Source Water Assessment for
City of Palmer
Well No.1 and No. 3

A Hydrogeologic Susceptibility and Vulnerability Assessment

DRINKING WATER PROTECTION PROGRAM REPORT 422
PWSID 226020.001and 226020.3

April 2002

Source Water Assessment for City of Palmer

By Alaska Department of Environmental Conservation

DRINKING WATER PROTECTION PROGRAM REPORT 422

The Drinking Water Protection Program is producing Source Water Assessments in compliance with the Safe Drinking Water Act Amendments of 1996. Each assessment includes a delineation of the source water area, an inventory of potential and existing contaminant sources that may impact the water, a risk ranking for each of these contaminants, and an evaluation of the potential vulnerability of these drinking water sources.

These assessments are intended to provide public water systems owners/operators, communities, and local governments with the best available information that may be used to protect the quality of their drinking water. The assessments combine information obtained from various sources, including the U.S. Environmental Protection Agency, Alaska Department of Environmental Conservation (ADEC), public water system owners/operators, and other public information sources. The results of this assessment are subject to change if additional data becomes available. If you have any additional information that may affect the results of this assessment, please contact the Program Coordinator of DWPP, (907) 269-7521.

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION: 2002

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By Alaska Department of Environmental Conservation

Drinking Water Protection Program
Alaska Department of Environmental Conservation

EXECUTIVE SUMMARY

City of Palmer public water system currently consists of three Class A (community) wells. This assessment looks at two of the wells, Palmer Well No.1 and Well No.3... The potential and current sources of contaminants for City of Palmer Well No. 1 and Well No. 3 include: paved roads, residential septic systems, sewer lines, large capacity septic systems and various commercial and industrial activities. These existing and potential sources of contamination are considered a source of bacteria and viruses, nitrates and/or nitrites, and volatile organic chemicals, heavy metals, synthetic organic chemicals and other organic chemicals. The City of Palmer Well No. 1 received a overall vulnerability rating of **Low** for volatile organic chemicals, synthetics organic chemicals and other organic chemicals; **Medium** for bacteria/viruses, nitrates/nitrites and heavy metals. The City of Palmer Well No. 3 received a overall vulnerability rating of **Low** for heavy metals, synthetic organic chemicals and other organic chemicals **Medium** for bacteria and viruses and volatile organic chemicals; **High** for nitrates/nitrites.

Figure 1. Index Map showing the location of the Matanuska-Susitna Valley and area of study.

INTRODUCTION

The purpose of this environmental assessment is to provide public water system owners/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 City of Palmer's Well No.1 and Well No.3, which are sources of public drinking water for the city of Palmer. (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 MATANUSKA-SUSITNA VALLEY-AREA, ALASKA

Location

The Matanuska-Susitna Valley is part of the lowland lying about 50 miles north of Anchorage in south central Alaska. The well described in this report is part of the Matanuska River Watershed. The study area is roughly bounded on the north by the Talkeetna Mountains; on the west by Wasilla Creek; on the south by the Knik River; and on the east by the Chugach Mountains. The area covers approximately 150 square miles.

Climate

The climate of the Matanuska-Susitna Valley is the result of a combination of marine and continental influences. The 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 is approximately 15 inches per year. On the average, the Valley receives a total snow accumulation of 58 inches per year. Precipitation generally increased inland toward the Talkeetna Mountains where annual precipitation may exceed 60 inches. Mean daily temperature ranges from 67° F during July to 5° F in January [*Western Regional Climate Center*, 2000].

Physiography and Groundwater Conditions

The Matanuska-Susitna Valley is surrounded by rugged mountains that rise abruptly above the valley floor. The Chugach Mountains at the southern edge of the valley reach altitudes greater than 6300 feet. These mountains are composed primarily of metamorphosed sedimentary marine and volcanic rocks. Along the northern edge of the valley, peaks in the Talkeetna Mountains reach altitudes of 3000 to 5000 feet. The Talkeenta Mountains are composed mainly of igneous rocks, granite intrusives and subordinate laves; Cretaceous and Tertiary sedimentary rocks form the south flank of the mountains. Although the altitude of the valley floor ranges from sea level at Knik Arm to 1000 feet at the base of Wishbone Hill, the local relief is commonly not more than 100 to 200 feet.

The Matanuska and Knik River's drain the area. These rivers are braided glacial outwash streams having wide floodplains. Drainage is poor in many interstream tracts resulting in large areas of swampy ground with shallow lakes occupying depressions.

The Matanuska-Susitna Valley is floored with unconsolidated deposits, chiefly glacial drift, that

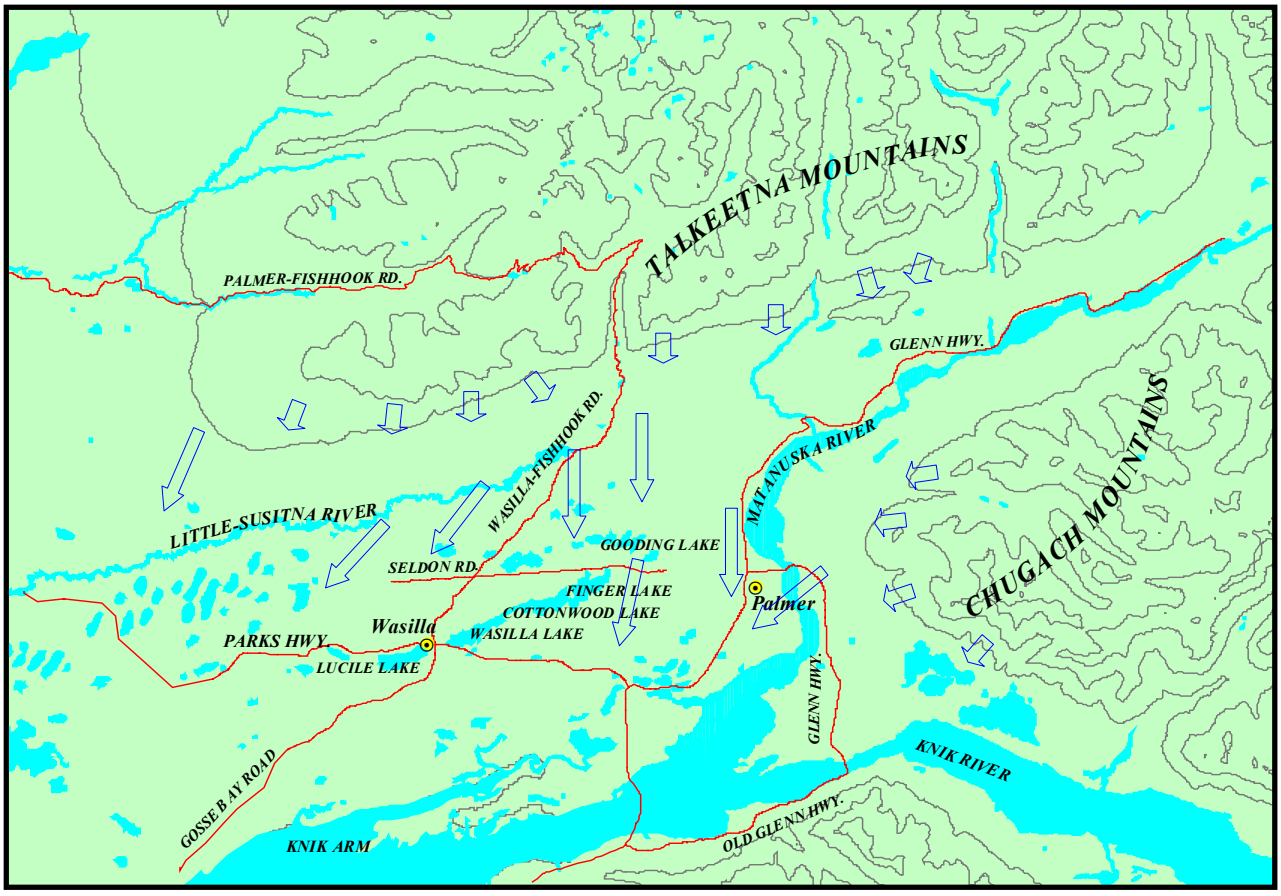

Figure 2. Map showing groundwater flow in the Matanuska-Susitna Valley (Jokela, Munter and Evans, 1991).

represents several episodes of glacial advances and retreats. The drift includes till, outwash stream deposits, and estuarine and lake deposits. Physiographic features formed by these deposits in or adjacent to the study area include end moraine, lateral moraines, eskers, crevasse fillings, and other pitted features, river terraces, outwash floodplains and an extensive estuarine flat (Trainer, 1960).

The glacial till and bedrock form aquifers of minor importance. The chief hydrologic significance of the till is in confining the artesian aquifer. Generally, the till is poorly permeable, although locally thin layers of sand may yield small quantities of water. Till that is present at or near the land surface in much of the area makes the acquisition of shallow groundwater difficult. The bedrock is poorly permeable. It yields water only from fractures, whose location and frequency cannot be easily predicted.

The chief aquifers are composed of outwash sand and gravel laid down by melt-water streams or in lakes. The outwash deposits are of two chief forms. The first consists of sheet-like deposits that lie just beneath the ground surface. These deposits range in thickness from a few feet to more than 100 feet. They typically rest on till or bedrock. The water in these deposits is unconfined. The other outwash deposits are buried beneath till. They are known to be as much as 50 to 60 feet thick, and probably are considerably thicker in some places. They commonly contain confined, or artesian, groundwater. Well logs and data from pumping tests suggest that outwash sand and gravel form a continuous or nearly continuous sheet in an area of more than 10 square miles north and west of Palmer (Jakola et al, 1991).

In the Mat-Su Valley, groundwater is primarily recharged by snowmelt and precipitation infiltrating both directly and also from the infiltration into the foothill slopes of the Talkeetna and Chugach Mountains. In addition,, aquifers may be recharged by streams where surface water percolates into surrounding permeable sediments (losing reaches of streams). This is the case for the water-table aquifers in the terrace south of Palmer and in the Bodenburg Butte area, which receive underground flow from the Matanuska River. Groundwater flow in the confined aquifers is generally from the north and north-northwest. 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 (Trainer, 1960).

CITY OF PALMER PUBLIC WATER SYSTEM

The city of Palmer public water system consists of three Class A (community) water sources, which are owned and operated by the city of Palmer. This report assesses Well No.1 and Well No. 3 due to their close proximity. The remaining source, Well No. 4 is assessed in a separate report. In addition to the three sources, another source, Well No.2, is currently inactive and reportedly has never been active due to high levels of silt. An assessment will not be completed for Well No. 2.

Well No.1 and No.3 are located approximately 1/2 mile north of the Palmer Wasilla Highway off of Scott Road. The two wells, Well No.1 and Well No.3 are approximately 350 feet apart (See Appendix A-Map 1) and are at an approximate elevation of 350 feet.

According to records, Well No. 1 is 624 feet deep and had a static water level of 173 feet below the surface at the time of drilling in 1959. Records indicate that Well No. 1 is screened for 20 feet but it is unknown at what depth. The well appears to have been grouted. Grouting is a seal surrounding the well casing. The seal helps protect ground water resource from surface and/or subsurface contamination (NGWA, 2001).

Well No.1 penetrates numerous confining layers from the surface to 465 feet below the surface. The well is completed in sandy outwash from 465 to 624 feet below the surface.

The information available for Well No. 3 is limited. A well log does not exist for the well, however records indicate that it is 146 feet deep. It is unknown whether Well No. 3 is screened and the static water level at the time of drilling in 1953, was not recorded.

Well logs in the area indicate that there is a confining layer near Well No. 3 from approximately 60 to 100 ft below the surface. Since little information exists for Well No. 3, information was interpolated from nearby wells.

The Palmer water system operates 365 days per year. According to the 1999 Sanitary Survey, the system provides water to 4000 + residents, via 1400+ service connections. The current production rate for Well No. 1 is 650 gallons/minute and Well No. 3 is 45 gallons/minute and is only exercised in the summer for emergency back up. Well No.1 produces only 10% of the total water supply for the city of Palmer. Well No.4 is the primary producer for the city and will be assessed separately. If Well No. 4 should go down, Well No. 1 would be the primary pump for the city.

ASSESSMENT AND PROTECTION AREA FOR CITY OF PALMER DRINKING WATER SOURCE

The Drinking Water Protection and Assessment Area that has been established for the City of Palmer wells is the area that is most sensitive to contamination. This area has served as a basis for assessing the risk of the drinking water source to contamination. This zone around the drinking water source is the most critical area for the preservation of the quality of the drinking water for this source. For simplicity, this area will be known as your Drinking Water Protection Area and will serve as the area of focus for voluntary protection efforts.

Conceptually, groundwater enters the aquifer systems along the front range of the Talkeetna Mountains and flows toward Cook Inlet. An analytical calculation was used to calculate 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 well log and the recent Sanitary Survey. This analytical calculation was used as a guide in establishing the protection area for City of Palmer . Additional methods were further employed to take into account any uncertainties in groundwater flow and aquifer characteristics to arrive at a meaningful and conservative protection area 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 (ADEC) 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 Areas for City of Palmer contains four zones, Zone A, Zone B, Zone C and Zone D (Map 1, Appendix A). Zone A corresponds to the area between the well and the distance equal to ¼ 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 well may be on the order of several days to several hours. Zone A also extends down gradient from the well to take into account the area of the aquifer that is influenced by pumping of the well. The Zone B protection area for City of Palmer corresponds to a time-of-travel of less than two years and extends toward base of the Talkeetna Mountains. Zone C protection area corresponds to a time-of-travel of greater than 2 years and less than 5 years. Zone D corresponds to a time-of-travel of greater than 5 years and less than 10 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 City of Palmer Well No. 1 and Well No. 3. 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

Table 1 in Appendix C lists the Contaminant Source Inventory for City of Palmer .
Below is a summary of the contaminant sources inventoried within the City of Palmer Well No. 1 and Well No. 3 protection area:

<u>Well No. 1</u>

- Paved roads
- Domestic sewer lines
- Residential septic systems
- Residential area
- Large capacity septic systems.
- ADEC recognized contaminated site
- Commercial activities
- Injection Wells (Class V) large capacity septic systems
- Vehicle waste disposal well
- Industrial process water and disposal well

Well No. 3

- Paved roads
- Residential septic systems
- Injection Wells (Class V) Large Capacity Septic Systems

These potential contaminant sources present risks for all six categories of drinking water contaminants for City of Palmer drinking water source No. 1 and No. 3.

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 well (Appendices B & C).

VULNERABILITY OF CITY OF PALMER DRINKING WATER SOURCES

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

- Natural susceptibility; and
- Contaminant risks.

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

Natural Susceptibility (0 – 50 points)

+

Contaminant Risks (0 – 50 points)

=

Vulnerability of the
Drinking Water Source to Contamination (0 – 100).

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

Susceptibility of the Wellhead (0 – 25 Points)
+
Susceptibility of the Aquifer (0 – 25 Points)

= Natural Susceptibility (Susceptibility of the Well)
(0 – 50 Points)

Both Well No. 1 and Well No. 3 are completed in a confined-aquifer setting. However, due to differences in well depth, they obtain water from different aquifers. The differences in depth and production rate of the wells contribute to significant differences in the protection areas for the two wells. (See Appendix A-Map1)

From the well log for Well No.1, there appears to be a numerous small confining layers and one large confining layer above the aquifer. Since the well is much deeper then the wells in the area, it is likely that there are no other wells penetrating the large confining layer. The continuous barrier increases the protection of the aquifer.

Since information on Well No.3 was limited, information was interpolated from wells of similar depth in the area. Records indicate that a confining layer exists approximately from 60 to 40 feet below the surface. However, this confining layer appears to be inconsistent. Well logs directly north of this system indicate the absence of a barrier. In addition, there are many wells of similar depth, penetrating the confining layer. The presence of a confining layer may provide a protective barrier from the movement of contaminants in the subsurface. However, the inconsistency of the layer and perforations from wells may allow contaminants to enter the subsurface aquifer uninhibited by any protective layer.

Combining the susceptibilities of the wellhead and the aquifer to contamination leads to a score (0 – 50 points) and rating of overall Susceptibility (Appendix D). Table 1 shows the overall Susceptibility score and rating for City of Palmer .

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

Well No. 1	**Score**	**Rating**
Susceptibility of the Wellheads	0	Low
Susceptibility of the Aquifer	7	Low
Natural Susceptibility	7	Low
Well No. 3		
Susceptibility of the Wellheads	0	Low
Susceptibility of the Aquifer	20	Very High
Natural Susceptibility	20	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 recent existing or historical contamination that has been detected at the drinking water sources 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

Contaminant Risks	Score	Rating
Well No. 1		
Bacteria and Viruses	50	Very High
Nitrates and/or Nitrites	50	Very High
Volatile Organic Chemicals	25	Medium
Heavy Metals, Cyanide, And Other Inorganic Chemicals	50	Very High
Synthetic Organic Chemicals	29	Medium
Other Organic Chemicals	24	Medium
Well No. 3		
Bacteria and Viruses	22	Medium
Nitrates and/or Nitrites	38	High
Volatile Organic Chemicals	22	Medium
Heavy Metals, Cyanide, And Other Inorganic Chemicals	12	Low
Synthetic Organic Chemicals	14	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 City of Palmer Public Drinking Water Source to Contamination by Category

Category	Score	Rating
Well No. 1		
Bacteria and Viruses	55	Medium
Nitrates and Nitrites	55	Medium
Volatile Organic Chemicals	30	Low
Heavy Metals, Cyanide, and Other Inorganic Chemicals	55	Medium
Synthetic Organic Chemicals	35	Low
Other Organic Chemicals	30	Low
Well No. 3		
Bacteria and Viruses	40	Medium
Nitrates and Nitrites	60	High
Volatile Organic Chemicals	40	Medium
Heavy Metals, Cyanide, and Other Inorganic Chemicals	30	Low
Synthetic Organic Chemicals	35	Low
Other Organic Chemicals	30	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.

The contamination risk for the bacteria/viruses for Well No. 1 are driven by the potential risk associated roads, sewer lines, commercial activities, large capacity septic systems and residential areas.

No detection of bacteria and viruses has occurred in recent sampling history for Well No. 1. Combining the contamination risk with the natural susceptibility of the

well leads to an overall vulnerability to bacteria and virus contamination of medium.
The contamination risk for the bacteria/viruses for Well No. 3 are driven by the potential risk associated roads, sewer lines, commercial activities, systems and residential areas.
No detection of bacteria and viruses has occurred in recent sampling history for Well No. 3. Combining the contamination risk with the natural susceptibility of the well leads to an overall vulnerability to bacteria and virus contamination of medium.

The contamination risk for nitrate/nitrites at Well No.1 are driven by the potential risk associated with sewerlines, comercial activities, large capacity septic systems, roads, industrial process water disposal wells, and resdidential area

Exisitng risk was determined by reviewing recent historical sampling data. The most recent detection at Well No. 1 indicates that nitrates were detected at 3% of the maximum contaminant level (MCL) of 10 mg/l on 4/9/01. (See Chart 5 – Contaminant Risks for nitrates and/or nitrites in Appendix D.) The MCL is the maximum level of contaminant that is allowed to exist in drinking water and still be consumed by humans without harmful effects. Combining the contamination risk with the natural susceptibility of the well leads to an overall vulnerability to nitrate/nitrite contamination of medium.

The contamination risk for nitrate/nitrites at Well No.3 are driven by the potential risk associated with roads, , resdidential area, residential septic systems and large capacity septic systems.

Exisitng risk was determined by reviewing recent historical sampling data. The most recent detection at Well No. 3 indicates that nitrates were detected at 3% of the maximum contaminant level (MCL) of 10 mg/l on 4/9/01. (See Chart 5 – Contaminant Risks for nitrates and/or nitrites in Appendix D.) Combining the contamination risk with the natural susceptibility of the well leads to an overall vulnerability to nitrate/nitrite contamination of high.

For purposes of this study, LCSS's are defined as septic systems serving more then one single family home. The United States Environmental Protection Agency's (USEPA) Underground Injection Control Program (UICP) is responsible for regulating large capacity septic systems (LCSS's) serving 20 or more individuals (USEPA, 1999).

Nitrates and/or nitrites are found in natural background concentration at this site, as elsewhere in Alaska. Other sources of nitrate and/or nitrites are human sewage, livestock manure, especially from feedlots and fertilizers. Due to high solubility and weak retention by soil, nitrates are very mobile often moving at approximately the same rate as water. According to the USEPA, short-term exposure to levels excessively above the MCL has caused serious illness and sometimes death. Serious illness in infants can occur due to the conversion of nitrate to nitrite by the body, which can interfere with the oxygen-carrying capacity of the child's' blood. This can be an acute condition in which health deteriorates rapidly over a period of days. Symptoms include shortness of breath and blueness of the skin. Long term exposure to nitrates and nitrites at levels above the MCL can lead to diuresis, increased starchy deposits and hemorrhaging of the spleen (USEPA, 2001).

Because naturally less than 2 mg/l (or 20% the MCL), it is suspected that the nitrate levels detected are not being influenced by man made sources. (Wang, Strelakos, Jokela, 2000). The level of nitrate/nitrite detected at City of Palmer Well No.1 and No.3 remain at very safe levels with respect to human health.

The contaminant risks for volatile organic chemicals at Well No. 1are driven by the potential risk associated with roads, residential area, sewer lines, large capacity septic systems, residential septic systems, , recognized contaminated sites, and a motor vehcile disposal wells.

Recent historical sampling of Well No. 1 indicates no detection of volatile organic chemicals. Combining the potential and existing contaminant risk with the natural susceptibility of the wells leads to an overall vulnerability to volatile organic chemical contamination of low.

On 2/29/1990, a contaminated site (CS ID Tag: U04-01) was identified at a private residence. Contaminated soils were discovered at a underground heating oil storage tank. The impact and extent of contamination is unknown. Approximately 4.0 tons of contaminated soil was excavated. Records indicate that the contamination was cleaned up to ADEC's satisfaction. The site is currently inactive.

The contaminant risks for volatile organic chemicals at Well No. 3 are driven by the potential risk associated with roads, residential areas, residential septic systems and large capacity septic systems.

Recent historical sampling of Well No. 3 indicates no detection of volatile organic chemicals. Combining the potential and existing contaminant risk with the natural susceptibility of the wells leads to an overall

vulnerability to volatile organic chemical contamination of medium.
The contaminant risks for heavy metals and inorganics at Well No. 1 are driven by the potential risks associated with sewer lines, roads, residential area, large capacity septic systems, industrial process water disposal wells, motor vehcile disposal wells and the risks associated with existing contamination.

Exisitng risk was determined by reviewing recent historical sampling data. The most recent detection at Well No. 3 indicates that barium was detected at 99% of the maximum contaminant level (MCL) of 0.05 mg/l on 2/23/1998.. (See Chart 5 – Contaminant Risks for nitrates and/or nitrites in Appendix D.) Combining the contamination risk with the natural susceptibility of the well leads to an overall vulnerability to heavy metals and inorganics contamination of medium

Barium is a lustrous, machinable metal, which exists in nature in ores containing mixtures of elements. It is used in making a wide variety of electronic components, in metal alloys, bleaches, dyes, fireworks, ceramics and glass. In particular, it is used in well drilling operations where it is directly released into the ground (USEPA, 2002).

The EPA has found barium to potentially cause gastrointestinal disturbances and muscular weakness at levels above the MCL when exposed for relatively short periods of time. Long term exposure above the MCL has the potential to cause high blood pressure (USEPA, 2002). The levels detected at Palmer Well No.1 were under the MCL however the high levels detected should be watched in the future. It is unknown whether the existing contamination is naturally occurring or human influenced, however due to the aquifers protectiveness it is likely that it derived form natural geologic deposits. Since the high detection, the system has had no detection of barium. The levels of barium detected at Well No. 1 remain at safe levels with respect to human health.

The contaminant risks for heavy metals and inorganics at Well No. 3 are driven by the potential risks associated with roads, residential area and large capacity septic systems.
Recent historical sampling detected of Well No. 3 indicates no detection of heavy metals and inorganics. Combining the potential and existing contaminant risk with the natural susceptibility of the wells leads to an overall vulnerability to heavy metals and inorganics contamination of low.

The contaminant risk for synthetic organic chemicals at Well No.1 is driven by the potential risk associated with sewer lines, large capacity septic systems, residential septic systems, residential area and motor vehicle waste disposal wells.

Recent historical sampling of Well No. 1indicates no detection of regulated synthetic organic chemicals. Combining the potential and existing contaminant risk with the natural susceptibility of the wells leads to an overall vulnerability to synthetic organic chemical contamination of low.

The contaminant risk for synthetic organic chemicals at Well No.3 is driven by the potential risk associated with residential area, residential septic systems and large capacity septic systems.

Recent historical sampling of Well No. 3 indicates no detection of regulated synthetic organic chemicals. Combining the potential and existing contaminant risk with the natural susceptibility of the wells leads to an overall vulnerability to synthetic organic chemical contamination of low.

The contaminant risk for other organic chemicals at Well No. 1 is driven by the potential risk associated with sewer lines, large capacity septic systems, roads, solvent storage, residential areas and large capacity septic systems, roads, industrial process water disposal wells and motor vehcile disposal wells.

Recent historical sampling of Well No. 1indicates no detection of other organic chemicals. Combining the potential and existing contaminant risk with the natural susceptibility of the wells leads to an overall vulnerability to other organic chemical contamination of low.

The contaminant risk for other organic chemicals at Well No. 3 is driven by the potential risk associated with residential septic systems, residential areas, roads and large capacity septic systems.

Recent historical sampling of Well No. 3 indicates no detection of other organic chemicals. Combining the potential and existing contaminant risk with the natural susceptibility of the wells leads to an overall vulnerability to other organic chemical contamination of low.

SUMMARY

A *Source Water Assessment* has been completed for the City of Palmer Well No.1 and Well No.2.public drinking sources. The City of Palmer Well No. 1 received an overall vulnerability rating of **Low** for volatile organic chemicals, synthetics organic chemicals and other organic chemicals; **Medium** for bacteria/viruses, nitrates/nitrites and heavy metals. The City of Palmer Well No. 3 received a overall vulnerability rating of **Low** for heavy metals, synthetic organic chemicals and other organic chemicals **Medium** for bacteria and viruses and volatile organic chemicals; **High** for nitrates/nitrites.

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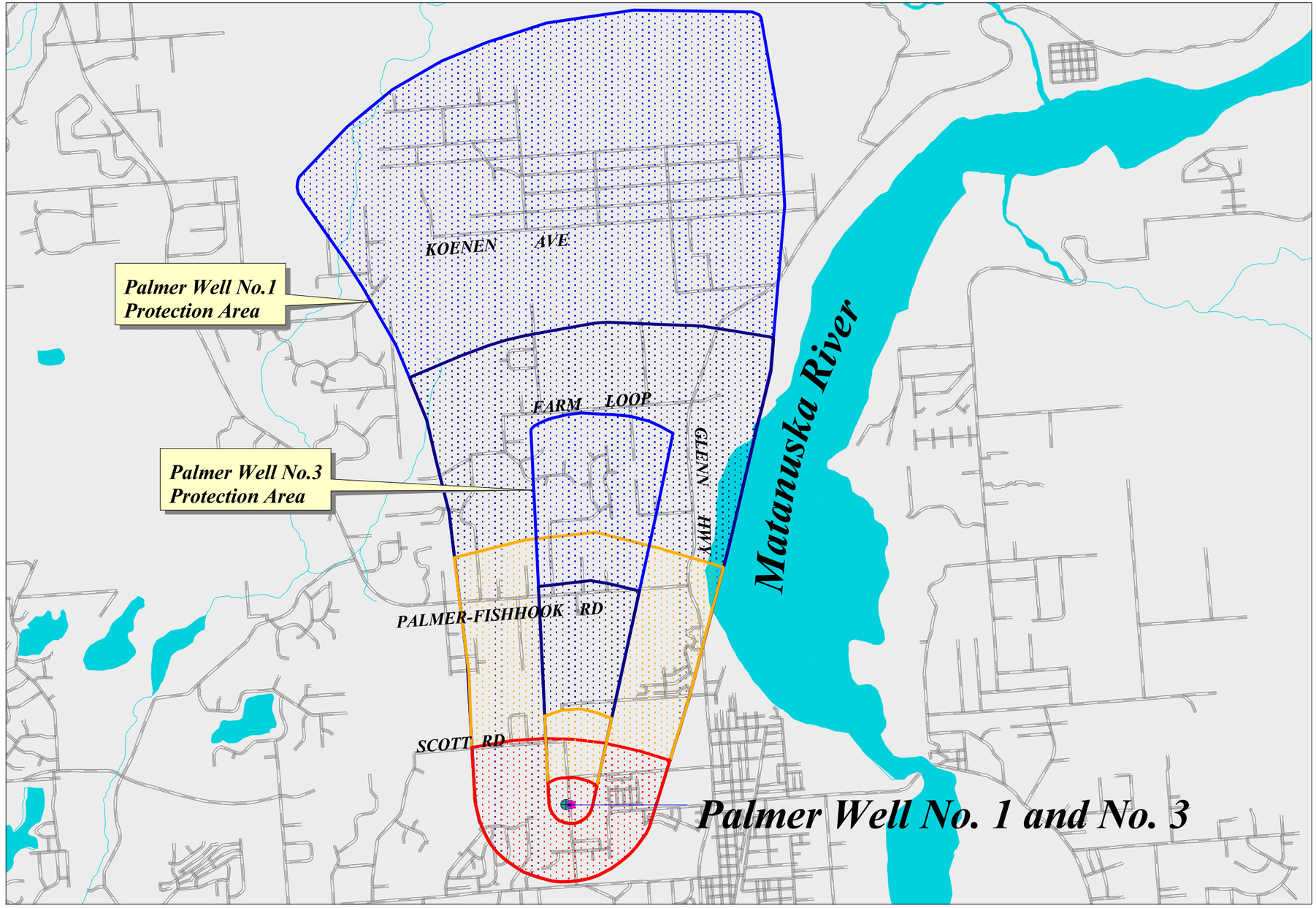
APPENDIX A

City of Palmer Well No.1 and No. 3
Drinking Water Protection Area

Drinking Water Protection Area for Palmer Well No. 1 and Well No. 3



Legend

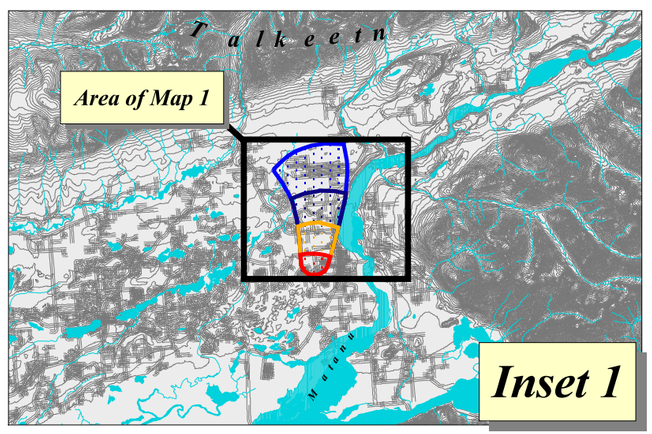
- Palmer Well No. 3
- Palmer Well No. 1

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

Zone D Protection Area
- Less than 10 Years Travel Time
- Lakes and Rivers
- Rivers and Streams
- Roads
- Parcels



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PWSID 226020.001 and 226020.3

Map 1

APPENDIX B

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No.1 and Well No. 3

City of Palmer Well No. 1

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Location*	*Map Number*	*Comments*
Pharmacies (with on-site wastewater disposal)	C35	C35-01	A	Beylund Loop	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-01	A	Elton Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-02	A	Josh Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-03	A	Near Edinborough Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-04	A	Near Edinborough Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-05	A	Near Arctic Ave and Felton Steet	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-06	A	Near Arctic Avenue	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-07	A	Near Gloria Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-08	A	Anna Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-09	A	Gloria Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-10	A	Irene Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-11	A	Lloyd Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-12	A	Auklet Avenue	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-13	A	Oscar Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-14	A	Beylund Loop	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-15	A	Near Scott Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-16	A	Near Anna Court and Scott Road	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Location*	*Map Number*	*Comments*
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Near Hemmer Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-02	A	Arctic Road	3	
Residential Areas	R01	R01-01	A	Residential Acres in Zone A	2	157 acres is Zone A.
Septic systems (serves one single-family home)	R02	R01-01	A	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-03	A	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-04	A	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-05	A	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-06	A	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-07	A	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-08	A	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-09	A	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-10	A	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-11	A	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-12	A	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-13	A	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-14	A	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-15	A	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-16	A	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-17	A	Near Arctic Road	3	`
Septic systems (serves one single-family home)	R02	R02-18	A	Near Amber Circle	3	
Septic systems (serves one single-family home)	R02	R02-19	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-20	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-21	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-22	A	Near Monte Vista DriveNear Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-23	A	Near Monte Vista Drive	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-24	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-25	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-26	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-27	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-28	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-29	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-30	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-31	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-32	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-33	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-34	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-35	A	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-36	A	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-37	A	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-38	A	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-39	A	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-40	A	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-41	A	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-42	A	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-43	A	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-44	A	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-45	A	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-46	A	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-47	A	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-48	A	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-49	A	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-50	A	Near Scott Road	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-51	A	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-52	A	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-53	A	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-54	A	Near Scott Road	3	
Highways and roads, paved (cement or asphalt)	X20	X20-01	A	Hemmer Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	A	Penny	2	
Highways and roads, paved (cement or asphalt)	X20	X20-03	A	Rush	2	
Highways and roads, paved (cement or asphalt)	X20	X20-04	A	Arctic Avenue	2	
Highways and roads, paved (cement or asphalt)	X20	X20-05	A	Chalet Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-06	A	Amber Hill	2	
Highways and roads, paved (cement or asphalt)	X20	X20-07	A	Wondra Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-08	A	Monte Vista Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-09	A	Verde Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-10	A	Equestrian Street	2	
Highways and roads, paved (cement or asphalt)	X20	X20-11	A	Kentucky Derby Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-12	A	Scott Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-13	A	Unamed Road leading to Well No. 4	2	
Highways and roads, paved (cement or asphalt)	X20	X20-14	A	Auklet Avenue	2	
Highways and roads, paved (cement or asphalt)	X20	X20-15	A	Scott Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-16	A	Beaver Avenue	2	
Highways and roads, paved (cement or asphalt)	X20	X20-17	A		2	
Highways and roads, paved (cement or asphalt)	x20	X20-18	A		2	
Highways and roads, paved (cement or asphalt)	X20	X20-19	A		2	
Highways and roads, paved (cement or asphalt)	X20	X20-20	A		2	
Highways and roads, paved (cement or asphalt)	X20	X20-21	A	Eves Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-22	A	Marsh Road	2	
Swimming pools (public)	X44	X44-01	A	Arctic Road	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Location*	*Map Number*	*Comments*
Lawn and garden supplies/services	C23	C23-01	B	C Bell Circle	4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-17	B		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-18	B		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-19	B		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-20	B		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-21	B		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-22	B		4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-03	B	Near Moffit Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-04	B	Palmer Fishhook Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-05	B	Near Werner Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-06	B	Near Biscan Drive	4/5	
Residential Areas	R01	R01-02	B	Residential Acres in Zone B	2	550 residential acres in Zone B
Septic systems (serves one single-family home)	R02	R02-56-141	B	All residential septics in Zone B	4	
Highways and roads, paved (cement or asphalt)	X20	X20-23	B	Williwaw Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-24	B		2	
Highways and roads, paved (cement or asphalt)	X20	X20-25	B	Coville Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-26	B		2	
Highways and roads, paved (cement or asphalt)	X20	X20-27	B		2	
Highways and roads, paved (cement or asphalt)	X20	X20-28	B		2	
Highways and roads, paved (cement or asphalt)	X20	X20-29	B	Glenn Highway	2	
Highways and roads, paved (cement or asphalt)	X20	X20-30	B	Pinnacle Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-31	B	Palmer Fishhook Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-32	B	Jana Drive	2	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Location*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-33	B		2	
Highways and roads, paved (cement or asphalt)	X20	X20-34	B	Moffit Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-35	B	Werner Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-36	B	C Bell Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-37	B		2	
Highways and roads, paved (cement or asphalt)	X20	X20-38	B	Ryder Dirve	2	
Highways and roads, paved (cement or asphalt)	X20	X20-39	B	Hecker Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-40	B	Farm Loop	2	
Highways and roads, paved (cement or asphalt)	X20	X20-41	B		2	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-07	C	Near Farm Loop	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-08	C	Near Glenn Highway	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-12	C	Pinnell Circle	4	
Residential Areas	R01	R01-03	C	Residential Acres in Zone C	2	
Septic systems (serves one single-family home)	R02	R02-142-25	C	All Residential Septic's in Zone C.	4	(108 total septics) R02-142-250. 668 acres in Zone C.
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-01	C	Farm Loop and Hay Road	5	Soils contaminated from heating oil underground storage tank at private residence. Impact and extent of contamination unknown.4.01 tons contaminated soil excavated. Contamination cleaned up to DEC's satisfaction.
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-09	D	Near Evergreen Street	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-10	D	Near Jensen Avenue	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-11	D	Near Yarrow Road	5	
Injection wells (Class V) Industrial Process Water & Water Disposal Wells	D40	D40-01	D	Near Hermann Avenue	5	
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D42-01	D	Near Showers Street	5	

