

SANITARY
FACILITY
EVALUATION
GUIDELINES

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KENT COUNTY HEALTH DEPARTMENT

KENT COUNTY, MICHIGAN

KENT COUNTY HEALTH DEPARTMENT



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SANITARY FACILITY EVALUATION GUIDELINES

For many years, the Kent County Health Department has offered Sanitary Facility Evaluations as public services to individuals requesting assistance in determining legal compliance and the operational adequacy of on-site water supply and sewage disposal systems. These evaluations are usually performed at the request of a building owner, realtor, a buyer and realtor or a lending institution.

In an effort to assure consistent and accurate evaluations of water supply and sewage disposal systems, the Kent County Health Department developed the Sanitary Facility Evaluations Guidelines. Enclosed, please find updated copies of the Guidelines for your reference. The Guidelines are a compilation of state and local regulations and program policies related to the evaluation of these systems.

The changes from previous evaluation criteria were made in an effort to provide new owners of evaluated property sites with more detailed information about the safety and operational adequacy of the systems evaluated. These policy changes will place a heavier burden of proof on existing homeowners when there is no documentation of well depth and/or septic system location. The Guidelines will be implemented, June, 1998.

If you have questions concerning any portion of these Guidelines, please contact the Environmental Health Division at (616) 336-3089, and we will be happy to assist you.

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Sample Forms:

**Evaluation Request, On-Site Water Supply System and/or
Sewage Disposal System**

Sanitary Facility Evaluation Inspection Record

Variance/Deviation Record

On-Site Sewage System Statement (Pump Card)

Water Well and Pump Record

On-Site Water Supply/Sewage Disposal Evaluation Report

I. INTRODUCTION

The Sanitary Facility Evaluation Guidelines will serve as a comprehensive reference for sanitarians and other health department staff involved in providing sanitary facility evaluations in Kent County, Michigan.

The Guidelines are compilation of state and local laws and office policy related to private and public water supplies, on-site sewage disposal systems and sanitary facility evaluations. This material has been reorganized and updated to assist sanitarians in providing reports which are technically accurate and executed in an efficient manner.

II. STATEMENT OF PURPOSE

Sanitary Facility Evaluations are provided as a public service to clients requesting the Kent County Health Department's assistance in determining the safety and operational adequacy of on-site water supply and sewage disposal facilities serving existing residential dwellings and commercial buildings. Properties for which applications are received are evaluated to determine each facility's relative acceptability. A report which details the results of the evaluation is provided to the applicant. Where deficiencies are noted, recommendations for correction are identified. The recommendations, unless otherwise stated, do not constitute a violation notice or order to correct.

III. SCOPE AND LIMITATION

Because many factors can influence the successful operation of on-site water supply and waste water disposal systems, findings reported by the Kent County Health Department should not be construed as a guarantee of future system performance.

IV. LEGAL AUTHORITY

Authority to conduct sanitary facility evaluations is provided in Section 333.12708 Part 127 of Act 368, PA 1978, Michigan Public Health Code, Section 3.4 of Water Supply Regulations of Kent County Michigan, 1996 and Section 404 of the Sewage Disposal Regulations for Kent County, Michigan. Facilities are evaluated in terms of their conformance with state and local laws and Department criteria. Facilities constructed prior to the effective dates of such laws and Department criteria are reviewed in terms of their conformance with criteria and principles generally accepted by the environmental health profession.

V. EVALUATION CRITERIA

5.01 Water Supply - Private Supplies

Part 127, Act 368, PA 1978, as amended and Administrative Rules
Water Supply Regulations for Kent County, Michigan, 1996

