32	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-33	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-34	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-35	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-36	B	Low		Off of Schuss Drive	4	
Septic systems (serves one single-family home)	R02	R2-37	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-38	B	Low		Off of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-39	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-40	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-41	B	Low		Of of Snowline Drive	4	
Septic systems (serves one single-family home)	R02	R2-42	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-43	B	Low		Off of Upper O'Malley Road	4	
Septic systems (serves one single-family home)	R02	R2-44	B	Low		Off of Schuss Drive	4	
Highways and roads, paved (cement or asphalt)	X20	X20-10	B	Low		Schuss Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-9	B	Low		Snowline Drive	2	
Residential Areas	R01	R1-3	C	Low		Residential areas located within Zone C	4	Approximately 125 acres of residential area.
Septic systems (serves one single-family home)	R02	R245-158	C	Low		All septic systems located within Zone C	5	
Highways and roads, paved (cement or asphalt)	X20	X20-11-23	C	Low		All roads located within Zone C	3	

Table 7 (continued)

*Contaminant Source Inventory and Risk Ranking for
Hillside Park S/D
Sources of Other Organic Chemicals*

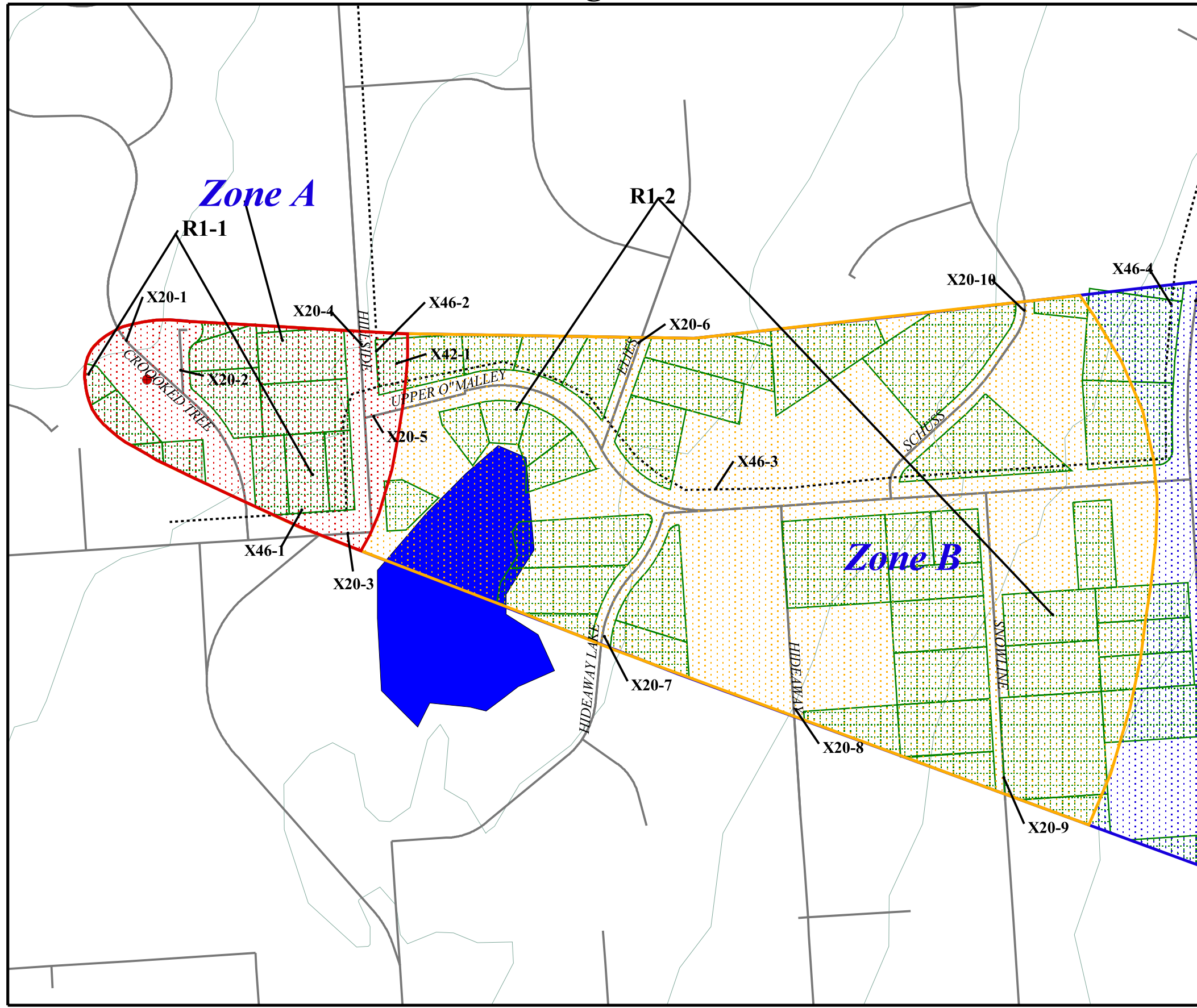
PWSID 212461.001

<i>Contaminant Source Type</i>	<i>Contaminant Source ID</i>	<i>CS ID tag</i>	<i>Zone</i>	<i>Risk Ranking for Analysis</i>	<i>Overall Rank after Analysis</i>	<i>Location</i>	<i>Map Number</i>	<i>Comments</i>
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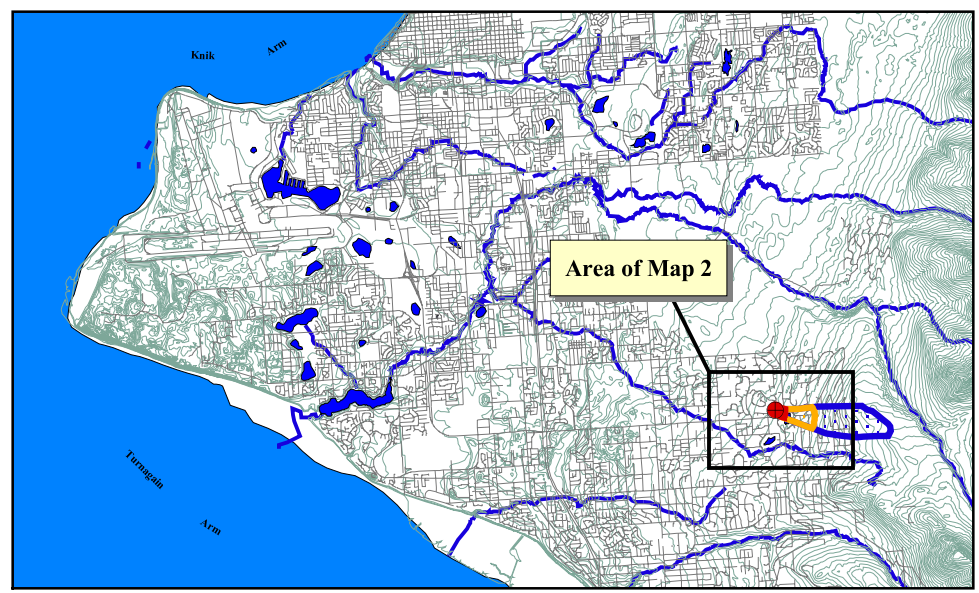
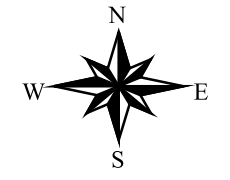
APPENDIX C

Hillside Park Subdivision's Drinking Water Protection Area and Potential & Existing Contaminant Sources

Drinking Water Protection Area and Potential & Existing Contaminant Sources for Hillside Park Subdivision



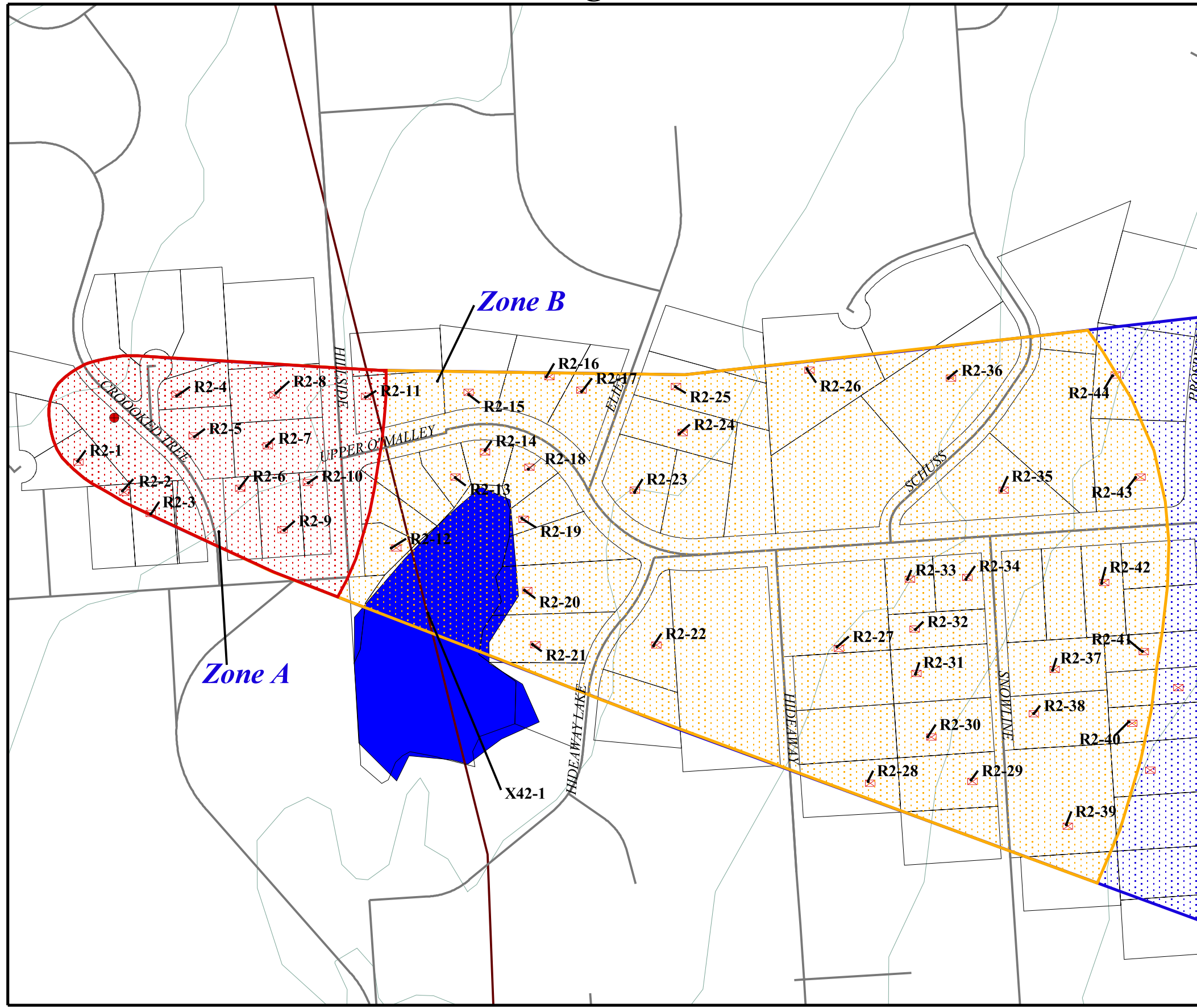
- Hillside Park Subdivision Well
- Zone A Protection Area**
- Several Months Travel Time
- Zone B Protection Area**
- Less Than 2 Years Travel Time
- Zone C Protection Area**
- Less Than 5 Years Travel Time
- Lawns and Gardens (R1)
- Trails (X46)
- Roads (X20)
- Elevation Contours
- Anchorage Streams
- Anchorage Lakes



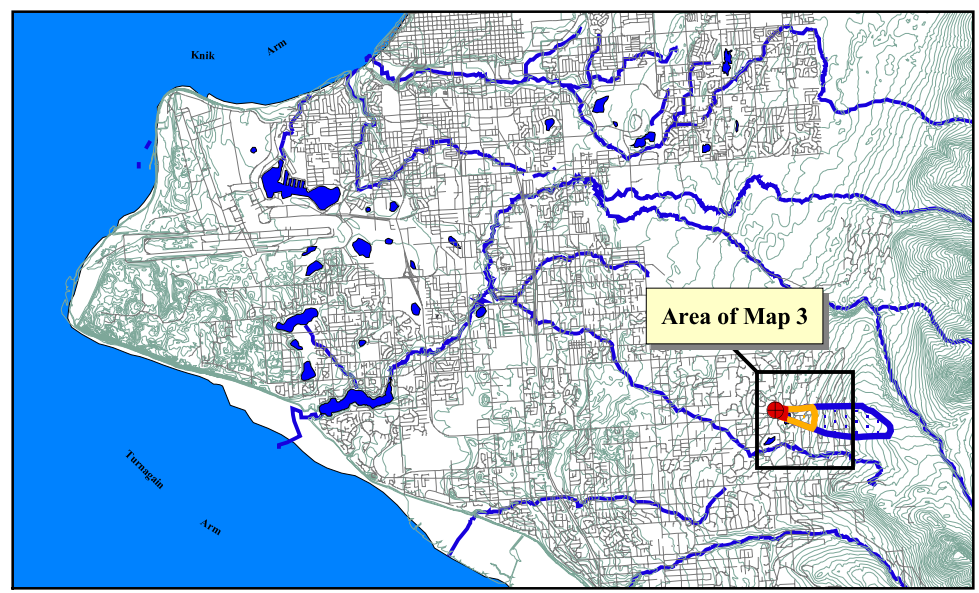
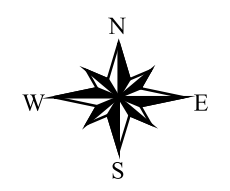
PWSID 212461.001

Map 2

Drinking Water Protection Area and Potential & Existing Contaminant Sources for Hillside Park Subdivision



- Hillside Park Subdivision Well
- Zone A Protection Area**
- ▨ Several Months Travel Time
- Zone B Protection Area**
- ▨ Less Than 2 Years Travel Time
- Zone C Protection Area**
- ▨ Less Than 5 Years Travel Time
- ⊠ Septic Systems (R2)
- ⌒ Roads (X20)
- MOA Land Parcels
- ⌒ Public Utility Easements/Corridors (X42)
- ⌒ Elevation Contours
- ⌒ Anchorage Streams
- Anchorage Lakes