Table 2

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 1 Sources of Bacteria and Viruses

PWSID 226020.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-50	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-49	A	Low	Near Scott Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	Near Hemmer Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-02	A	High	Arctic Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-13	A	Medium	Oscar Street	3	
Residential Areas	R01	R01-01	A	Low	Residential Acres in Zone A	2	157 acres is Zone A.
Highways and roads, paved (cement or asphalt)	X20	X20-12	A	Low	Scott Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-07	A	Low	Wondra Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-04	A	Low	Arctic Avenue	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-12	A	Medium	Auklet Avenue	3	
Pharmacies (with on-site wastewater disposal)	C35	C35-01	A	Low	Beylund Loop	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-01	A	Medium	Elton Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-03	A	Medium	Near Edinborough Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-04	A	Medium	Near Edinborough Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-05	A	Medium	Near Arctic Ave and Felton Steet	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-06	A	Medium	Near Arctic Avenue	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-07	A	Medium	Near Gloria Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-08	A	Medium	Anna Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-09	A	Medium	Gloria Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-10	A	Medium	Irene Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-11	A	Medium	Lloyd Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-14	A	Medium	Beylund Loop	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-15	A	Medium	Near Scott Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-16	A	High	Near Anna Court and Scott Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-16	A	Medium	Near Anna Court and Scott Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	High	Near Hemmer Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	High	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R01-01	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R01-01	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-03	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-03	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-04	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-04	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-05	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-05	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-06	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-06	A	Low	Near Chalet Court and Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-07	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-07	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-08	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-09	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-10	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-11	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-12	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-13	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-14	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-15	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-16	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-17	A	Low	Near Arctic Road	3	`
Septic systems (serves one single-family home)	R02	R02-18	A	Low	Near Amber Circle	3	
Septic systems (serves one single-family home)	R02	R02-19	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-20	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-21	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-22	A	Low	Near Monte Vista DriveNear Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-23	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-24	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-25	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-26	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-27	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-28	A	Low	Near Monte Vista Drive	3	

Table 2 (continued)

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 1 Sources of Bacteria and Viruses

PWSID 226020.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-29	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-30	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-31	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-32	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-33	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-34	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-35	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-36	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-37	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-38	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-39	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-40	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-41	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-42	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-43	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-43	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-44	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-45	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-46	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-47	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-48	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-51	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-52	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-54	A	Low	Near Scott Road	3	

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 1 Sources of Bacteria and Viruses

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-01	A	Low	Hemmer Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	A	Low	Penny	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	A	Low	Penny	2	
Highways and roads, paved (cement or asphalt)	X20	X20-03	A	Low	Rush	2	
Highways and roads, paved (cement or asphalt)	X20	X20-05	A	Low	Chalet Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-06	A	Low	Amber Hill	2	
Highways and roads, paved (cement or asphalt)	X20	X20-08	A	Low	Monte Vista Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-09	A	Low	Verde Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-10	A	Low	Equestrian Street	2	
Highways and roads, paved (cement or asphalt)	X20	X20-11	A	Low	Kentucky Derby Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-13	A	Low	Unamed Road leading to Well No. 4	2	
Highways and roads, paved (cement or asphalt)	X20	X20-14	A	Low	Auklet Avenue	2	
Highways and roads, paved (cement or asphalt)	X20	X20-15	A	Low	Scott Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-16	A	Low	Beaver Avenue	2	
Highways and roads, paved (cement or asphalt)	X20	X20-17	A	Low		2	
Highways and roads, paved (cement or asphalt)	x20	X20-18	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-19	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-20	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-21	A	Low	Eves Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-22	A	Low	Marsh Road	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-17	B	Medium		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-18	B	Medium		4	

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 1 Sources of Bacteria and Viruses

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-19	B	Medium		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-20	B	Medium		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-21	B	Medium		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-22	B	Medium		4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-03	B	High	Near Moffit Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-04	B	High	Palmer Fishhook Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-05	B	High	Near Werner Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-06	B	High	Near Biscan Drive	4/5	
Residential Areas	R01	R01-02	B	Low	Residential Acres in Zone B	2	550 residential acres in Zone B
Residential Areas	R01	R01-02	B	Low	Residential Acres in Zone B	2	550 residential acres in Zone B
Septic systems (serves one single-family home)	R02	R02-56-141	B	Low	All residential septics in Zone B	4	
Highways and roads, paved (cement or asphalt)	X20	X20-23	B	Low	Williwaw Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-24	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-25	B	Low	Coville Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-26	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-27	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-28	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-29	B	Low	Glenn Highway	2	
Highways and roads, paved (cement or asphalt)	X20	X20-30	B	Low	Pinnacle Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-31	B	Low	Palmer Fishhook Road	2	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-32	B	Low	Jana Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-33	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-34	B	Low	Moffit Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-35	B	Low	Werner Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-36	B	Low	C Bell Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-37	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-38	B	Low	Ryder Dirve	2	
Highways and roads, paved (cement or asphalt)	X20	X20-39	B	Low	Hecker Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-40	B	Low	Farm Loop	2	
Highways and roads, paved (cement or asphalt)	X20	X20-41	B	Low		2	

Table 3

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 1 Sources of Nitrates/Nitrites

PWSID 226020.001

Contaminant Source Type	Contaminant Source ID	CS ID tag	Zone	Risk Ranking for Analysis	Location	Map Number	Comments
Septic systems (serves one single-family home)	R02	R02-50	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-49	A	Low	Near Scott Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	Near Hemmer Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-02	A	High	Arctic Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-13	A	Medium	Oscar Street	3	
Residential Areas	R01	R01-01	A	Low	Residential Acres in Zone A	2	157 acres is Zone A.
Highways and roads, paved (cement or asphalt)	X20	X20-12	A	Low	Scott Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-07	A	Low	Wondra Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-04	A	Low	Arctic Avenue	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-12	A	Medium	Auklet Avenue	3	
Pharmacies (with on-site wastewater disposal)	C35	C35-01	A	Low	Beylund Loop	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-01	A	Medium	Elton Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-03	A	Medium	Near Edinborough Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-04	A	Medium	Near Edinborough Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-05	A	Medium	Near Arctic Ave and Felton Steet	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-06	A	Medium	Near Arctic Avenue	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-07	A	Medium	Near Gloria Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-08	A	Medium	Anna Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-09	A	Medium	Gloria Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-10	A	Medium	Irene Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-11	A	Medium	Lloyd Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-14	A	Medium	Beylund Loop	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-15	A	Medium	Near Scott Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-16	A	Medium	Near Anna Court and Scott Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-16	A	High	Near Anna Court and Scott Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	High	Near Hemmer Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	High	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R01-01	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R01-01	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-03	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-03	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-04	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-04	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-05	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-05	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-06	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-06	A	Low	Near Chalet Court and Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-07	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-07	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-08	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-09	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-10	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-11	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-12	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-13	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-14	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-15	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-16	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-17	A	Low	Near Arctic Road	3	`
Septic systems (serves one single-family home)	R02	R02-18	A	Low	Near Amber Circle	3	
Septic systems (serves one single-family home)	R02	R02-19	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-20	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-21	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-22	A	Low	Near Monte Vista DriveNear Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-23	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-24	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-25	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-26	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-27	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-28	A	Low	Near Monte Vista Drive	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-29	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-30	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-31	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-32	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-33	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-34	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-35	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-36	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-37	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-38	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-39	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-40	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-41	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-42	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-43	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-43	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-44	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-45	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-46	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-47	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-48	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-51	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-52	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-54	A	Low	Near Scott Road	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-01	A	Low	Hemmer Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	A	Low	Penny	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	A	Low	Penny	2	
Highways and roads, paved (cement or asphalt)	X20	X20-03	A	Low	Rush	2	
Highways and roads, paved (cement or asphalt)	X20	X20-05	A	Low	Chalet Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-06	A	Low	Amber Hill	2	
Highways and roads, paved (cement or asphalt)	X20	X20-08	A	Low	Monte Vista Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-09	A	Low	Verde Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-10	A	Low	Equestrian Street	2	
Highways and roads, paved (cement or asphalt)	X20	X20-11	A	Low	Kentucky Derby Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-13	A	Low	Unamed Road leading to Well No. 4	2	
Highways and roads, paved (cement or asphalt)	X20	X20-14	A	Low	Auklet Avenue	2	
Highways and roads, paved (cement or asphalt)	X20	X20-15	A	Low	Scott Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-16	A	Low	Beaver Avenue	2	
Highways and roads, paved (cement or asphalt)	X20	X20-17	A	Low		2	
Highways and roads, paved (cement or asphalt)	x20	X20-18	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-19	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-20	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-21	A	Low	Eves Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-22	A	Low	Marsh Road	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-17	B	Medium		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-18	B	Medium		4	

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 1 Sources of Nitrates/Nitrites

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-19	B	Medium		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-20	B	Medium		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-21	B	Medium		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-22	B	Medium		4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-03	B	High	Near Moffit Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-04	B	High	Palmer Fishhook Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-05	B	High	Near Werner Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-06	B	High	Near Biscan Drive	4/5	
Residential Areas	R01	R01-02	B	Low	Residential Acres in Zone B	2	550 residential acres in Zone B
Residential Areas	R01	R01-02	B	Low	Residential Acres in Zone B	2	550 residential acres in Zone B
Septic systems (serves one single-family home)	R02	R02-56-141	B	Low	All residential septics in Zone B	4	
Highways and roads, paved (cement or asphalt)	X20	X20-23	B	Low	Williwaw Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-24	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-25	B	Low	Coville Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-26	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-27	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-28	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-29	B	Low	Glenn Highway	2	
Highways and roads, paved (cement or asphalt)	X20	X20-30	B	Low	Pinnacle Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-31	B	Low	Palmer Fishhook Road	2	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-32	B	Low	Jana Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-33	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-34	B	Low	Moffit Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-35	B	Low	Werner Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-36	B	Low	C Bell Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-37	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-38	B	Low	Ryder Dirve	2	
Highways and roads, paved (cement or asphalt)	X20	X20-39	B	Low	Hecker Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-40	B	Low	Farm Loop	2	
Highways and roads, paved (cement or asphalt)	X20	X20-41	B	Low		2	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-07	C	High	Near Farm Loop	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-08	C	High	Near Glenn Highway	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-12	C	High	Pinnell Circle	4	
Residential Areas	R01	R01-03	C	Low	Residential Acres in Zone C	2	
Septic systems (serves one single-family home)	R02	R02-142-25	C	Low	All Residential Septic's in Zone C.	4	(108 total septics) R02-142-250. 668 acres in Zone C.
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-09	D	High	Near Evergreen Street	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-10	D	High	Near Jensen Avenue	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-11	D	High	Near Yarrow Road	5	
Injection wells (Class V) Industrial Process Water & Water Disposal Wells	D40	D40-01	D	High	Near Hermann Avenue	5	

Table 4

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 1 Sources of Volatile Organic Chemicals

PWSID 226020.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Injection wells (Class V) Industrial Process Water & Water Disposal Wells	D40	D40-01	D	High	Near Hermann Avenue	5	
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D42-01	D	High	Near Showers Street	5	
Residential Areas	R01	R01-01	A	Low	Residential Acres in Zone A	2	157 acres is Zone A.
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	Near Hemmer Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-02	A	Low	Arctic Road	3	
Septic systems (serves one single-family home)	R02	R02-50	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-49	A	Low	Near Scott Road	3	
Highways and roads, paved (cement or asphalt)	X20	X20-12	A	Low	Scott Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-07	A	Low	Wondra Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-04	A	Low	Arctic Avenue	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-01	A	Low	Elton Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-03	A	Low	Near Edinborough Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-04	A	Low	Near Edinborough Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-05	A	Low	Near Arctic Ave and Felton Steet	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-06	A	Low	Near Arctic Avenue	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-07	A	Low	Near Gloria Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-08	A	Low	Anna Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-09	A	Low	Gloria Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-10	A	Low	Irene Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-11	A	Low	Lloyd Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-12	A	Low	Auklet Avenue	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-13	A	Low	Oscar Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-14	A	Low	Beylund Loop	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-15	A	Low	Near Scott Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-16	A	Low	Near Anna Court and Scott Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-16	A	Low	Near Anna Court and Scott Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	Near Hemmer Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R01-01	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R01-01	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-03	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-03	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-04	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-04	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-05	A	Low	Near Chalet Court and Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-05	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-06	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-06	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-07	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-07	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-08	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-09	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-10	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-11	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-12	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-13	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-14	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-15	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-16	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-17	A	Low	Near Arctic Road	3	`
Septic systems (serves one single-family home)	R02	R02-18	A	Low	Near Amber Circle	3	
Septic systems (serves one single-family home)	R02	R02-19	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-20	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-21	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-22	A	Low	Near Monte Vista DriveNear Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-23	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-24	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-25	A	Low	Near Monte Vista Drive	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-26	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-27	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-28	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-29	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-30	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-31	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-32	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-33	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-34	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-35	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-36	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-37	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-38	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-39	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-40	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-41	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-42	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-43	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-43	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-44	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-45	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-46	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-47	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-48	A	Low	Near Equestrian Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-51	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-52	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-54	A	Low	Near Scott Road	3	
Highways and roads, paved (cement or asphalt)	X20	X20-01	A	Low	Hemmer Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	A	Low	Penny	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	A	Low	Penny	2	
Highways and roads, paved (cement or asphalt)	X20	X20-03	A	Low	Rush	2	
Highways and roads, paved (cement or asphalt)	X20	X20-05	A	Low	Chalet Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-06	A	Low	Amber Hill	2	
Highways and roads, paved (cement or asphalt)	X20	X20-08	A	Low	Monte Vista Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-09	A	Low	Verde Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-10	A	Low	Equestrian Street	2	
Highways and roads, paved (cement or asphalt)	X20	X20-11	A	Low	Kentucky Derby Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-13	A	Low	Unamed Road leading to Well No. 4	2	
Highways and roads, paved (cement or asphalt)	X20	X20-14	A	Low	Auklet Avenue	2	
Highways and roads, paved (cement or asphalt)	X20	X20-15	A	Low	Scott Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-16	A	Low	Beaver Avenue	2	
Highways and roads, paved (cement or asphalt)	X20	X20-17	A	Low		2	
Highways and roads, paved (cement or asphalt)	x20	X20-18	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-19	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-20	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-21	A	Low	Eves Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-22	A	Low	Marsh Road	2	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-17	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-18	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-19	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-20	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-21	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-22	B	Low		4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-03	B	Low	Near Moffit Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-04	B	Low	Palmer Fishhook Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-05	B	Low	Near Werner Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-06	B	Low	Near Biscan Drive	4/5	
Residential Areas	R01	R01-02	B	Low	Residential Acres in Zone B	2	550 residential acres in Zone B
Residential Areas	R01	R01-02	B	Low	Residential Acres in Zone B	2	550 residential acres in Zone B
Septic systems (serves one single-family home)	R02	R02-56-141	B	Low	All residential septics in Zone B	4	
Highways and roads, paved (cement or asphalt)	X20	X20-23	B	Low	Williwaw Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-24	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-25	B	Low	Coville Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-26	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-27	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-28	B	Low		2	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-29	B	Low	Glenn Highway	2	
Highways and roads, paved (cement or asphalt)	X20	X20-30	B	Low	Pinnacle Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-31	B	Low	Palmer Fishhook Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-32	B	Low	Jana Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-33	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-34	B	Low	Moffit Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-35	B	Low	Werner Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-36	B	Low	C Bell Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-37	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-38	B	Low	Ryder Dirve	2	
Highways and roads, paved (cement or asphalt)	X20	X20-39	B	Low	Hecker Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-40	B	Low	Farm Loop	2	
Highways and roads, paved (cement or asphalt)	X20	X20-41	B	Low		2	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-07	C	Low	Near Farm Loop	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-08	C	Low	Near Glenn Highway	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-12	C	Low	Pinnell Circle	4	
Residential Areas	R01	R01-03	C	Low	Residential Acres in Zone C	2	
Septic systems (serves one single-family home)	R02	R02-142-25	C	Low	All Residential Septic's in Zone C.	4	(108 total septics) R02-142-250. 668 acres in Zone C.
Contaminated sites, DEC recognized, non-Superfund, non-RCRA	U04	U04-01	C	Low	Farm Loop and Hay Road	5	Soils contaminated from heating oil underground storage tank at private residence. Impact and extent of contamination unknown.4.01 tons contaminated soil excavated. Contamination cleaned up to DEC's satisfaction.

Table 4 (continued)

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 1 Sources of Volatile Organic Chemicals

PWSID 226020.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-09	D	Low	Near Evergreen Street	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-10	D	Low	Near Jensen Avenue	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-11	D	Low	Near Yarrow Road	5	

Table 5

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 1

Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals

PWSID 226020.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Injection wells (Class V) Industrial Process Water & Water Disposal Wells	D40	D40-01	D	High	Near Hermann Avenue	5	
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D42-01	D	High	Near Showers Street	5	
Residential Areas	R01	R01-01	A	Low	Residential Acres in Zone A	2	157 acres is Zone A.
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	Near Hemmer Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-02	A	Low	Arctic Road	3	
Septic systems (serves one single-family home)	R02	R02-50	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-49	A	Low	Near Scott Road	3	
Highways and roads, paved (cement or asphalt)	X20	X20-12	A	Low	Scott Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-07	A	Low	Wondra Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-04	A	Low	Arctic Avenue	2	
Pharmacies (with on-site wastewater disposal)	C35	C35-01	A	Low	Beylund Loop	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-01	A	Low	Elton Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-03	A	Low	Near Edinborough Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-04	A	Low	Near Edinborough Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-05	A	Low	Near Arctic Ave and Felton Steet	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-06	A	Low	Near Arctic Avenue	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-07	A	Low	Near Gloria Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-08	A	Low	Anna Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-09	A	Low	Gloria Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-10	A	Low	Irene Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-11	A	Low	Lloyd Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-12	A	Low	Auklet Avenue	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-13	A	Low	Oscar Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-14	A	Low	Beylund Loop	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-15	A	Low	Near Scott Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-16	A	Low	Near Anna Court and Scott Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-16	A	Low	Near Anna Court and Scott Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	Near Hemmer Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R01-01	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R01-01	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-03	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-03	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-04	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-04	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-05	A	Low	Near Chalet Court and Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-05	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-06	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-06	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-07	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-07	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-08	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-09	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-10	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-11	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-12	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-13	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-14	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-15	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-16	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-17	A	Low	Near Arctic Road	3	`
Septic systems (serves one single-family home)	R02	R02-18	A	Low	Near Amber Circle	3	
Septic systems (serves one single-family home)	R02	R02-19	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-20	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-21	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-22	A	Low	Near Monte Vista DriveNear Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-23	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-24	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-25	A	Low	Near Monte Vista Drive	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-26	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-27	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-28	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-29	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-30	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-31	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-32	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-33	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-34	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-35	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-36	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-37	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-38	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-39	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-40	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-41	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-42	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-43	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-43	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-44	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-45	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-46	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-47	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-48	A	Low	Near Equestrian Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-51	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-52	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-54	A	Low	Near Scott Road	3	
Highways and roads, paved (cement or asphalt)	X20	X20-01	A	Low	Hemmer Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	A	Low	Penny	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	A	Low	Penny	2	
Highways and roads, paved (cement or asphalt)	X20	X20-03	A	Low	Rush	2	
Highways and roads, paved (cement or asphalt)	X20	X20-05	A	Low	Chalet Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-06	A	Low	Amber Hill	2	
Highways and roads, paved (cement or asphalt)	X20	X20-08	A	Low	Monte Vista Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-09	A	Low	Verde Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-10	A	Low	Equestrian Street	2	
Highways and roads, paved (cement or asphalt)	X20	X20-11	A	Low	Kentucky Derby Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-13	A	Low	Unamed Road leading to Well No. 4	2	
Highways and roads, paved (cement or asphalt)	X20	X20-14	A	Low	Auklet Avenue	2	
Highways and roads, paved (cement or asphalt)	X20	X20-15	A	Low	Scott Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-16	A	Low	Beaver Avenue	2	
Highways and roads, paved (cement or asphalt)	X20	X20-17	A	Low		2	
Highways and roads, paved (cement or asphalt)	x20	X20-18	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-19	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-20	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-21	A	Low	Eves Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-22	A	Low	Marsh Road	2	
Lawn and garden supplies/services	C23	C23-01	B	Low	C Bell Circle	4	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-17	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-18	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-19	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-20	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-21	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-22	B	Low		4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-03	B	Low	Near Moffit Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-04	B	Low	Palmer Fishhook Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-05	B	Low	Near Werner Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-06	B	Low	Near Biscan Drive	4/5	
Residential Areas	R01	R01-02	B	Low	Residential Acres in Zone B	2	550 residential acres in Zone B
Residential Areas	R01	R01-02	B	Low	Residential Acres in Zone B	2	550 residential acres in Zone B
Septic systems (serves one single-family home)	R02	R02-56-141	B	Low	All residential septics in Zone B	4	
Highways and roads, paved (cement or asphalt)	X20	X20-23	B	Low	Williwaw Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-24	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-25	B	Low	Coville Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-26	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-27	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-28	B	Low		2	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-29	B	Low	Glenn Highway	2	
Highways and roads, paved (cement or asphalt)	X20	X20-30	B	Low	Pinnacle Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-31	B	Low	Palmer Fishhook Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-32	B	Low	Jana Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-33	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-34	B	Low	Moffit Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-35	B	Low	Werner Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-36	B	Low	C Bell Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-37	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-38	B	Low	Ryder Dirve	2	
Highways and roads, paved (cement or asphalt)	X20	X20-39	B	Low	Hecker Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-40	B	Low	Farm Loop	2	
Highways and roads, paved (cement or asphalt)	X20	X20-41	B	Low		2	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-07	C	Low	Near Farm Loop	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-08	C	Low	Near Glenn Highway	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-12	C	Low	Pinnell Circle	4	
Residential Areas	R01	R01-03	C	Low	Residential Acres in Zone C	2	
Septic systems (serves one single-family home)	R02	R02-142-25	C	Low	All Residential Septic's in Zone C.	4	(108 total septics) R02-142-250. 668 acres in Zone C.
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-09	D	Low	Near Evergreen Street	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-10	D	Low	Near Jensen Avenue	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-11	D	Low	Near Yarrow Road	5	

Table 5 (continued)

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 1

Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals

PWSID 226020.001

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*

Table 6

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 1 Sources of Synthetic Organic Chemicals

PWSID 226020.001

Contaminant Source Type	Contaminant Source ID	CS ID tag	Zone	Risk Ranking for Analysis	Location	Map Number	Comments
Residential Areas	R01	R01-01	A	Low	Residential Acres in Zone A	2	157 acres is Zone A.
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	Near Hemmer Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-02	A	Low	Arctic Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-13	A	Low	Oscar Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-12	A	Low	Auklet Avenue	3	
Septic systems (serves one single-family home)	R02	R02-49	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-50	A	Low	Near Scott Road	3	
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D42-01	D	Low	Near Showers Street	5	
Residential Areas	R01	R01-03	C	Low	Residential Acres in Zone C	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-01	A	Low	Elton Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-03	A	Low	Near Edinborough Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-04	A	Low	Near Edinborough Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-05	A	Low	Near Arctic Ave and Felton Steet	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-06	A	Low	Near Arctic Avenue	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-07	A	Low	Near Gloria Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-08	A	Low	Anna Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-09	A	Low	Gloria Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-10	A	Low	Irene Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-11	A	Low	Lloyd Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-14	A	Low	Beylund Loop	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-15	A	Low	Near Scott Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-16	A	Low	Near Anna Court and Scott Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-16	A	Low	Near Anna Court and Scott Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	Near Hemmer Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R01-01	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R01-01	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-03	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-03	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-04	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-04	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-05	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-05	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-06	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-06	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-07	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-07	A	Low	Near Chalet Court and Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-08	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-09	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-10	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-11	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-12	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-13	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-14	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-15	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-16	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-17	A	Low	Near Arctic Road	3	`
Septic systems (serves one single-family home)	R02	R02-18	A	Low	Near Amber Circle	3	
Septic systems (serves one single-family home)	R02	R02-19	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-20	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-21	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-22	A	Low	Near Monte Vista DriveNear Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-23	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-24	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-25	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-26	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-27	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-28	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-29	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-30	A	Low	Near Monte Vista Drive	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-31	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-32	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-33	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-34	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-35	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-36	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-37	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-38	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-39	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-40	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-41	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-42	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-43	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-43	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-44	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-45	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-46	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-47	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-48	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-51	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-52	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-54	A	Low	Near Scott Road	3	
Swimming pools (public)	X44	X44-01	A	Low	Arctic Road	3	
Lawn and garden supplies/services	C23	C23-01	B	Medium	C Bell Circle	4	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-17	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-18	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-19	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-20	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-21	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-22	B	Low		4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-03	B	Low	Near Moffit Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-04	B	Low	Palmer Fishhook Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-05	B	Low	Near Werner Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-06	B	Low	Near Biscan Drive	4/5	
Residential Areas	R01	R01-02	B	Low	Residential Acres in Zone B	2	550 residential acres in Zone B
Residential Areas	R01	R01-02	B	Low	Residential Acres in Zone B	2	550 residential acres in Zone B
Septic systems (serves one single-family home)	R02	R02-56-141	B	Low	All residential septics in Zone B	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-07	C	Low	Near Farm Loop	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-08	C	Low	Near Glenn Highway	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-12	C	Low	Pinnell Circle	4	
Septic systems (serves one single-family home)	R02	R02-142-25	C	Low	All Residential Septic's in Zone C.	4	(108 total septics) R02-142-250. 668 acres in Zone C.

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-09	D	Low	Near Evergreen Street	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-10	D	Low	Near Jensen Avenue	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-11	D	Low	Near Yarrow Road	5	

Table 7

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 1 Sources of Other Organic Chemicals

PWSID 226020.001

Contaminant Source Type	Contaminant Source ID	CS ID tag	Zone	Risk Ranking for Analysis	Location	Map Number	Comments
Injection wells (Class V) Industrial Process Water & Water Disposal Wells	D40	D40-01	D	High	Near Hermann Avenue	5	
Injection wells (Class V) Motor Vehicle Waste Disposal Well	D42	D42-01	D	Medium	Near Showers Street	5	
Residential Areas	R01	R01-01	A	Low	Residential Acres in Zone A	2	157 acres is Zone A.
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	Near Hemmer Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-02	A	Low	Arctic Road	3	
Septic systems (serves one single-family home)	R02	R02-50	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-49	A	Low	Near Scott Road	3	
Highways and roads, paved (cement or asphalt)	X20	X20-12	A	Low	Scott Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-07	A	Low	Wondra Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-04	A	Low	Arctic Avenue	2	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-01	A	Low	Elton Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-03	A	Low	Near Edinborough Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-04	A	Low	Near Edinborough Drive	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-05	A	Low	Near Arctic Ave and Felton Steet	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-06	A	Low	Near Arctic Avenue	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-07	A	Low	Near Gloria Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-08	A	Low	Anna Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-09	A	Low	Gloria Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-10	A	Low	Irene Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-11	A	Low	Lloyd Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-12	A	Low	Auklet Avenue	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-13	A	Low	Oscar Street	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-14	A	Low	Beylund Loop	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-15	A	Low	Near Scott Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-16	A	Low	Near Anna Court and Scott Road	3	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-16	A	Low	Near Anna Court and Scott Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	Near Hemmer Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R01-01	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R01-01	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Near Rush Circle	3	
Septic systems (serves one single-family home)	R02	R02-03	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-03	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-04	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-04	A	Low	Near Arctic Avenue	3	
Septic systems (serves one single-family home)	R02	R02-05	A	Low	Near Chalet Court and Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-05	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-06	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-06	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-07	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-07	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-08	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-09	A	Low	Near Chalet Court and Street	3	
Septic systems (serves one single-family home)	R02	R02-10	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-11	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-12	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-13	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-14	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-15	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-16	A	Low	Near Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-17	A	Low	Near Arctic Road	3	`
Septic systems (serves one single-family home)	R02	R02-18	A	Low	Near Amber Circle	3	
Septic systems (serves one single-family home)	R02	R02-19	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-20	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-21	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-22	A	Low	Near Monte Vista DriveNear Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-23	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-24	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-25	A	Low	Near Monte Vista Drive	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-26	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-27	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-28	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-29	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-30	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-31	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-32	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-33	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-34	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-35	A	Low	Near Monte Vista Drive	3	
Septic systems (serves one single-family home)	R02	R02-36	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-37	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-38	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-39	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-40	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-41	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-42	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-43	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-43	A	Low	Near Belmount Avenue	3	
Septic systems (serves one single-family home)	R02	R02-44	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-45	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-46	A	Low	Near Kentucky Derby Avenue	3	
Septic systems (serves one single-family home)	R02	R02-47	A	Low	Near Equestrian Street	3	
Septic systems (serves one single-family home)	R02	R02-48	A	Low	Near Equestrian Street	3	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-51	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-52	A	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-54	A	Low	Near Scott Road	3	
Highways and roads, paved (cement or asphalt)	X20	X20-01	A	Low	Hemmer Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	A	Low	Penny	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	A	Low	Penny	2	
Highways and roads, paved (cement or asphalt)	X20	X20-03	A	Low	Rush	2	
Highways and roads, paved (cement or asphalt)	X20	X20-05	A	Low	Chalet Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-06	A	Low	Amber Hill	2	
Highways and roads, paved (cement or asphalt)	X20	X20-08	A	Low	Monte Vista Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-09	A	Low	Verde Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-10	A	Low	Equestrian Street	2	
Highways and roads, paved (cement or asphalt)	X20	X20-11	A	Low	Kentucky Derby Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-13	A	Low	Unamed Road leading to Well No. 4	2	
Highways and roads, paved (cement or asphalt)	X20	X20-14	A	Low	Auklet Avenue	2	
Highways and roads, paved (cement or asphalt)	X20	X20-15	A	Low	Scott Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-16	A	Low	Beaver Avenue	2	
Highways and roads, paved (cement or asphalt)	X20	X20-17	A	Low		2	
Highways and roads, paved (cement or asphalt)	x20	X20-18	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-19	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-20	A	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-21	A	Low	Eves Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-22	A	Low	Marsh Road	2	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-17	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-18	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-19	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-20	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-21	B	Low		4	
Domestic wastewater collection systems (sewer lines or lift stations)	D01	D01-22	B	Low		4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-03	B	Low	Near Moffit Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-04	B	Low	Palmer Fishhook Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-05	B	Low	Near Werner Road	4	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-06	B	Low	Near Biscan Drive	4/5	
Residential Areas	R01	R01-02	B	Low	Residential Acres in Zone B	2	550 residential acres in Zone B
Residential Areas	R01	R01-02	B	Low	Residential Acres in Zone B	2	550 residential acres in Zone B
Septic systems (serves one single-family home)	R02	R02-56-141	B	Low	All residential septics in Zone B	4	
Highways and roads, paved (cement or asphalt)	X20	X20-23	B	Low	Williwaw Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-24	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-25	B	Low	Coville Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-26	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-27	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-28	B	Low		2	

Sources of Other Organic Chemicals

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-29	B	Low	Glenn Highway	2	
Highways and roads, paved (cement or asphalt)	X20	X20-30	B	Low	Pinnacle Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-31	B	Low	Palmer Fishhook Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-32	B	Low	Jana Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-33	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-34	B	Low	Moffit Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-35	B	Low	Werner Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-36	B	Low	C Bell Circle	2	
Highways and roads, paved (cement or asphalt)	X20	X20-37	B	Low		2	
Highways and roads, paved (cement or asphalt)	X20	X20-38	B	Low	Ryder Dirve	2	
Highways and roads, paved (cement or asphalt)	X20	X20-39	B	Low	Hecker Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-40	B	Low	Farm Loop	2	
Highways and roads, paved (cement or asphalt)	X20	X20-41	B	Low		2	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-07	C	Low	Near Farm Loop	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-08	C	Low	Near Glenn Highway	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-12	C	Low	Pinnell Circle	4	
Residential Areas	R01	R01-03	C	Low	Residential Acres in Zone C	2	
Septic systems (serves one single-family home)	R02	R02-142-25	C	Low	All Residential Septic's in Zone C.	4	(108 total septics) R02-142-250. 668 acres in Zone C.
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-09	D	Low	Near Evergreen Street	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-10	D	Low	Near Jensen Avenue	5	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-11	D	Low	Near Yarrow Road	5	

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*

Table 1 *Contaminant Source Inventory for* ***PWSID 226020.3***

City of Palmer Well No. 3

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Location*	*Map Number*	*Comments*
Residential Areas	R01	R01-01	A	Residential Areas in Zone A	2	
Septic systems (serves one single-family home)	R02	R02-01	A	Between Scott Rd and Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Between Scott Rd and Hemmer Road	3	
Highways and roads, paved (cement or asphalt)	X20	X20-01	A	Unnamed road leading to Well No. 3	2	
Residential Areas	R01	R01-02	B	Residential Areas in Zone B	2	
Septic systems (serves one single-family home)	R02	R02-03	B	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-04	B	Near Scott Road	3	
Highways and roads, paved (cement or asphalt)	X20	X20-02	B	Scott Road	2	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	C	Near Palmer Fishhook Road	3	
Residential Areas	R01	R01-03	C	Residential Areas in Zone C	2	
Septic systems (serves one single-family home)	R02	R02-05-11	C	Residential septics in Zone C	3	
Highways and roads, paved (cement or asphalt)	X20	X20-03	C	Marsh Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-04	C	Christiansen Lane	2	
Highways and roads, paved (cement or asphalt)	X20	X20-05	C	Jana Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-06	C	Ryder Drive	2	

Table 2

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 3 Sources of Bacteria and Viruses

PWSID 226020.3

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-01	A	Low	Between Scott Rd and Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Between Scott Rd and Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-03	B	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-04	B	Low	Near Scott Road	3	
Highways and roads, paved (cement or asphalt)	X20	X20-01	A	Low	Unnamed road leading to Well No. 3	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	B	Low	Scott Road	2	
Residential Areas	R01	R01-01	A	Low	Residential Areas in Zone A	2	
Residential Areas	R01	R01-02	B	Low	Residential Areas in Zone B	2	