5.02 Water Supply - Public Water Supplies

Act 399 of PA 1976 and Administrative Rules, Safe Drinking Water Act

5.03 On-site Sewage Disposal Systems - Single and 2 Family Dwellings

Sewage Regulations for Kent County Michigan, 1995

5.04 On-site Sewage Disposal Systems - Multi-family Dwellings & Commercial Buildings, less than 10,000 gpd

Michigan Criteria for Subsurface Sewage Disposal, 1994 edition

VI. EVALUATION PROCEDURES

6.00 **General**

The evaluation of sanitary facilities is to include any on-site water supply and sewage disposal system present at the time of inspection. Findings are to be documented on the "Sanitary Facility Evaluation Inspection Record" (EH 63.B) and are to be based on a physical inspection of the system and/or documentation found during the record review. When this is not possible, the item in questions is to be marked "Not Determined". When a comment is made that requires a qualifying statement, it is to be placed in the "Comments Concerning Inspection Findings" section of the Inspection Record. Please refer to Section XII FORMS for a copy of the Inspection Record.

Information evaluated for the purpose of making recommendations concerning the on-site water and septic facilities is derived from the record review, client provided documents and site inspections.

6.01 **Record Review**

Records which are to be considered in the evaluation process should include, but are not limited to:

- * Evaluation Request for On-site Water Supply and/or Sewage Disposal System
- * Pump Cards
- * Well Screen, (current edition)

- * Well Logs
- * Septic System Permits
- * Well Depth Verification Information
- * Complaint Records

These items, when available, are to be reviewed and relevant information transferred to the Inspection Record prior to the site inspection. When record information is incomplete or conflicts with other records or applicant information, a note is to be made in the “Comments” section of the Inspection Record. The conflicting information and any unanswered items on the Inspection Record are to be investigated during the site inspection.

6.02 Site Inspection

1. Does the owner know or have access to information needed for the evaluation? (Example: omissions on request form, resolution of conflicting documents)
2. Based on the file review, is it necessary to make a site visit?
3. When entering the structure, is an adult going to be present? During what period of time will they be present? (See *Unescorted Entry Upon Private Property*) Section 8.02
4. Has the owner or agent been notified that a pump card or other system verification is required? (See *Cleaning of Septic Tanks*)
5. If the facilities being evaluated are used for commercial or public purposes, which sewage disposal or public water supply regulations apply? (See *Evaluation Criteria*) Section 11.03

Requests and answers to questions posed to the owner or agent are to be documented in the “Comments” section of the inspection record with the source of the information identified.

During the site inspection, the items which remain to be answered or verified are evaluated. Due to the variety of site and seasonal conditions, it is not always possible to use the evaluation methods that would produce recommendations based on conclusive evidence. The extent of the site investigation is a matter of professional judgment by the sanitarian. The decision to use or not to use an evaluation method(s) will be considered appropriate when:

1. The extent of the evaluation supports the recommendation
2. The source and/or reasoning for the recommendation is documented

6.03 Water Supply

1. Visual inspection of well components and water distribution system including well head termination, casing size, pump type and location, storage tank location, water service lines and water treatment devices
2. Measurement of well isolation with regard to sewage disposal system and other sources of contamination, both on and off-site. When direct measurement is not possible, use the Pythagorean Theorem, found in Appendix A
3. Measurement of well production as described in Appendix B
4. Sampling of the water supply for coliform bacteria, nitrates, and other water quality parameters as necessary

6.04 **Septic Systems**

1. Physical measurement of isolation distances as described in Table VI-A of "Sewage Disposal Regulations for Kent County, Michigan"
2. Visual evaluation of the septic system area
3. Auger boring into the absorption system and/or adjacent soils (except for sand filter and infiltrator)
4. Visual inspection of the interior building plumbing with special attention to plumbing fixtures not routed through the system, water softener, and footing drains connected to the system

VII RECOMMENDATIONS

7.00 Recommendations are made after considering information from the file review and inspection findings as documented on the Inspection Record. Recommendations are made for each system evaluated and are as follows:

1. System has been determined to conform with current standards
2. Because of above noted deficiencies, the indicated system may not meet current construction standards. However, the system is functioning adequately at this time and does not constitute a health or safety hazard
3. The indicated system does not conform to current standards and may constitute a health or safety hazard
4. An adequate assessment of the condition of the system could not be made

7.01 **Recommendation 1**

Systems which qualify for reporting under Recommendation 1 are to meet the following criteria:

Water Supply

1. Water sample results for nitrate, nitrite, fluoride, bacteriological and other parameters with known health effects are below the maximum contamination level (MCL)
2. A copy of the well log must be provided to the Kent County Health Department and indicate conformance with the regulations for the type of construction applicable to the well's proposed use
3. Physical measurement of well isolation reveals conformance with applicable standards
4. Measurement of well production is found to be greater than 3 gpm, as determined by the procedure listed in Appendix B

Septic System

1. A copy of the pump card, if required, reveals conformance with current standards and shows no sign of sewage system failure
2. A copy of the sewage system permit reveals conformance with current standards
3. An evaluation of the system is made and it is determined that there are no signs of septic system failure

7.02 **Recommendation 2**

Systems which qualify for reporting under Recommendation 2 are to meet the following criteria:

Water Supply

1. Water sample results for nitrate and bacterial analyses are below the maximum concentration level
2. A visual inspection of the well components and water distribution system reveals nonconformance with current applicable standards, however, the condition must not constitute a public health hazard (Variance or Deviation required)
3. Physical measurement of well isolation reveals conformance with current applicable standards or it is determined that the well isolation does not constitute a public health hazard (Variance or Deviation required)
4. The well must produce a minimum of 3 gpm through the pump cycle, as measured by the procedure listed in Appendix B

Sewage Disposal System

It is determined from the file review and/or site inspection that the system is composed of the following:

1. A septic tank with a minimum capacity of 750 gallons and in working condition
2. A soil absorption system that is not in a state of failure
3. A copy of the pump card, if required, reveals conformance with standards in place at the time of installation and shows no sign of sewage system failure
 - a. The system is not in a state of failure
 - b. The tank components are in good repair
4. The building served by the system is occupied

7.03 **Recommendation 3**

Systems for which all of the information is provided, but does not comply with the criteria for Recommendation 1 and 2 shall be marked under Recommendation 3. Examples are as follows:

Water Supply

1. Nonconformance to well isolation or well depth where a public health hazard is likely
2. Inadequate well production (less than 3 gpm)
3. Water sample results exceed the maximum concentration level
4. Well components are subject to flooding

Sewage Disposal System

1. Septic tank capacity is less than 750 gallons
2. System was found to be in a state of failure
3. Sanitary waste discharging to storm drain, surface water or ground surface

7.04 **Recommendation 4**

When information is not provided or conditions are encountered which make a thorough evaluation of the system impossible, Recommendation 4 will be marked. Examples are as follows:

Water Supply

1. Well depth not verified for shallow wells of unknown depth (see Well Depth Verification)
2. Unable to collect water samples
3. Unable to determine well isolation; 3rd party verification not received (See Well Depth Verification)

Sewage Disposal System

1. Pump card not received

2. The house is not occupied. The system could not be evaluated (See Sewage System Recommendations Based on a Limited Evaluation)

VIII. PROGRAM POLICIES

The following items represent a compilation of new and existing policies related to Sanitary Facility Evaluations. They are arranged into the following categories: Administrative; On-Site Water Supplies and On-Site Sewage Disposal Systems. The date listed references the time the policy was implemented.

8.00 Administrative

8.01 Variances and Deviations 2/98

Variances may be authorized only when it can be reasonably demonstrated that no hazard to public health and safety, no nuisance, and no degradation of the natural environment will result. Requests for Variances will be reviewed and approved by the Supervisor and if approved, shall be documented in writing on Form EH300.38 (5/97). The SFE report shall contain a description of the Variance, a statement of the reasons why the variance was authorized and conditions, if any, for which the Variance may be withdrawn.