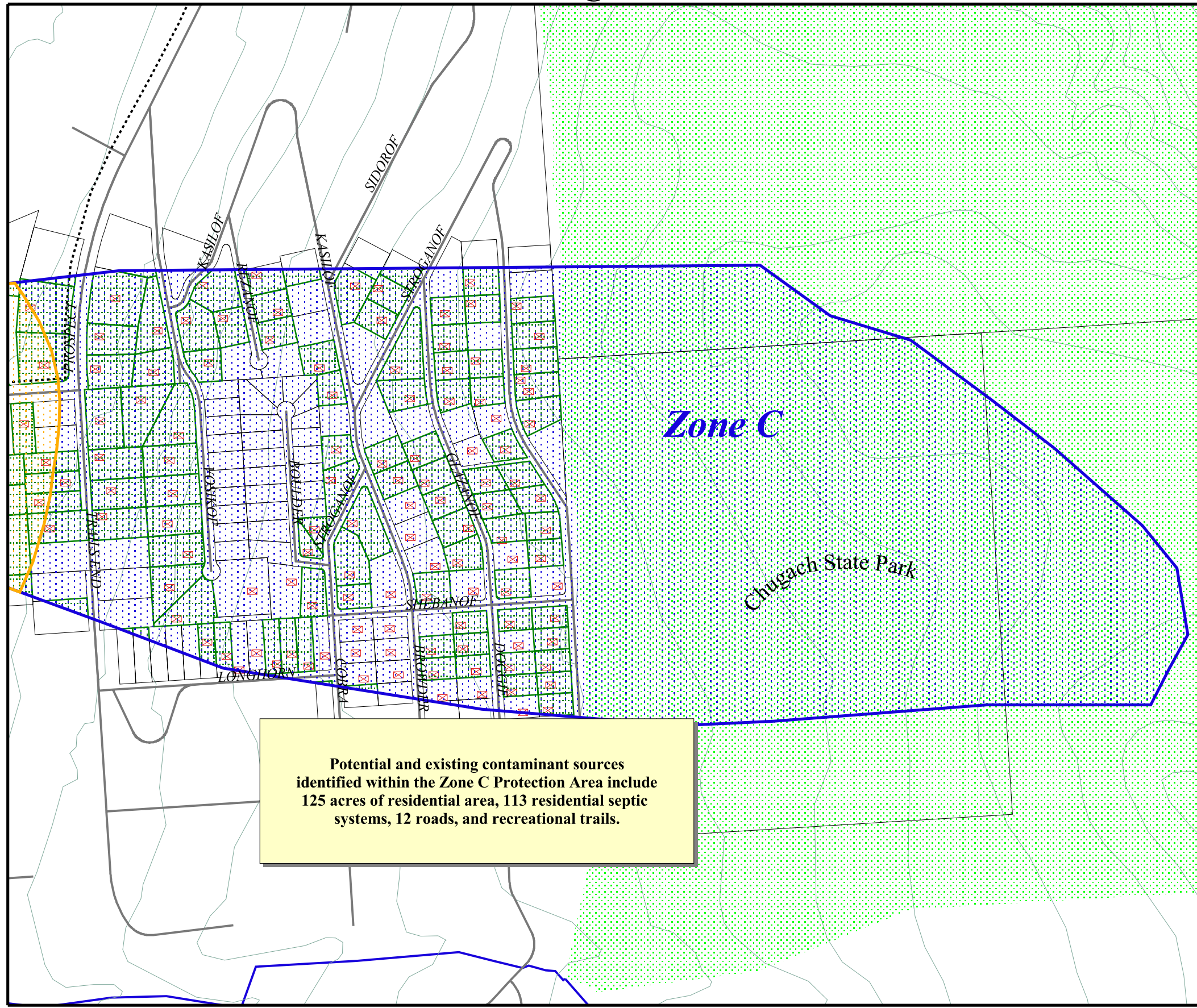


600 0 600 1200 Feet

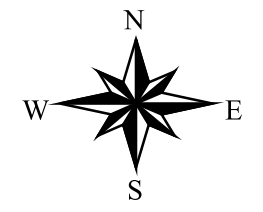
PWSID 212461.001

Map 3

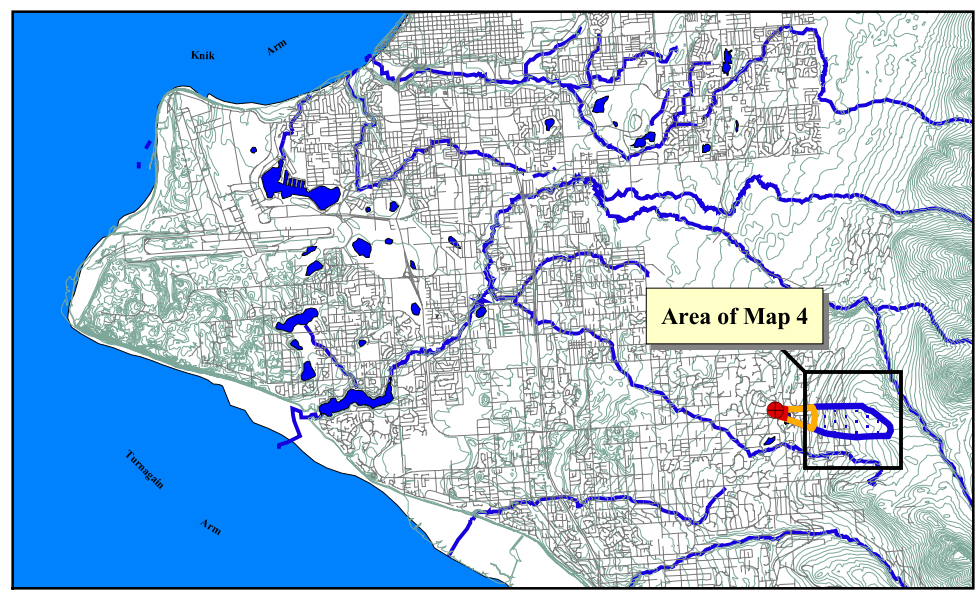
Drinking Water Protection Area and Potential & Existing Contaminant Sources for Hillside Park Subdivision



- Hillside Park Subdivision Well
- Zone A Protection Area**
- Several Months Travel Time
- Zone B Protection Area**
- Less Than 2 Years Travel Time
- Zone C Protection Area**
- Less Than 5 Years Travel Time
- Lawns and Gardens (R1)
- Trails (X46)
- Roads (X20)
- ⊠ Septic Systems (R2)
- MOA Land Parcels
- Chugach State Park
- Elevation Contours
- Anchorage Streams



Potential and existing contaminant sources identified within the Zone C Protection Area include 125 acres of residential area, 113 residential septic systems, 12 roads, and recreational trails.