Table 3

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 3 Sources of Nitrates/Nitrites

PWSID 226020.3

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Septic systems (serves one single-family home)	R02	R02-01	A	Low	Between Scott Rd and Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Between Scott Rd and Hemmer Road	3	
Residential Areas	R01	R01-02	B	Low	Residential Areas in Zone B	2	
Septic systems (serves one single-family home)	R02	R02-03	B	Low	Near Scott Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	C	High	Near Palmer Fishhook Road	3	
Residential Areas	R01	R01-01	A	Low	Residential Areas in Zone A	2	
Highways and roads, paved (cement or asphalt)	X20	X20-01	A	Low	Unnamed road leading to Well No. 3	2	
Septic systems (serves one single-family home)	R02	R02-04	B	Low	Near Scott Road	3	
Highways and roads, paved (cement or asphalt)	X20	X20-02	B	Low	Scott Road	2	
Septic systems (serves one single-family home)	R02	R02-05-11	C	Low	Residential septics in Zone C	3	
Residential Areas	R01	R01-03	C	Low	Residential Areas in Zone C	2	
Highways and roads, paved (cement or asphalt)	X20	X20-03	C	Low	Marsh Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-04	C	Low	Christiansen Lane	2	
Highways and roads, paved (cement or asphalt)	X20	X20-05	C	Low	Jana Drive	2	
Highways and roads, paved (cement or asphalt)	X20	X20-06	C	Low	Ryder Drive	2	

Table 4

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 3 Sources of Volatile Organic Chemicals

PWSID 226020.3

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-01	A	Low	Unnamed road leading to Well No. 3	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	B	Low	Scott Road	2	
Residential Areas	R01	R01-01	A	Low	Residential Areas in Zone A	2	
Septic systems (serves one single-family home)	R02	R02-01	A	Low	Between Scott Rd and Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Between Scott Rd and Hemmer Road	3	
Residential Areas	R01	R01-02	B	Low	Residential Areas in Zone B	2	
Highways and roads, paved (cement or asphalt)	X20	X20-03	C	Low	Marsh Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-04	C	Low	Christiansen Lane	2	
Highways and roads, paved (cement or asphalt)	X20	X20-05	C	Low	Jana Drive	2	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	C	Low	Near Palmer Fishhook Road	3	
Septic systems (serves one single-family home)	R02	R02-03	B	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-04	B	Low	Near Scott Road	3	
Residential Areas	R01	R01-03	C	Low	Residential Areas in Zone C	2	
Septic systems (serves one single-family home)	R02	R02-05-11	C	Low	Residential septics in Zone C	3	
Highways and roads, paved (cement or asphalt)	X20	X20-06	C	Low	Ryder Drive	2	

Table 5

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 3

Sources of Heavy Metals, Cyanide and Other Inorganic Chemicals

PWSID 226020.3

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-01	A	Low	Unnamed road leading to Well No. 3	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	B	Low	Scott Road	2	
Residential Areas	R01	R01-01	A	Low	Residential Areas in Zone A	2	
Septic systems (serves one single-family home)	R02	R02-01	A	Low	Between Scott Rd and Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Between Scott Rd and Hemmer Road	3	
Residential Areas	R01	R01-02	B	Low	Residential Areas in Zone B	2	
Highways and roads, paved (cement or asphalt)	X20	X20-03	C	Low	Marsh Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-04	C	Low	Christiansen Lane	2	
Highways and roads, paved (cement or asphalt)	X20	X20-05	C	Low	Jana Drive	2	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	C	Low	Near Palmer Fishhook Road	3	
Septic systems (serves one single-family home)	R02	R02-03	B	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-04	B	Low	Near Scott Road	3	
Residential Areas	R01	R01-03	C	Low	Residential Areas in Zone C	2	
Septic systems (serves one single-family home)	R02	R02-05-11	C	Low	Residential septics in Zone C	3	
Highways and roads, paved (cement or asphalt)	X20	X20-06	C	Low	Ryder Drive	2	

Table 6

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 3 Sources of Synthetic Organic Chemicals

PWSID 226020.3

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Residential Areas	R01	R01-01	A	Low	Residential Areas in Zone A	2	
Residential Areas	R01	R01-02	B	Low	Residential Areas in Zone B	2	
Septic systems (serves one single-family home)	R02	R02-01	A	Low	Between Scott Rd and Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Between Scott Rd and Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-03	B	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-04	B	Low	Near Scott Road	3	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	C	Low	Near Palmer Fishhook Road	3	
Residential Areas	R01	R01-03	C	Low	Residential Areas in Zone C	2	
Septic systems (serves one single-family home)	R02	R02-05-11	C	Low	Residential septics in Zone C	3	

Table 7

Contaminant Source Inventory and Risk Ranking for City of Palmer Well No. 3 Sources of Other Organic Chemicals

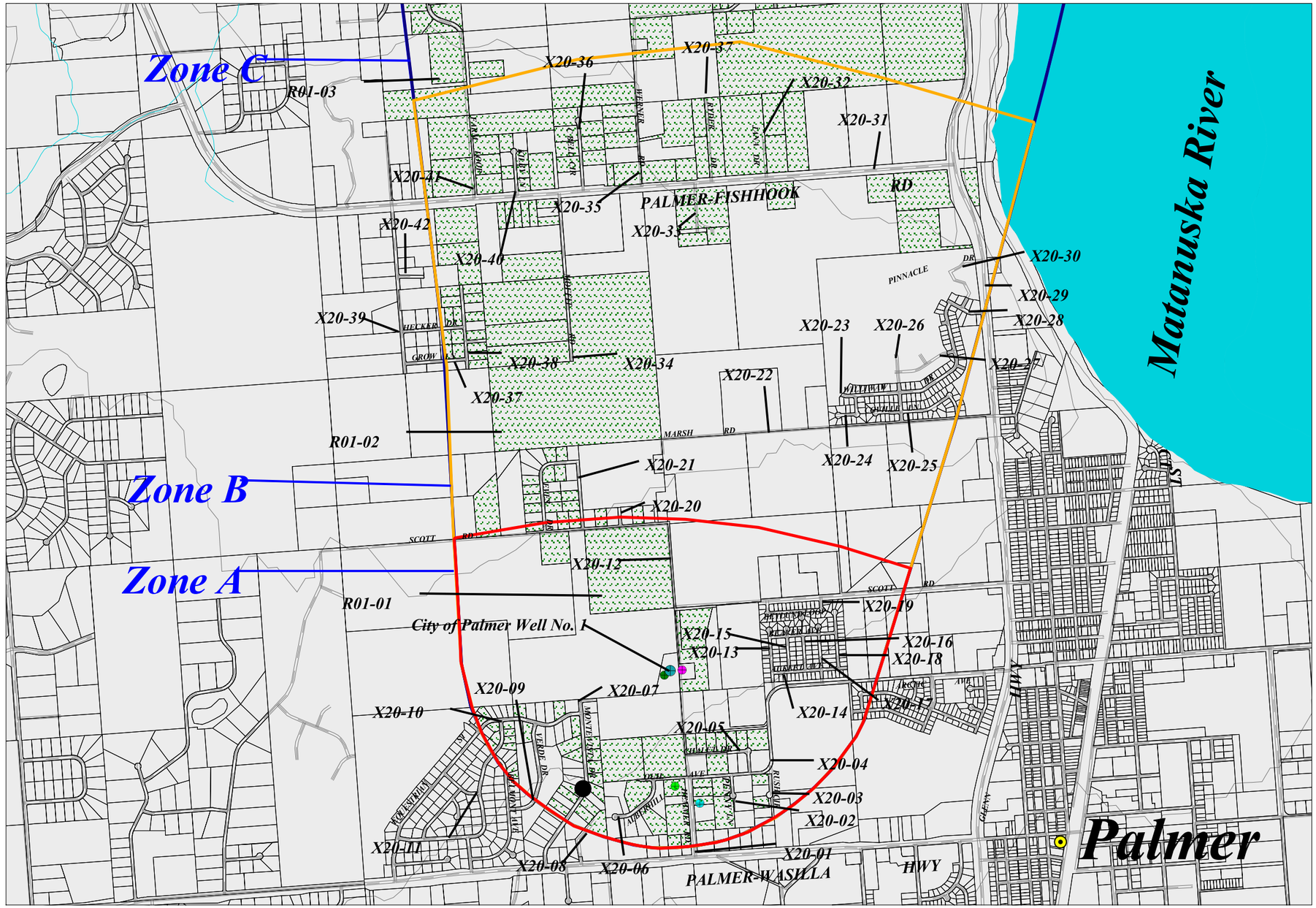
PWSID 226020.3

Contaminant Source Type	*Contaminant Source ID*	*CS ID tag*	*Zone*	*Risk Ranking for Analysis*	*Location*	*Map Number*	*Comments*
Highways and roads, paved (cement or asphalt)	X20	X20-01	A	Low	Unnamed road leading to Well No. 3	2	
Highways and roads, paved (cement or asphalt)	X20	X20-02	B	Low	Scott Road	2	
Residential Areas	R01	R01-01	A	Low	Residential Areas in Zone A	2	
Septic systems (serves one single-family home)	R02	R02-01	A	Low	Between Scott Rd and Hemmer Road	3	
Septic systems (serves one single-family home)	R02	R02-02	A	Low	Between Scott Rd and Hemmer Road	3	
Residential Areas	R01	R01-02	B	Low	Residential Areas in Zone B	2	
Highways and roads, paved (cement or asphalt)	X20	X20-03	C	Low	Marsh Road	2	
Highways and roads, paved (cement or asphalt)	X20	X20-04	C	Low	Christiansen Lane	2	
Highways and roads, paved (cement or asphalt)	X20	X20-05	C	Low	Jana Drive	2	
Injection wells (Class V) Large-Capacity Septic System (Drainfield Disposal Method)	D10	D10-01	C	Low	Near Palmer Fishhook Road	3	
Septic systems (serves one single-family home)	R02	R02-03	B	Low	Near Scott Road	3	
Septic systems (serves one single-family home)	R02	R02-04	B	Low	Near Scott Road	3	
Residential Areas	R01	R01-03	C	Low	Residential Areas in Zone C	2	
Septic systems (serves one single-family home)	R02	R02-05-11	C	Low	Residential septics in Zone C	3	
Highways and roads, paved (cement or asphalt)	X20	X20-06	C	Low	Ryder Drive	2	

APPENDIX C

City of Palmer Well No. 1 and No. 3
Drinking Water Protection Area
and Potential & Existing Contaminant Sources

Drinking Water Protection Area and Potential and Existing Sources of Contamination for Palmer Well No. 1



1000 0 1000 Feet

Legend

- Palmer Well No. 1

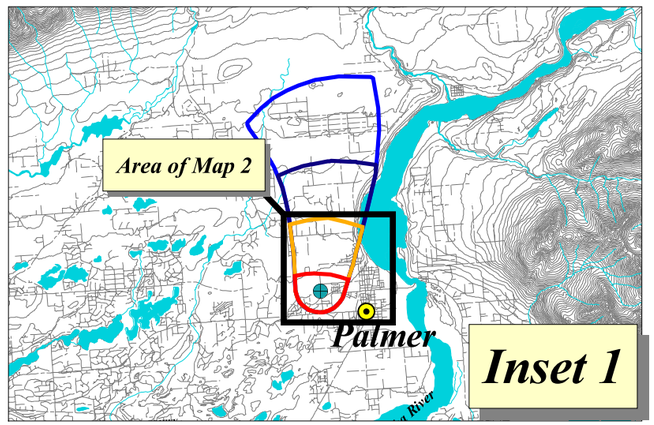
Zone A Protection Area
- Several Months Travel Time

Zone B Protection Area
- Less than 2 Years Travel Time

Zone C Protection Area
- Less than 5 Years Travel Time

Zone D Protection Area
- Less than 10 Years Travel Time
- Residential (R01)
- Cities

Public Water Systems
- Daybreak Apartments
- Palmer Church of Nazarene
- Palmer Water System Well No. 2
- Palmer Water System Well No. 3
- Lakes and Rivers
- Rivers and Streams
- Parcels
- Roads
- Elevation Contours



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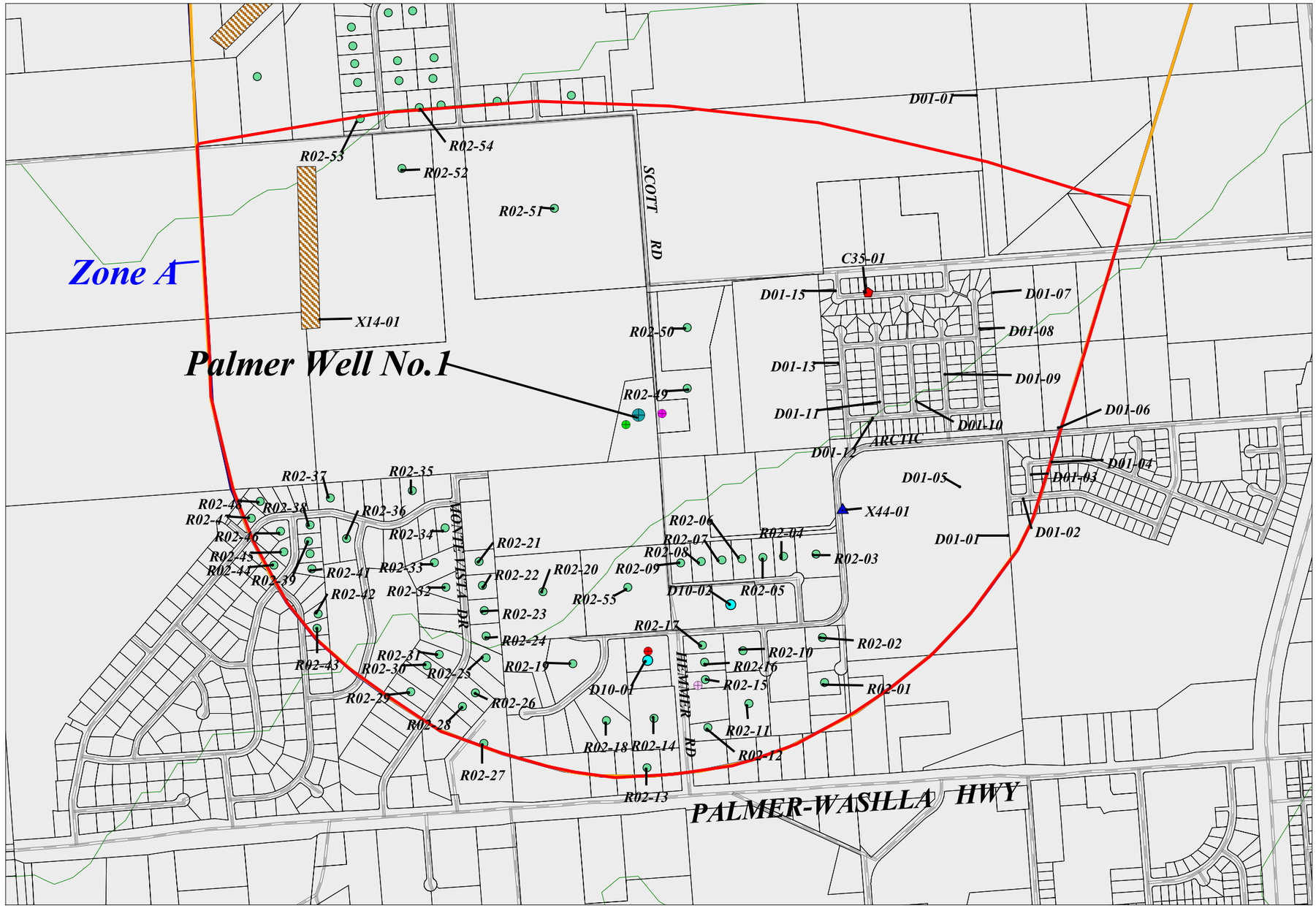
Map 2

Drinking Water Protection Area and Potential and Existing Sources of Contamination for Palmer Well No. 1



Legend

- Palmer Well No. 1

Zone A Protection Area
- Several Months Travel Time

Zone B Protection Area
- Less than 2 Years Travel Time

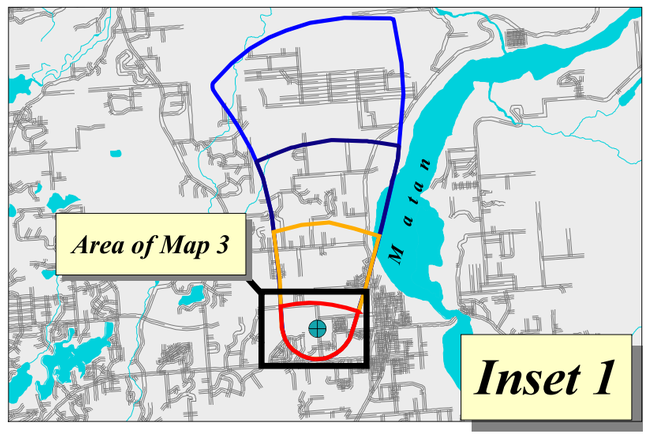
Zone C Protection Area
- Less than 5 Years Travel Time

Zone D Protection Area
- Less than 10 Years Travel Time
- Septics (R02)

Potential and Existing Sources of Contamination
- Swimming pools (public) (X44)
- Pharmacies (C35)

Class V Injection Wells
- Injection wells (Class V) Septic System (Drainfield) (D10)

Public Water Systems
- Palmer Water System Well No. 3
- Palmer Water System Well No. 2
- Daybreak Apartments
- Palmer Church of Nazarene
- Landing Strip
- Lakes and Rivers
- Rivers and Streams
- Parcels
- Roads
- Elevation Contours



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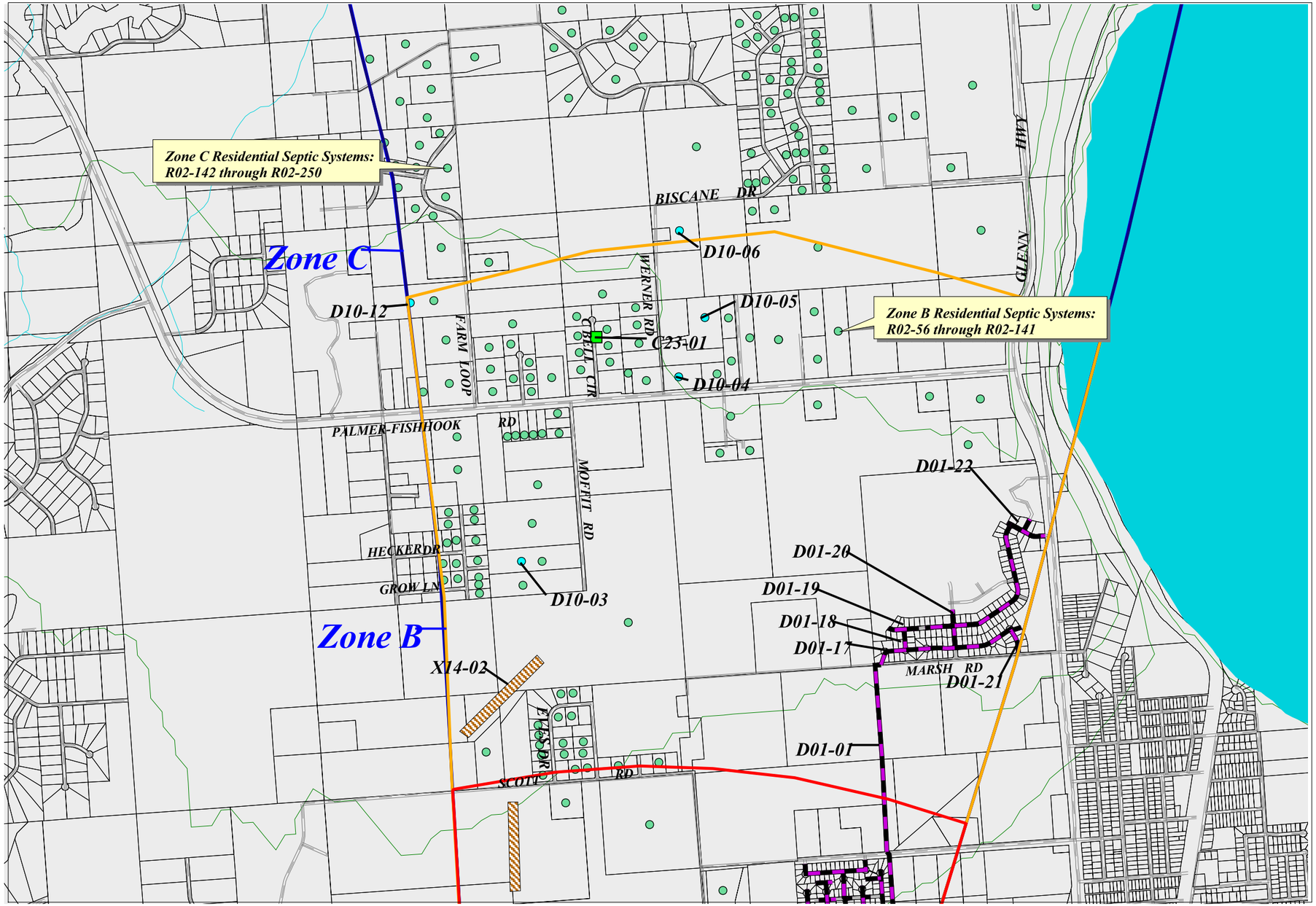
Map 3

Drinking Water Protection Area and Potential and Exisiting Sources of Contamination for Palmer Well No. 1



2000 0 2000 Feet

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Legend

- Palmer Well No. 1

Zone A Protection Area
- Several Months Travel Time

Zone B Protection Area
- Less than 2 Years Travel Time

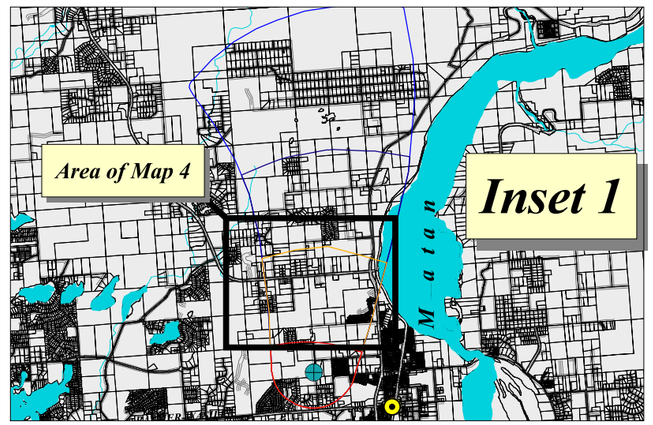
Zone C Protection Area
- Less than 5 Years Travel Time

Zone D Protection Area
- Less than 10 Years Travel Time
- Septics (R02)

Potential and Existing Sources of Contamination
- Lawn and garden supplies/services (C23)

Class V Injection Wells
- Injection wells (Class V) Septic System (Drainfield) (D10)
- Landing Strip

Public Water Systems
- Daybreak Apartments
- Palmer Church of Nazarene
- Palmer Water System (Well No. 2 and 3)
- Public Water Systems
- Public Water Systems
- Roads
- Cities
- Lakes and Rivers
- Rivers and Streams
- Parcels
- Elevation Contours



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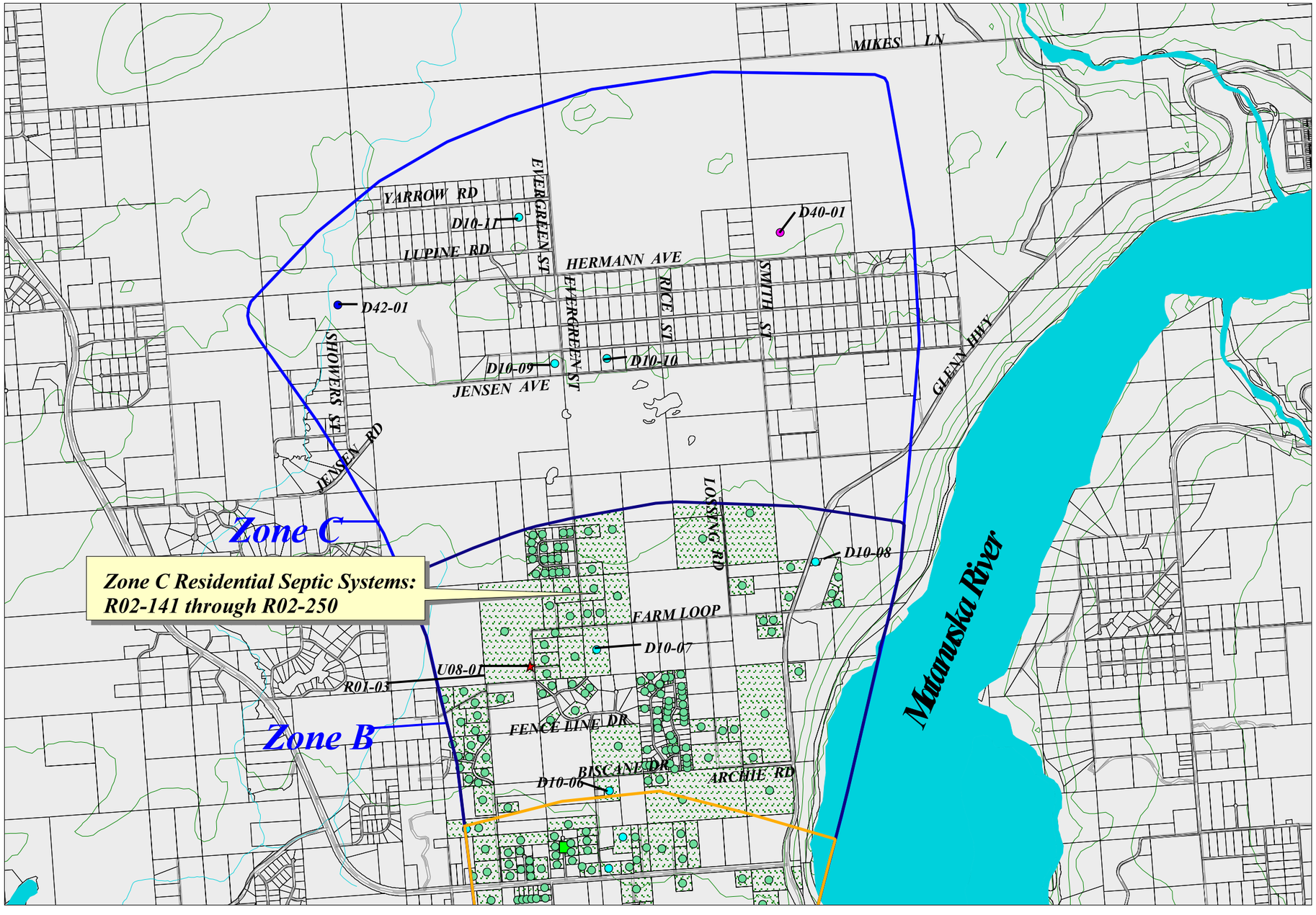
Map 4

Drinking Water Protection Area and Potential and Existing Sources of Contamination for Palmer Well No. 1



Legend

- Palmer Well No. 1

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

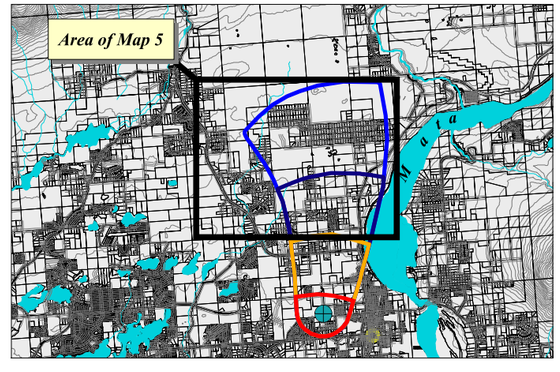
Zone D Protection Area
- Less than 10 Years Travel Time
- Septics (R02)

Potential and Existing Sources of Contamination
- Contaminated sites, DEC recognized, non-Superfund, non-RCRA
- Lawn and garden supplies/services
- Pharmacies (with on-site wastewater disposal)
- Swimming pools (public)

Class V Injection Wells
- Injection wells (Class V) Industrial Process Water) (D42)
- Injection wells (Class V) Motor Vehicle Waste Dispos (D40)
- Injection wells (Class V) Septic System (Drainfield) (D10)
- Residential (R01)

Public Water Systems
- Daybreak Apartments
- Palmer Church of Nazarene
- Palmer Water System (Well No. 2 and 3)
- Public Water Systems
- Public Water Systems

- Roads
- Cities
- Lakes and Rivers
- Rivers and Streams
- Parcels
- Elevation Contours



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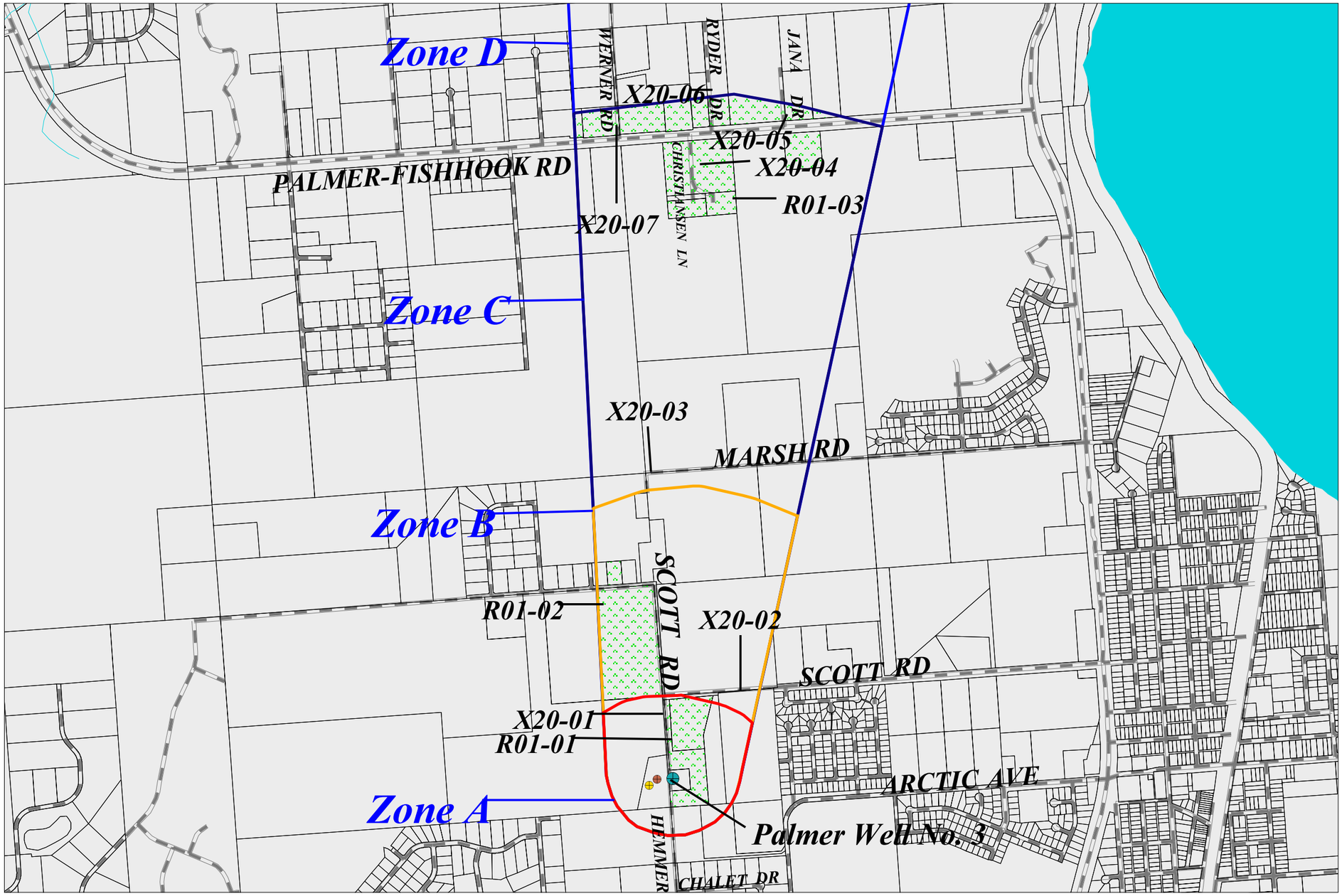
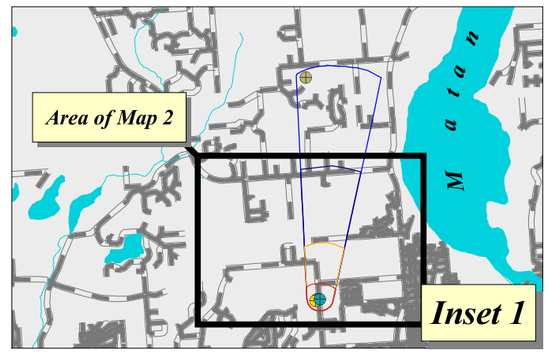
Map 5

Drinking Water Protection Area and Potential and Existing Sources of Contamination for City of Palmer Well No. 3



Legend

- Palmer Well No. 3
- 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
- Zone D Protection Area
  - Less than 10 years Travel Time
  - Residential (R01)
- Public Water Systems (Wells)
  - National Outdoor Leadership School Well
  - Palmer Well No. 2
  - Palmer Well No. 1
- Lakes and Rivers
- Rivers and Streams
- Parcels
- Roads