8.02 Unescorted Entry Upon Private Property 10/22/89

All staff members must make a written notation on appropriate inspection records in all cases where entry to a private residence has occurred without a responsible adult being present. Information to be provided should include:

1. The date and time the inspection was made
2. The identity of the person who previously authorized entry (i.e. the owner, a Realtor or other agent)
3. The method by which access was gained to the property (i.e. "the house was unlocked", "door key under rug", "owner's child provided access", etc.)
4. Notation is to be made in the "Comments" section of the Inspection Record

8.03 Fee Waivers - Sanitary Facility Evaluations 5/19/86

SFE fees will not be charged under the following conditions:

1. When an updated SFE report is requested within 60 days of an initial SFE report. Such updated reports may be for any of the following purposes:

*Modifying facts contained in an original report, due to the availability of new information (i.e. well log, pump card, etc.)

*Reporting physical corrections to previously reported deficiencies affecting either the water supply and/or sewage disposal system

2. For any written request approved by the Director 2/98

8.04 **Timely Close-out of Reports 2/98**

The following should be used as a general rule when closing out reports:

Evaluations are to be closed out 30 days following the service request. Closing a report consists of sending out the report based on available information

8.05 **Authorization of Final Sanitary Facility Evaluation Reports 2/98**

Whenever possible, the sanitarian having conducted the field work for a specific sanitary facility evaluation report should receive all test results and septic tank pump cards. The sanitarian or supervisor, shall sign the final report after they have reviewed and approved its contents.

8.06 **Request for Partial SFE Evaluations 2/98**

If a separate well or sewage disposal system evaluation request is received and it is determined that the request is to satisfy the requirements of a lending institute or private contract, both systems shall be evaluated, and the report completed prior to release.

This includes requesting that the septic tank be pumped out, if necessary, and certification card submitted.

The evaluation is take into consideration isolation distances, obvious failures, or other potential health hazards or limitations as it relates to the well and septic systems. Documentation indicating the reason for not evaluating the system, is to be included in the final report, if the evaluation cannot be made.

8.07 **Evaluation Time Limit 7/14/71**

In order to provide uniformity in our evaluation of septic tank and water supply systems, a 60 day time limit will apply to the validity of SFE reports.

If a second evaluation is requested for the property within 60 days and the sanitarian determines that another inspection is needed, require that a separate application be submitted and the appropriate fee collected.

8.08 Pending Request and/or Materials 4/23/79

No evaluations are to be made until the application has been submitted and the fee paid.

All evaluations which are in a pending status are to be filed in the sanitarian's pending file.

It will be the sanitarian's responsibility to attach the lab reports to the appropriate request. Be sure that you properly fill out all lab request forms before you send them to the lab so they can be properly identified when returned.

The completed report is to be given to your supervisor for review and initial. If you need a report to be typed by a certain time, discuss it with your supervisor.

IX. ON-SITE WATER SUPPLY

9.00 Bacteriological Water Sample Results Reporting "ND" Can Be Considered Safe.

9.01 Resampling Policy for Positive Coliform Test Results 2/98

When the initial water sample results report coliform growth, it will be necessary that 2 consecutive safe bacteria sample results be obtained prior to considering the supply safe.

Consecutive samples generally means the second check sample is collected at least 6 hours after the previous check sample is taken.

9.02 Point of Use Water Treatment Devices 2/98

The Department does not approve water treatment devices intended to treat water and meet a particular health standard unless there is no other alternative to providing a safe water supply. All reasonable alternatives such as a deeper well, relocation of the well, etc., must be exhausted prior to considering approval of a treatment device. Approval of such devices must first be endorsed by supervisory staff, and documented as to the justification for alternative correction.

After determining that a property can not provide water supply within the acceptable maximum contamination level (MCL), a water treatment device meeting recognized 3rd party standard, may be installed to reduce the parameter within acceptable limits. If two consecutive acceptable samples are obtained within 48 hours, the supply can be

accepted. Full disclosure of source conditions are to be reported. A variance is required, approved by supervision.