PWSID 212461.001

Map 4

APPENDIX D

Vulnerability Analysis for Hillside Park Subdivision

Chart 1. Susceptibility of the wellhead - Hillside Park Subdivision

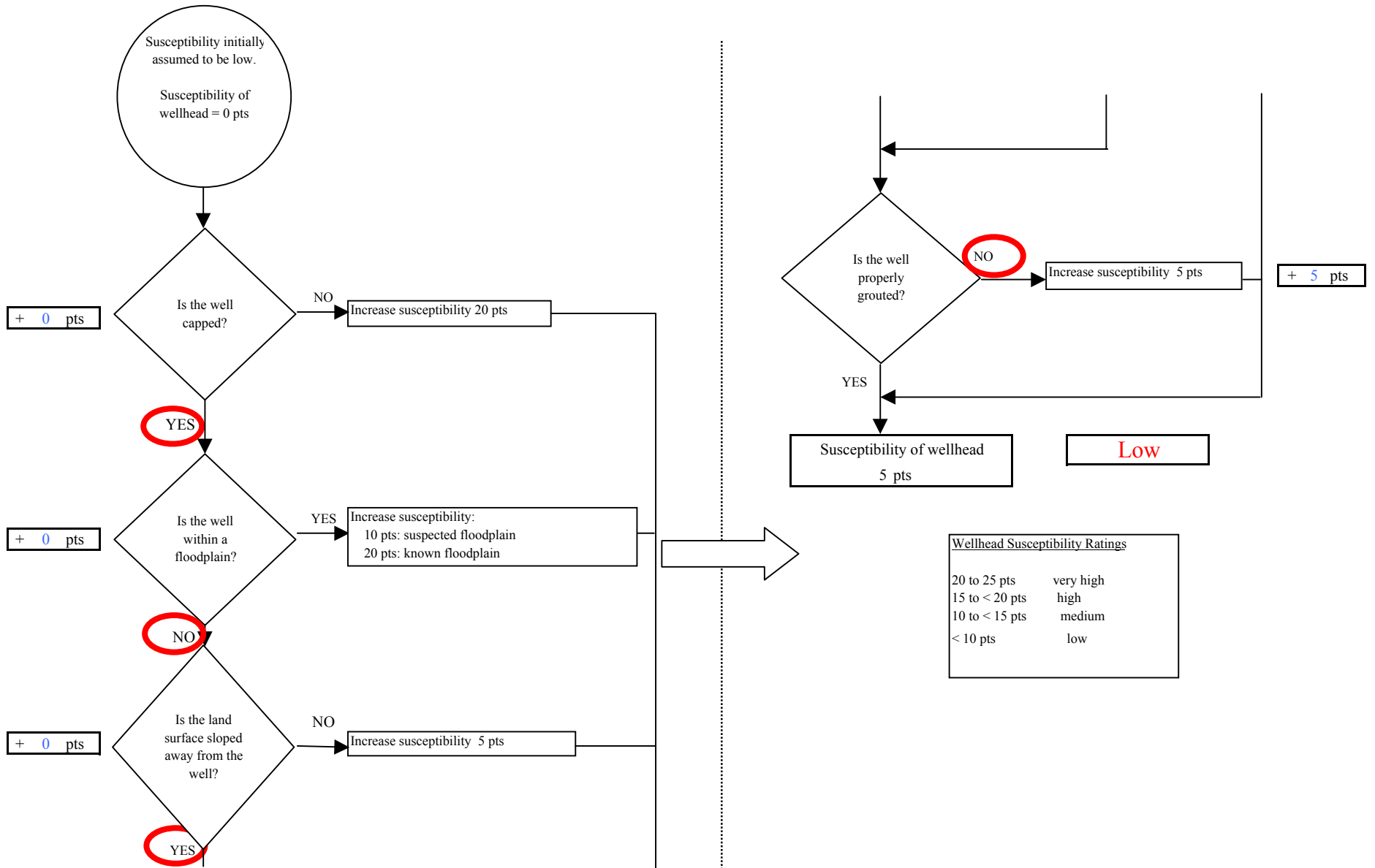


Chart 2. Susceptibility of the aquifer - Hillside Park Subdivision

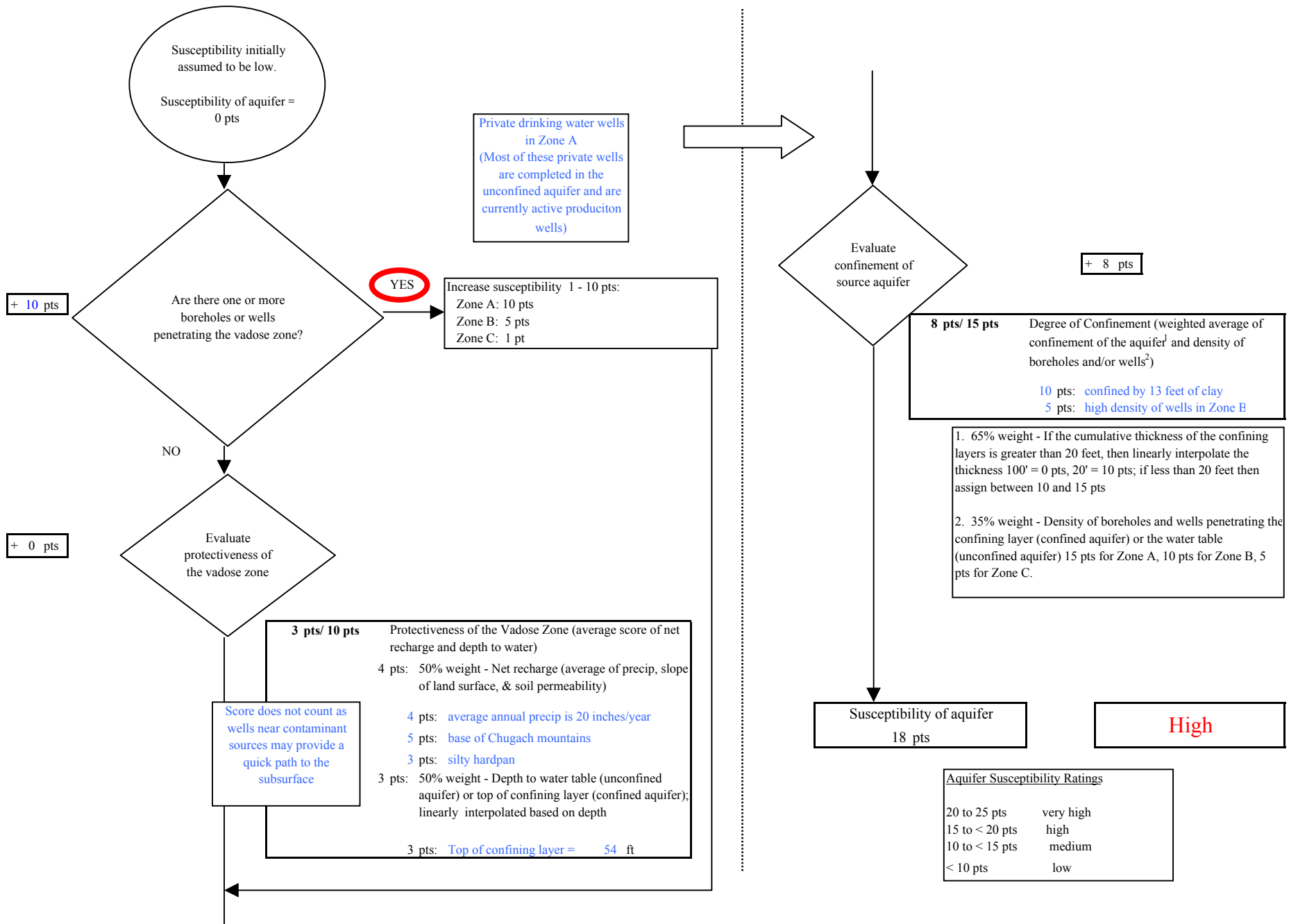


Chart 3. Contaminant risks for Hillside Park Subdivision - Bacteria & Viruses

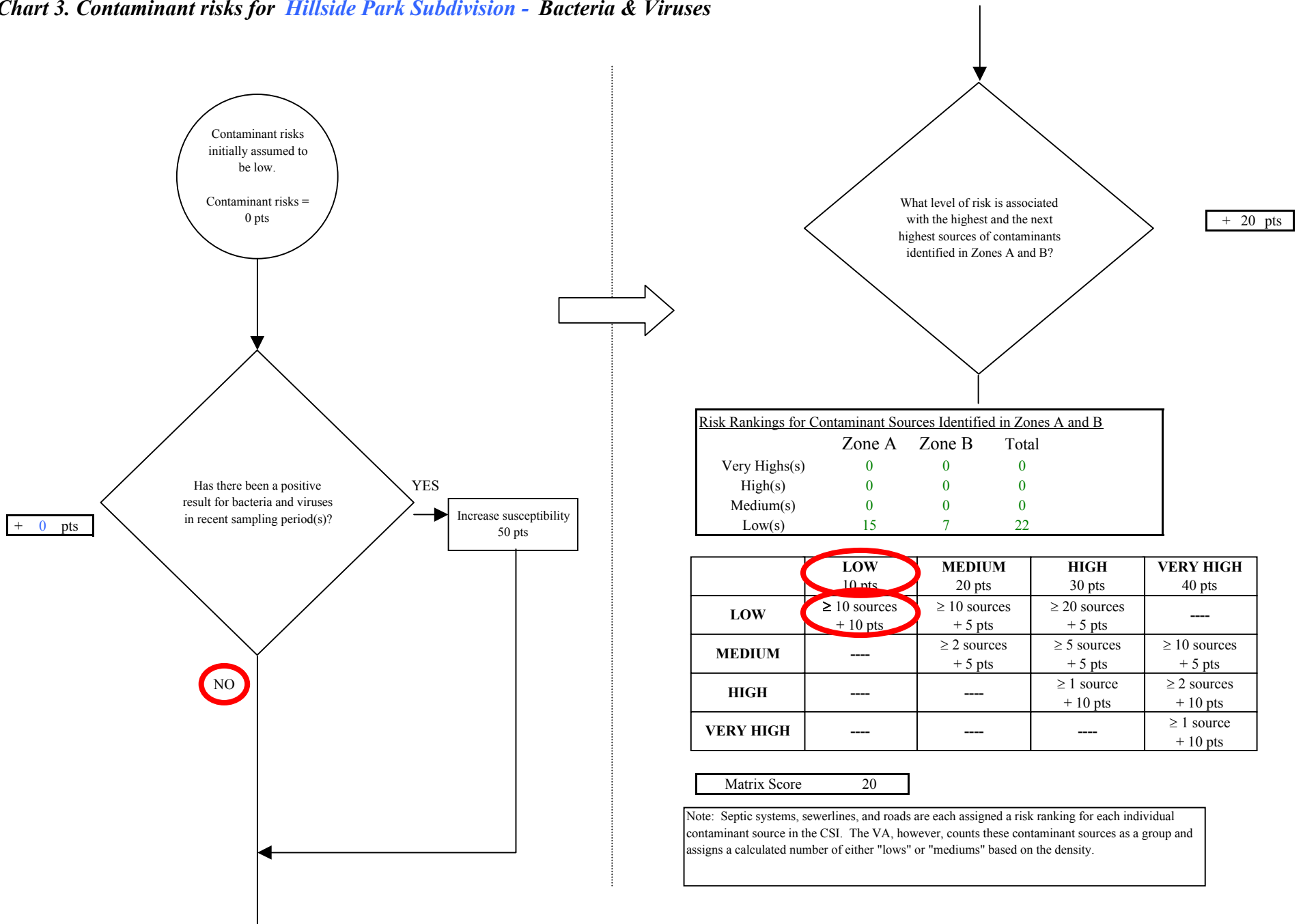
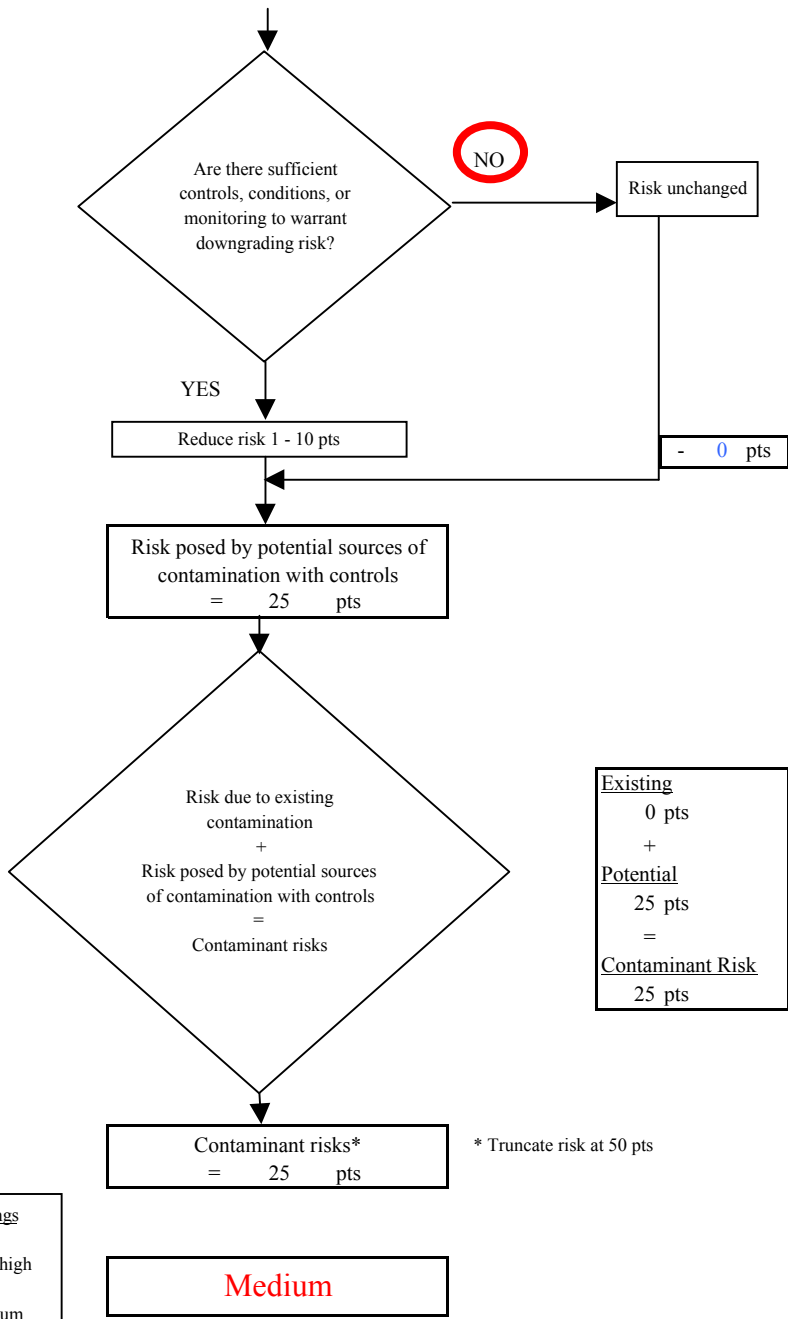
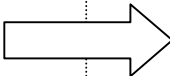
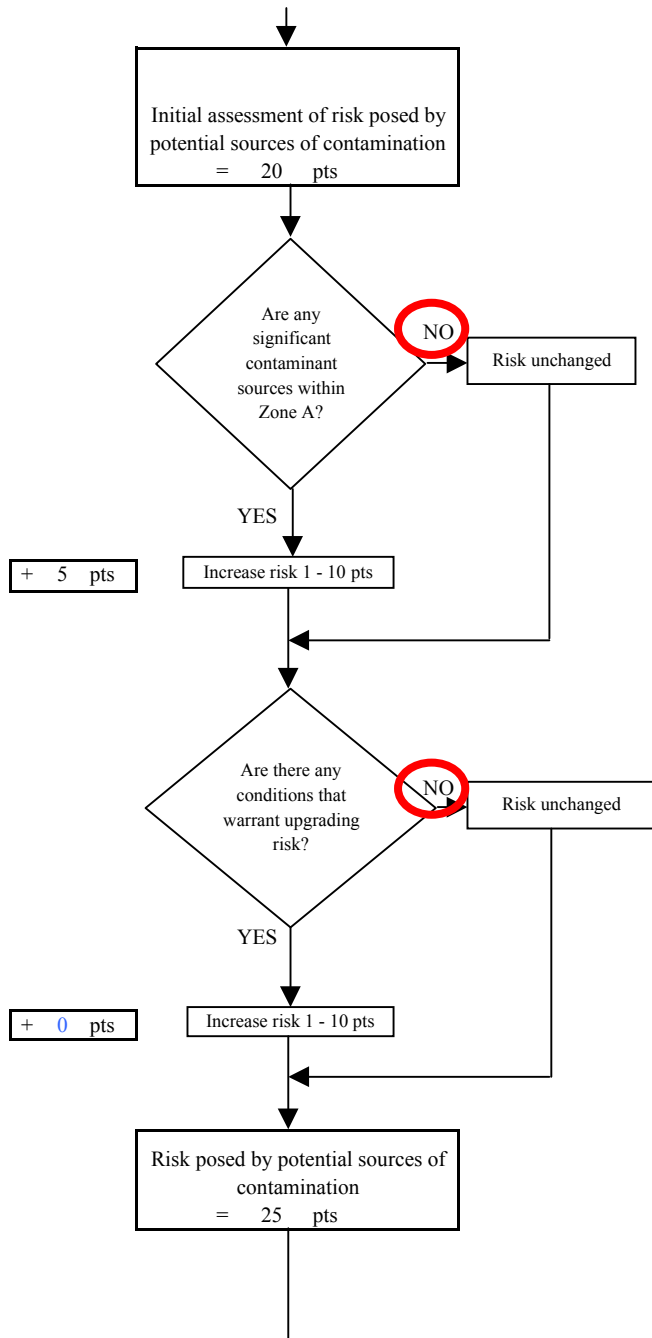


Chart 3. Contaminant risks for Hillside Park Subdivision - Bacteria & Viruses



Existing
0 pts
+
Potential
25 pts
=
Contaminant Risk
25 pts

Contaminant Risk Ratings	
40 to 50 pts	very high
30 to < 40 pts	high
20 to < 30 pts	medium
< 20 pts	low

* Truncate risk at 50 pts

Chart 4. Vulnerability analysis for Hillside Park Subdivision - Bacteria & Viruses

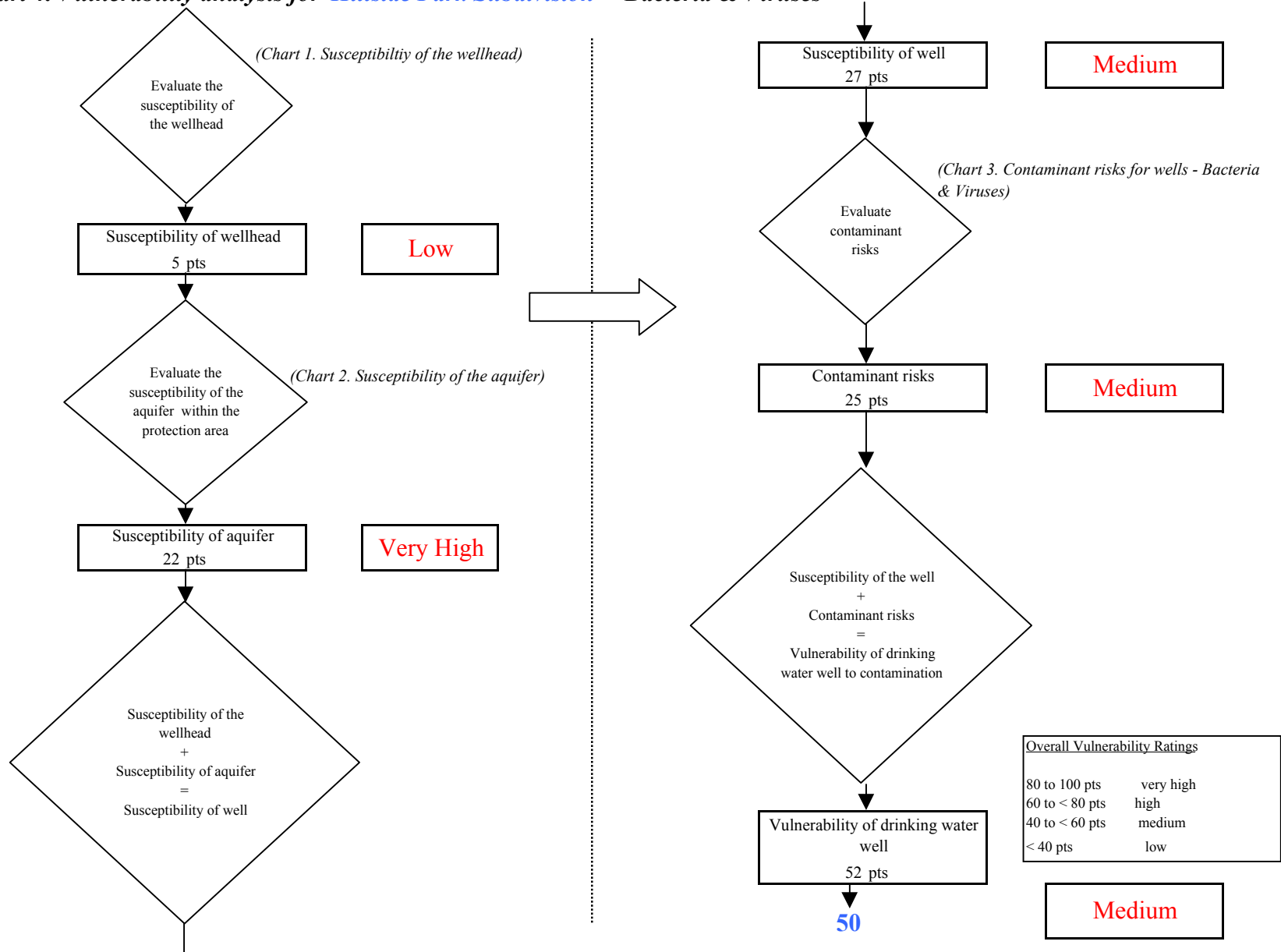


Chart 5. Contaminant risks for Hillside Park Subdivision - Nitrates and Nitrites

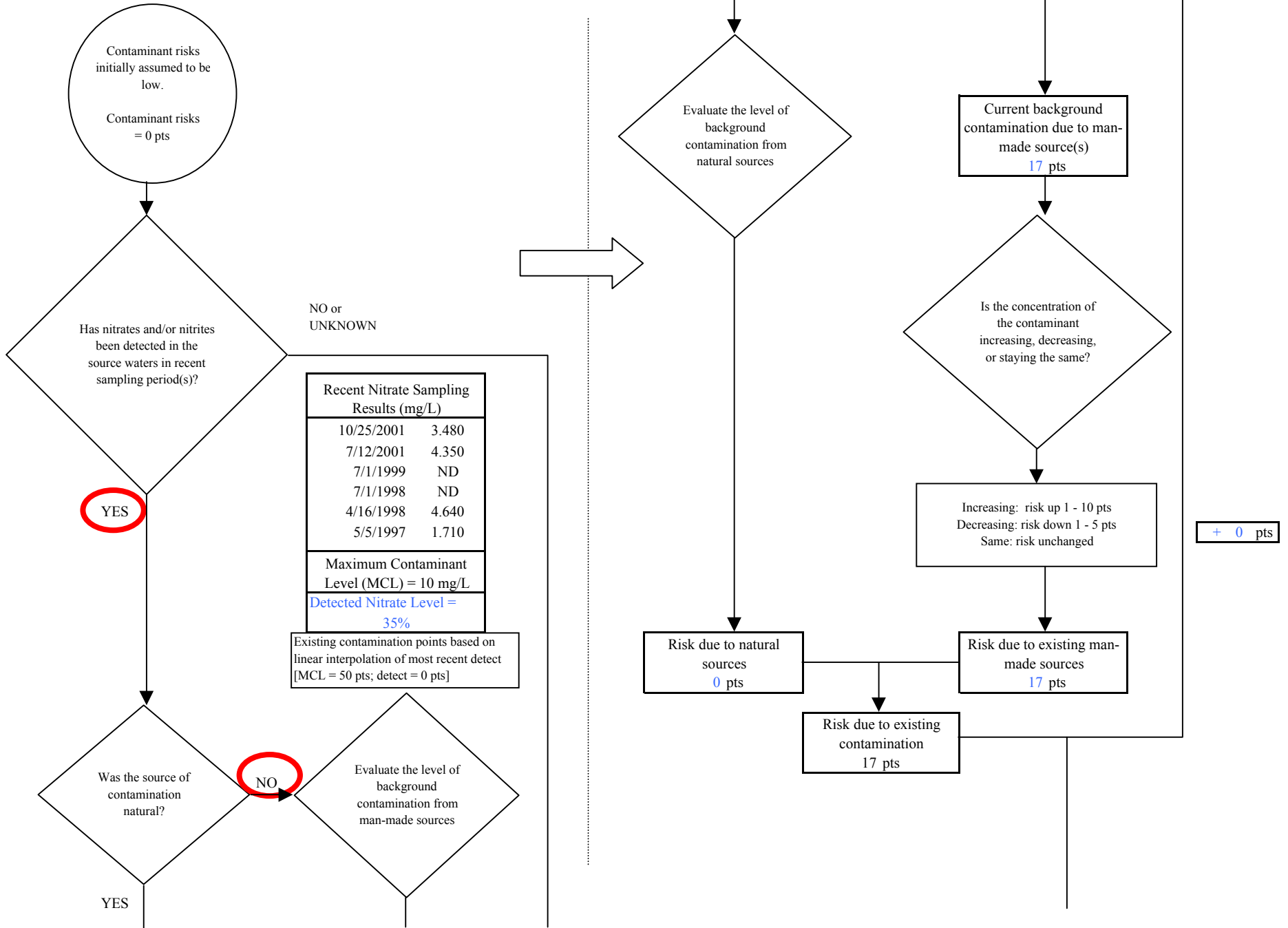
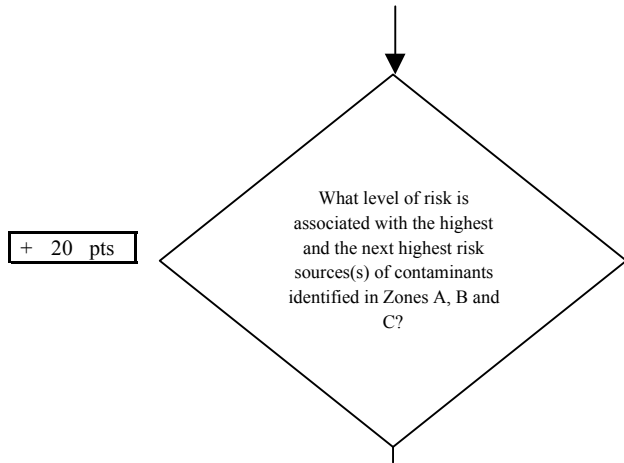


Chart 5. Contaminant risks for Hillside Park Subdivision - Nitrates and Nitrites



Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	0	0
Low(s)	15	20	35

	LOW 10 pts	MEDIUM 20 pts	HIGH 30 pts	VERY HIGH 40 pts
LOW	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
MEDIUM	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
HIGH	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
VERY HIGH	----	----	----	≥ 1 source + 10 pts

Matrix Score 20

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.