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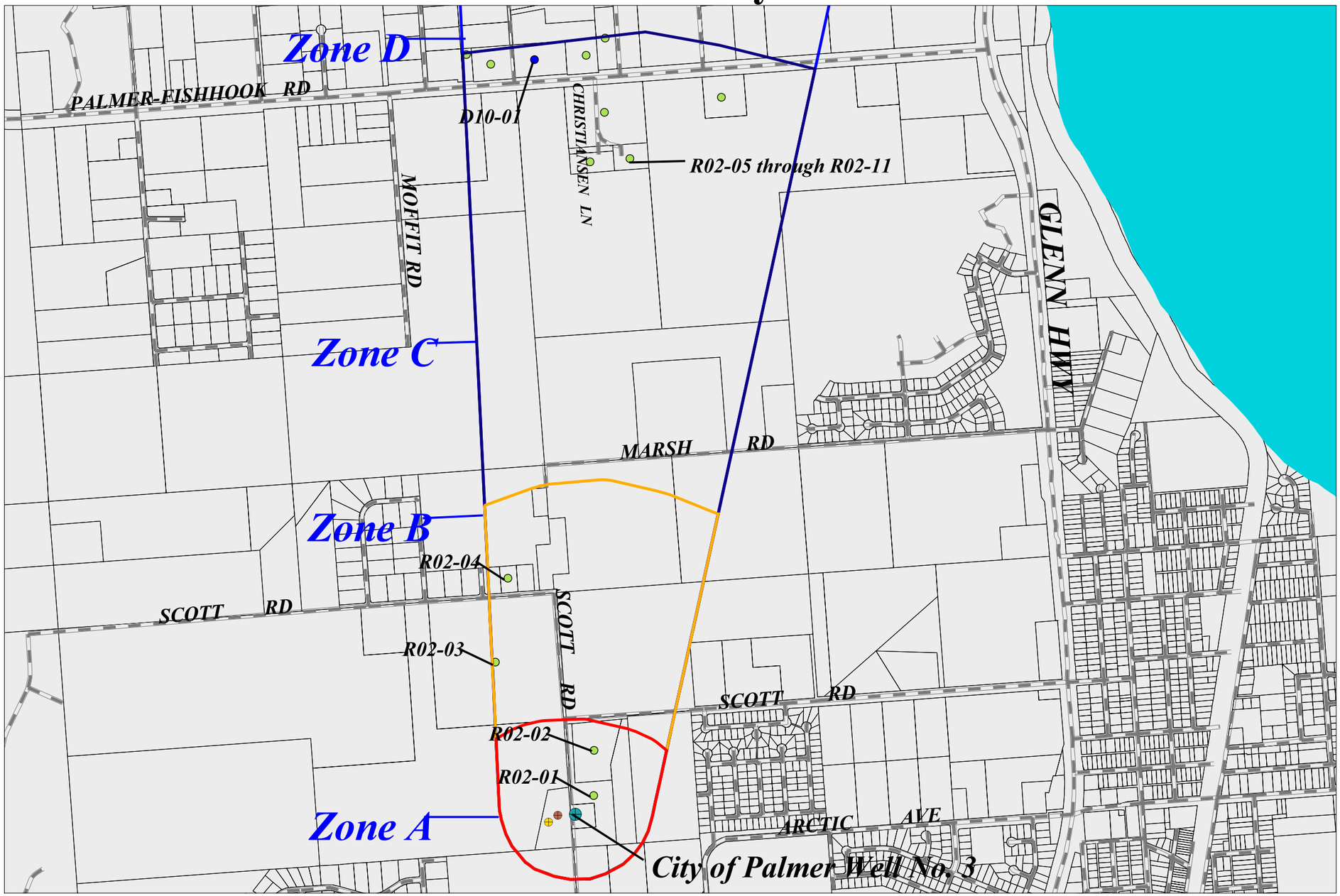
PWSID 226020.3 (Well No. 3)

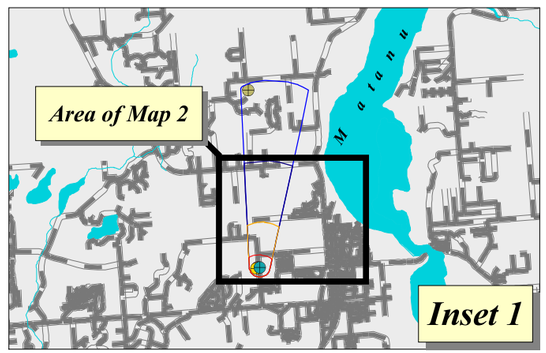
Map 6

Drinking Water Protection Area and Potential and Existing Sources of Contamination for the City of Palmer Well No. 3



Legend

- Palmer Well No. 3
- 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
- Zone D Protection Area
  - Less than 10 years Travel Time
  - Septics (R02)
- Class V Injection Wells
  - D10
- Public Water Systems (Wells)
  - National Outdoor Leadership School Well
  - Palmer Well No. 2
  - Palmer Well No. 1
  - Lakes and Rivers
  - Rivers and Streams
  - Roads
  - Parcels



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PWSID 226020.3 (Well No. 3)

Map 7

APPENDIX D

Vulnerability Analysis for City of Palmer
Well No. 1 and 3
Public Drinking Water Source

Chart 1. Susceptibility of the wellhead - City of Palmer Well No. 1

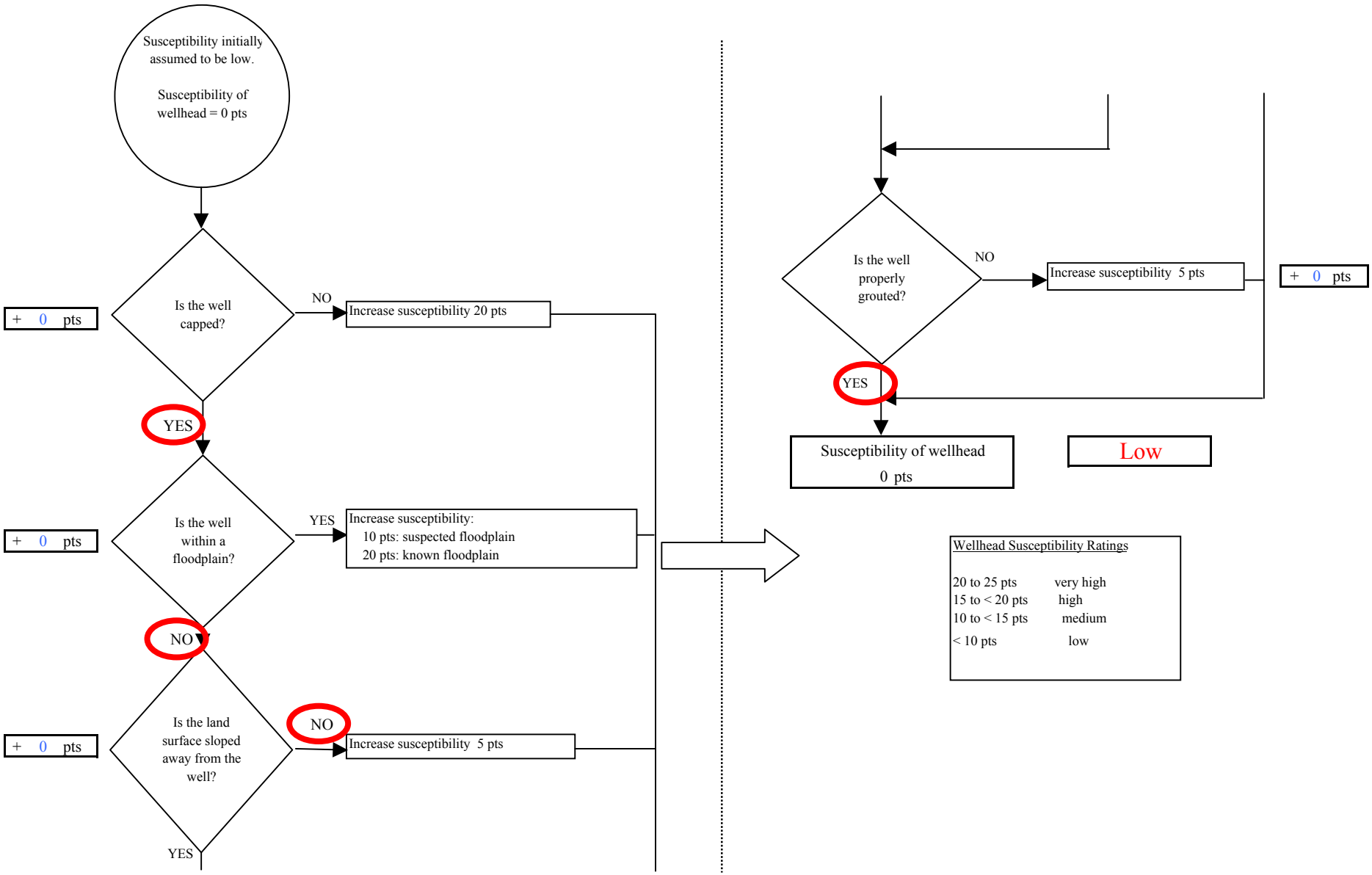


Chart 2. Susceptibility of the aquifer - City of Palmer Well No. 1

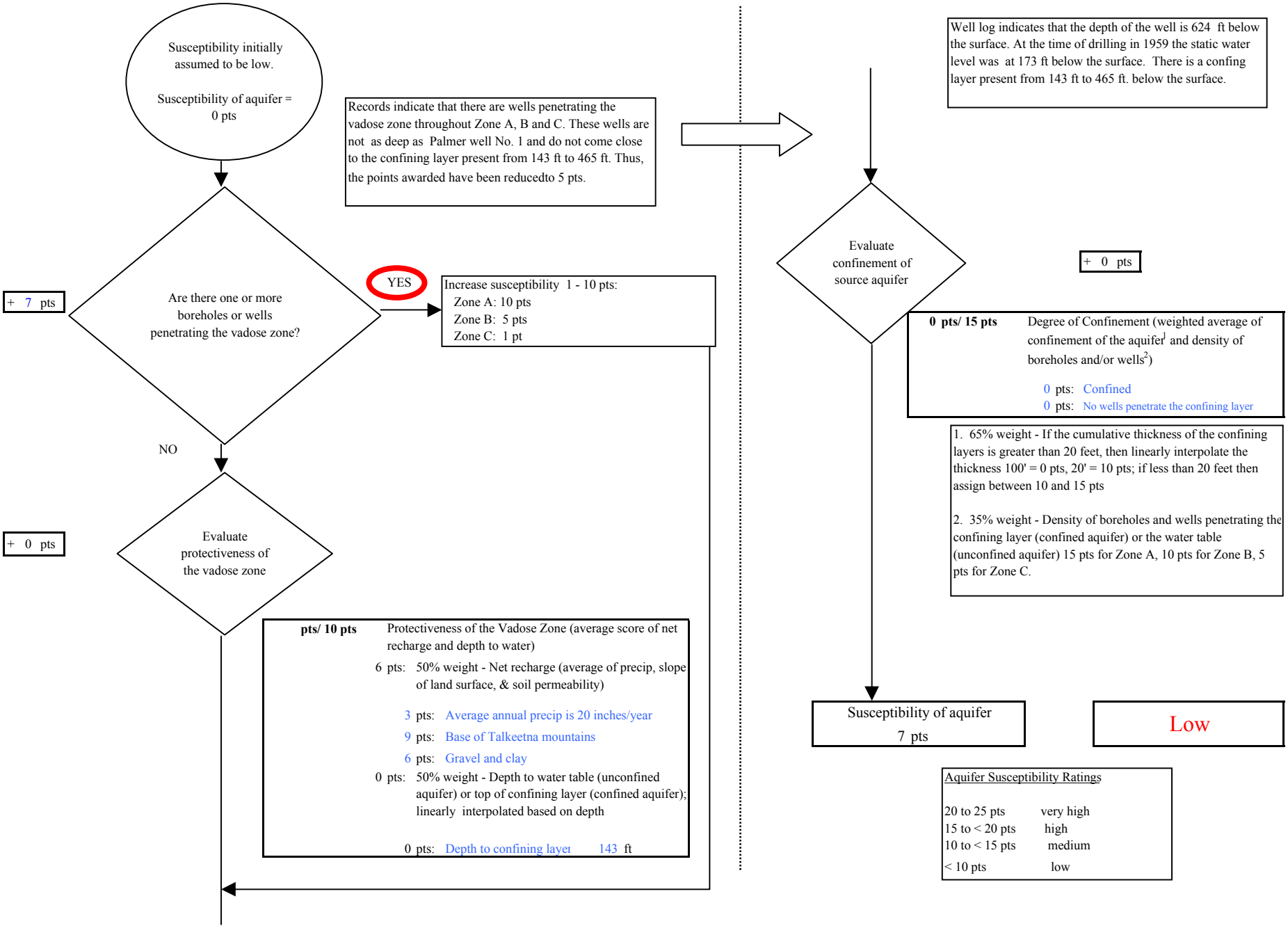
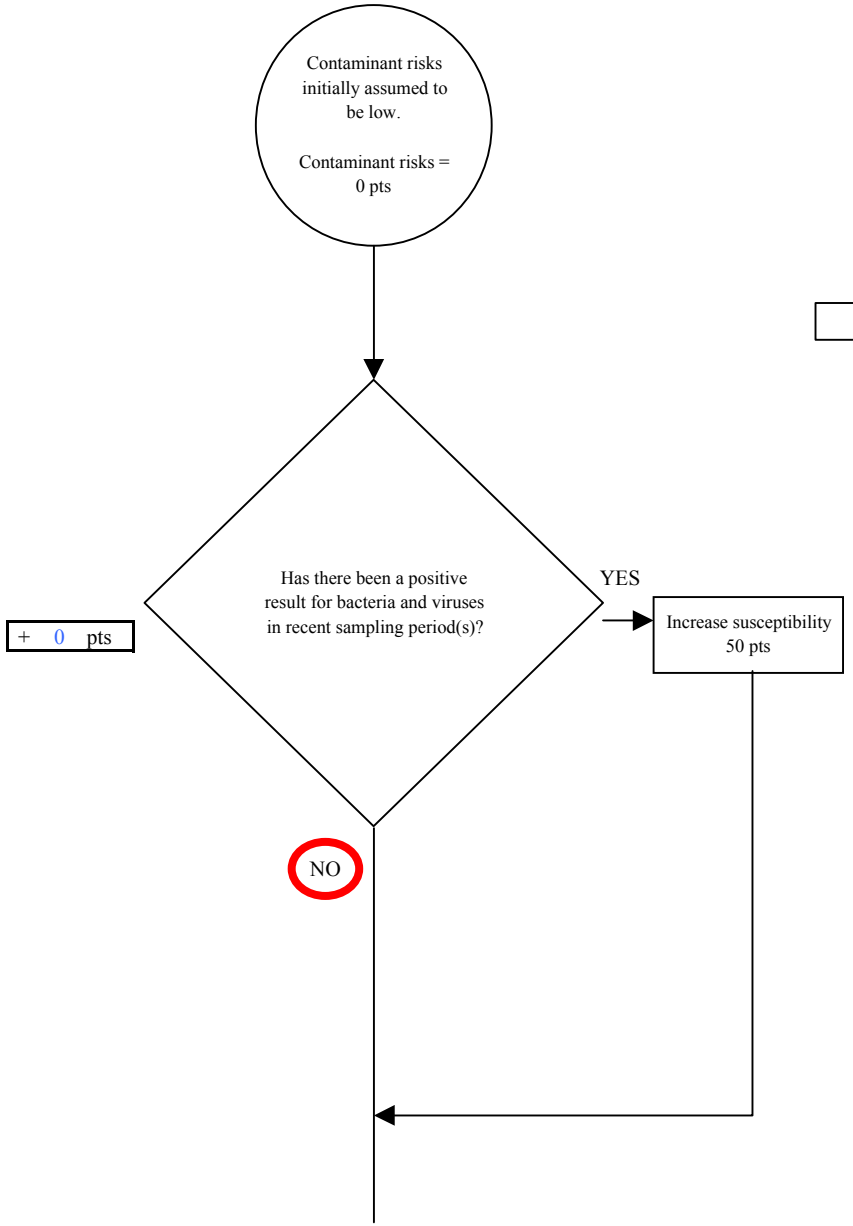
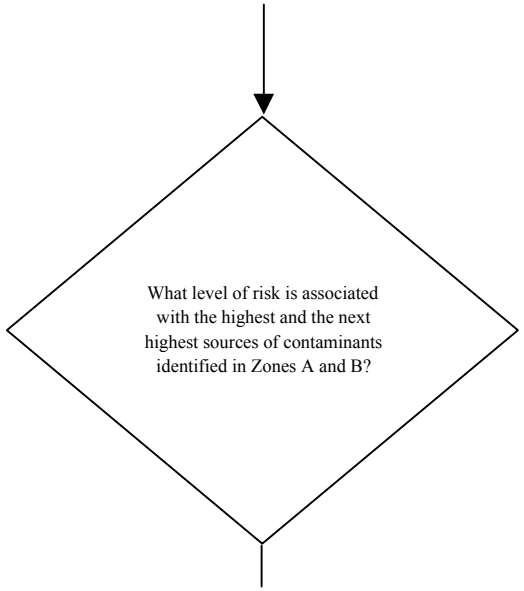


Chart 3. Contaminant risks for City of Palmer Well No. 1 - Bacteria & Viruses





+ 40 pts

Risk Rankings for Contaminant Sources Identified in Zones A and B

	Zone A	Zone B	Total
Very Highs(s)	0	0	0
High(s)	4	4	8
Medium(s)	2	0	2
Low(s)	68	10	78

	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 40

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 3. Contaminant risks for City of Palmer Well No. 1 - Bacteria & Viruses

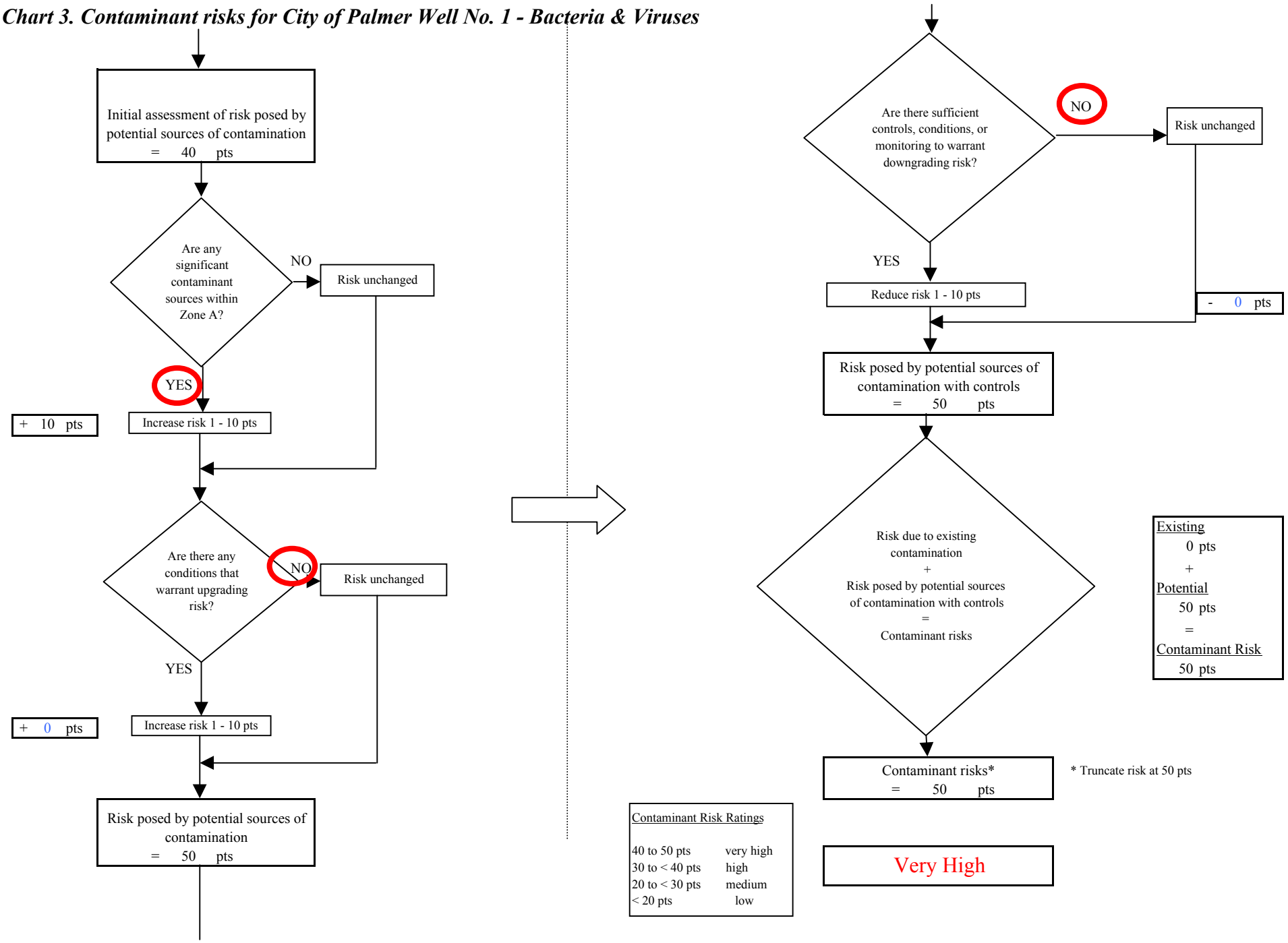


Chart 4. Vulnerability analysis for City of Palmer Well No. 1 - Bacteria & Viruses

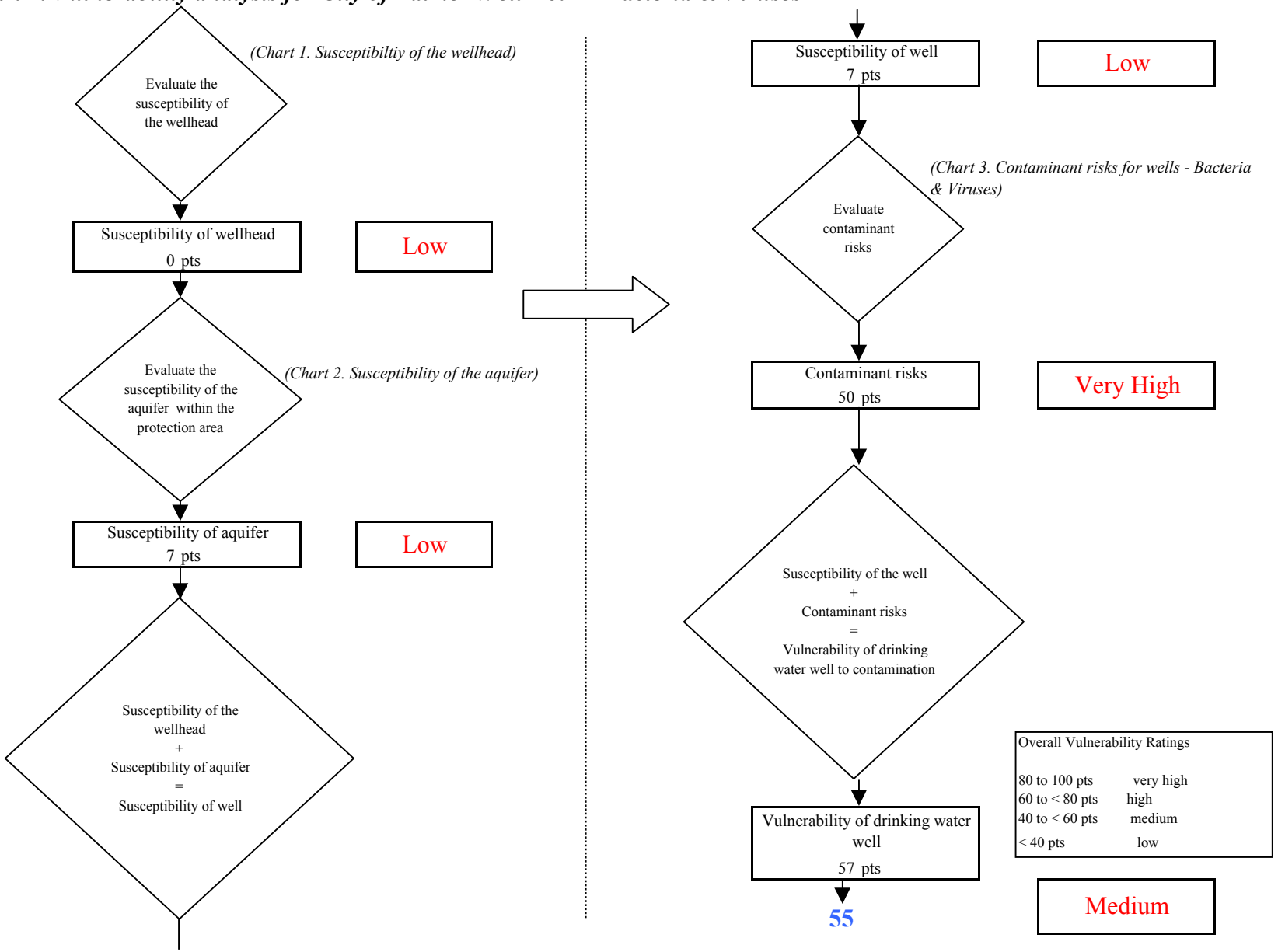


Chart 5. Contaminant risks for City of Palmer Well No. 1 - Nitrates and Nitrites

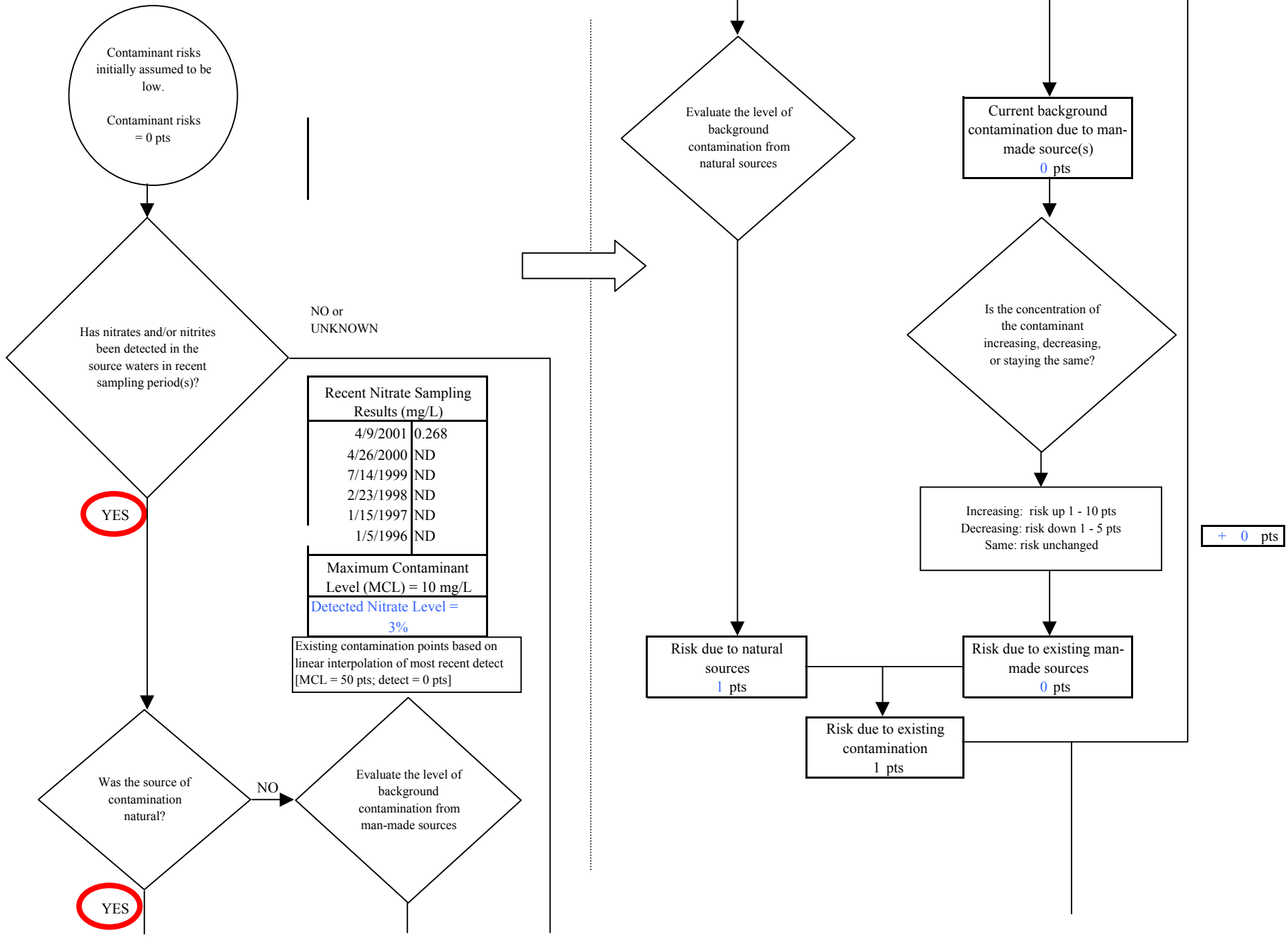


Chart 5. Contaminant risks for City of Palmer Well No. 1 - Nitrates and Nitrites

+ 40 pts

What level of risk is associated with the highest and the next highest risk sources(s) of contaminants identified in Zones A, B and C?

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)	4	7	11
Medium(s)	2	0	2
Low(s)	68	36	104

	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 40

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.

Initial assessment of risk posed by potential sources of contamination = 40 pts

Is the source aquifer fractured rock or karst?

YES

NO

Are all of the higher risk sources beyond Zones A and B?

NO

Risk unchanged

YES

Decrease risk 1 - 10 pts

- 0 pts

Are any significant sources within Zone A?

NO

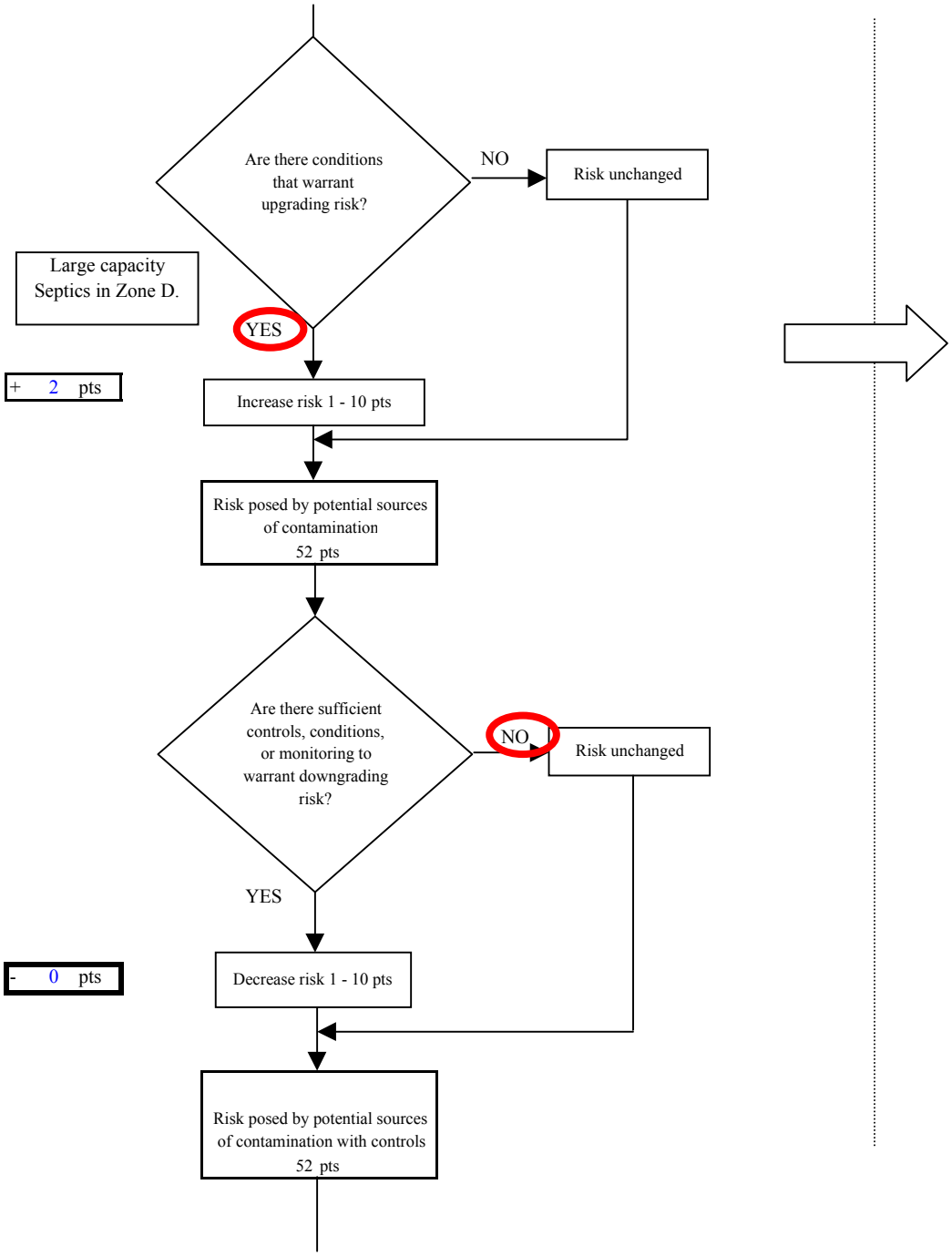
Risk unchanged

YES

Increase risk 1 - 10 pts

+ 10 pts

Chart 5. Contaminant risks for City of Palmer Well No. 1 - Nitrates and Nitrites



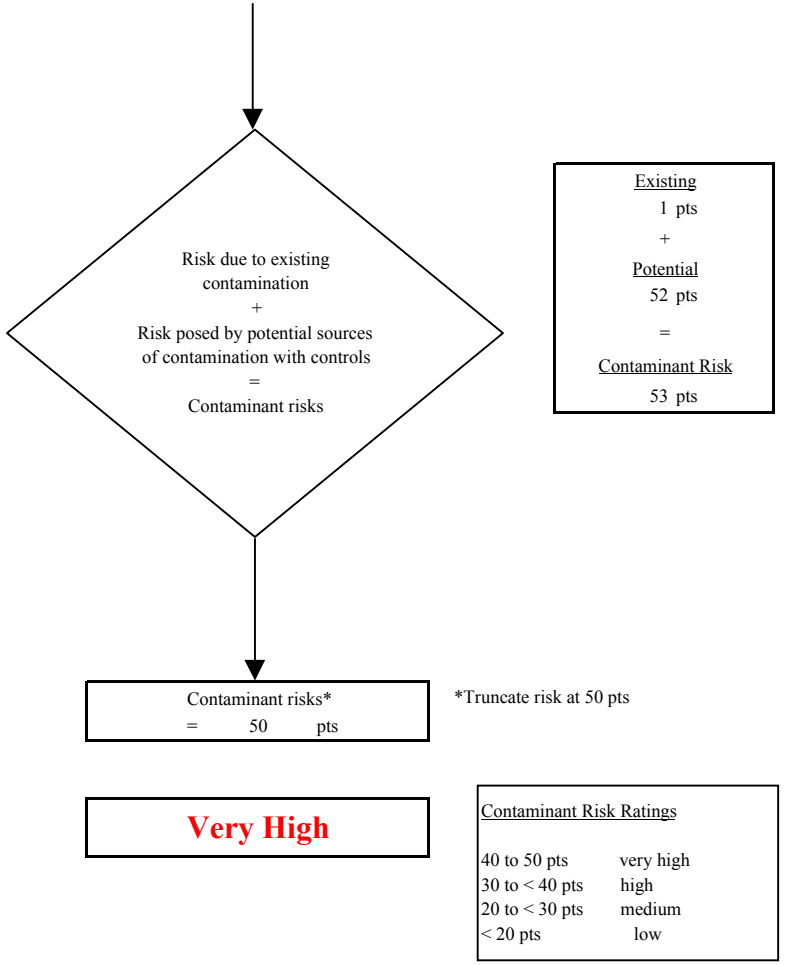


Chart 6. Vulnerability analysis for City of Palmer Well No. 1 - Nitrates and Nitrites