9.03 **Analysis of Drinking Water by Private Laboratories 11/15/82**

The following procedures apply if a client wishes to utilize the services of a private laboratory:

1. The laboratory must be certified by either Michigan Department of Environmental Quality or MDEQ to perform the required analysis
2. The requesting party is to make all arrangements with the private laboratory for sample collection and payment of lab fees
3. Only laboratory staff are to collect the sample. Environmental Health staff are not to collect the sample or deliver samples to the laboratory
4. Official laboratory results are to be received prior to our processing report forms

9.04 **Contamination Site Reporting Procedures 2/98**

The "Contamination Sites for Kent County, Michigan" and other maps that may be developed provide information on contamination that may affect groundwater. Information concerning these sites has been provided, and the locations should be considered when responding to requests for Sanitary Facility Evaluations which may be either in or adjacent to these areas.

If contamination sites are found to be a factor in specific situations, apply the following guideline:

On the report prepared for the requesting party, make mention of the fact that the property being evaluated lies within or near an identified contamination site. If possible, indicate the contaminant. Suggest that further testing for the presence or absence of such contamination may be advisable.

9.05 **Screened Well Vents 1/26/84**

The overlapping, drip-proof type well caps commonly used on submersible pump installations do not effectively eliminate the entrance of insects into the well. Venting of the well via the well cap during pumping causes insects and other material to be drawn

into the well. This condition is considered unacceptable from a public health standpoint.

Wells with submersible pumps must have watertight caps with screened vents or overlapping drip-proof type caps with modifications to prevent the entrance of insects into the well. Screening shall be a minimum of 24 mesh per inch and shall be constructed of corrosion-resistant material. Wells installed on or after September 1, 1984 shall conform with the screening requirements.

9.06 **Well Depth Verification 1/1/90**

When a well log is not available for an existing well, the following criteria shall be considered when determining acceptable depth:

Suspect Wells

Conditions which suggest that a well is less than 25 feet include:

- * Hand driven well construction
- * Shallow well jet pumps
- * High water table in combination with hand driven casing and/or shallow pumps

Verification of well depth may be accomplished by:

1. Written documentation by a licensed well driller, licensed pump installer or licensed master plumber
2. The sanitarian must be present to witness the measurement by the owner. The disassembly, measurement and reassembly are to be performed by the owner or his licensed contractor
3. The owner-installer may submit a well log

Suspect wells for which documentation is not available shall be marked under Recommendation No. 4

Non-Suspect Wells

Non-suspect wells have the following characteristics:

1. The well will be serviced by a 2 pipe deep well jet or submersible pump.

2. The well casing is 4" in diameter or greater and terminates with a pitless adapter or in an approved basement offset.
3. Wells in the area is known to be at depth of greater than 25 feet.

When a well log is not available but the well is otherwise acceptable and considered to be non-suspect, it may be marked under Recommendation No. 2.

9.07 **Minimum Well Production 1/1/90**

A well must produce an adequate volume of water for the intended use. For private water supplies, a minimum of 3 (gpm) gallons per minute shall be provided as calculated by methods described in Appendix B.

9.08 **Water Sampling When Well Depths are Verified 5/9/90**

When conducting Sanitary Facility Evaluations, water samples are collected as part of the initial and in most cases the only site inspection. However, since the implementation of the SFE Guidelines, we have also taken water samples after suspect wells have had their depths verified.

A safe bacteriological and nitrate sample collected during the initial site inspection, will be considered acceptable for evaluation purposes.

The person performing the well depth verification is still obligated to chlorinate the well upon completion. If we suspect that the water supply has been contaminated since the original water sample (flooding, back-flow) we may require that another sample be taken prior to making report recommendations.

9.09 **Yard Hydrants for Public Water Supplies 5/13/91**

The use of frost-proof yard hydrants with buried stop and waste valves is prohibited on Type I, II and III public water supplies as per Rule 1108 (3), Act 399, PA 1976. This applies to water supplies for food service establishments, churches, grocery stores, campgrounds, mobile home parks, grade A dairy farms, duplexes, nursing homes, office buildings and other public facilities. (See Groundwater Administration File for current approved frost-free listings.)

9.10 **Yard Hydrants for Private Water Supplies 2/98**

When conducting a SFE at a single family home and encountering a yard hydrant on a well constructed prior to April 21, 1994, the following will apply:

1. If the hydrant is attached directly to the casing or pitless adapter, the supply cannot be approved until the hydrant is removed and replaced with appropriate fittings.
2. Hydrants installed on service line or other pressure lines can be approved until the well requires major repair.