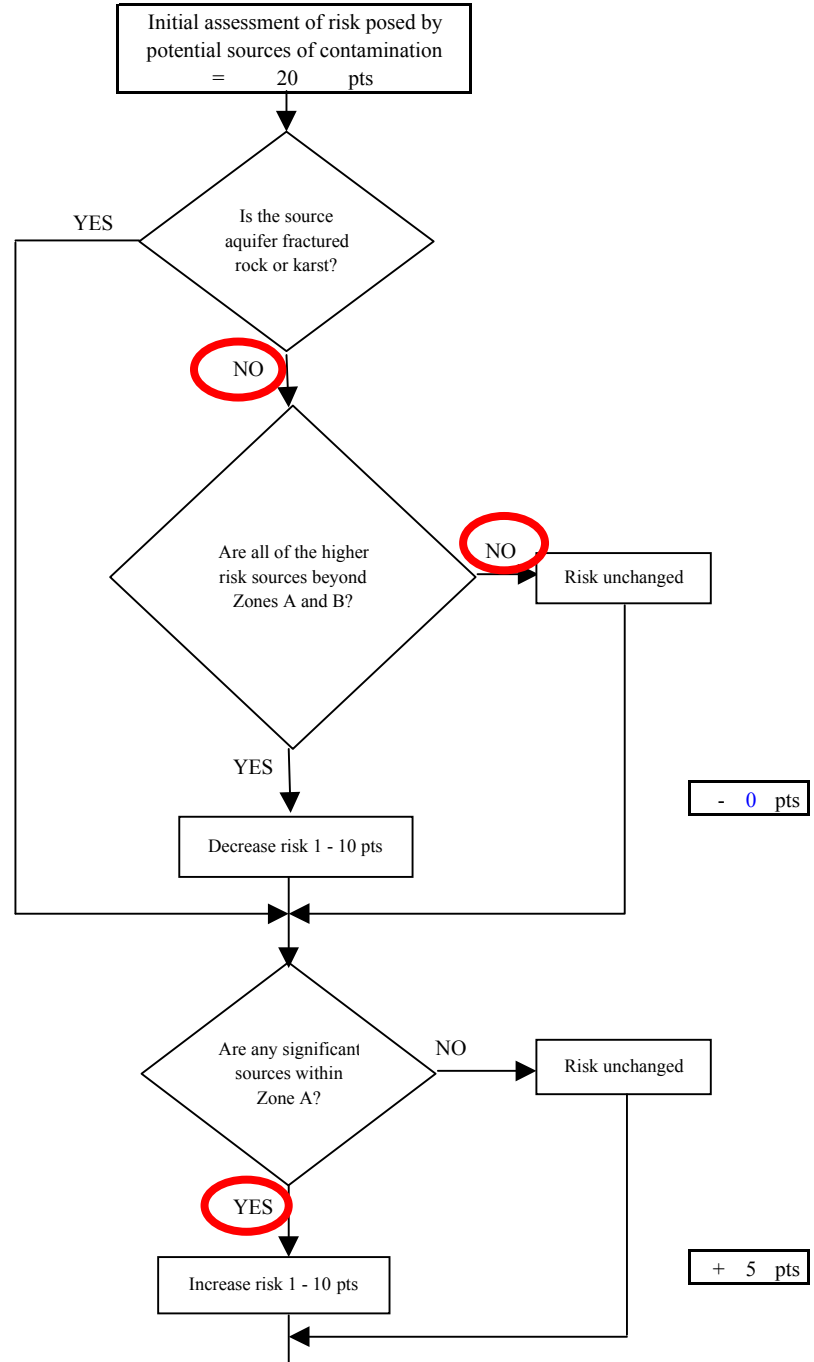
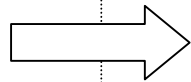


Chart 5. Contaminant risks for Hillside Park Subdivision - Nitrates and Nitrites

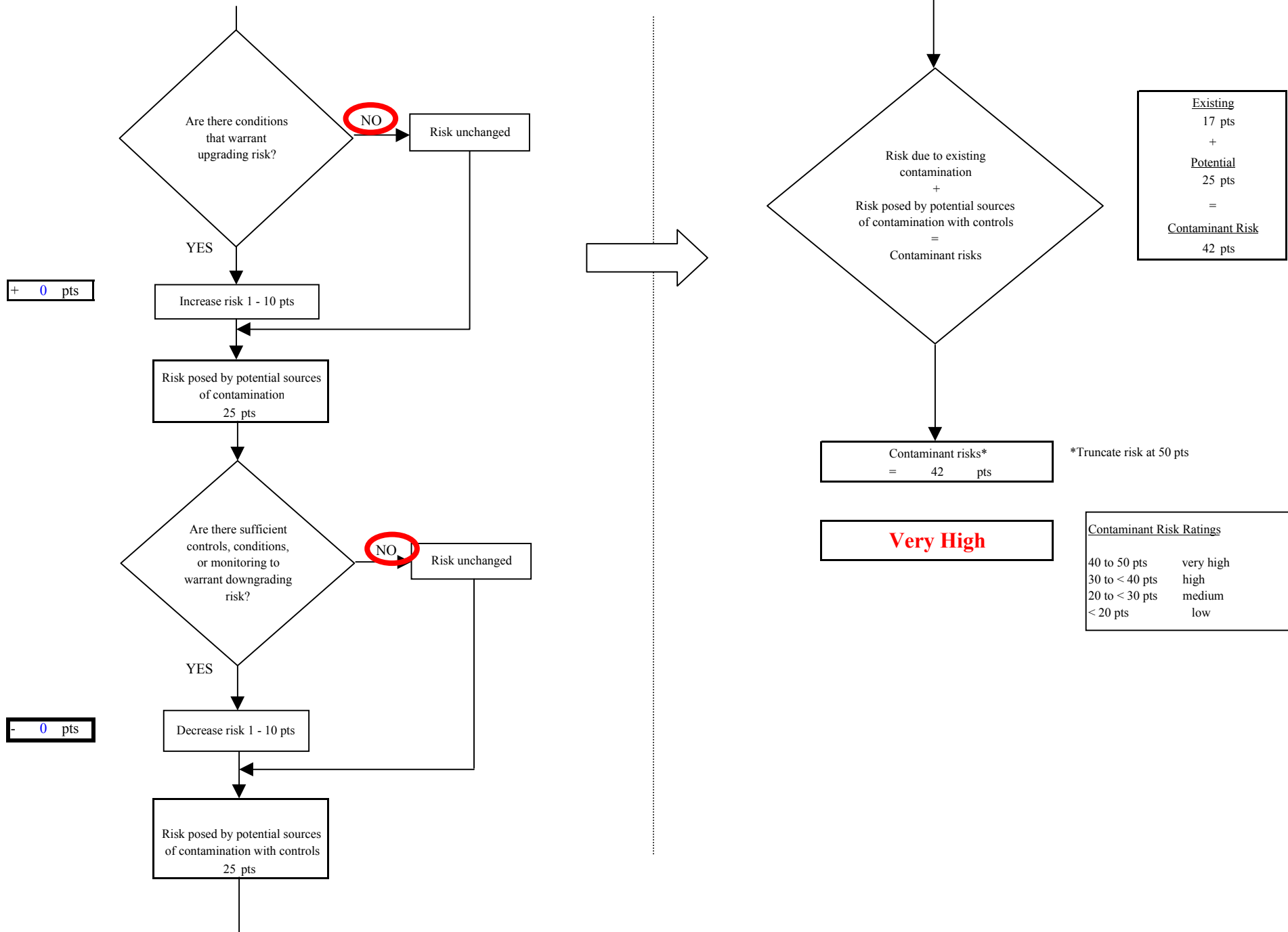


Chart 6. Vulnerability analysis for Hillside Park Subdivision - Nitrates and Nitrites

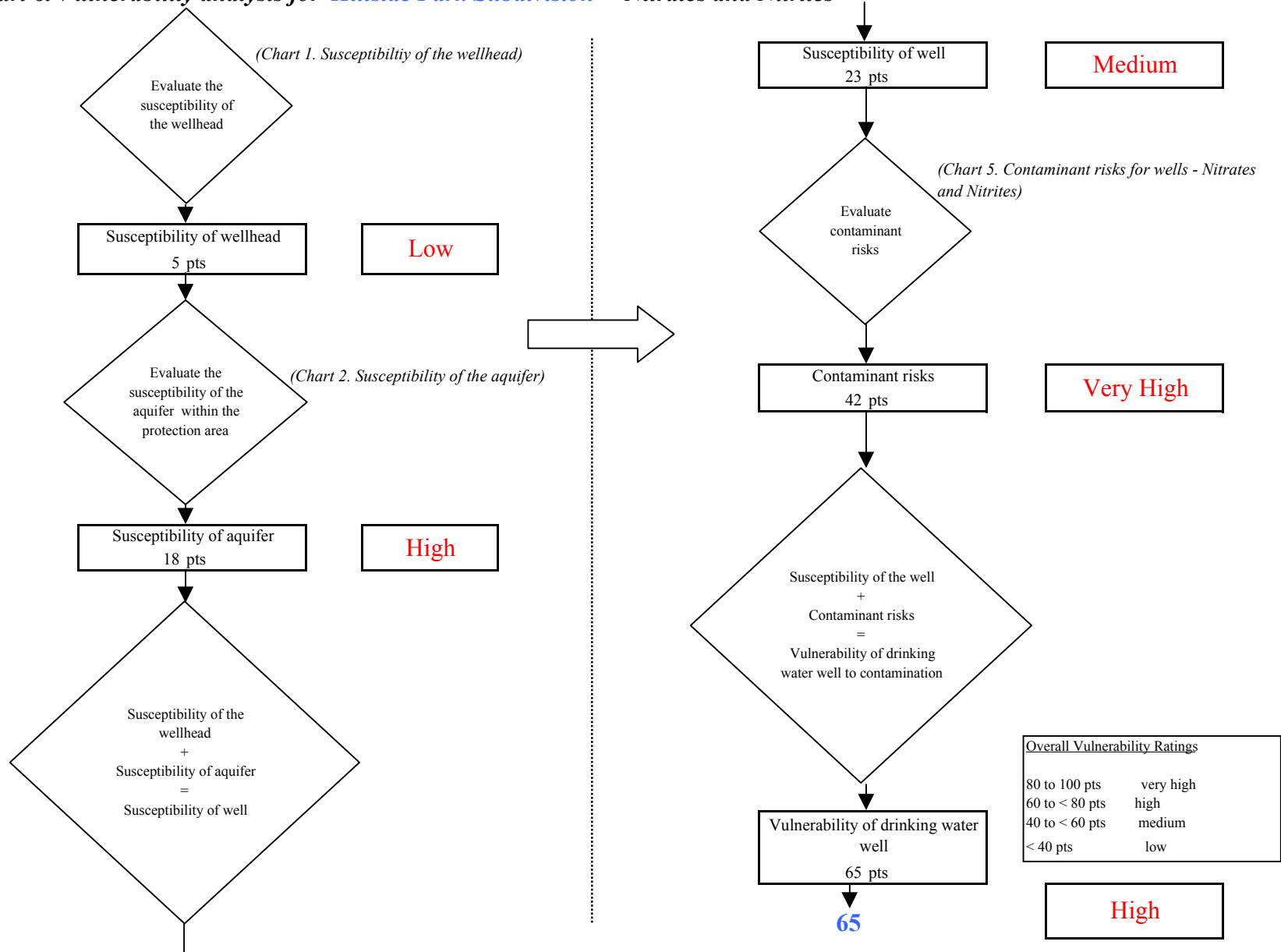


Chart 7. Contaminant risks for Hillside Park Subdivision - Volatile Organic Chemicals