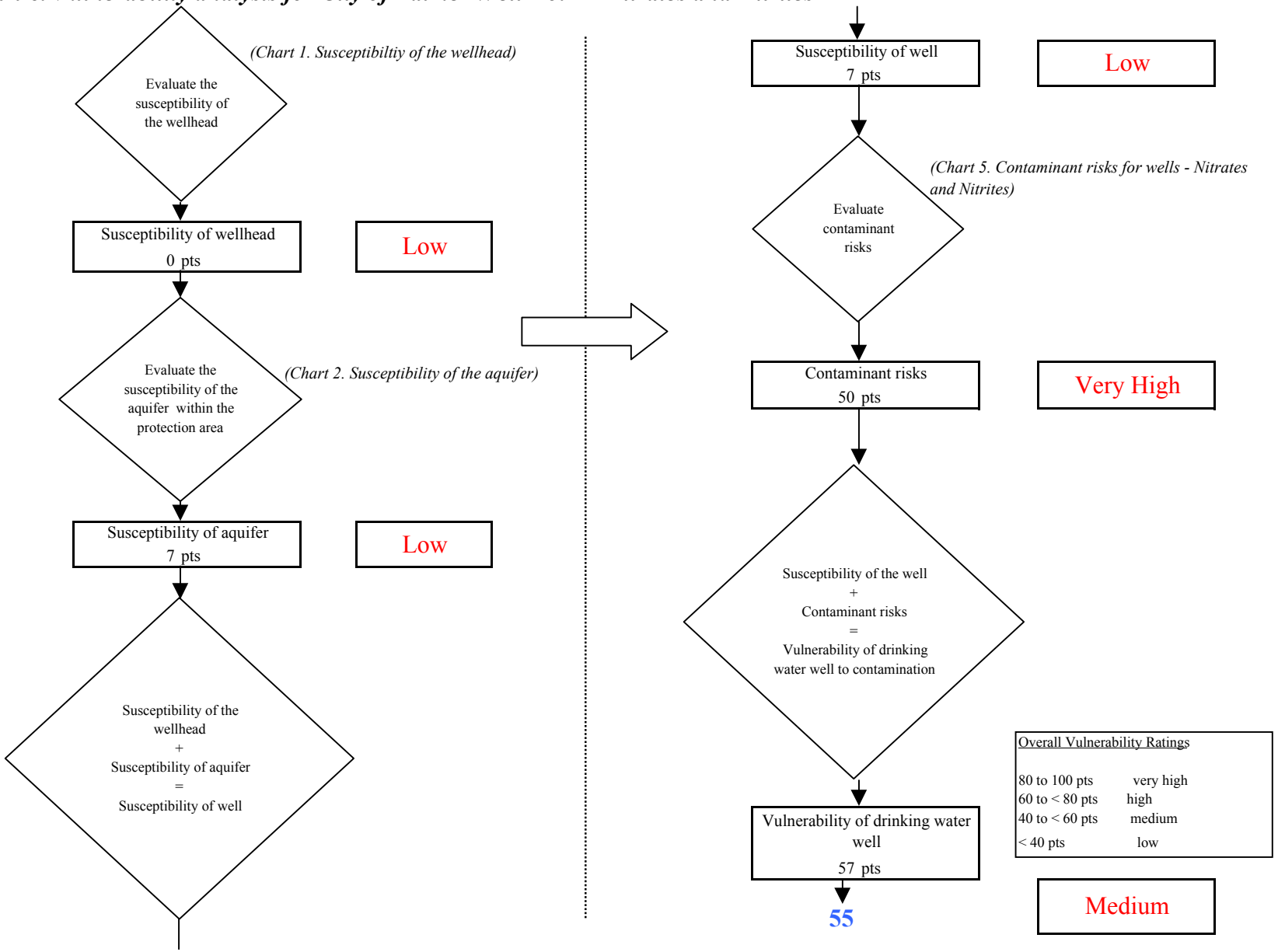


Chart 7. Contaminant risks for City of Palmer Well No. 1 - Volatile Organic Chemicals

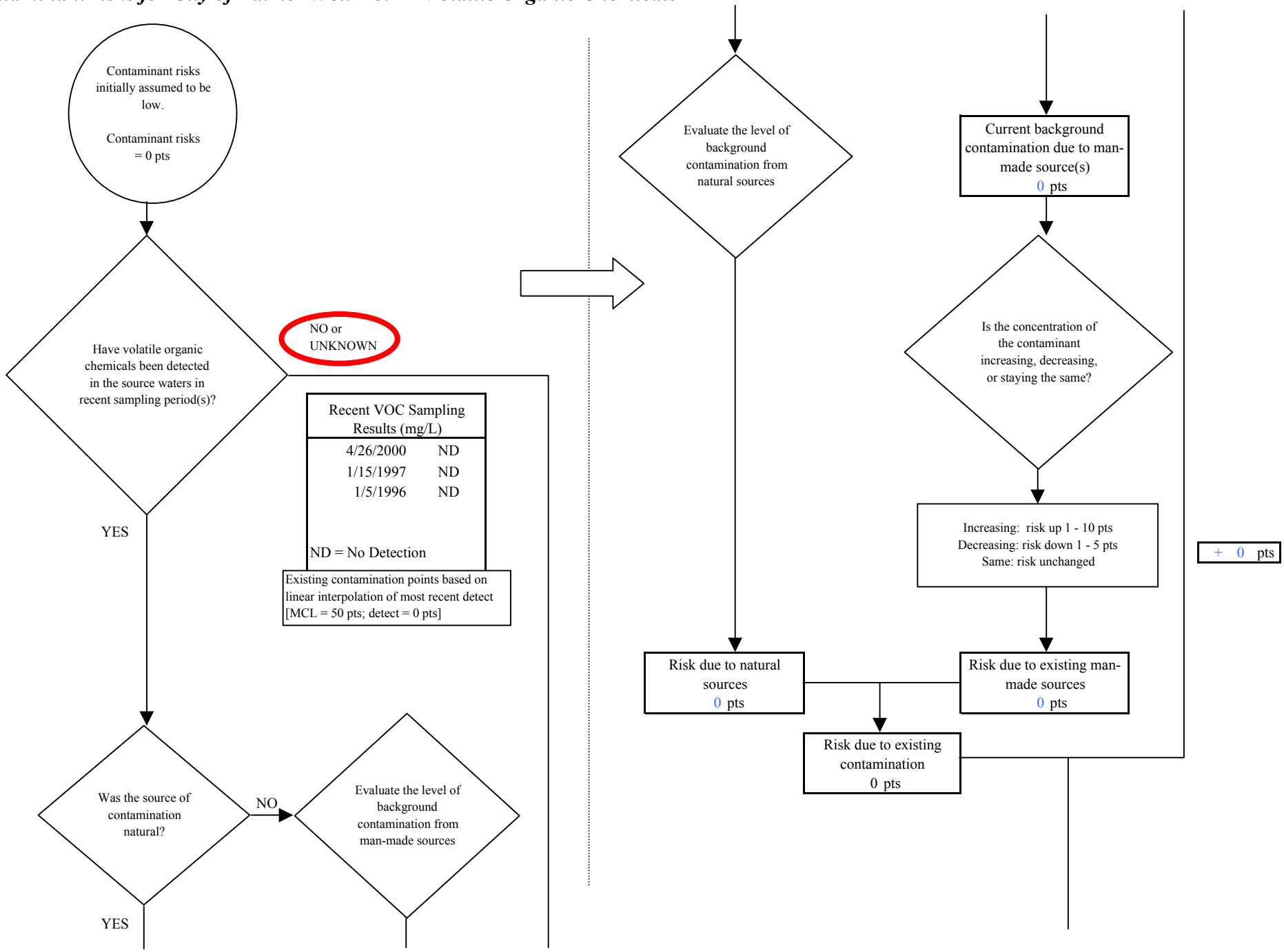


Chart 7. Contaminant risks for City of Palmer Well No. 1 - Volatile Organic Chemicals

+ 20 pts

What level of risk is associated with the highest and the next highest risk sources(s) of contaminants identified in Zones A, B and C?

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)	16	25	41

	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.

Initial assessment of risk posed by potential sources of contamination = 20 pts

Is the source aquifer fractured rock or karst?

YES

NO

Are all of the higher risk sources beyond Zones A and B?

NO

Risk unchanged

YES

Decrease risk 1 - 10 pts

- 0 pts

Are any significant sources within Zone A?

NO

Risk unchanged

YES

Increase risk 1 - 10 pts

+ 5 pts

Chart 7. Contaminant risks for City of Palmer Well No. 1 - Volatile Organic Chemicals

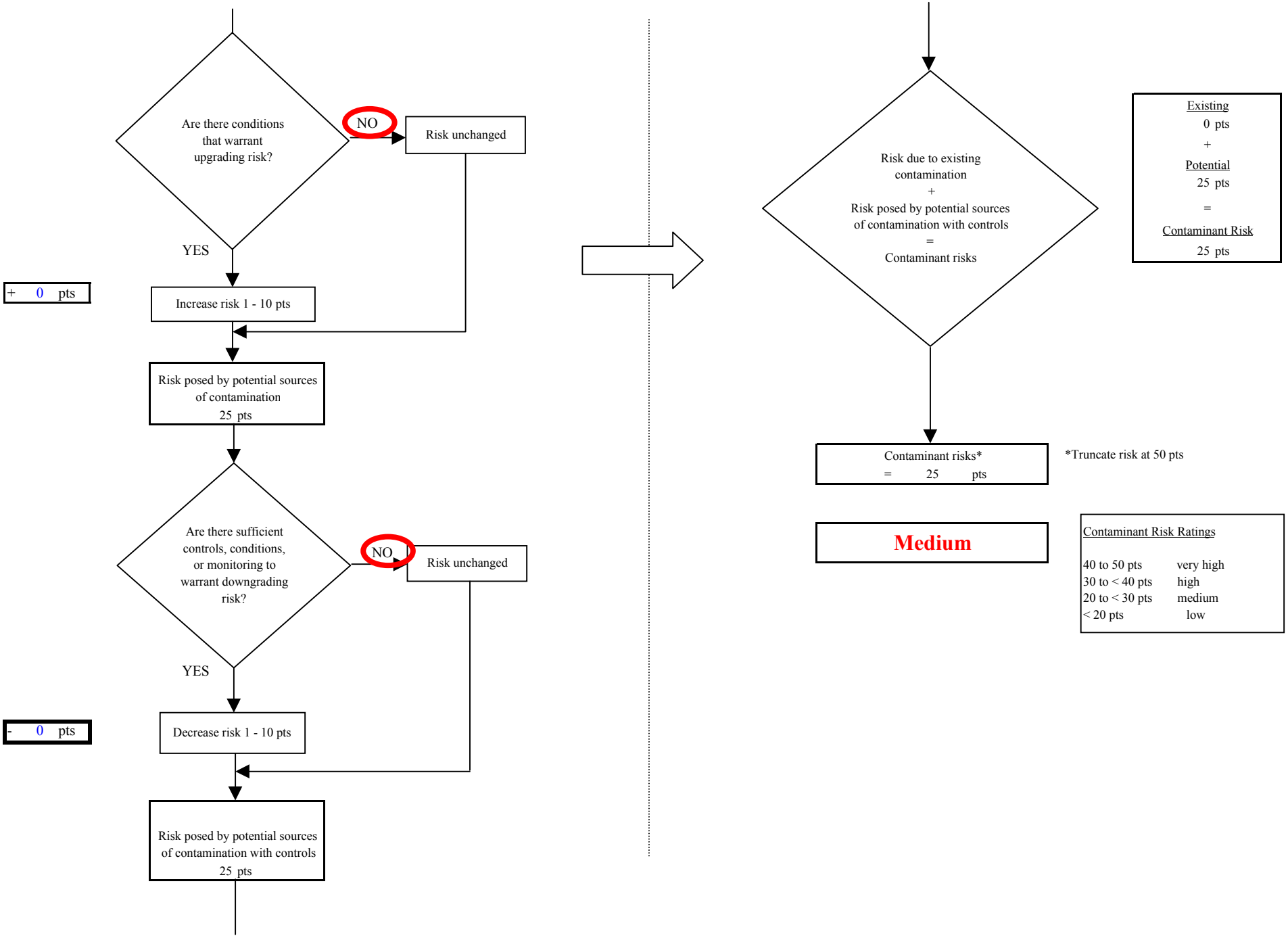


Chart 8. Vulnerability analysis for City of Palmer Well No. 1 - Volatile Organic Chemicals

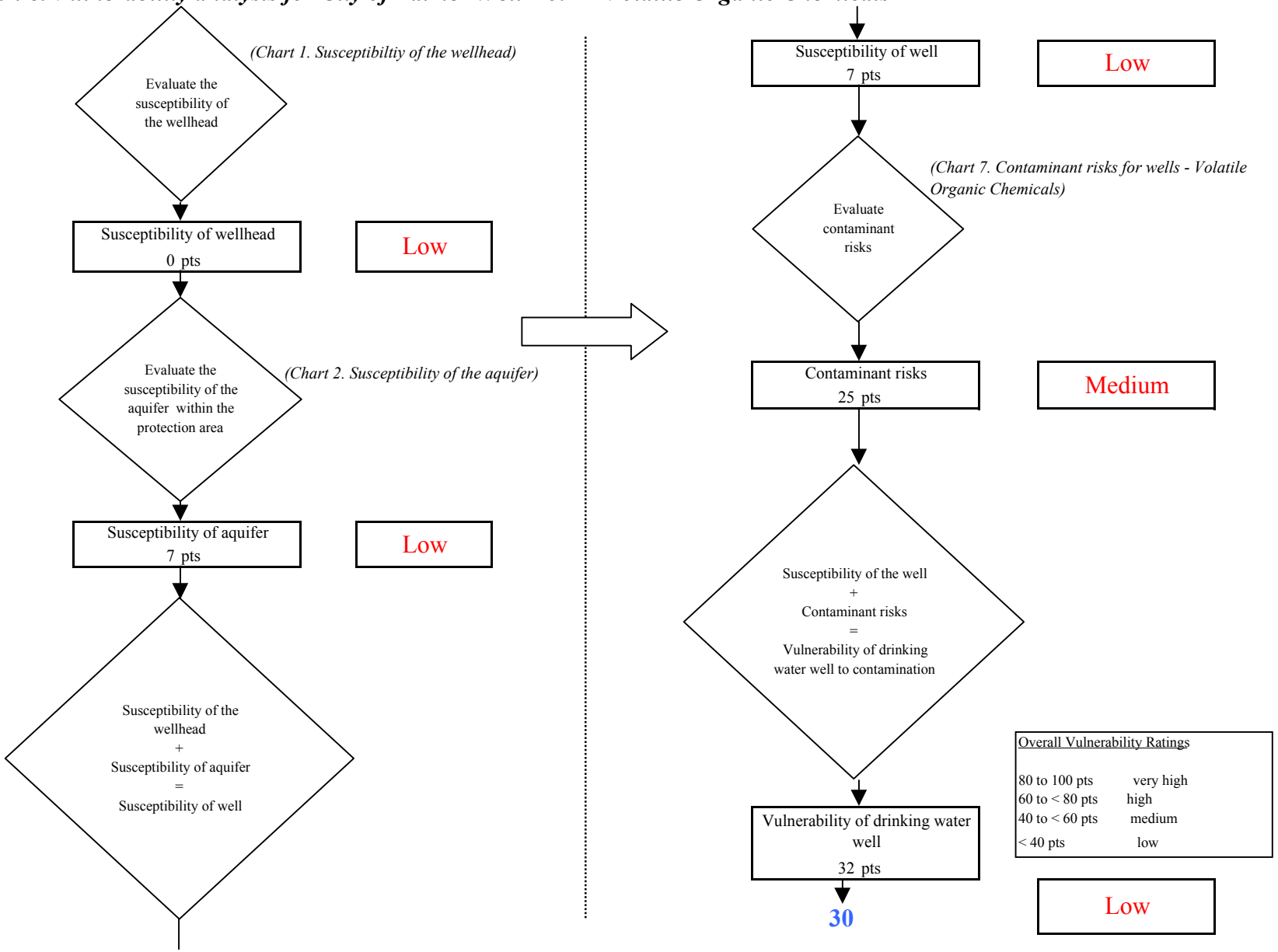


Chart 9. Contaminant risks for City of Palmer Well No. 1 - Heavy Metals, Cyanide and Other Inorganic Chemicals

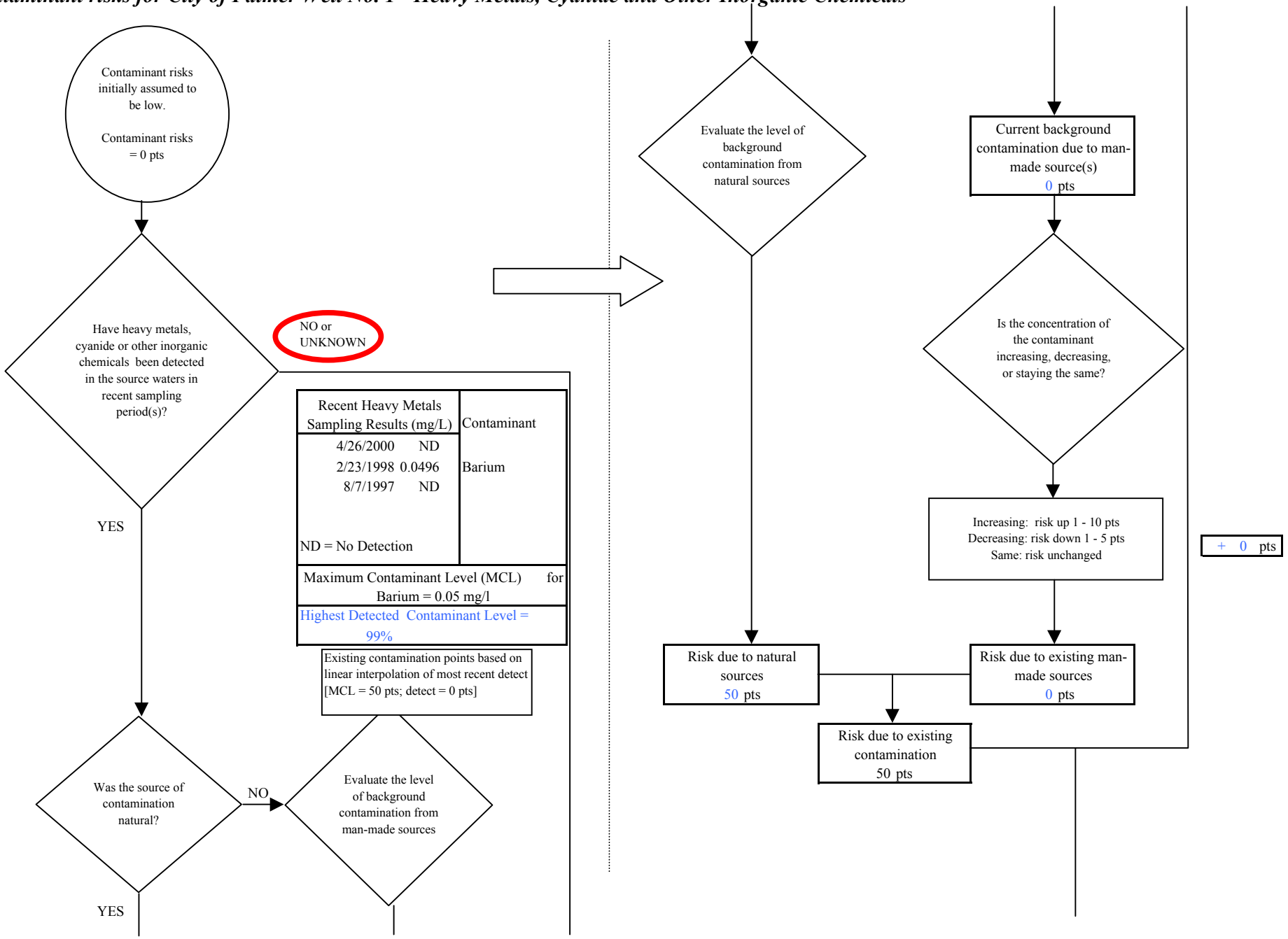


Chart 9. Contaminant risks for City of Palmer Well No. 1 - Heavy Metals, Cyanide and Other Inorganic Chemicals

+ 20 pts

What level of risk is associated with the highest and the next highest risk sources(s) of contaminants identified in Zones A, B and C?

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)	9	14	23

	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.

Initial assessment of risk posed by potential sources of contamination = 20 pts

Is the source aquifer fractured rock or karst?

YES

NO

Are all of the higher risk sources beyond Zones A and B?

NO

Risk unchanged

YES

Decrease risk 1 - 10 pts

- 0 pts

Are any significant sources within Zone A?

NO

Risk unchanged

YES

Increase risk 1 - 10 pts

+ 2 pts

Chart 9. Contaminant risks for City of Palmer Well No. 1 - Heavy Metals, Cyanide and Other Inorganic Chemicals

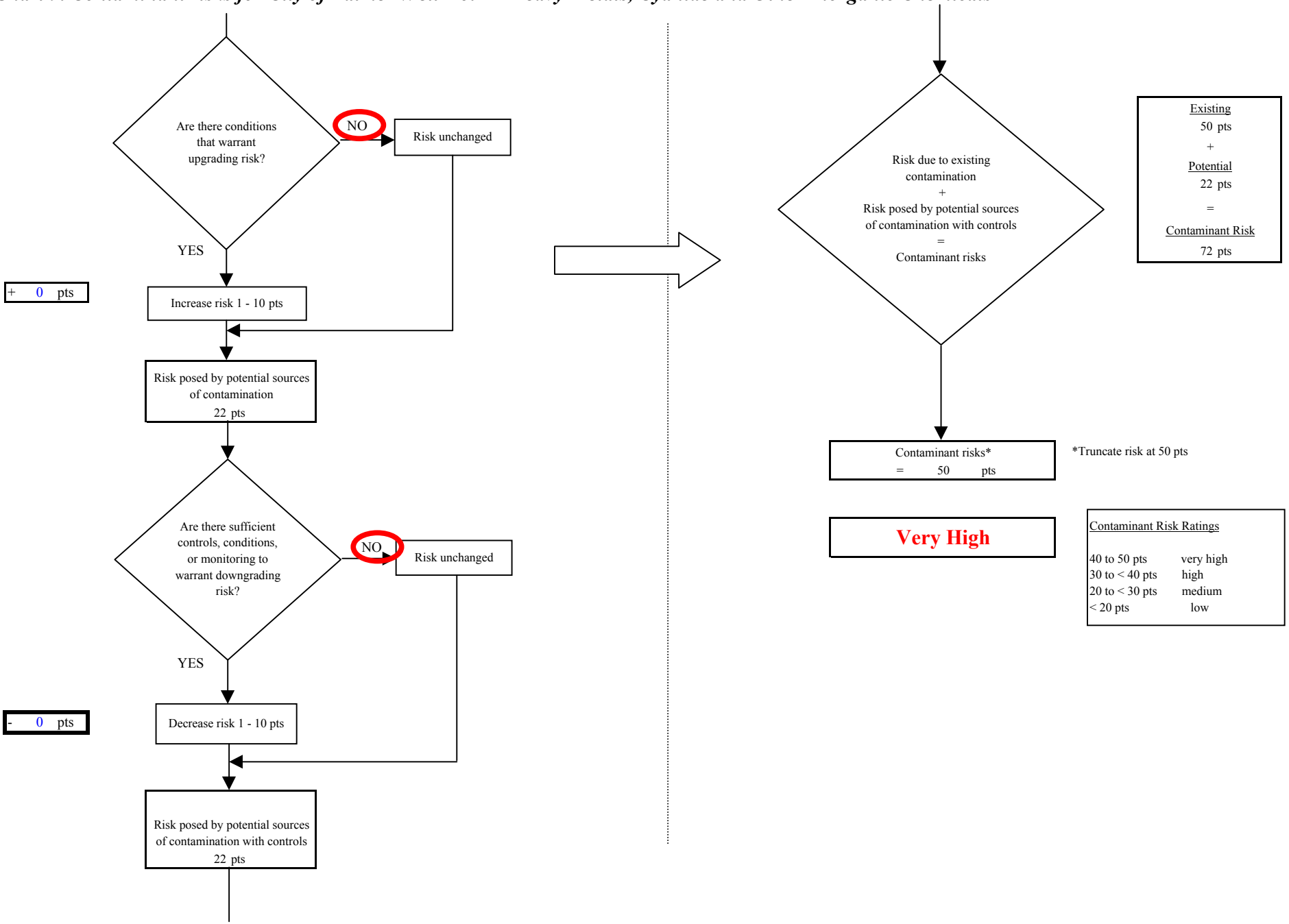


Chart 10. Vulnerability analysis for City of Palmer Well No. 1 - Heavy Metals, Cyanide and Other Inorganic Chemicals

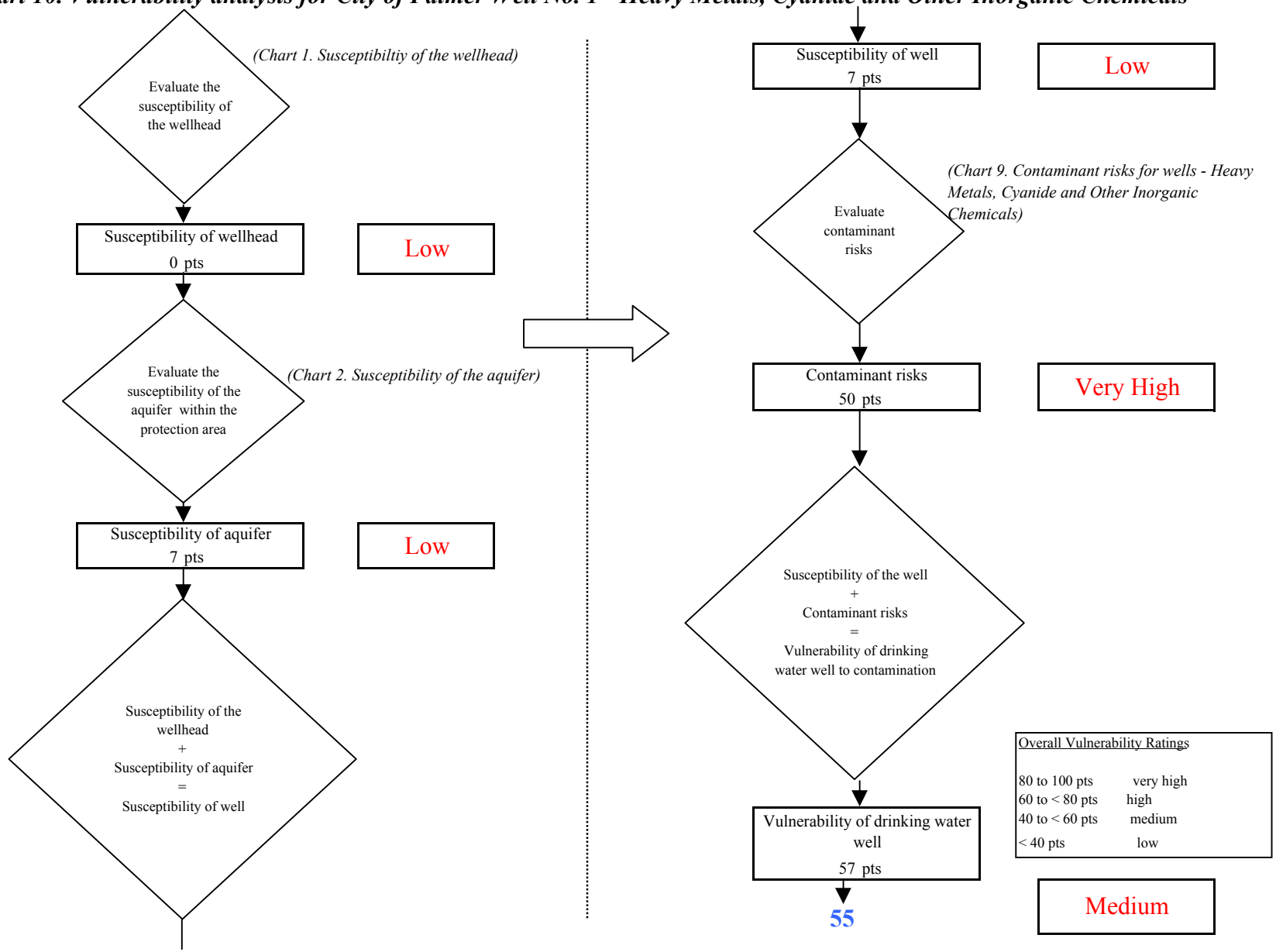


Chart 11. Contaminant risks for City of Palmer Well No. 1 - Synthetic Organic Chemicals

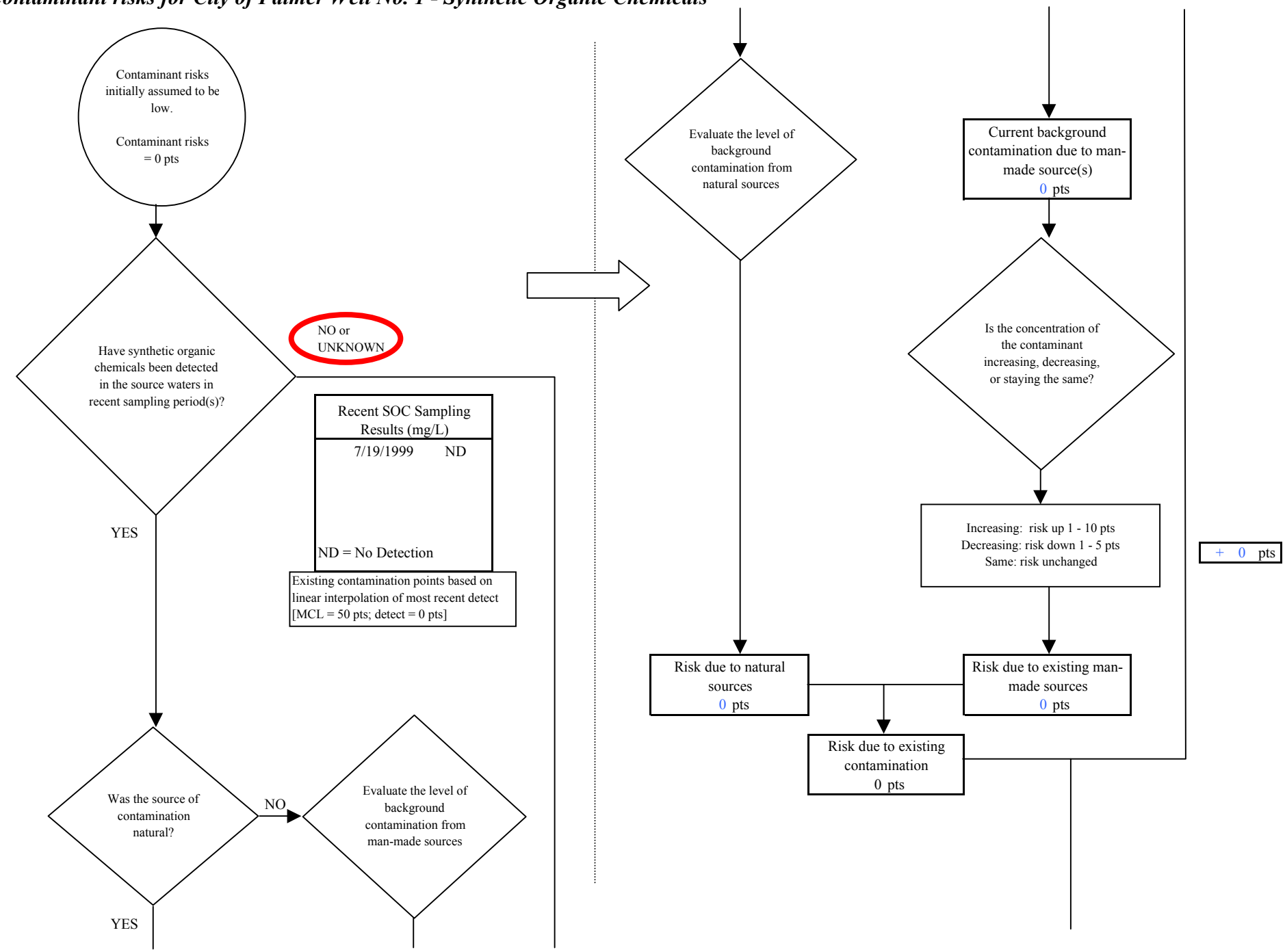


Chart 11. Contaminant risks for City of Palmer Well No. 1 - Synthetic Organic Chemicals

+ 25 pts

What level of risk is associated with the highest and the next highest risk sources(s) of contaminants identified in Zones A, B and C?

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	1	1
Low(s)	8	12	20

	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 25

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.

Initial assessment of risk posed by potential sources of contamination = 25 pts

Is the source aquifer fractured rock or karst?

YES

NO

Are all of the higher risk sources beyond Zones A and B?

NO

Risk unchanged

YES

Decrease risk 1 - 10 pts

- 0 pts

Are any significant sources within Zone A?