Yard hydrants installed on or after April 21, 1994, shall be of an approved type as listed by MDEQ.

9.11 **Well Abandonment 2/98**

When conducting an SFE and encountering a well not properly abandoned, one of the following recommendations is to be made:

1. If the buyer provides a signed statement that the well will be upgraded to current standards or properly abandoned, Recommendation No. 2 can be made. A statement or summary of this agreement is to appear in the "Comments" section of the report.
2. If the requested statement outlined above is not provided. Recommendation No. 3 is to be indicated until such a time as the well is abandoned.

9.12 **Well Pits**

When encountering a well pit, you are instructed not to enter it. Pits are considered by MIOSHA as confined spaces which require special safety equipment to gain safe entry. If you are unable to complete your evaluation form the outside of the pit, the well will receive a Recommendation No. 4.

X. UNDERGROUND STORAGE TANKS (UST)

10.00 **Well/Underground Storage Tanks (UST) Isolation Reporting Recommendations**

While performing an SFE, the presence/absence of an UST is to be documented. If an UST is present, determine the isolation distance from the on-site water supply.

The following is provided to give direction when encountering an UST during the course of a SFE:

1. The comments and recommendations are directed primarily toward private water supplies.
2. Public water supplies are subject to specific state and federal regulations.

3. It is acknowledged that there can be and often are, many variables that must be considered when evaluating the well/UST isolation distance. The indicated recommendations are suggested responses, however any of them could be used depending on the situation. Other comments/recommendations may also be appropriate depending upon available information.

XI ON-SITE SEWAGE DISPOSAL SYSTEMS

11.00 Sewage System Recommendations Based on a Limited Evaluation 1/1/90

When the evaluation of a sewage system is impeded by snowcover, absence of a permit or when the structure is not occupied, a judgment must be made as to the acceptability of the system. The decision shall be based on the following considerations:

1. The age of the system.
2. The condition of the system as determined from observation and/or soil boring into the system.
3. The size and location of the system.
4. The length of time the structure has been vacant.
5. The soil type.
6. Existing and proposed use of the structure.
7. Other reasonable evidence.

After considering the above, Recommendations No. 1, 2, 3 or 4 may be marked. The supportive details for the Recommendation are to be stated in the "Inspection Findings" section of the final report.

11.01 Minimum Septic Tank Size 10/25/77

All septic tank systems serving a single family residence must have at least one (1) tank with a minimum liquid capacity of 750 gallons.

11.02 Water Softener Discharge Reporting Procedure 10/21/87

If the sewage system is acceptable, either completely or provisionally, in all respects **except** for the water softener connection, report the system as acceptable by checking either Recommendation No. 1 or 2. In the "Inspection Findings" section, indicate that the water softener discharges into the septic tank and recommend that an alternative method be used for disposal of this wastewater.

Do not make it a requirement for your approval that the water softener be disconnected from the septic system.

11.03 **Cleaning of Septic Tanks 4/14/94**

Cleaning of the septic tanks is often necessary as part of an overall evaluation of an on-site waste disposal system evaluation to:

1. Determine size, location and construction of the tank(s).
2. Determine if the water level within the tank(s) is at normal operating depth.
3. Determine if the outlet baffle is in place and operating properly.
4. Determine if there is any runback from the drainage system. If so, this may indicate drainage system failure.

All septic tanks at the address for which the evaluation is requested shall be cleaned by a licensed septic tank cleaner.

The septic tanks do not need to be cleaned if:

1. The tanks have been cleaned within the last 2 years and a septic tank cleaning certification form is provided by the cleaning contractor.
2. The system, including the tanks, is less than 2 years old.
3. The drainage system is identified to be in a state of failure and tank cleaning will occur at the time of system repair.