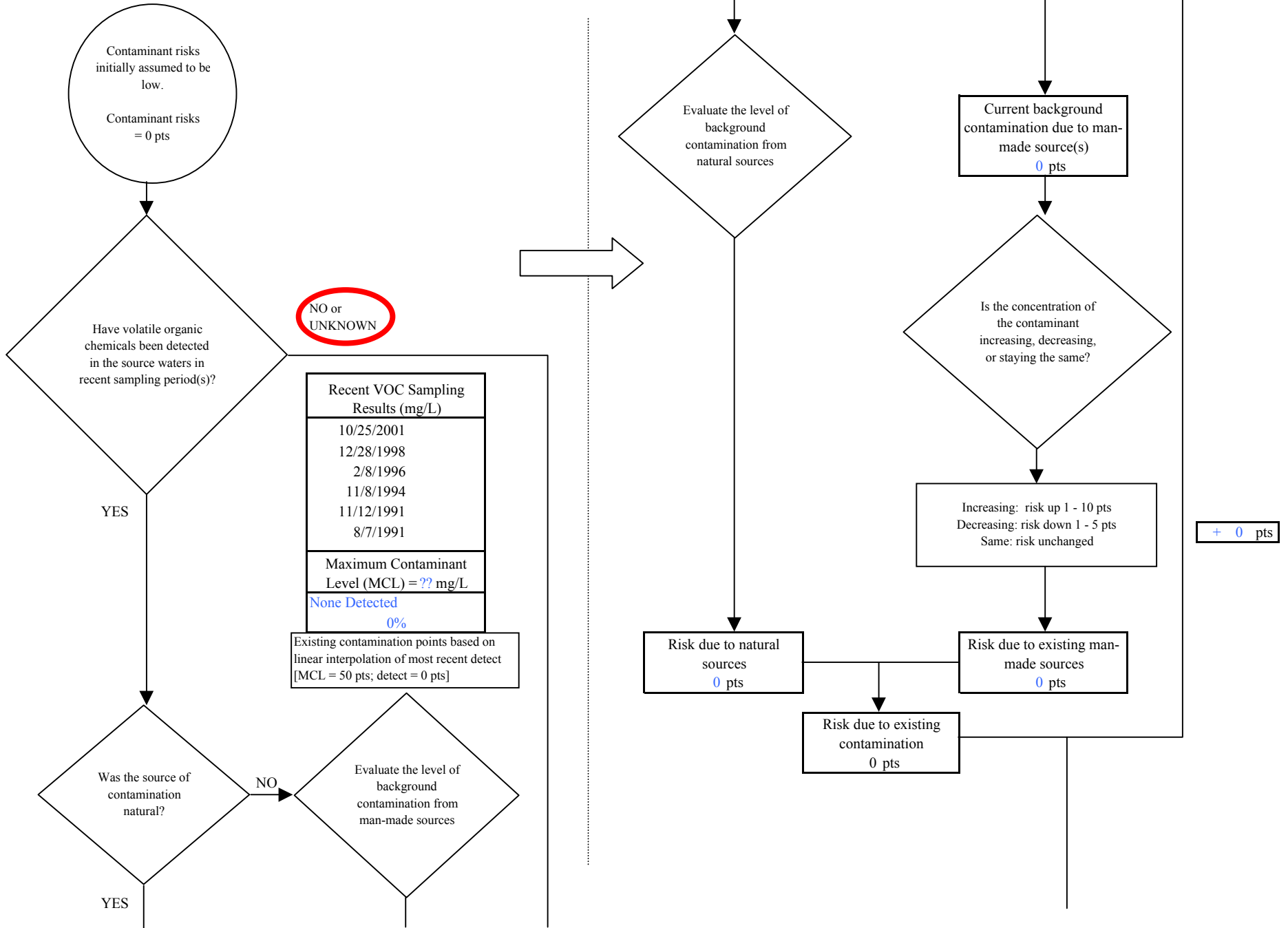
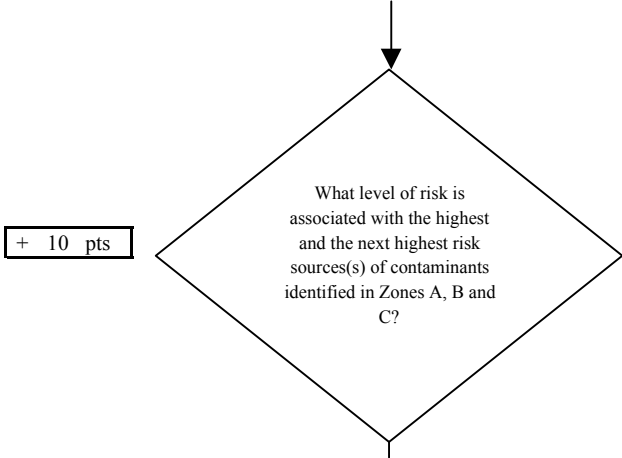


Chart 7. Contaminant risks for Hillside Park Subdivision - Volatile Organic Chemicals



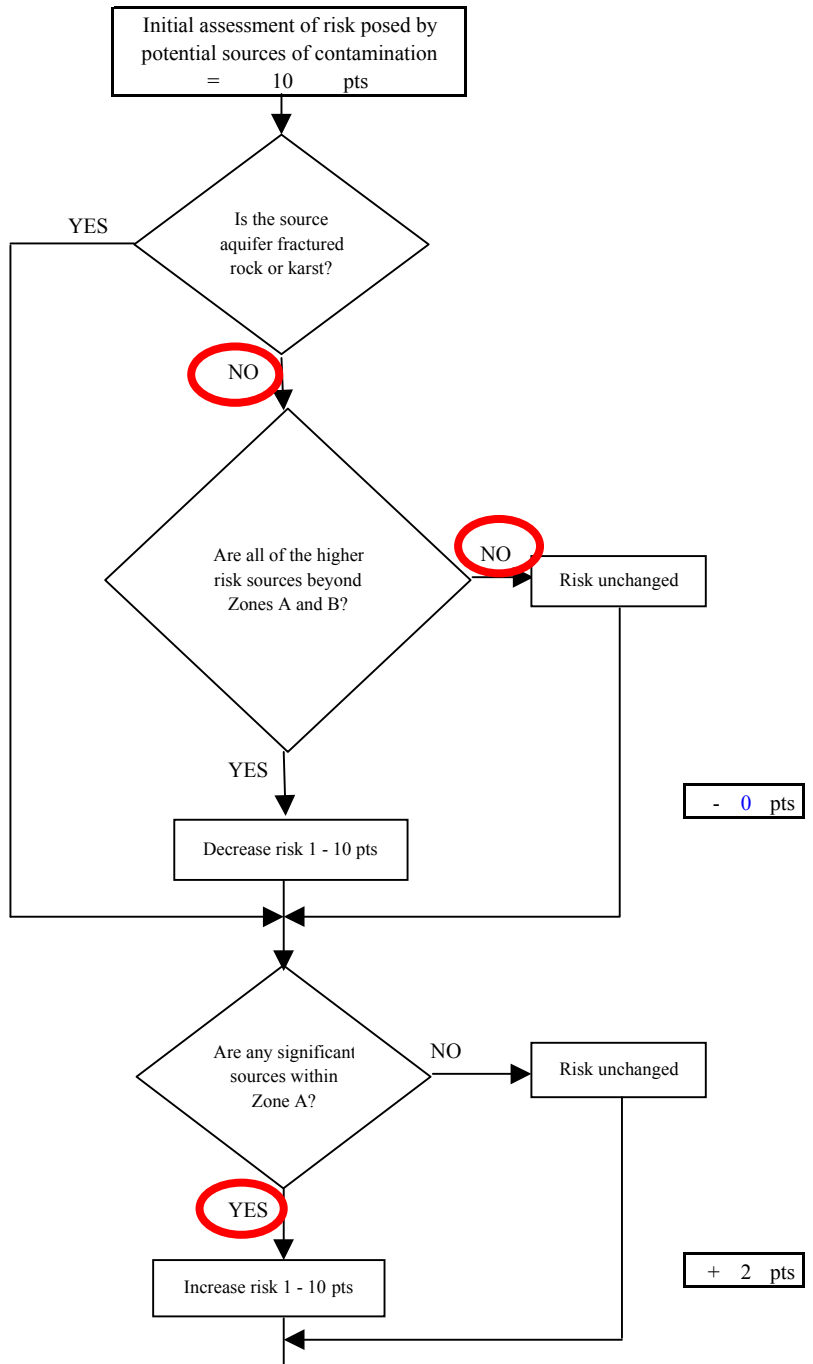
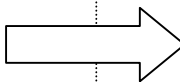
+ 10 pts

Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	0	0
Low(s)	3	4	7

	LOW 10 pts	MEDIUM 20 pts	HIGH 30 pts	VERY HIGH 40 pts
LOW	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
MEDIUM	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
HIGH	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
VERY HIGH	----	----	----	≥ 1 source + 10 pts

Matrix Score 10

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.



- 0 pts

+ 2 pts

Chart 7. Contaminant risks for Hillside Park Subdivision - Volatile Organic Chemicals

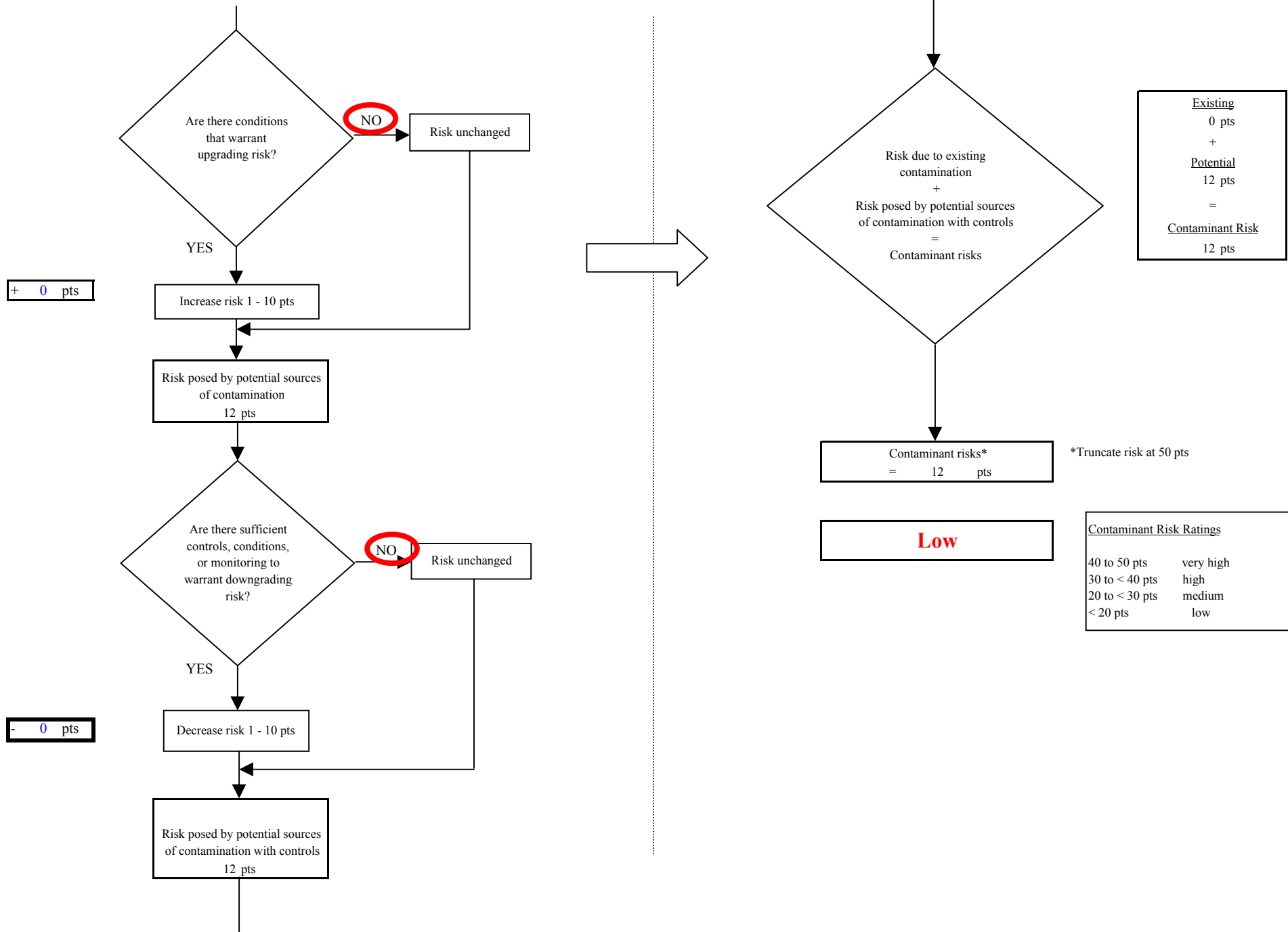


Chart 8. Vulnerability analysis for Hillside Park Subdivision - Volatile Organic Chemicals

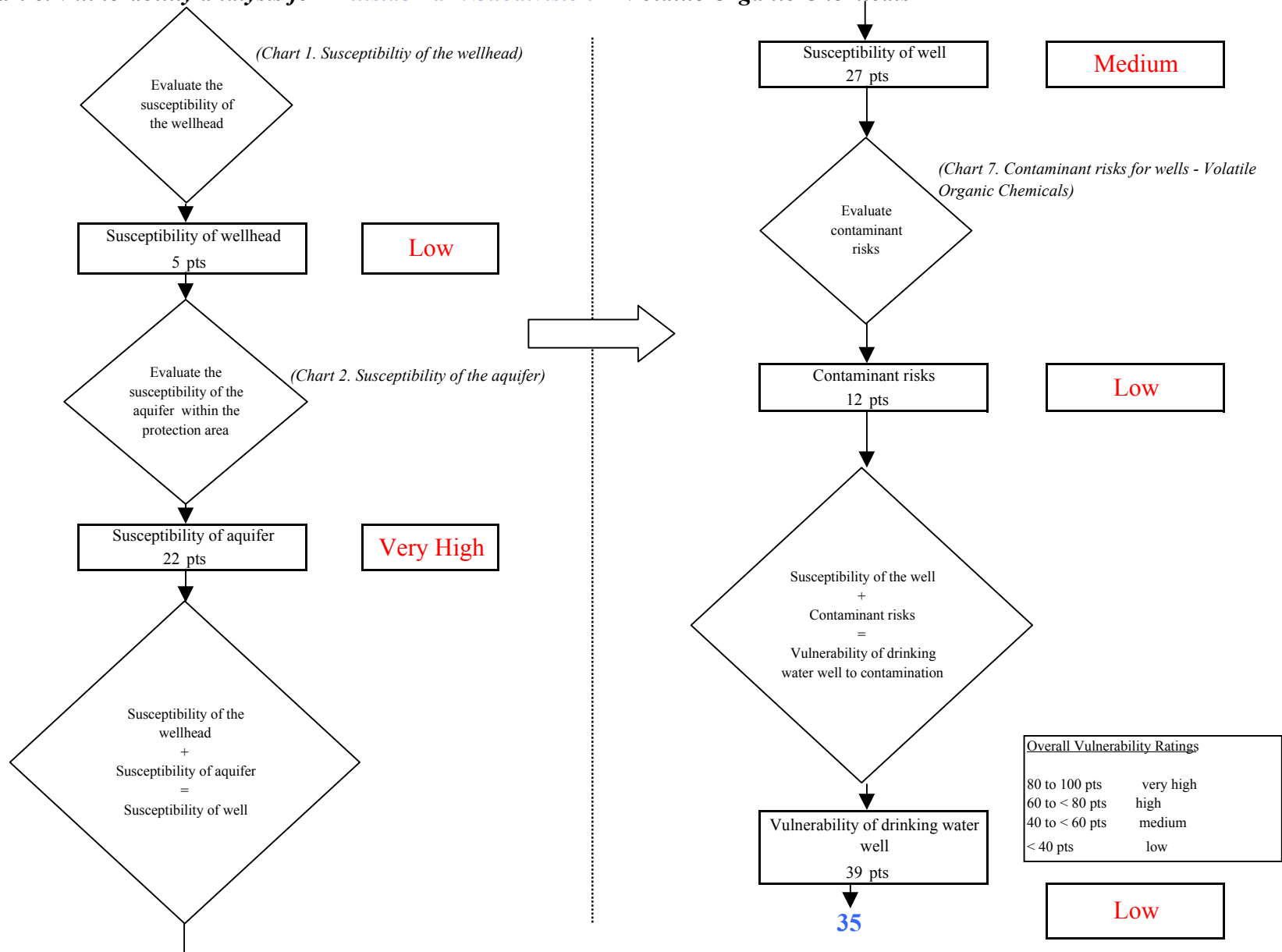
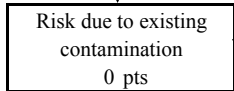
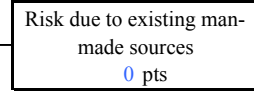
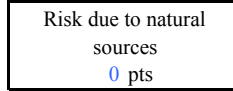
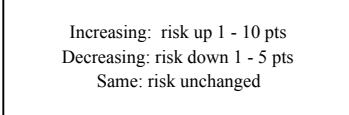
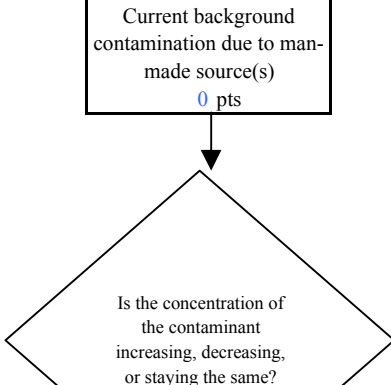
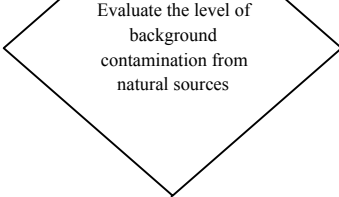
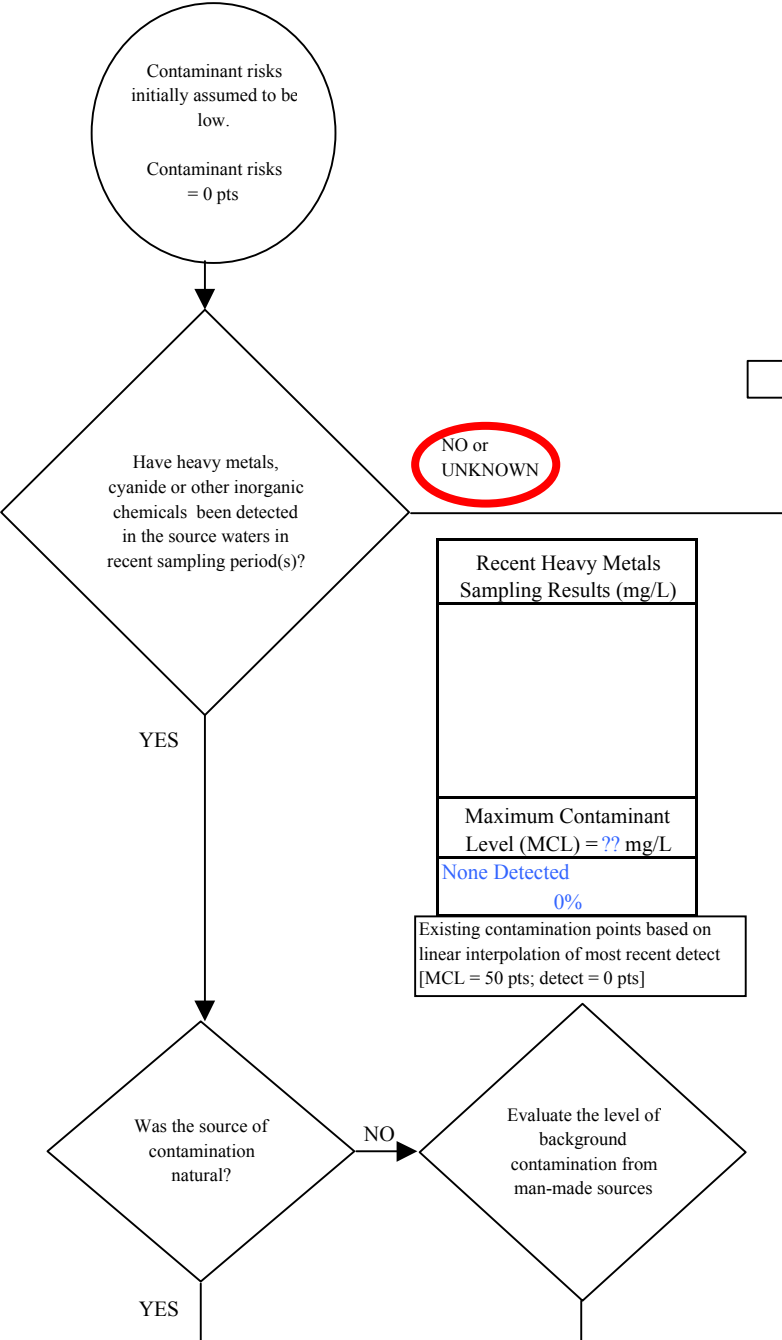
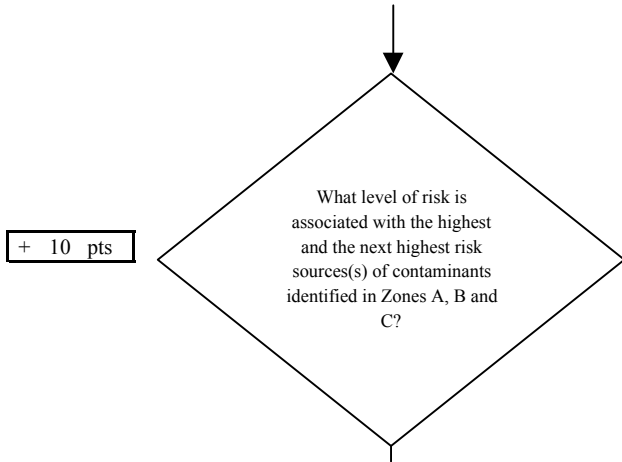