NO

Risk unchanged

YES

Increase risk 1 - 10 pts

+ 2 pts

Chart 11. Contaminant risks for City of Palmer Well No. 1 - Synthetic Organic Chemicals

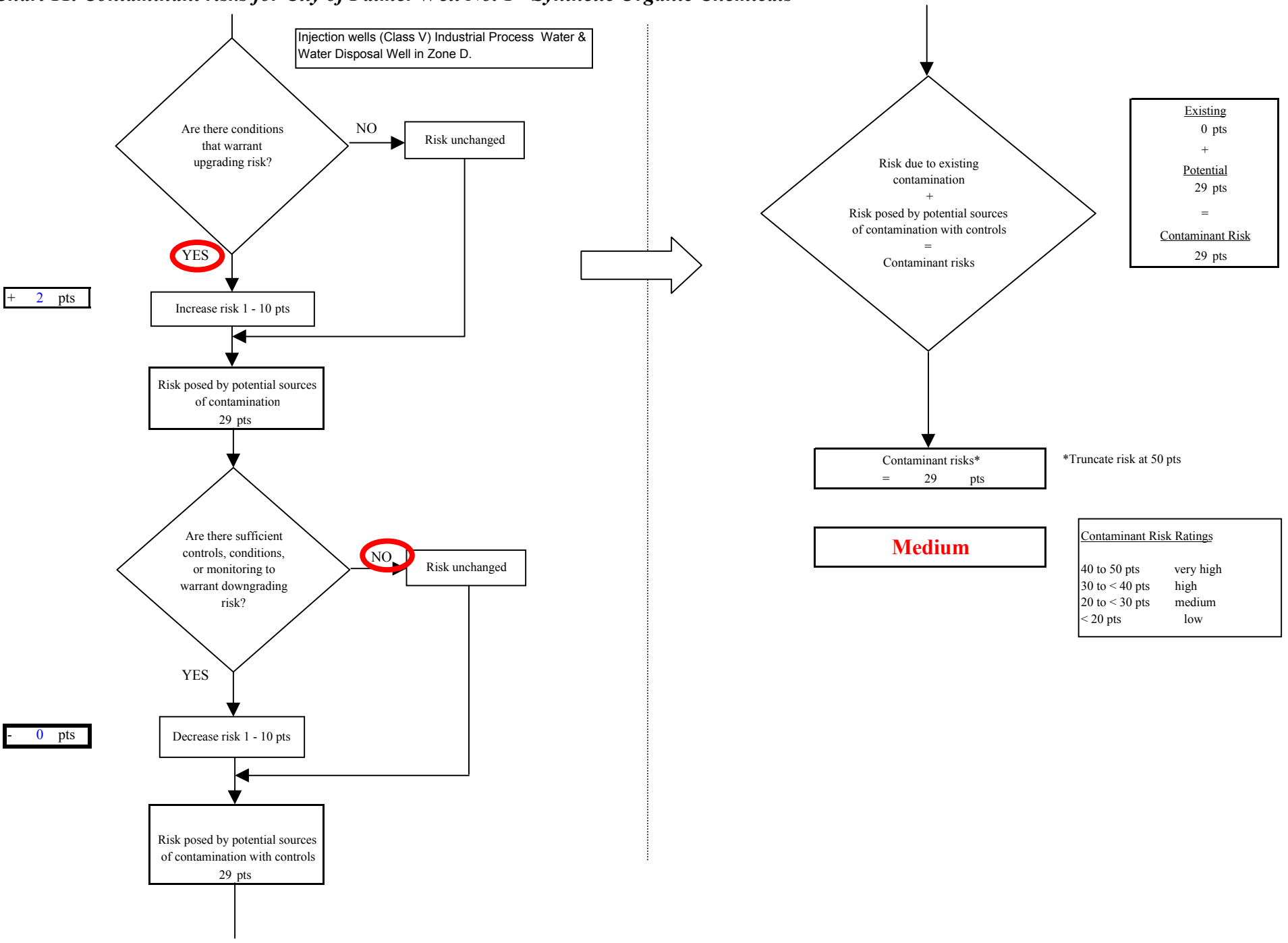


Chart 12. Vulnerability analysis for City of Palmer Well No. 1 - Synthetic Organic Chemicals

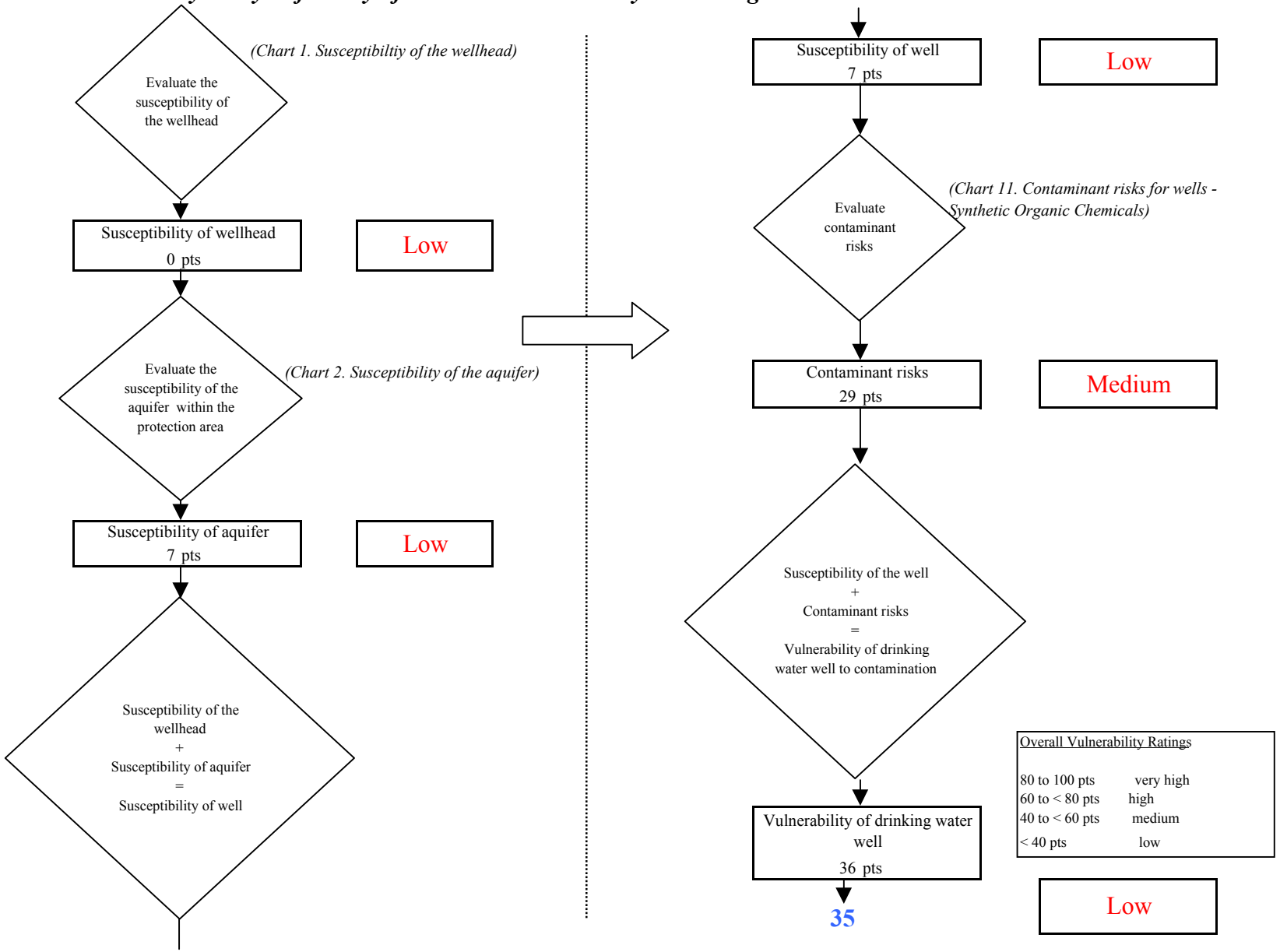


Chart 13. Contaminant risks for City of Palmer Well No. 1 - Other Organic Chemicals

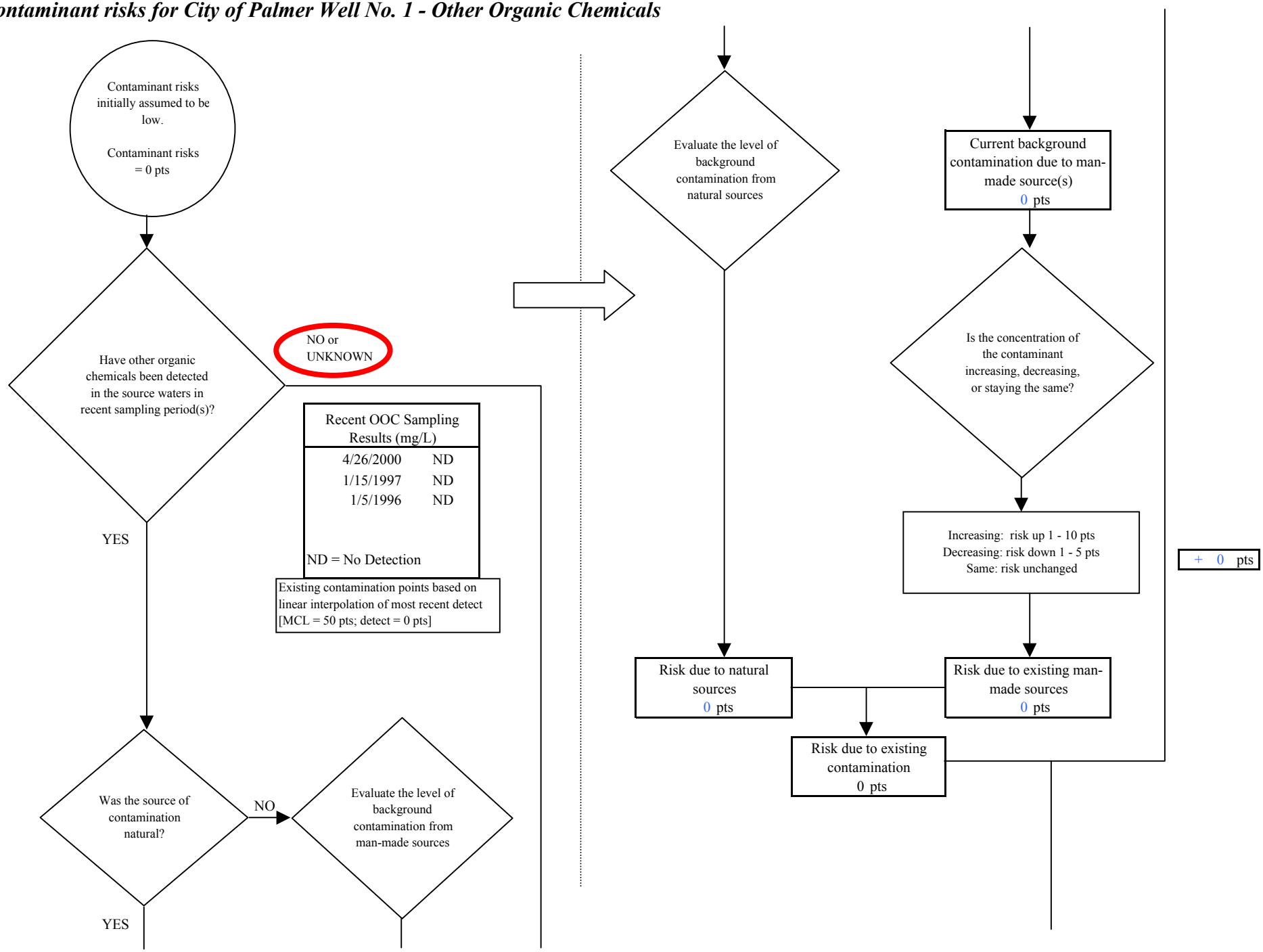
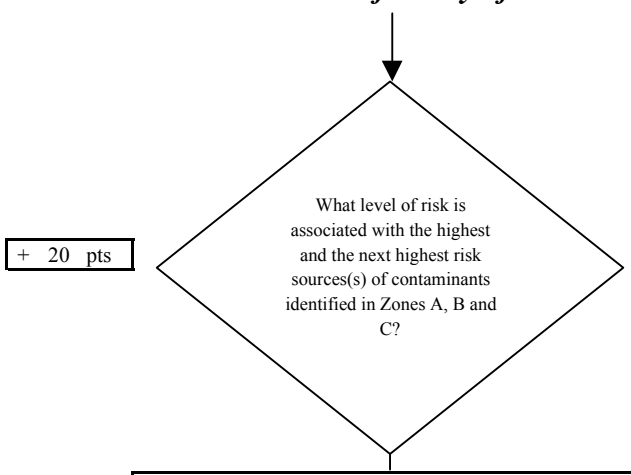


Chart 13. Contaminant risks for City of Palmer Well No. 1 - Other Organic Chemicals

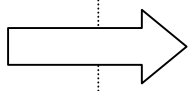


Risk Levels for Contaminant Sources identified in Zones A, B and C			
	Zone A	Zones B&C	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	0	0
Low(s)	8	11	19

	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.



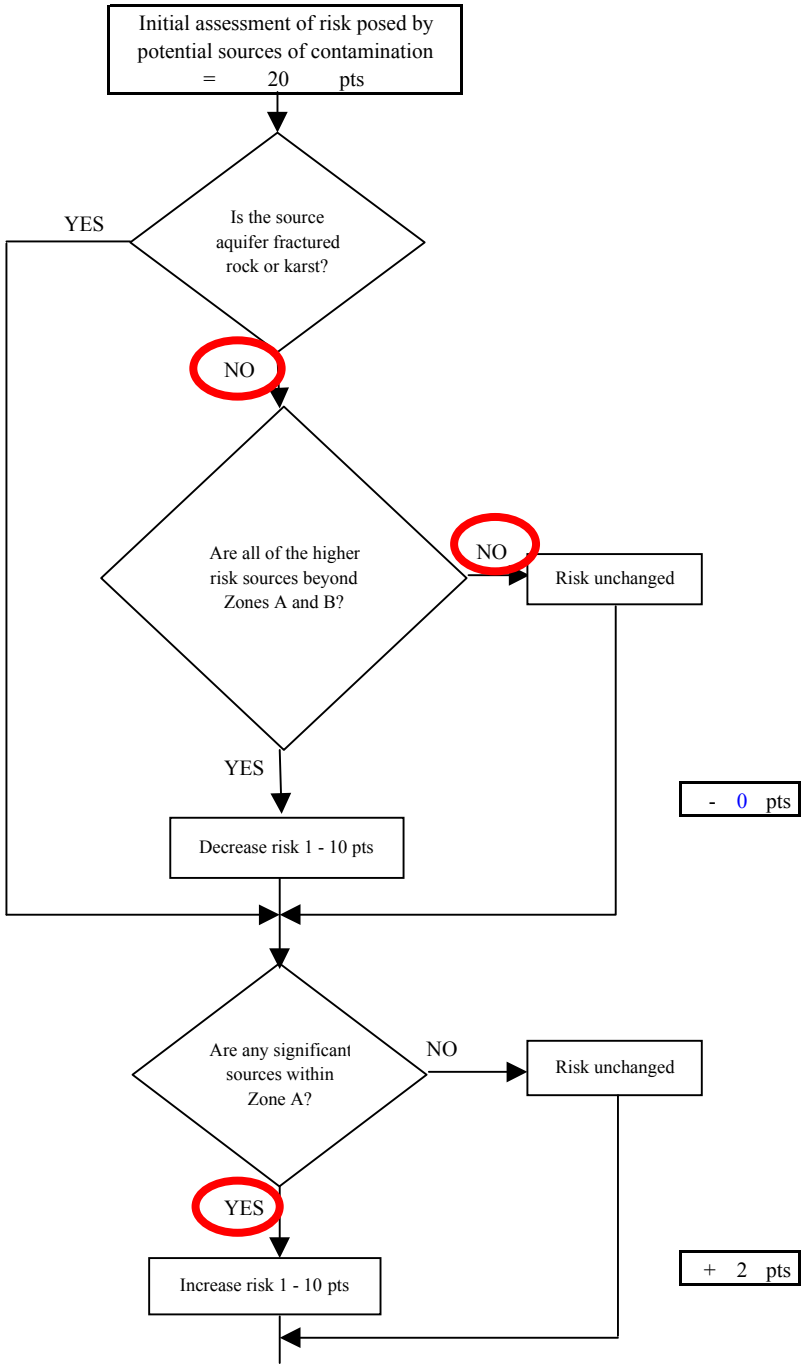


Chart 13. Contaminant risks for City of Palmer Well No. 1 - Other Organic Chemicals

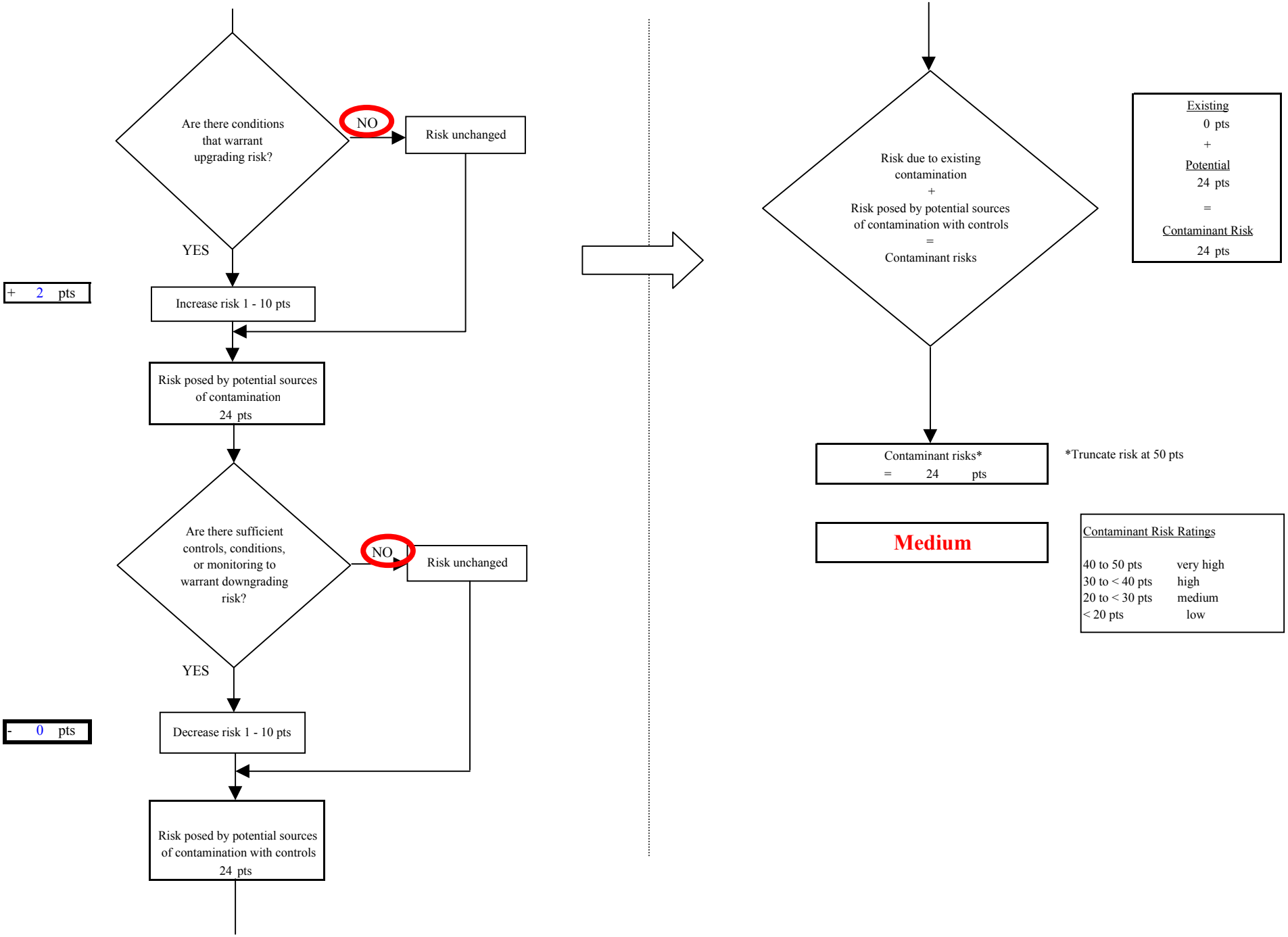


Chart 14. Vulnerability analysis forCity of Palmer Well No. 1 - Other Organic Chemicals

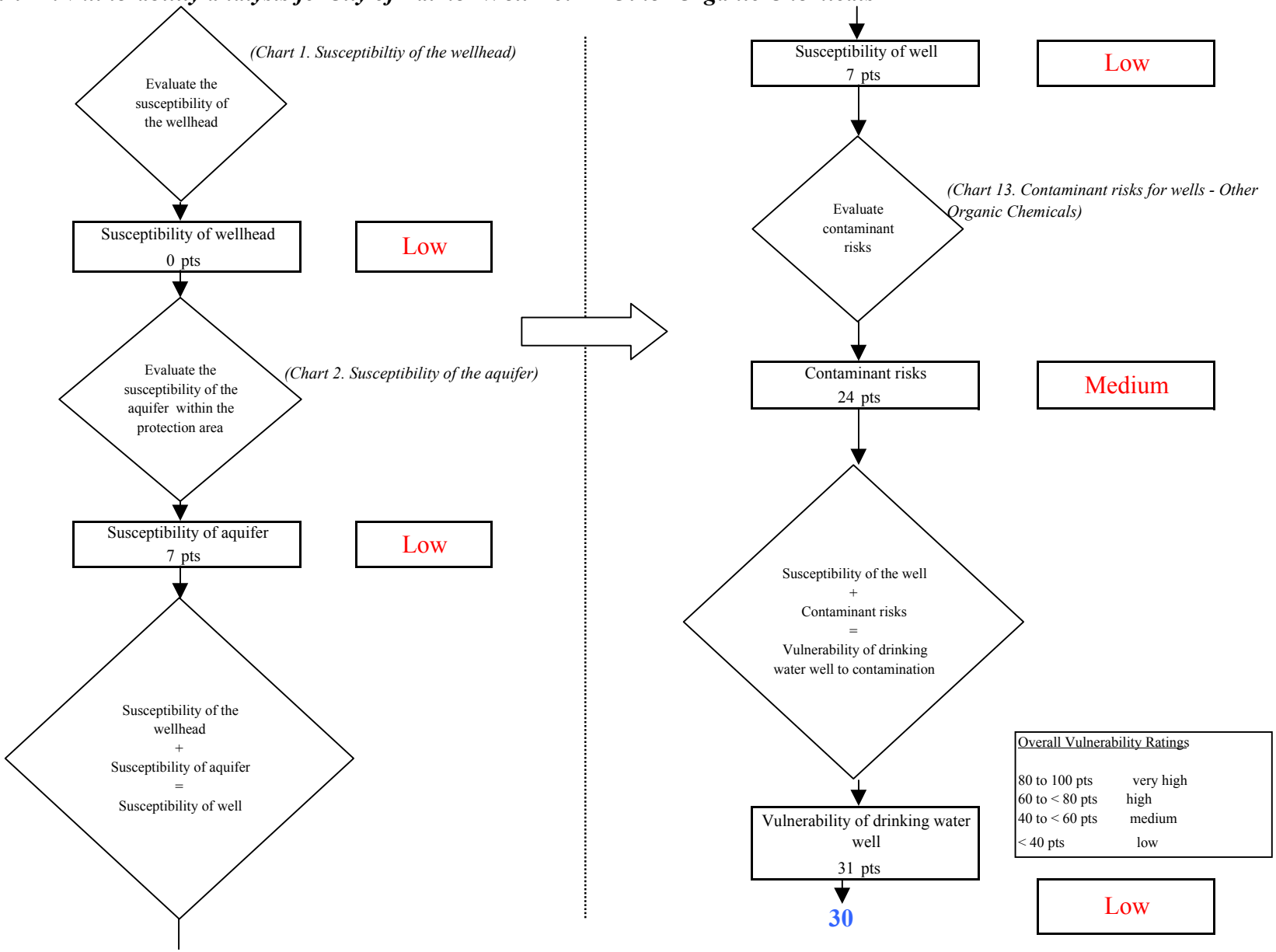


Chart 1. Susceptibility of the wellhead - City of Palmer Well No. 3

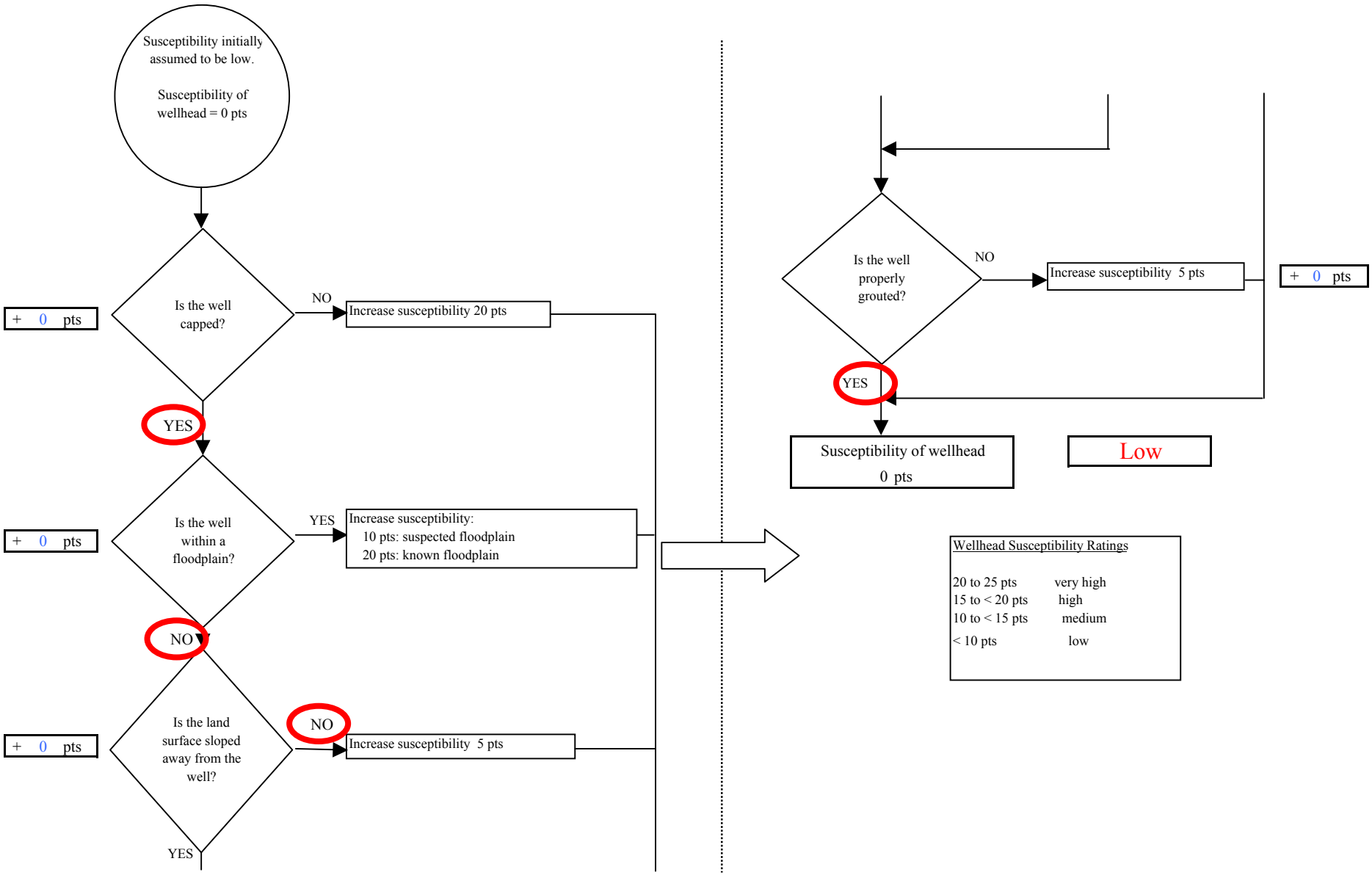


Chart 2. Susceptibility of the aquifer - City of Palmer Well No. 3

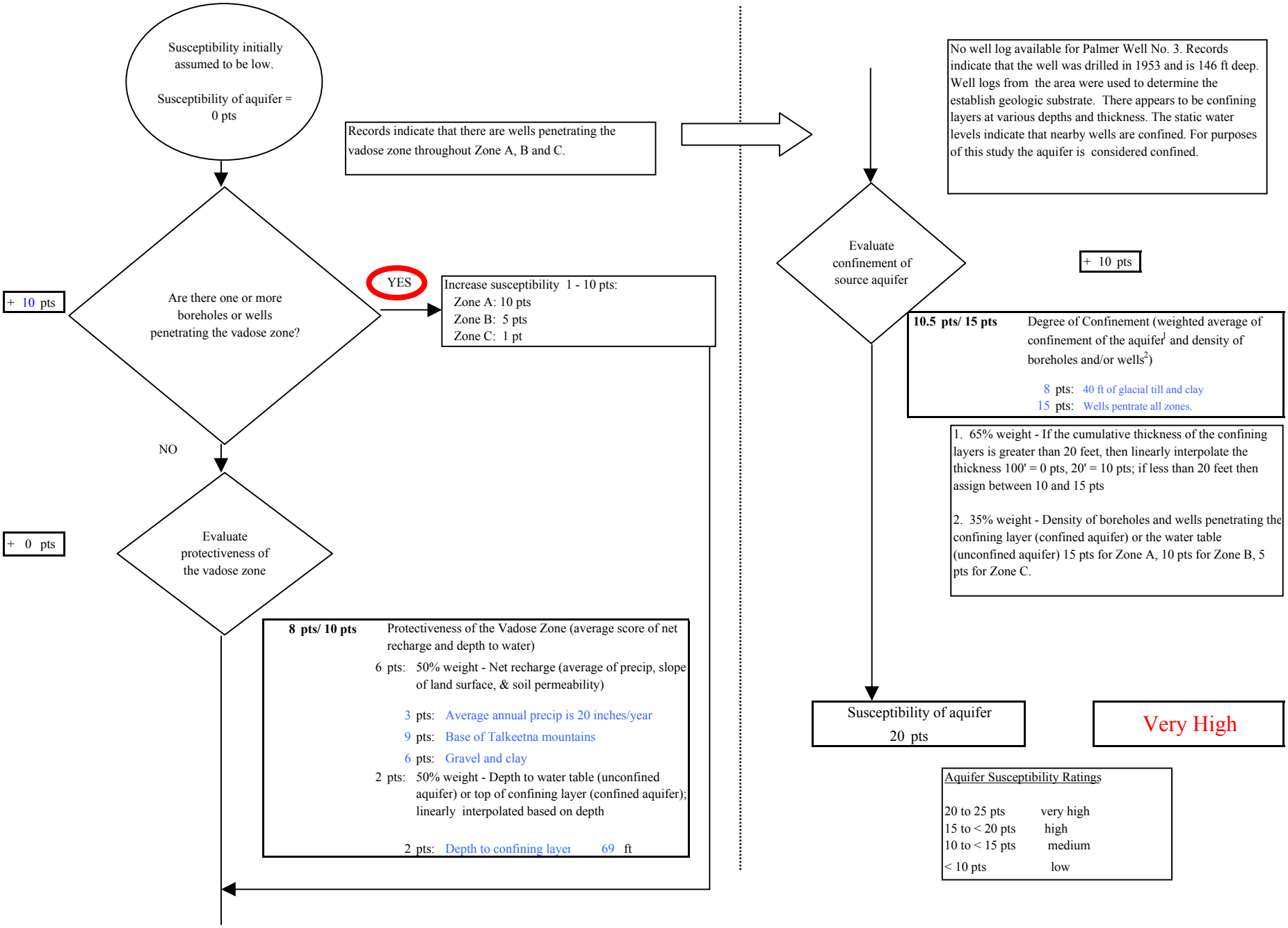
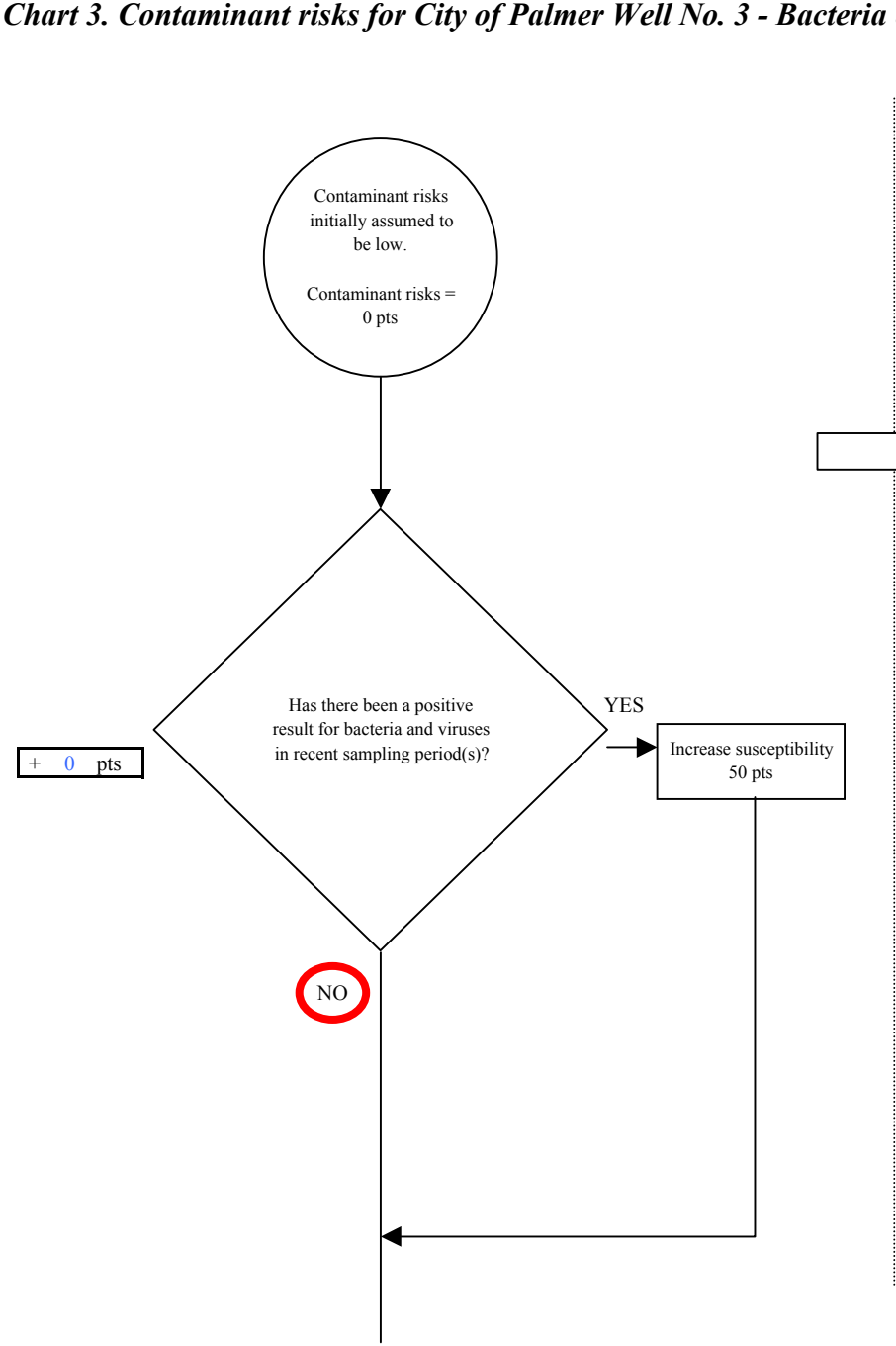
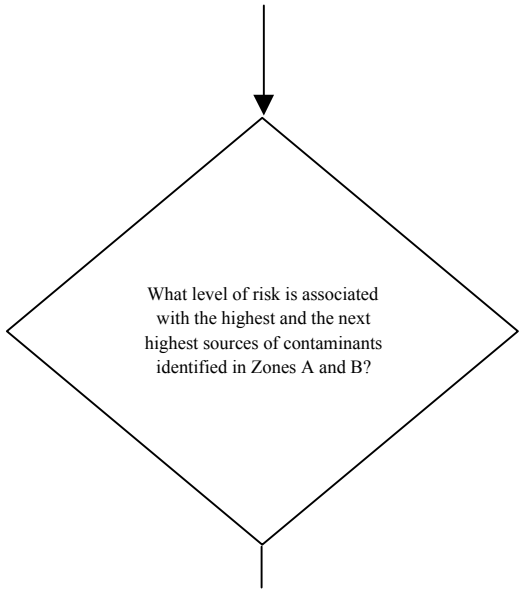


Chart 3. Contaminant risks for City of Palmer Well No. 3 - Bacteria & Viruses





+ 20 pts

Risk Rankings for Contaminant Sources Identified in Zones A and B

	Zone A	Zone B	Total
Very Highs(s)	0	0	0
High(s)	0	0	0
Medium(s)	0	0	0
Low(s)	8	8	16

	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 3. Contaminant risks for City of Palmer Well No. 3 - Bacteria & Viruses

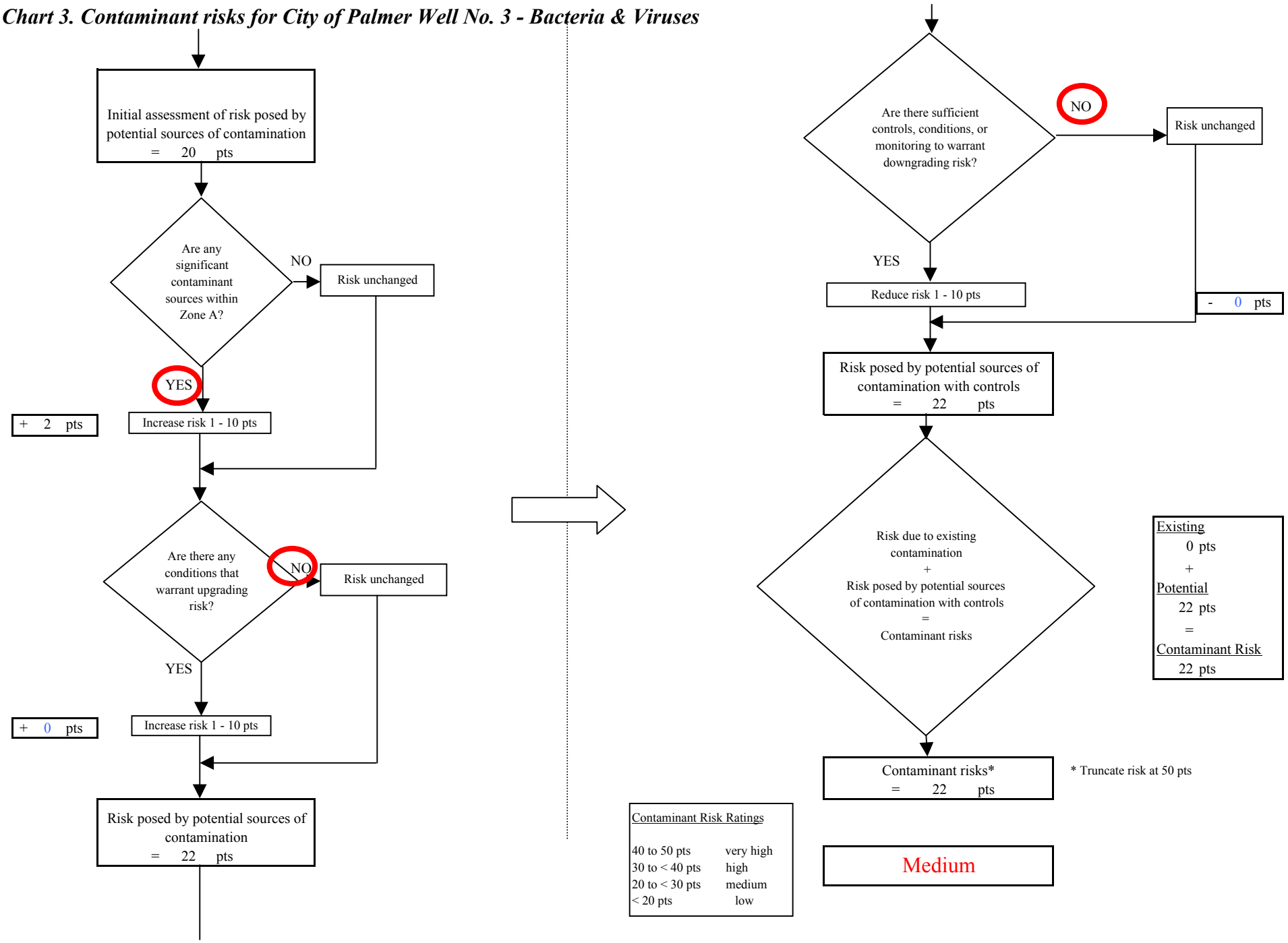


Chart 4. Vulnerability analysis for City of Palmer Well No. 3 - Bacteria & Viruses

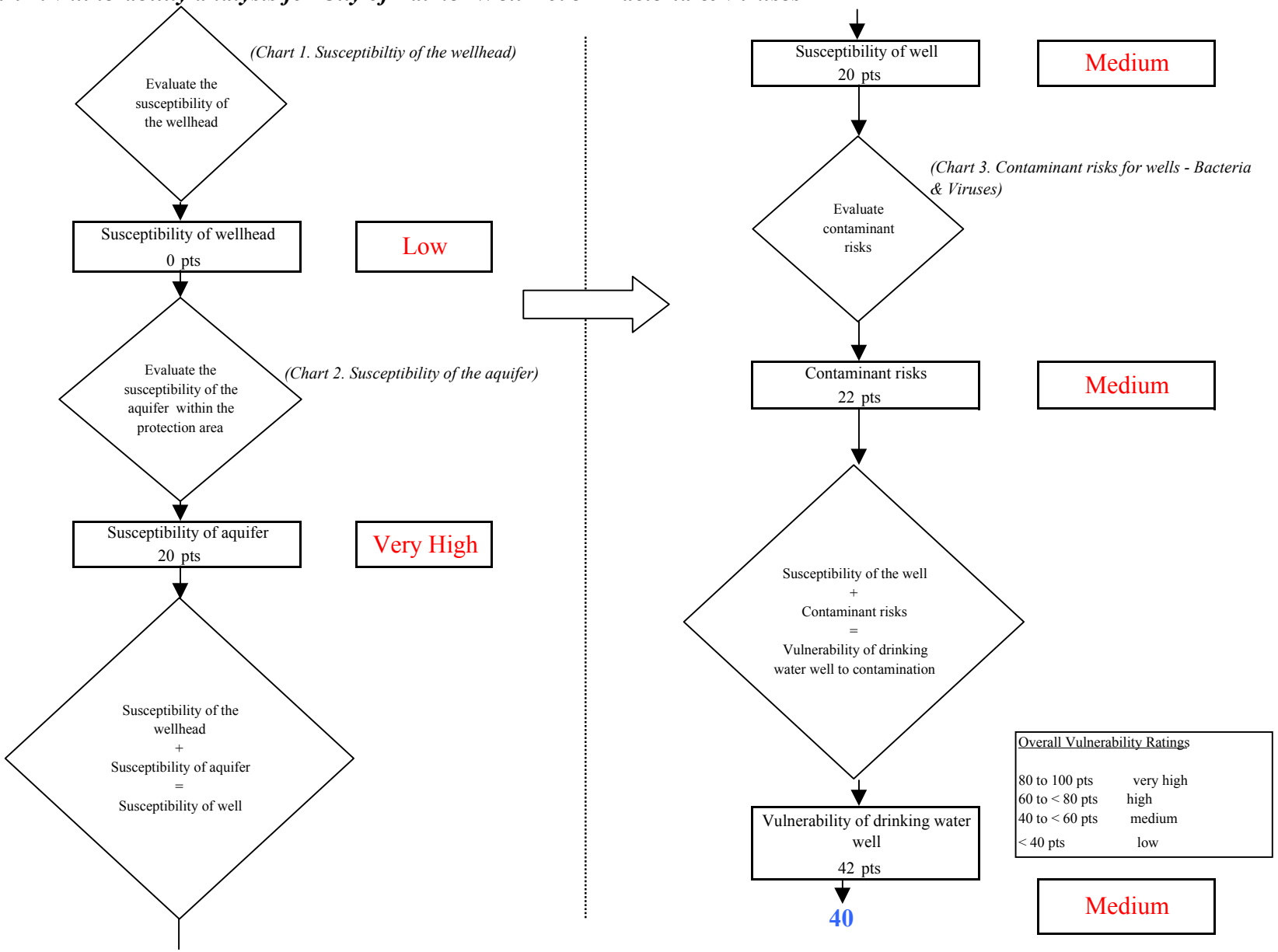


Chart 5. Contaminant risks for City of Palmer Well No. 3 - Nitrates and Nitrites

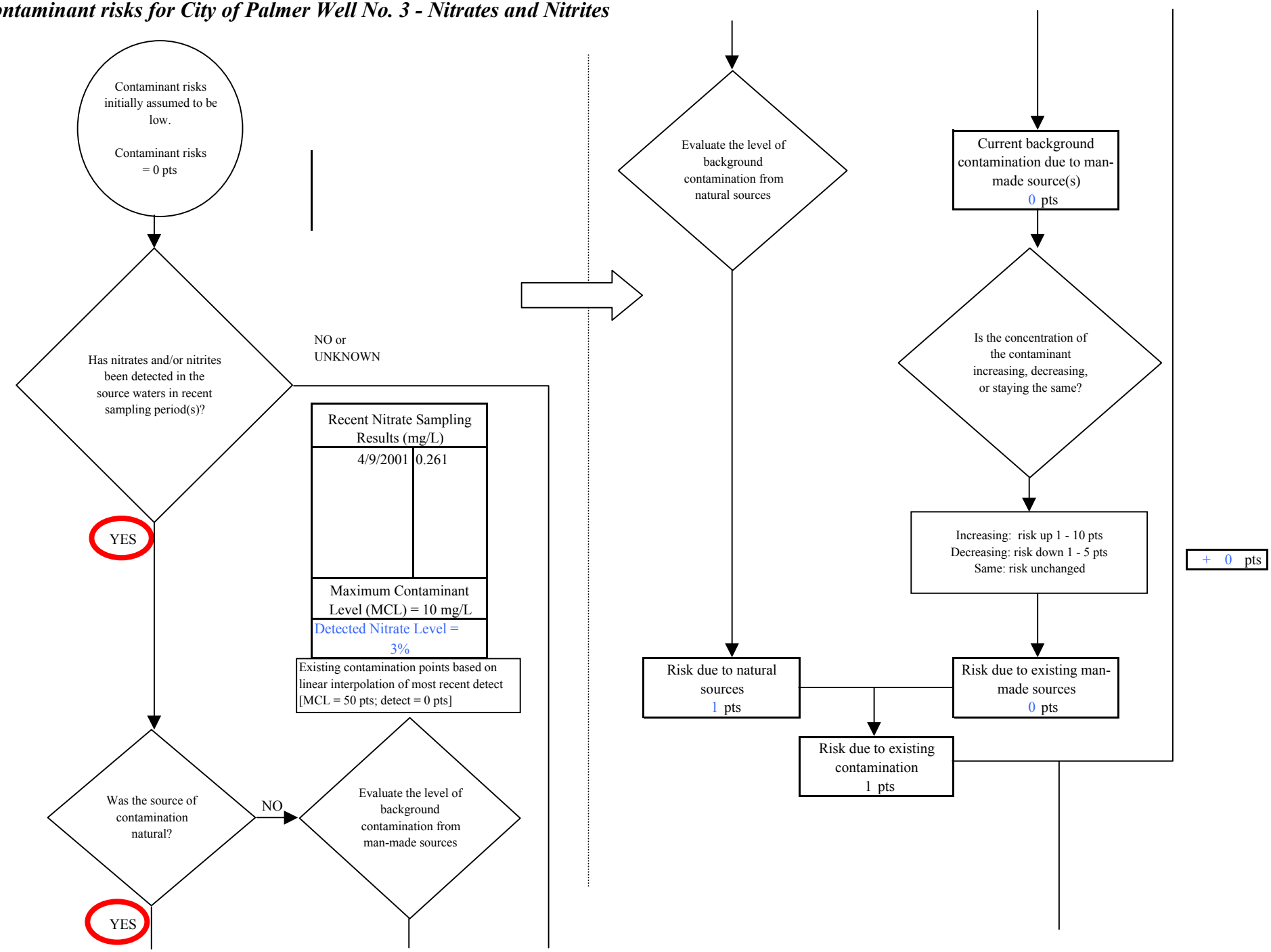


Chart 5. Contaminant risks for City of Palmer Well No. 3 - Nitrates and Nitrites

+ 35 pts

What level of risk is associated with the highest and the next highest risk sources(s) of contaminants identified in Zones A, B and C?

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	1	1
Medium(s)	0	0	0
Low(s)	8	36	44

	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 35

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.

Initial assessment of risk posed by potential sources of contamination = 35 pts

Is the source aquifer fractured rock or karst?

YES

NO

Are all of the higher risk sources beyond Zones A and B?

NO

Risk unchanged

YES

Decrease risk 1 - 10 pts

- 0 pts

Are any significant sources within Zone A?

NO

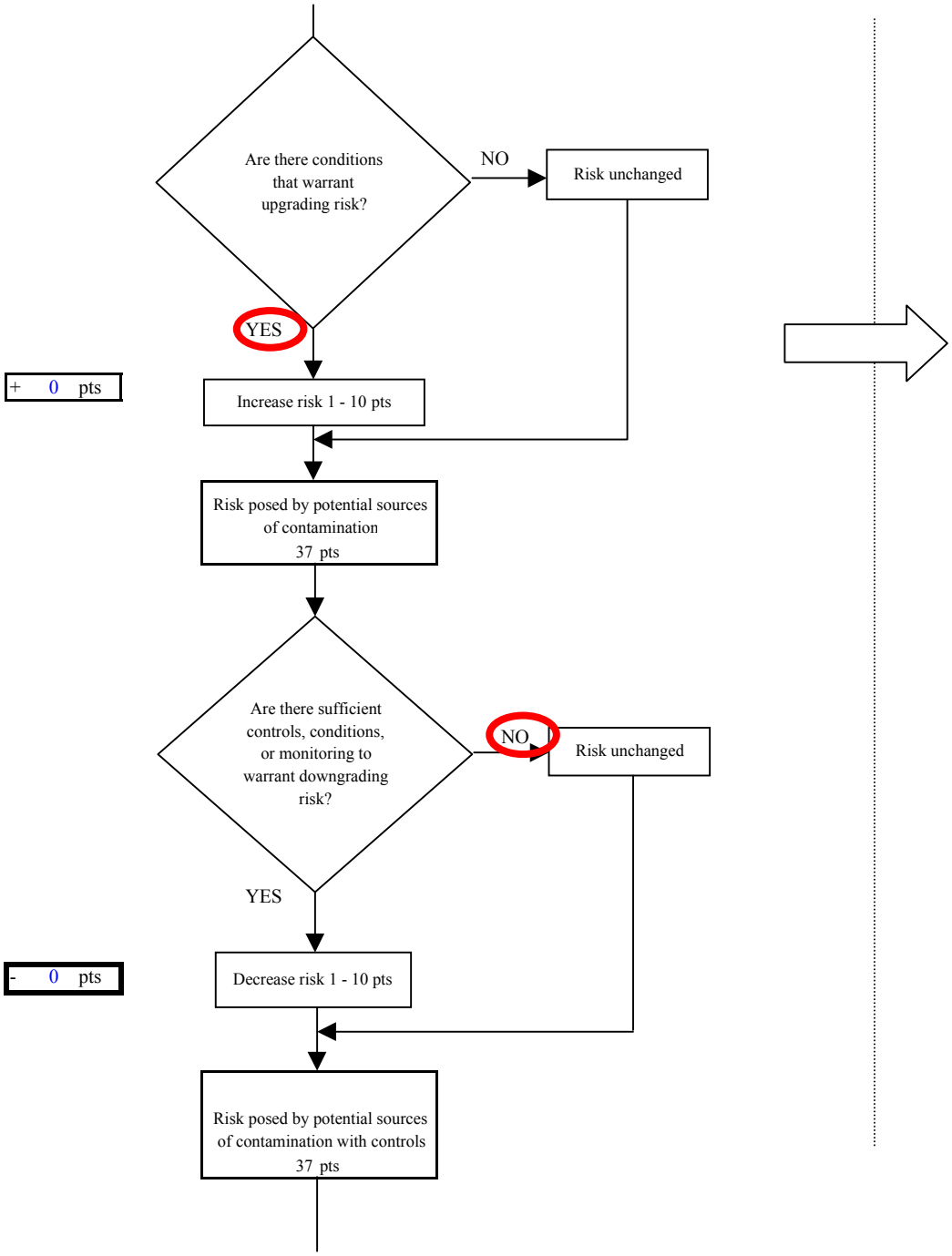
Risk unchanged

YES

Increase risk 1 - 10 pts

+ 2 pts

Chart 5. Contaminant risks for City of Palmer Well No. 3 - Nitrates and Nitrites



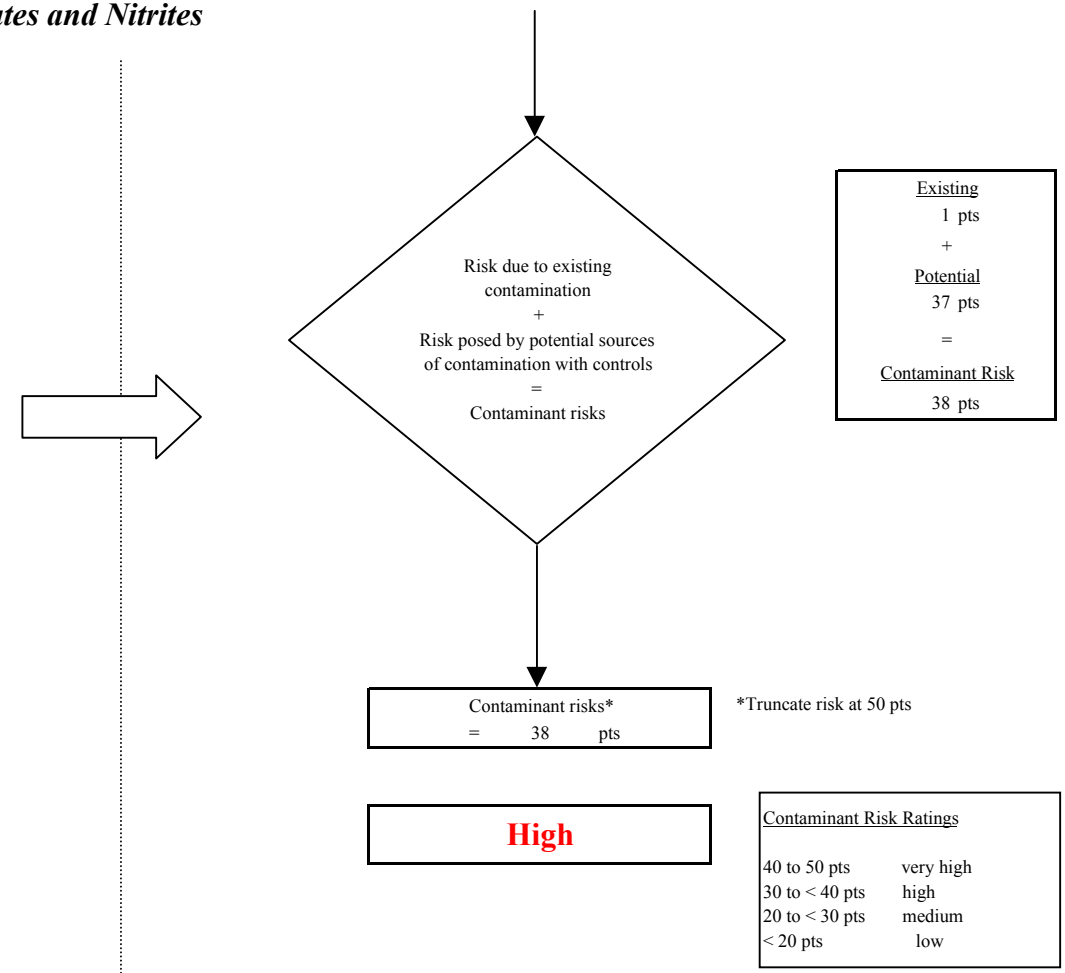


Chart 6. Vulnerability analysis for City of Palmer Well No. 3 - Nitrates and Nitrites

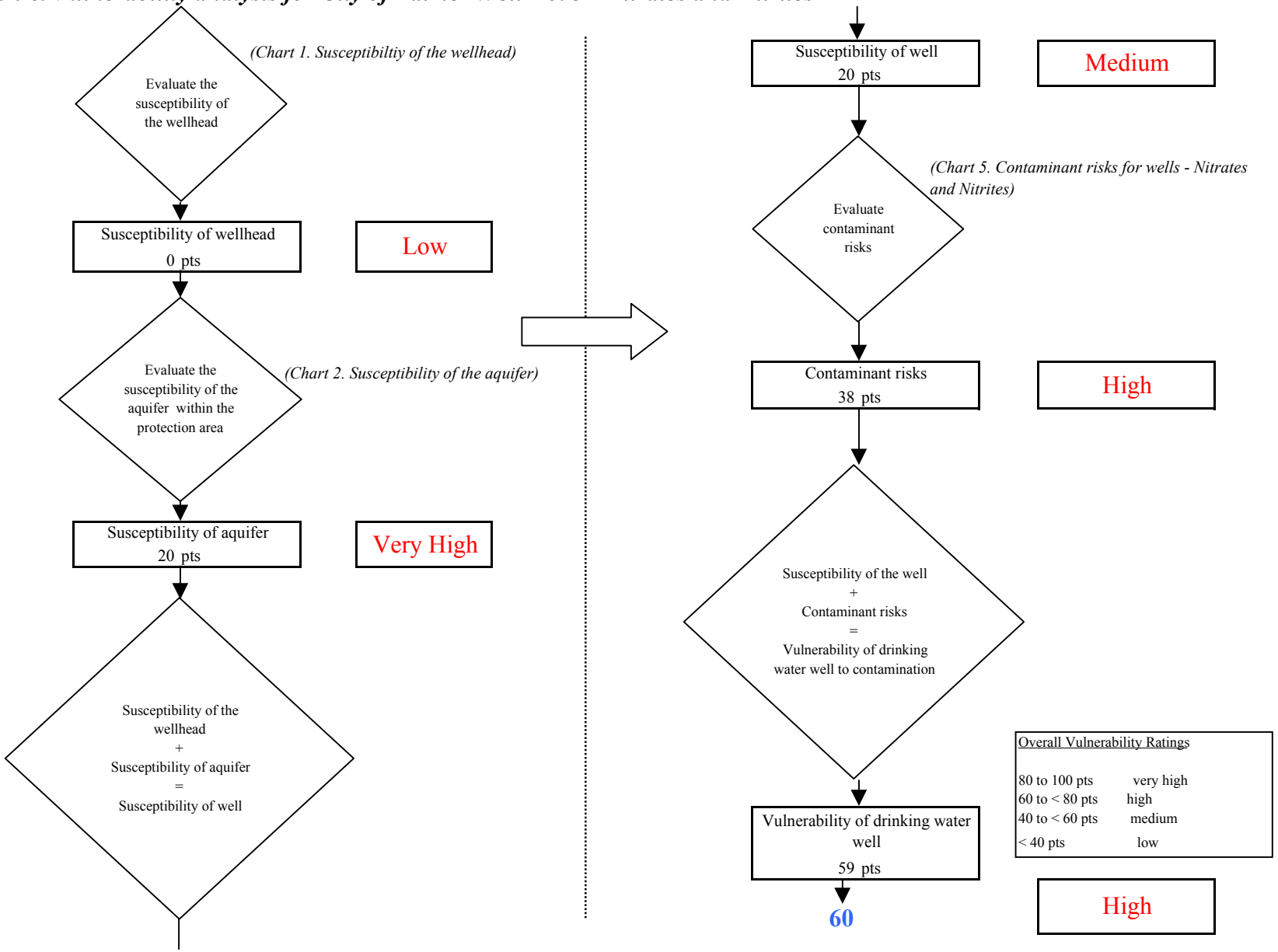


Chart 7. Contaminant risks for City of Palmer Well No. 3 - Volatile Organic Chemicals

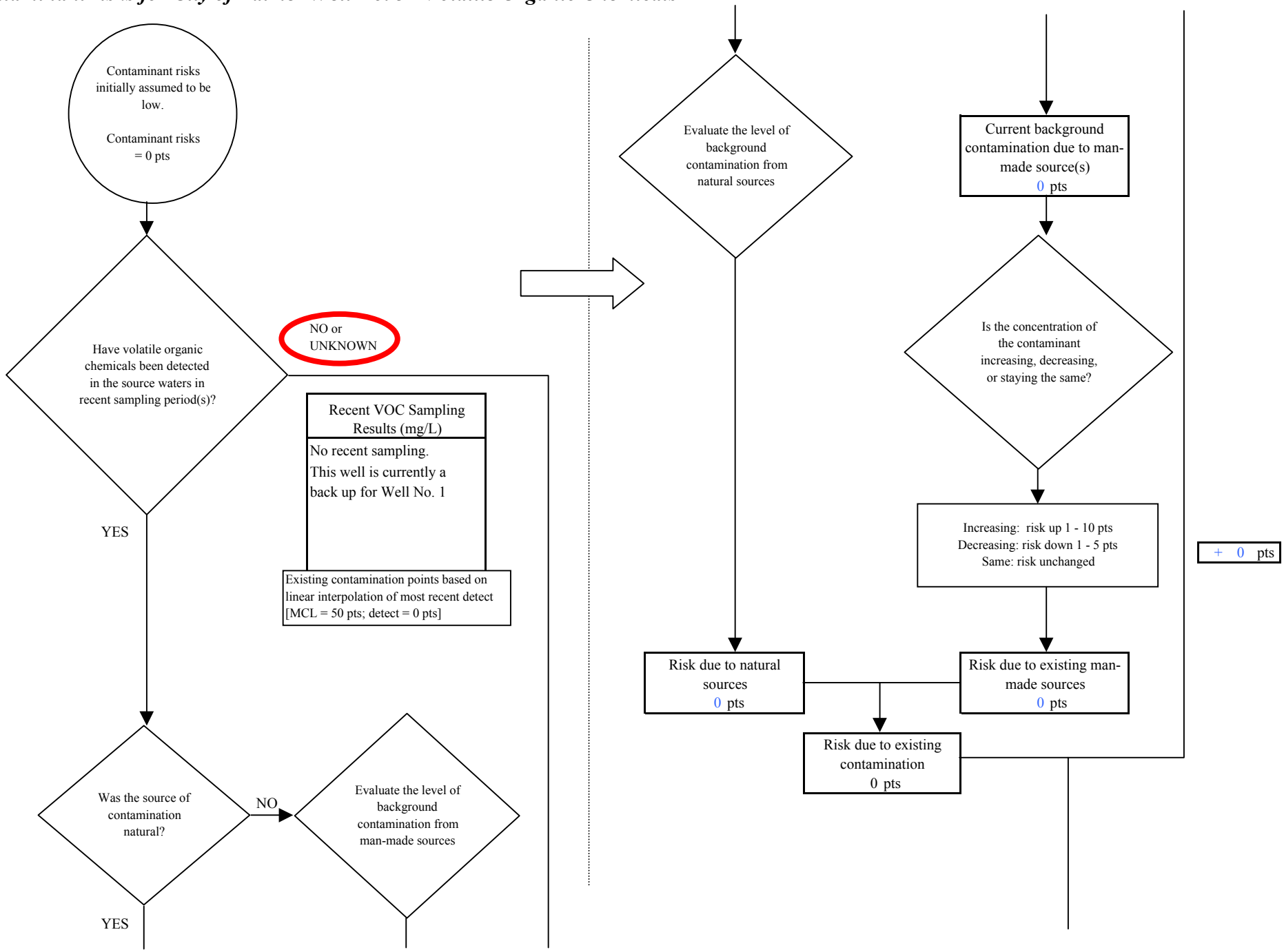


Chart 7. Contaminant risks for City of Palmer Well No. 3 - Volatile Organic Chemicals

+ 20 pts

What level of risk is associated with the highest and the next highest risk sources(s) of contaminants identified in Zones A, B and C?

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)	6	19	25

	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.

Initial assessment of risk posed by potential sources of contamination = 20 pts

Is the source aquifer fractured rock or karst?

YES

NO

Are all of the higher risk sources beyond Zones A and B?

NO

Risk unchanged

YES

Decrease risk 1 - 10 pts

- 0 pts

Are any significant sources within Zone A?

NO

Risk unchanged

YES

Increase risk 1 - 10 pts

+ 2 pts

Chart 7. Contaminant risks for City of Palmer Well No. 3 - Volatile Organic Chemicals

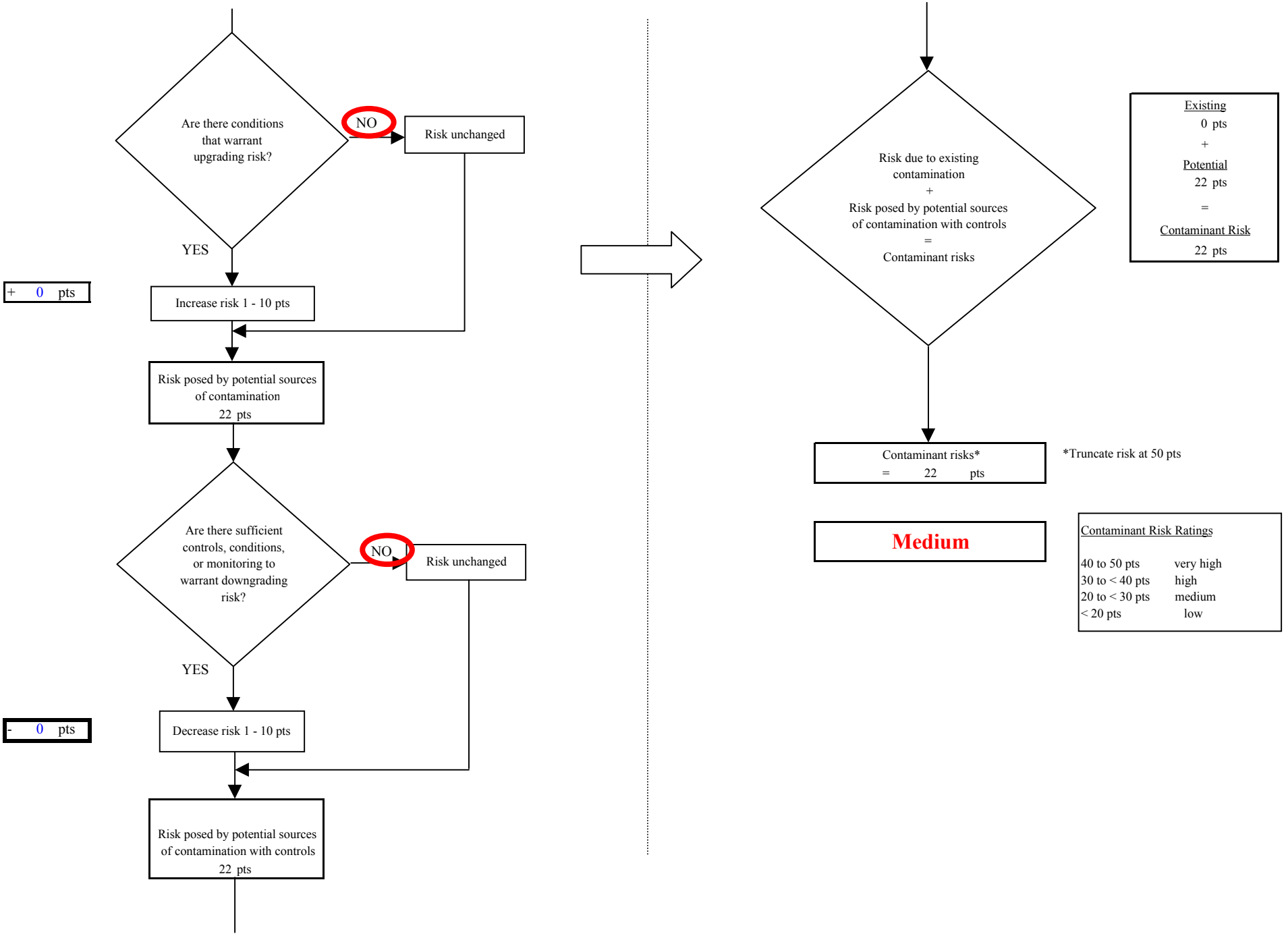


Chart 8. Vulnerability analysis for City of Palmer Well No. 3 - Volatile Organic Chemicals

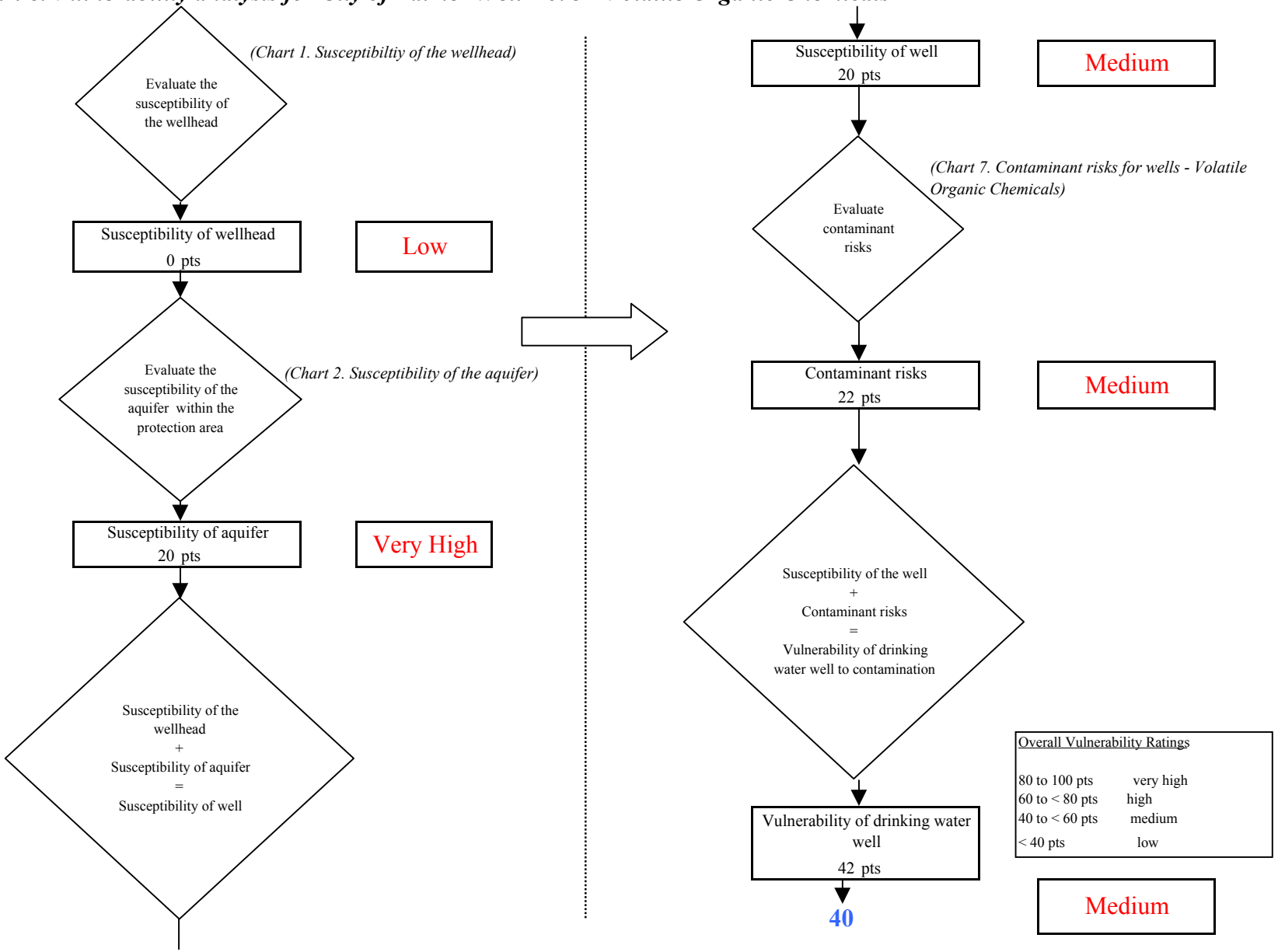


Chart 9. Contaminant risks for City of Palmer Well No. 3 - Heavy Metals, Cyanide and Other Inorganic Chemicals

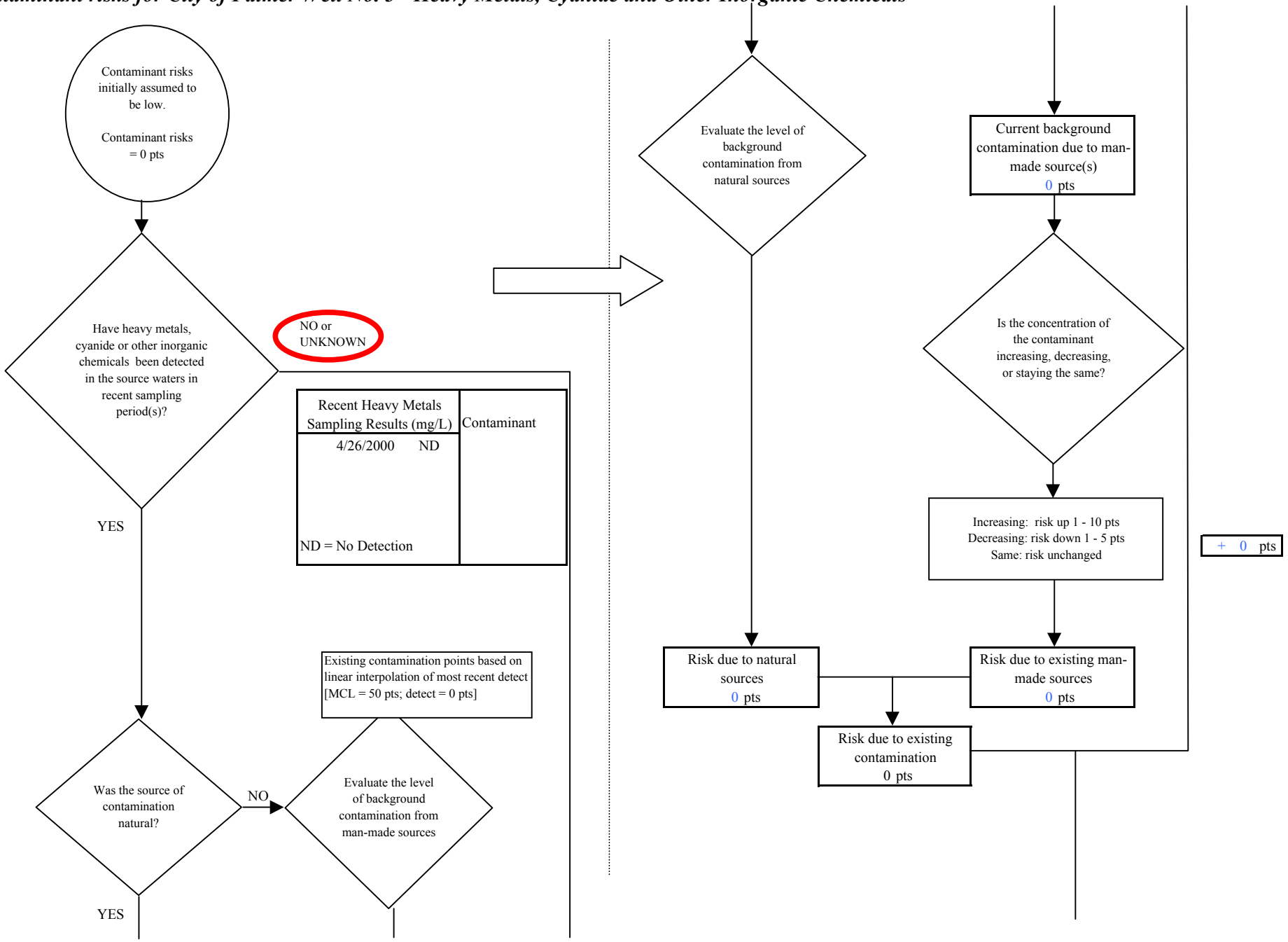


Chart 9. Contaminant risks for City of Palmer Well No. 3 - Heavy Metals, Cyanide and Other Inorganic Chemicals

+ 10 pts

What level of risk is associated with the highest and the next highest risk sources(s) of contaminants identified in Zones A, B and C?