Chart 9. Contaminant risks for Hillside Park Subdivision - Heavy Metals, Cyanide and Other Inorganic Chemicals



+ 0 pts

Chart 9. Contaminant risks for Hillside Park Subdivision - Heavy Metals, Cyanide and Other Inorganic Chemicals



+ 10 pts

Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	0	0
Low(s)	3	3	6

	LOW 10 pts	MEDIUM 20 pts	HIGH 30 pts	VERY HIGH 40 pts
LOW	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
MEDIUM	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
HIGH	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
VERY HIGH	----	----	----	≥ 1 source + 10 pts

Matrix Score 10

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.

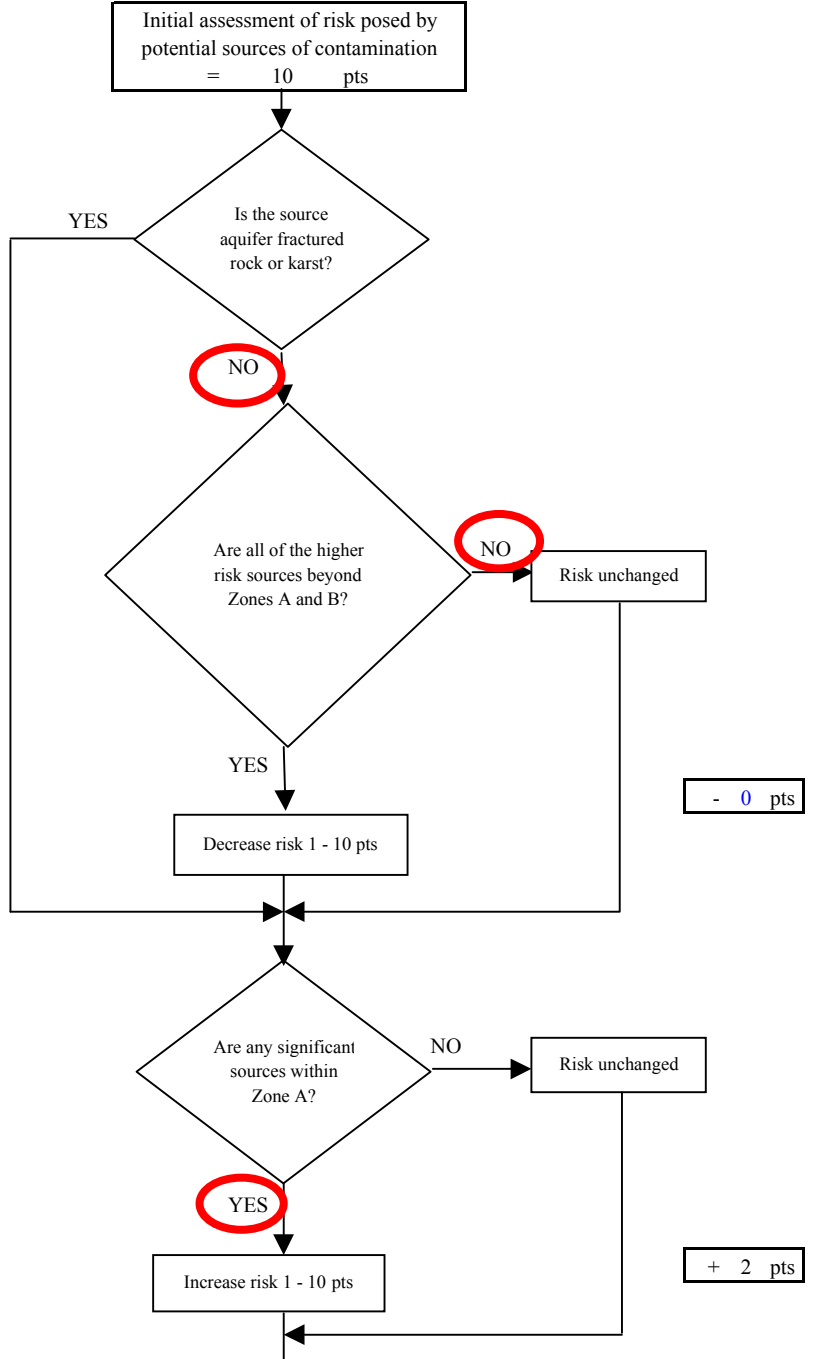
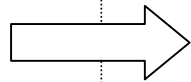


Chart 9. Contaminant risks for Hillside Park Subdivision - Heavy Metals, Cyanide and Other Inorganic Chemicals

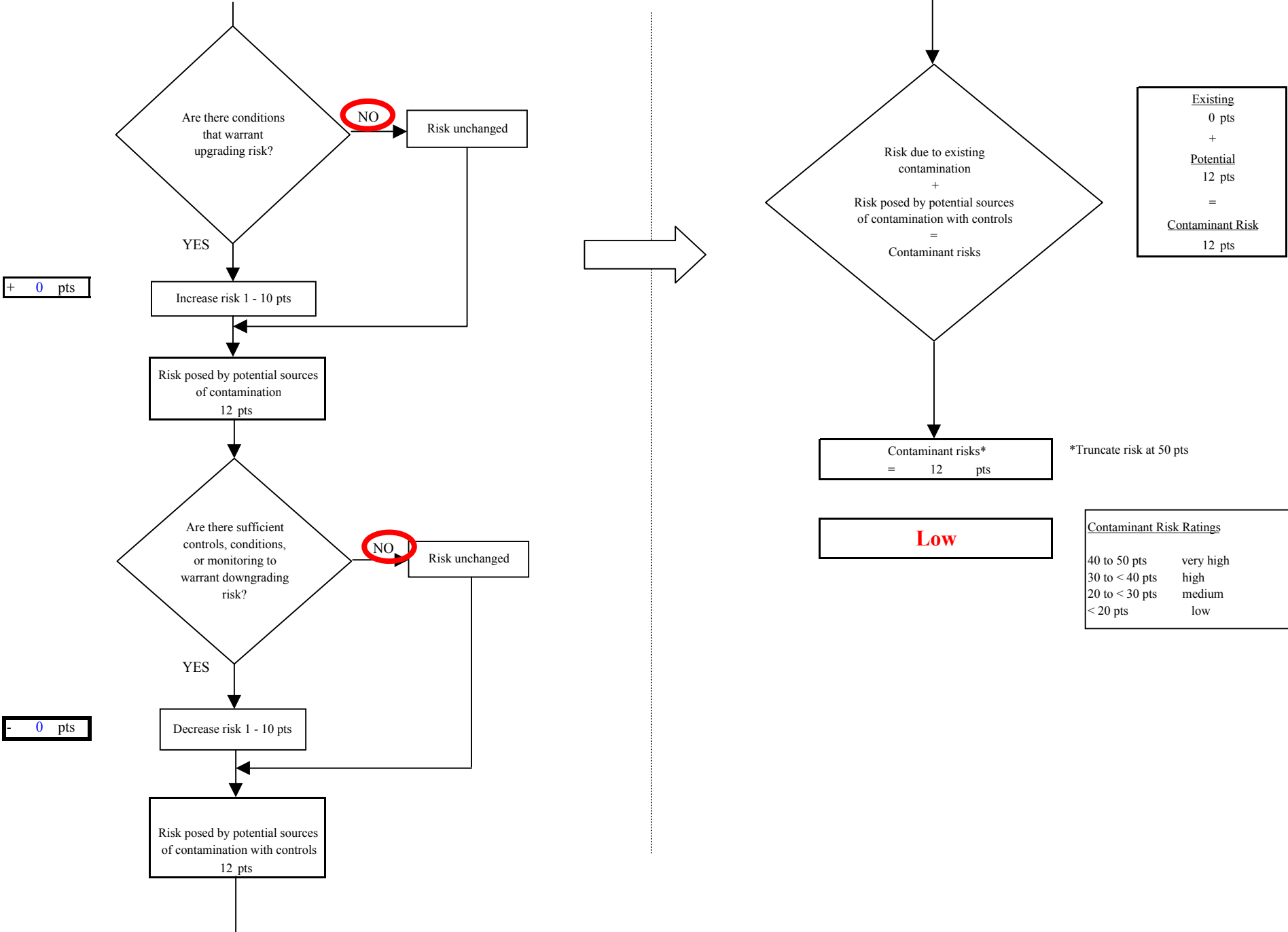


Chart 10. Vulnerability analysis for Hillside Park Subdivision - Heavy Metals, Cyanide and Other Inorganic Chemicals

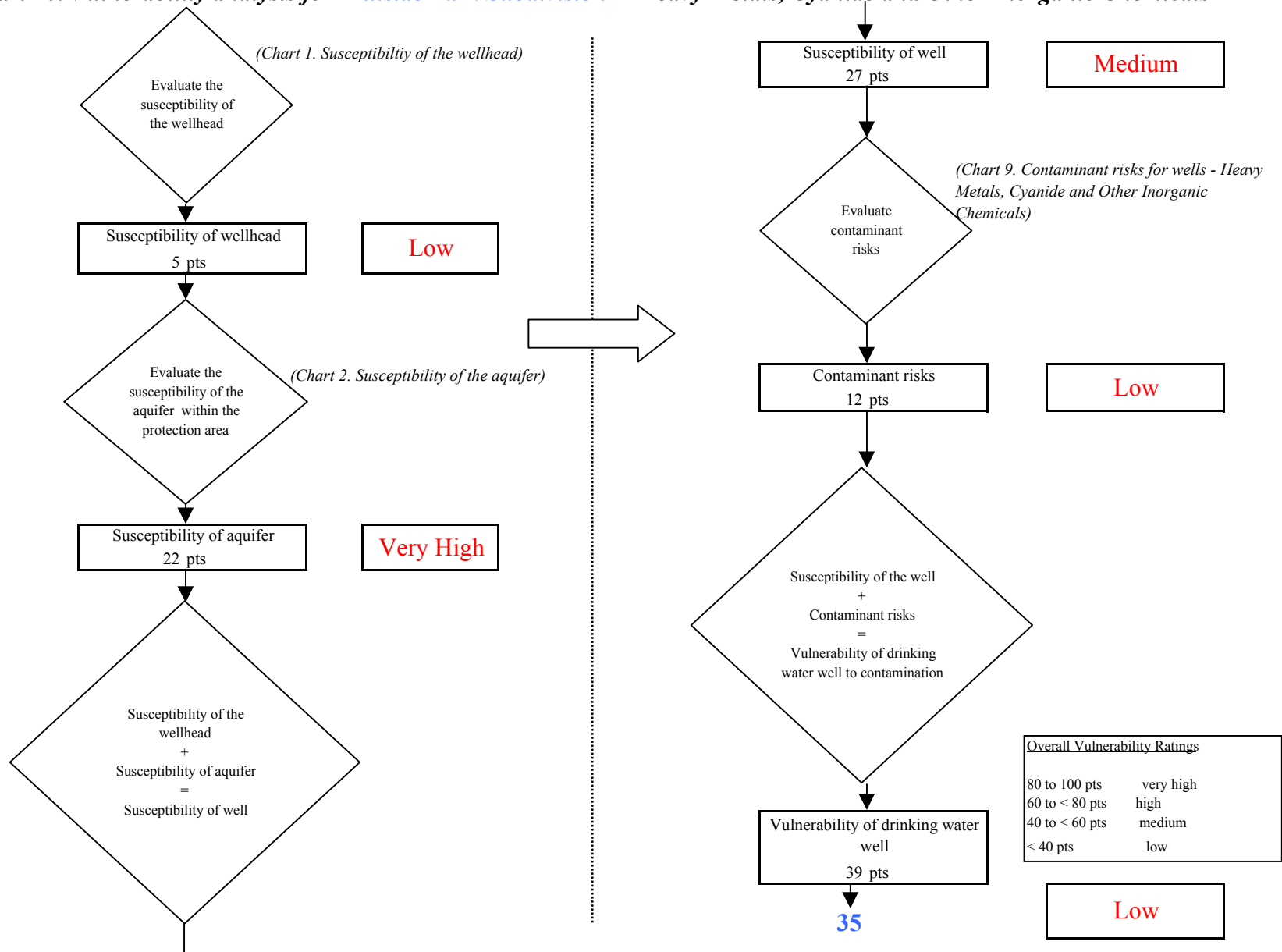


Chart 11. Contaminant risks for *Hillside Park Subdivision* - Synthetic Organic Chemicals

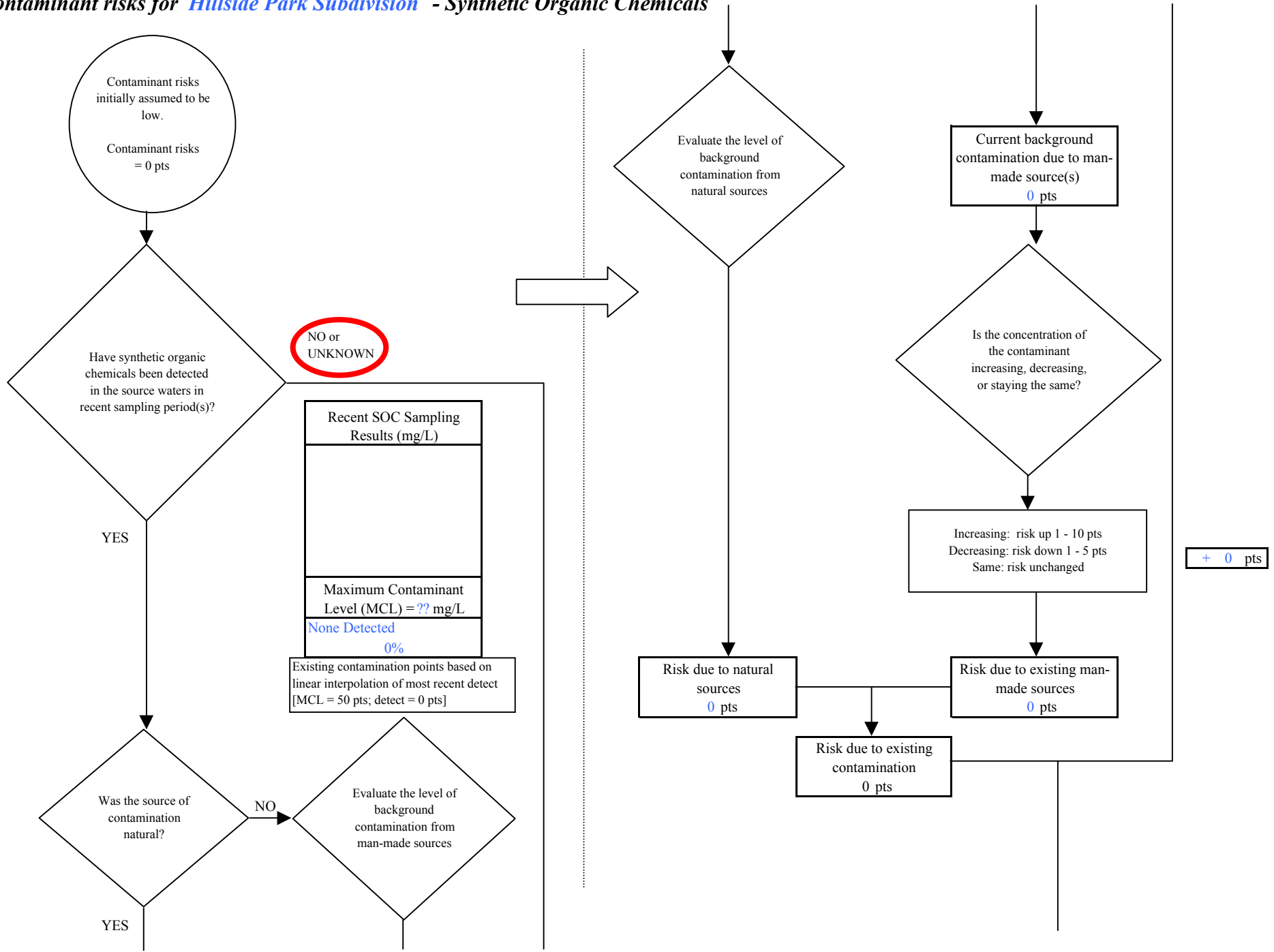
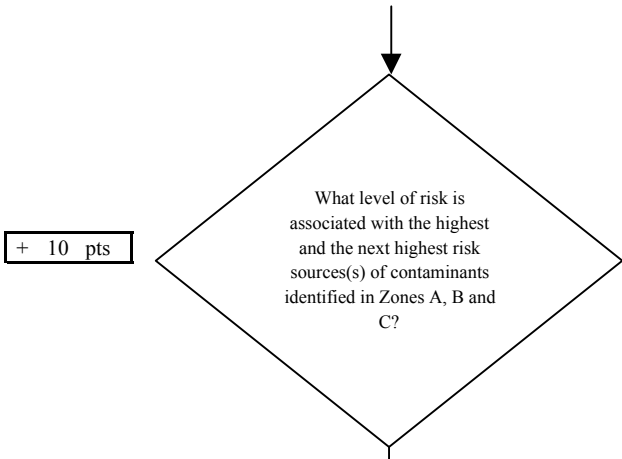


Chart 11. Contaminant risks for Hillside Park Subdivision - Synthetic Organic Chemicals



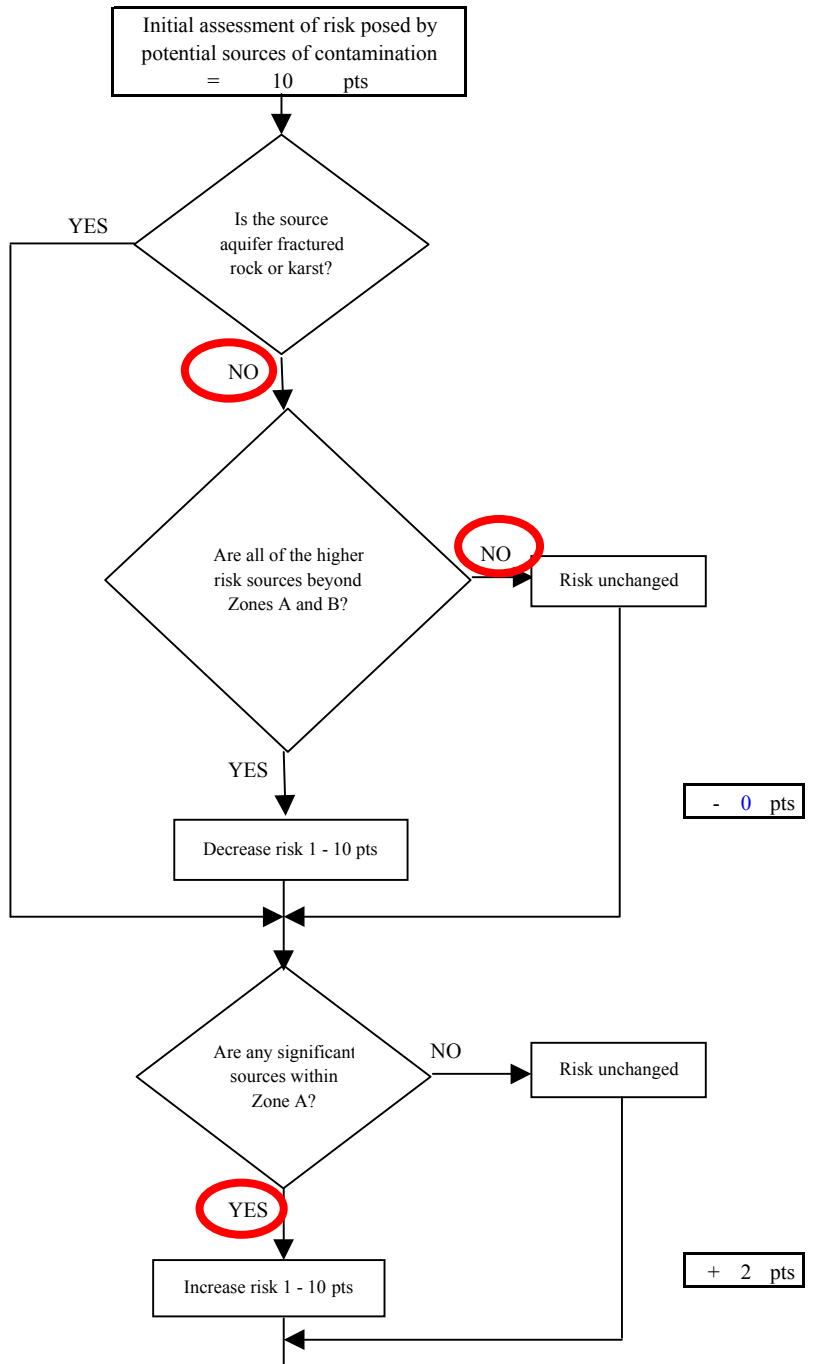
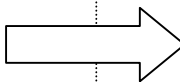
+ 10 pts

Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	0	0
Low(s)	2	2	4

	LOW 10 pts	MEDIUM 20 pts	HIGH 30 pts	VERY HIGH 40 pts
LOW	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
MEDIUM	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
HIGH	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
VERY HIGH	----	----	----	≥ 1 source + 10 pts

Matrix Score 10

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.



- 0 pts

+ 2 pts

Chart 11. Contaminant risks for Hillside Park Subdivision - Synthetic Organic Chemicals

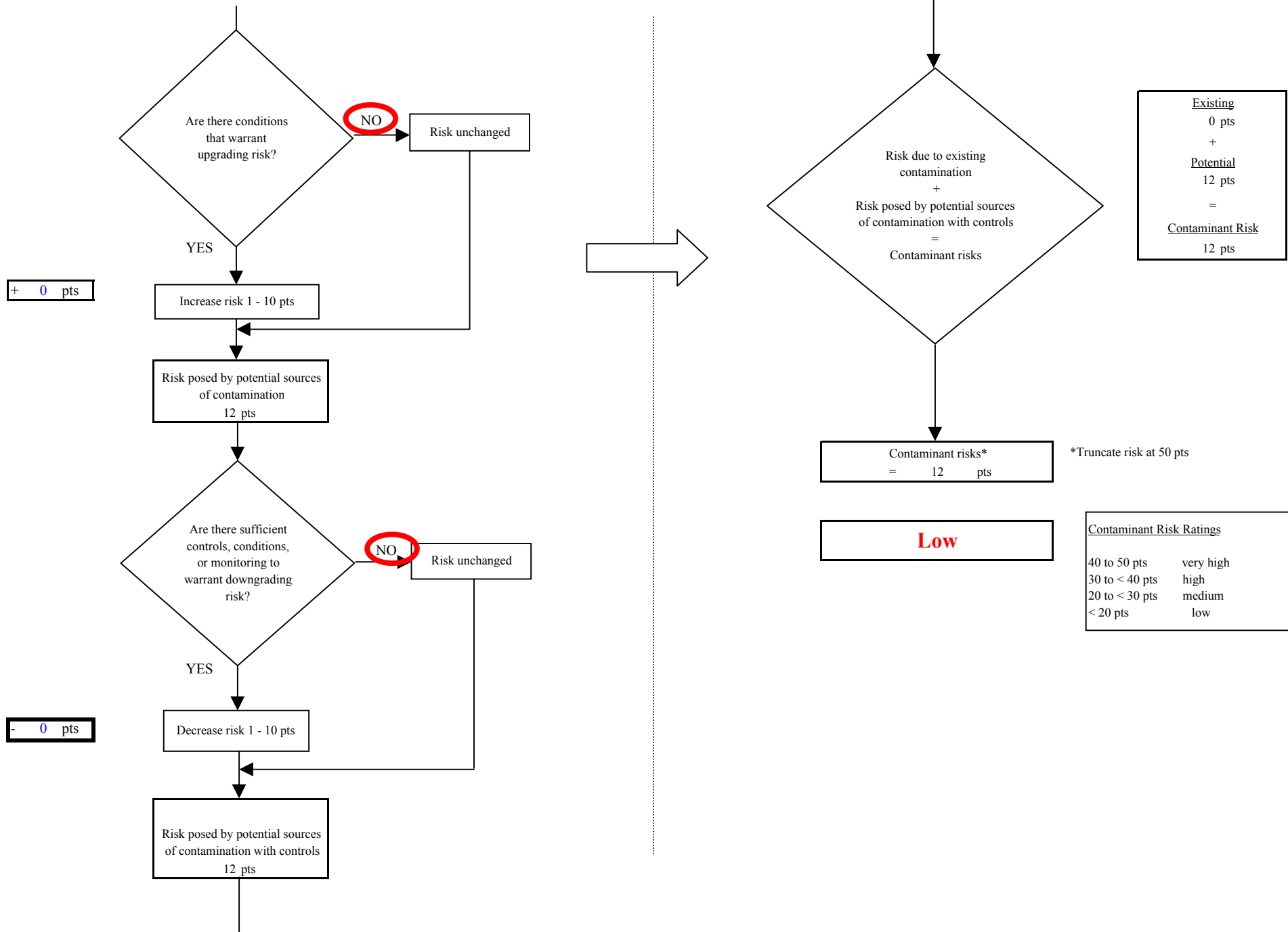


Chart 12. Vulnerability analysis for Hillside Park Subdivision - Synthetic Organic Chemicals