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	7	10

	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.

Initial assessment of risk posed by potential sources of contamination = 10 pts

Is the source aquifer fractured rock or karst?

YES

NO

Are all of the higher risk sources beyond Zones A and B?

NO

Risk unchanged

YES

Decrease risk 1 - 10 pts

- 0 pts

Are any significant sources within Zone A?

NO

Risk unchanged

YES

Increase risk 1 - 10 pts

+ 2 pts

Chart 9. Contaminant risks for City of Palmer Well No. 3 - Heavy Metals, Cyanide and Other Inorganic Chemicals

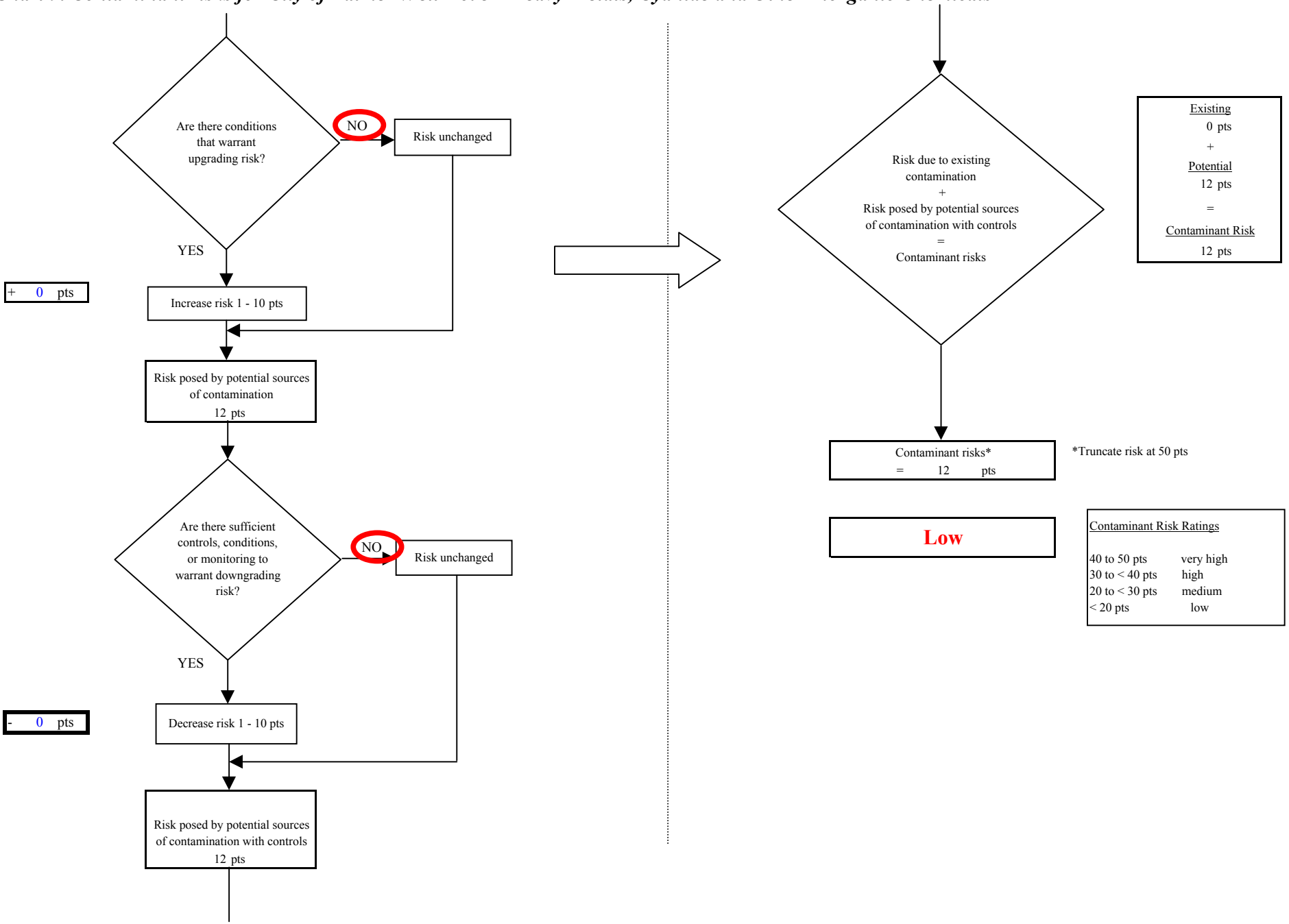


Chart 10. Vulnerability analysis for City of Palmer Well No. 3 - Heavy Metals, Cyanide and Other Inorganic Chemicals

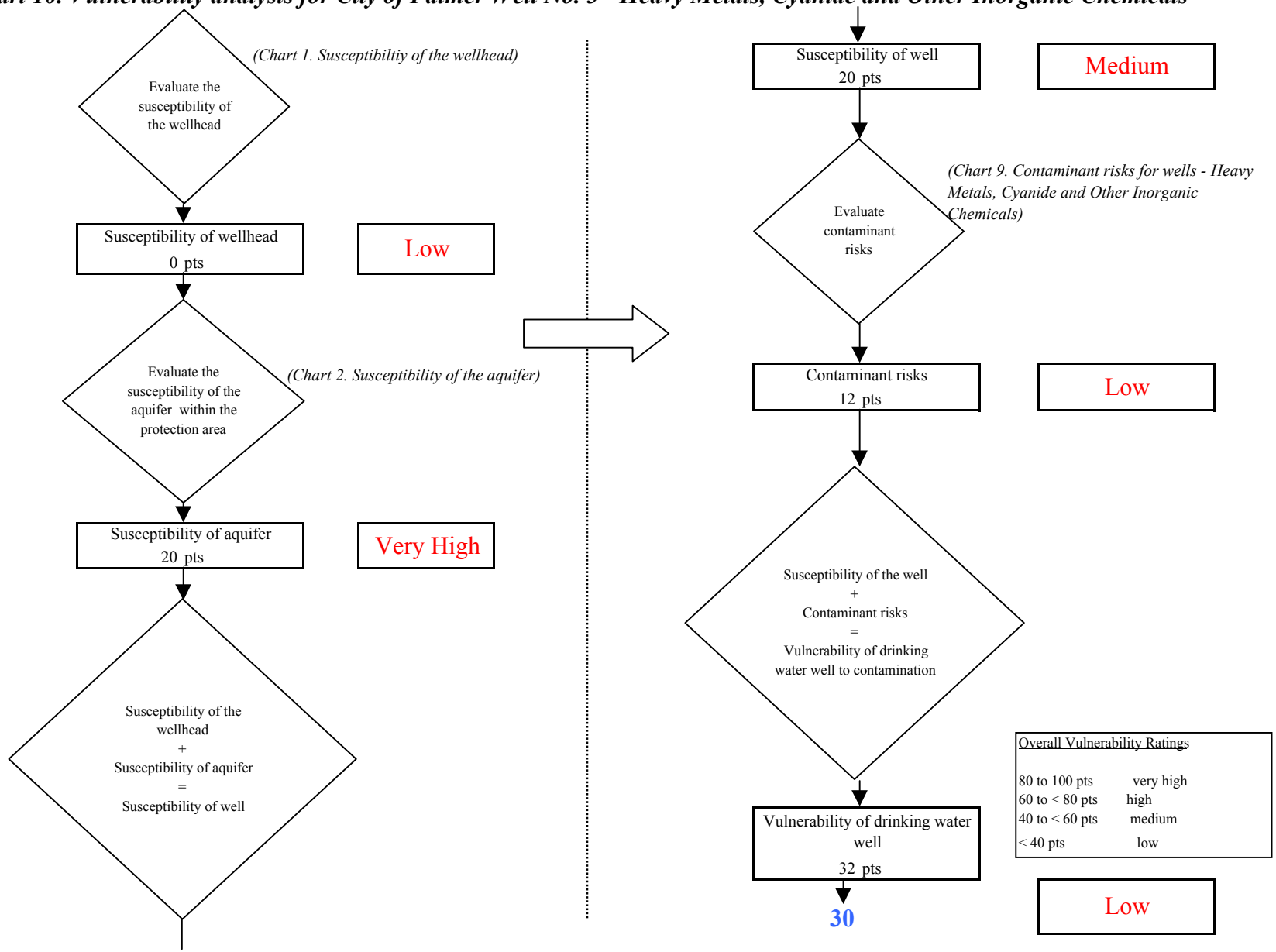


Chart 11. Contaminant risks for City of Palmer Well No. 3 - Synthetic Organic Chemicals

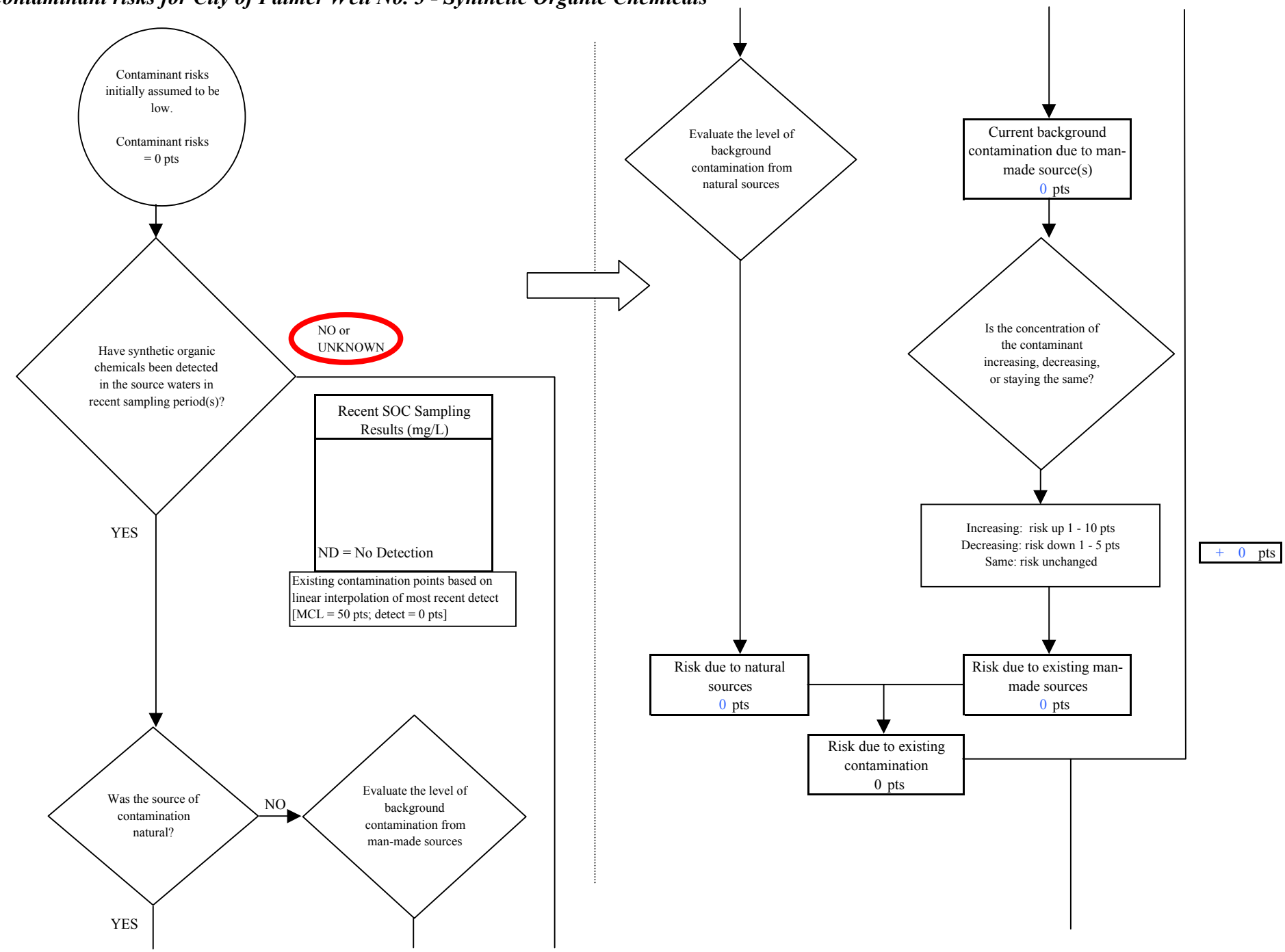
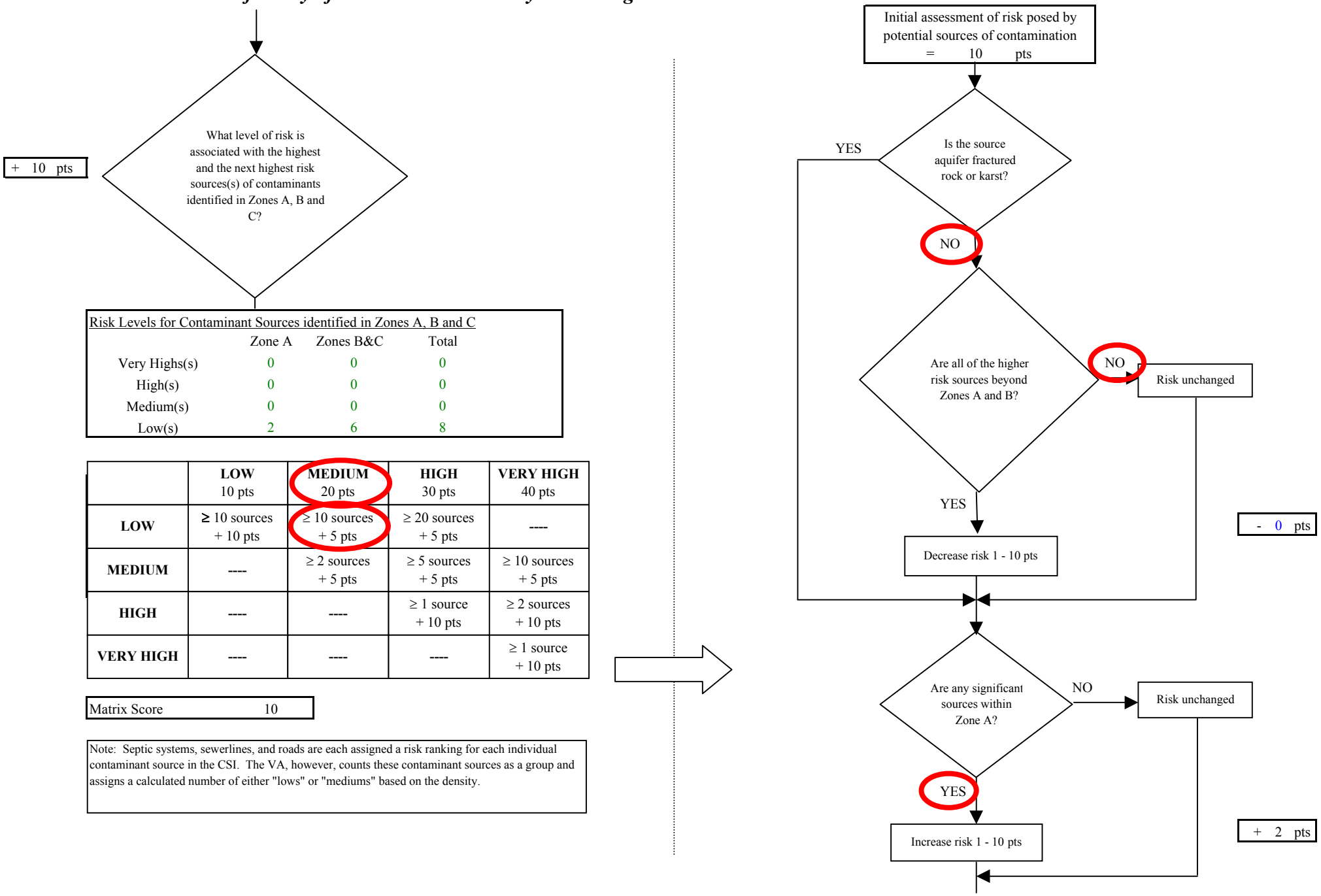


Chart 11. Contaminant risks for City of Palmer Well No. 3 - Synthetic Organic Chemicals



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	6	8

	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 11. Contaminant risks for City of Palmer Well No. 3 - Synthetic Organic Chemicals

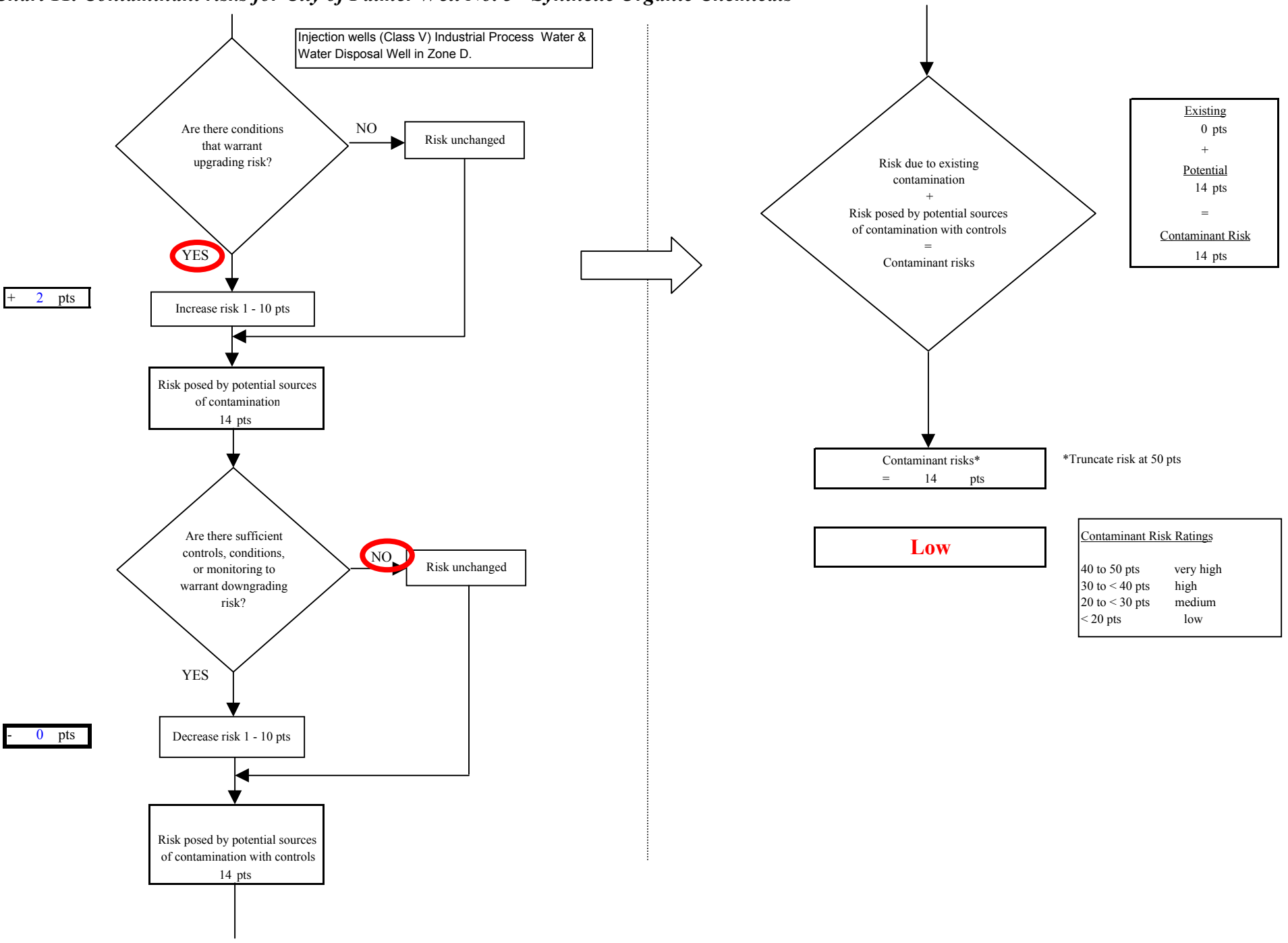


Chart 12. Vulnerability analysis for City of Palmer Well No. 3 - Synthetic Organic Chemicals

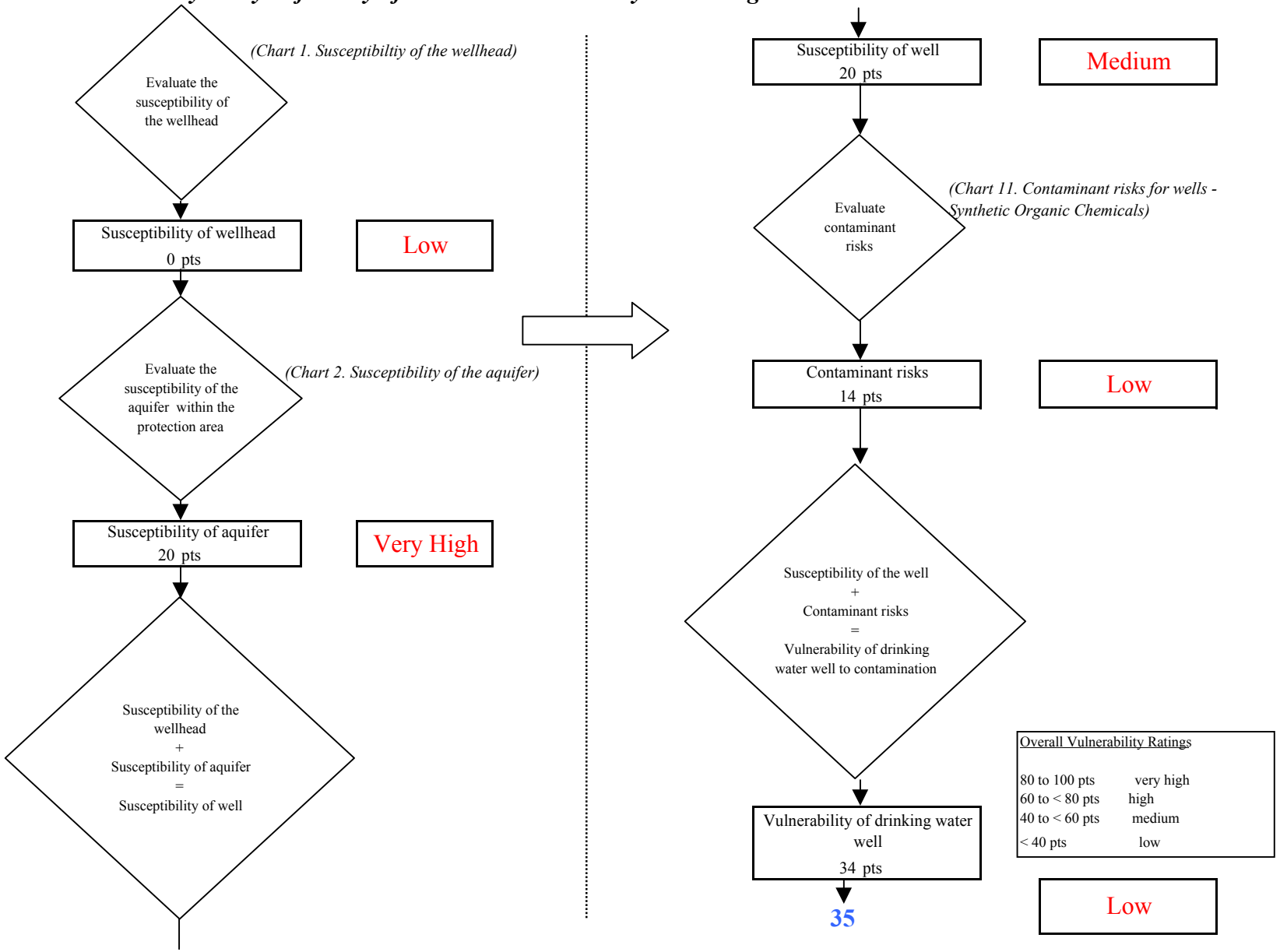


Chart 13. Contaminant risks for City of Palmer Well No. 3 - Other Organic Chemicals

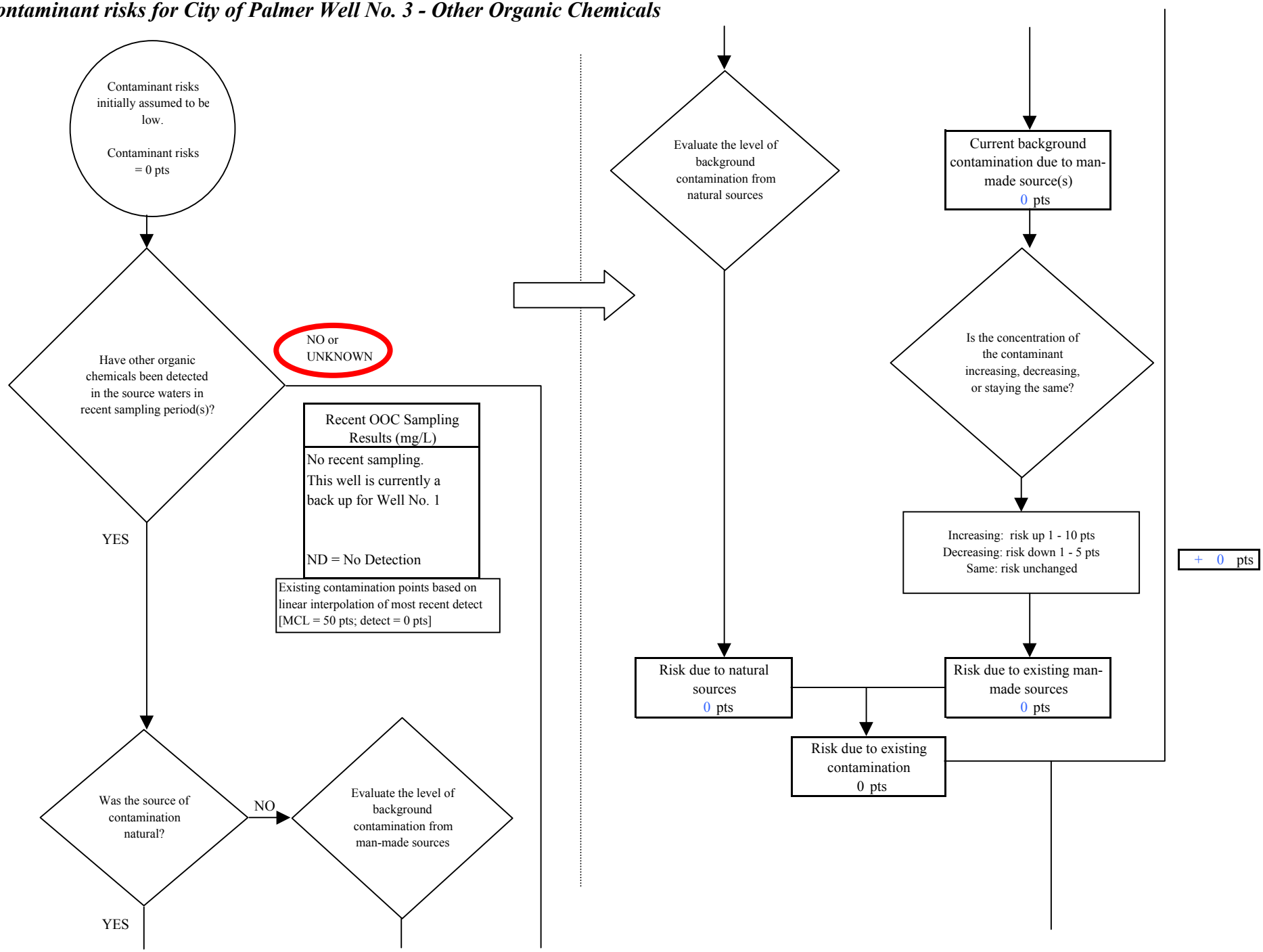
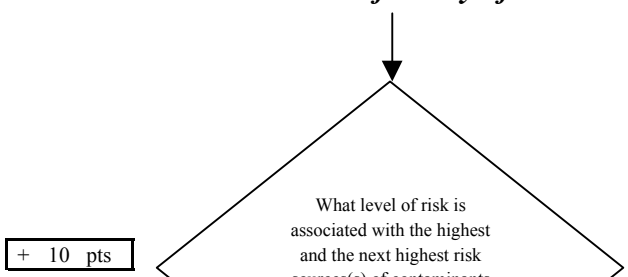


Chart 13. Contaminant risks for City of Palmer Well No. 3 - Other Organic Chemicals



+ 10 pts

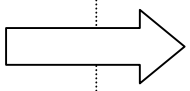
Risk Levels for Contaminant Sources identified in Zones A, B and C

	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	6	9

	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.



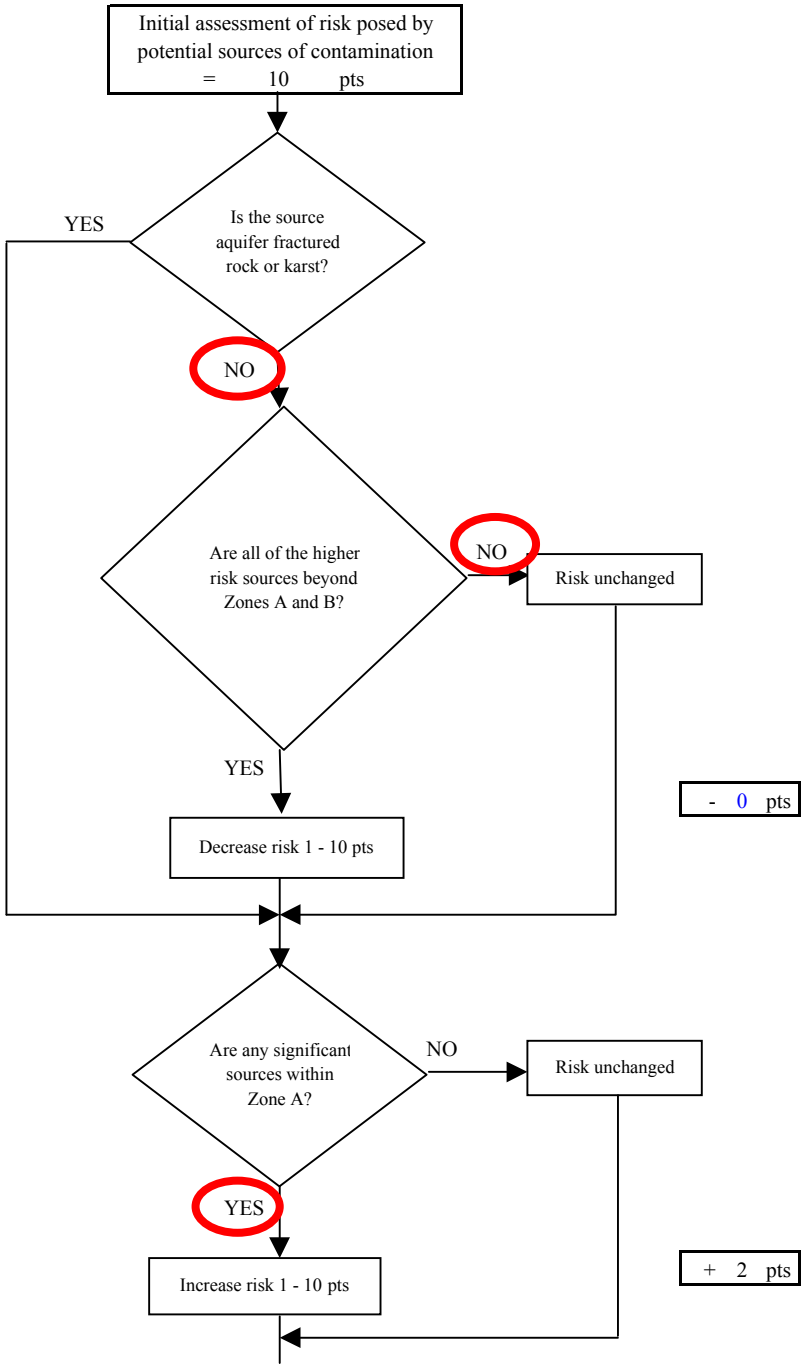


Chart 14. Vulnerability analysis for City of Palmer Well No. 3 - Other Organic Chemicals