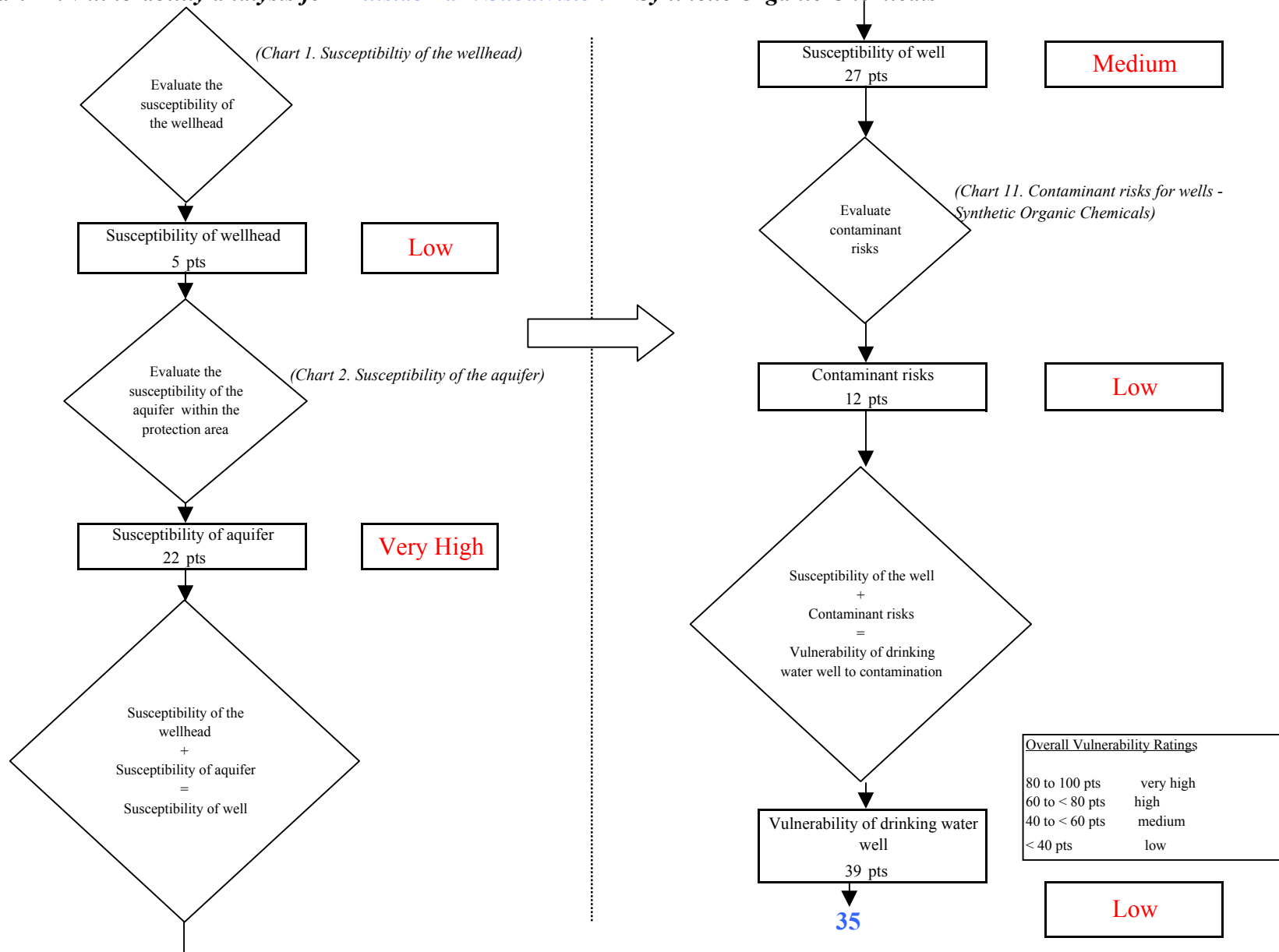


Chart 13. Contaminant risks for *Hillside Park Subdivision* - Other Organic Chemicals

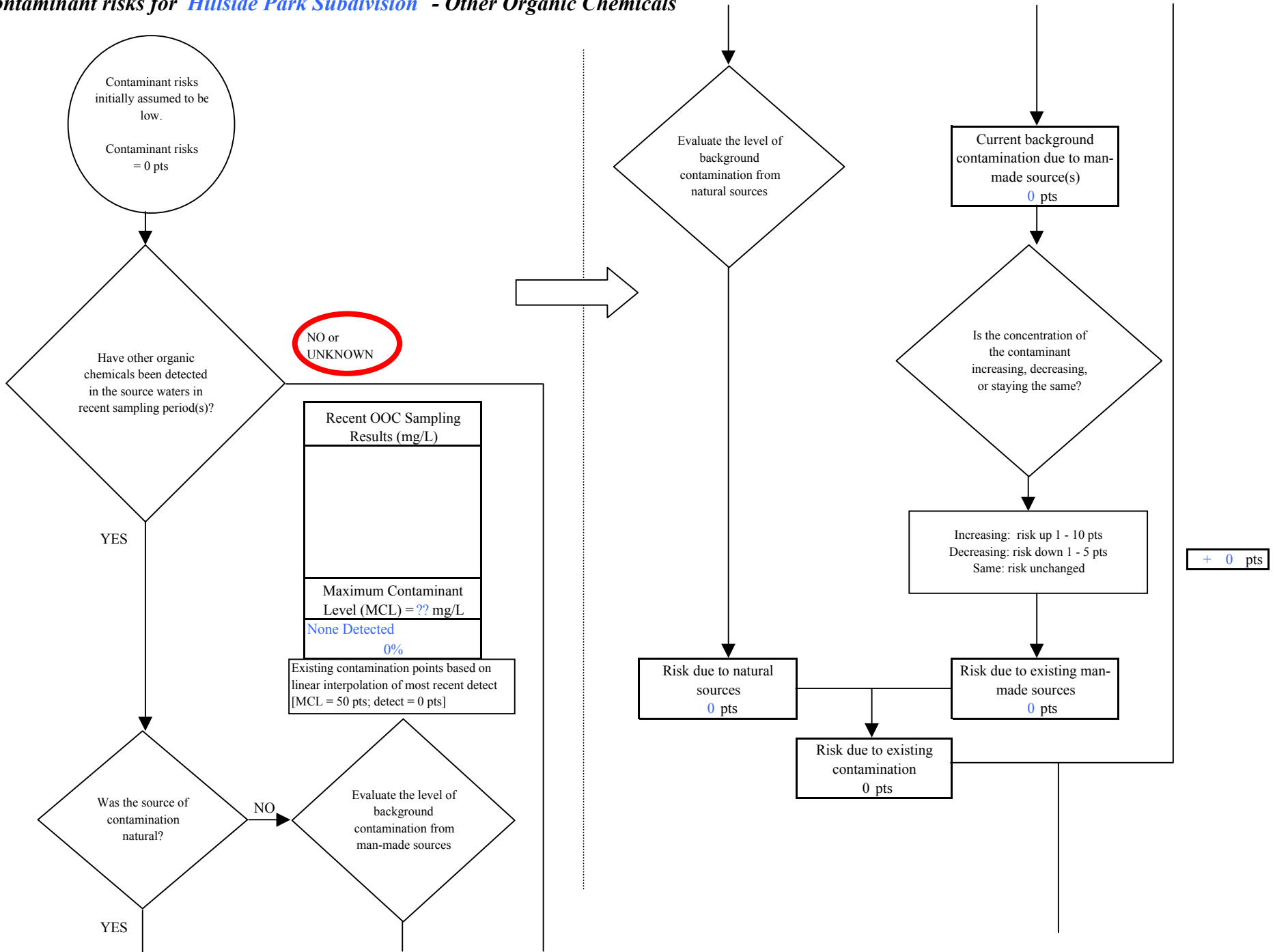
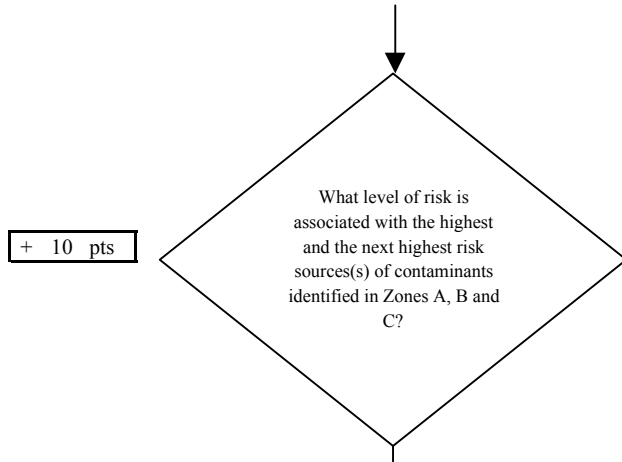


Chart 13. Contaminant risks for Hillside Park Subdivision - Other Organic Chemicals



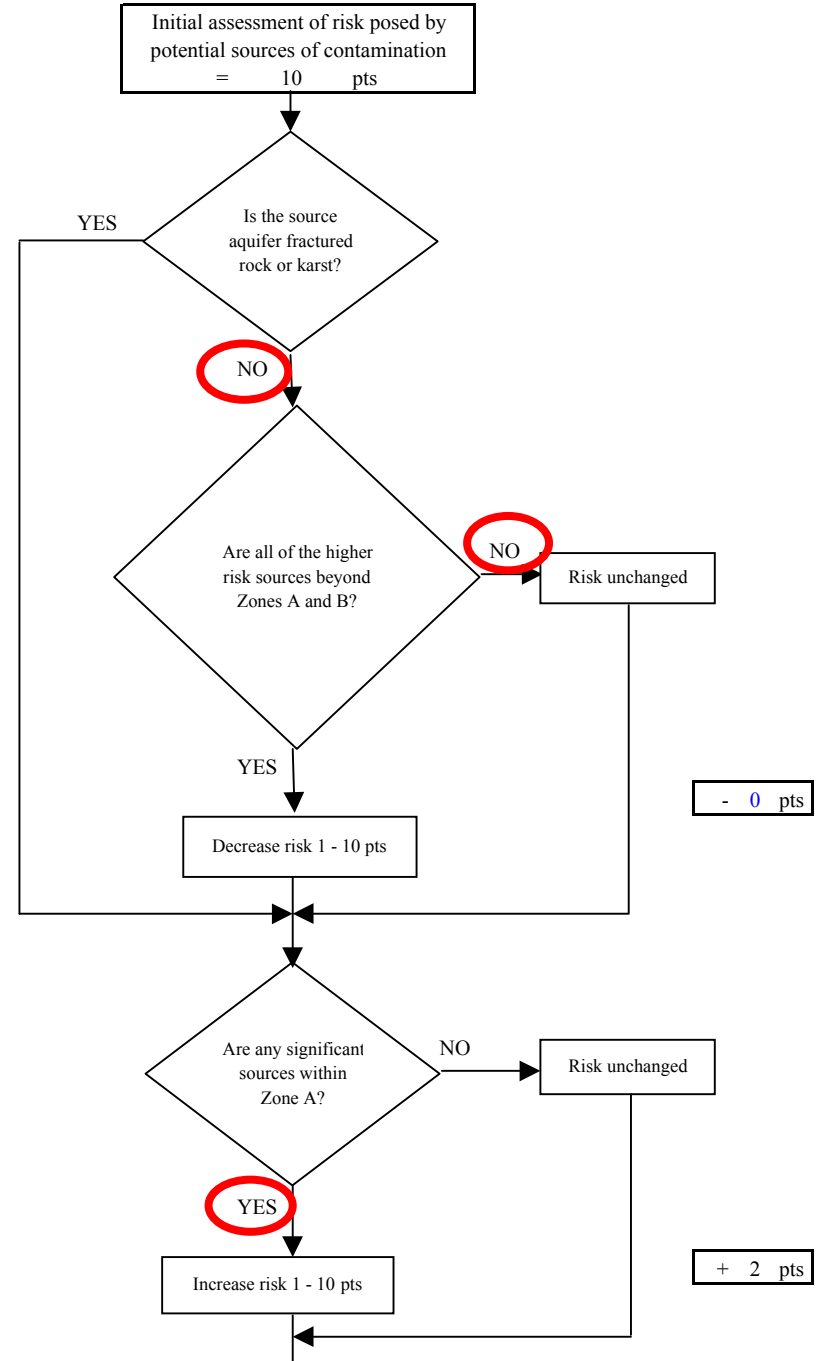
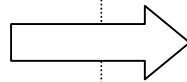
+ 10 pts

Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	0	0
Low(s)	3	3	6

	LOW 10 pts	MEDIUM 20 pts	HIGH 30 pts	VERY HIGH 40 pts
LOW	≥ 10 sources + 10 pts	≥ 10 sources + 5 pts	≥ 20 sources + 5 pts	----
MEDIUM	----	≥ 2 sources + 5 pts	≥ 5 sources + 5 pts	≥ 10 sources + 5 pts
HIGH	----	----	≥ 1 source + 10 pts	≥ 2 sources + 10 pts
VERY HIGH	----	----	----	≥ 1 source + 10 pts

Matrix Score 10

Note: Septic systems, sewerlines, and roads are each assigned a risk ranking for each individual contaminant source in the CSI. The VA, however, counts these contaminant sources as a group and assigns a calculated number of either "lows" or "mediums" based on the density.



- 0 pts

+ 2 pts

Chart 13. Contaminant risks for Hillside Park Subdivision - Other Organic Chemicals

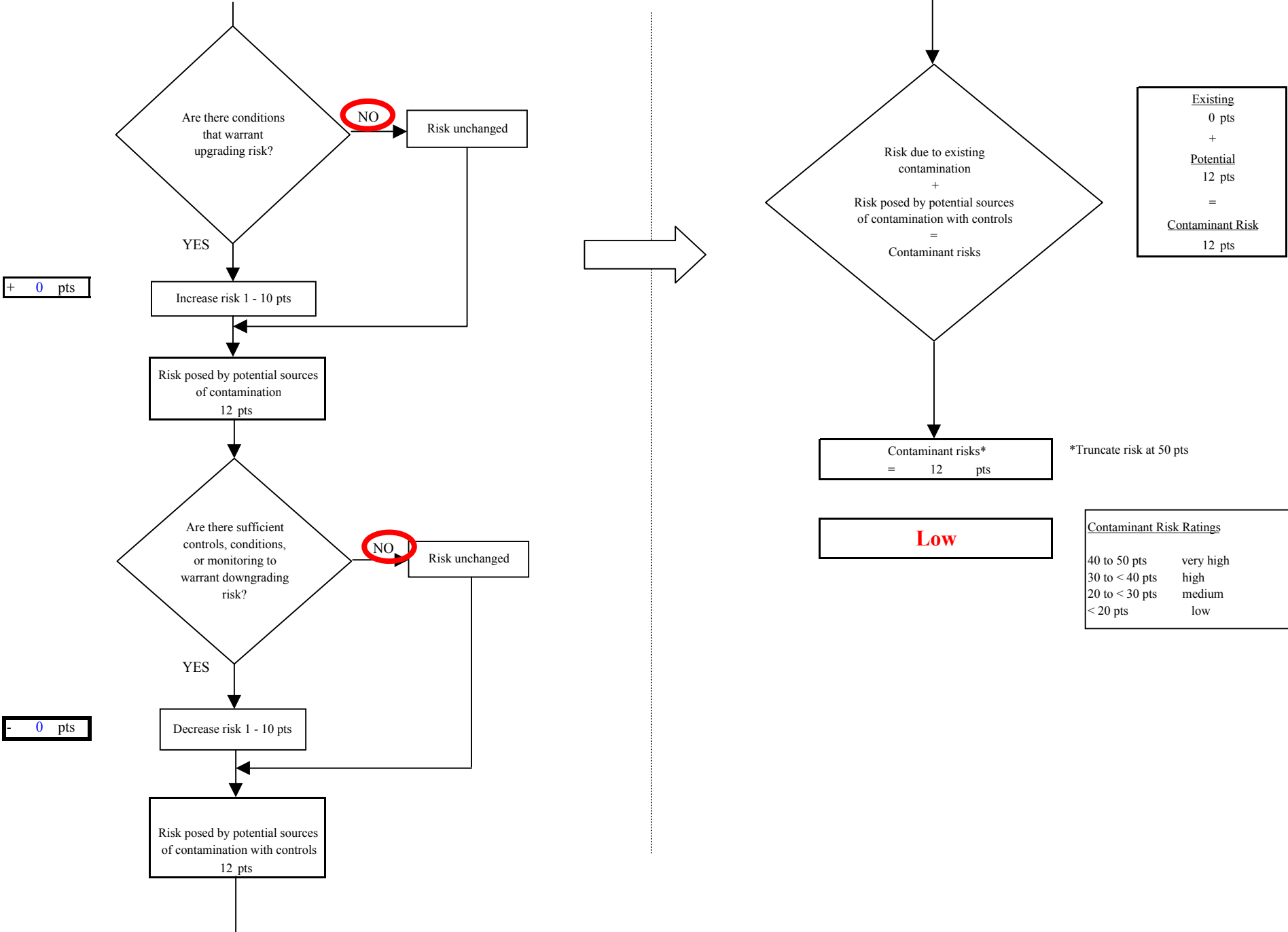


Chart 14. Vulnerability analysis for Hillside Park Subdivision - Other Organic Chemicals