If requested by the applicant, only the first tank need be cleaned if the following conditions are met:

1. Both tanks have been cleaned within the last 4 years and the outlet baffle in the first tank is in place and functioning properly. A certification card, completed at the time of the cleaning is documented within the Kent County Health Department files.
2. The system is less than 4 years old.
3. The size of the tanks meets KCHD minimum requirements.

A septic tank cleaning certification form or equivalent receipt shall be completed by the cleaning contractor and submitted to the KCHD.

If, in the opinion of the sanitarian conducting the evaluation, site conditions indicate questionable system operation, it is appropriate to request the tank(s) be cleaned regardless of when they were last cleaned. A cleaning certification form or equivalent receipt needs to be submitted in these situations.

APPENDIX A

MEASUREMENT BY PYTHAGOREAN THEOREM

The following formula for the Pythagorean Theorem can be used when it is not possible to measure directly from the well casing to a component of the sewage disposal system:

$$c^2 = a^2 + b^2 \text{ or } c = \sqrt{a^2 + b^2}$$

c = hypotenuse

a + b = other sides of the right triangle

For this formula to work, a right triangle must be formed.

EXAMPLE

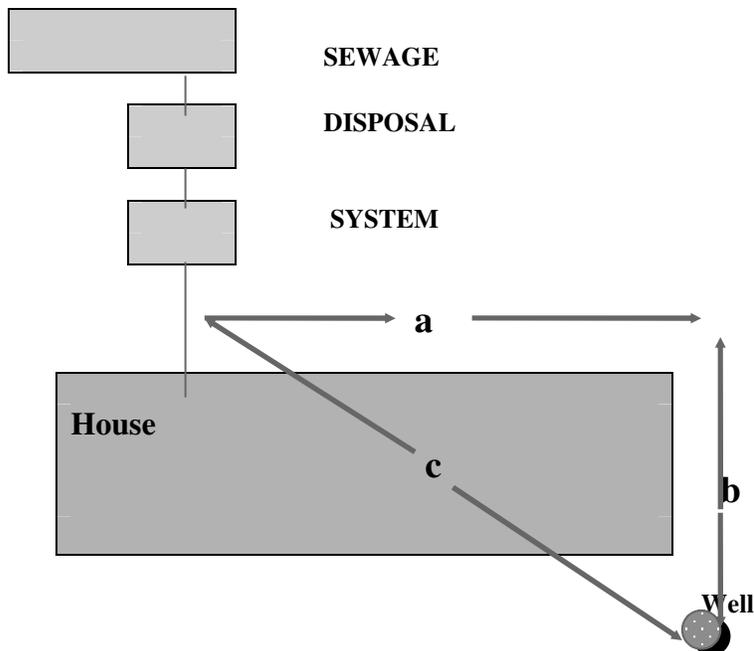
a = 33', b = 39', c = unknown

$$c^2 = 33^2 + 39^2$$

$$c = \sqrt{33^2 + 39^2}$$

$$c = \sqrt{1089 + 1521}$$

$$c = 51'$$



APPENDIX B

FIELD EVALUATION OF PUMP CAPACITY

Introduction:

Simple field procedures may be utilized by the sanitarian to estimate well production and evaluate pressure tank function. This information is essential for determining if a water supply will adequately meet demands within the facility.

Pump Capacity Evaluation:

1. Open the sampling tap near the pressure tank and drain water from the tank until pressure drops to the pump cut-in pressure. (Make sure no other water is being used in the building during the test.) On a submersible pump installation, it is often necessary to listen for a “click” in the pressure switch in order to signal the starting of the pump. Observe the pressure gage and note the pump cut-in and cut-out pressure.
2. When the pump starts, immediately close the sampling tap and measure the length of time required for the pump to fill the pressure tank and shut off. The length of time between the pump cut-in pressure and cut-out pressure is the pump running time.
3. After the pump stops, open the sampling tap, and using a gallon container, measure the volume of water that can be drained from the tank before the pump cut-in pressure is reached. When the pump starts, immediately close the tap and discontinue volume measurement. The volume of water measured is the usable tank volume.
4. Divide the usable tank volume by the pump running time to determine pump capacity.

EXAMPLE

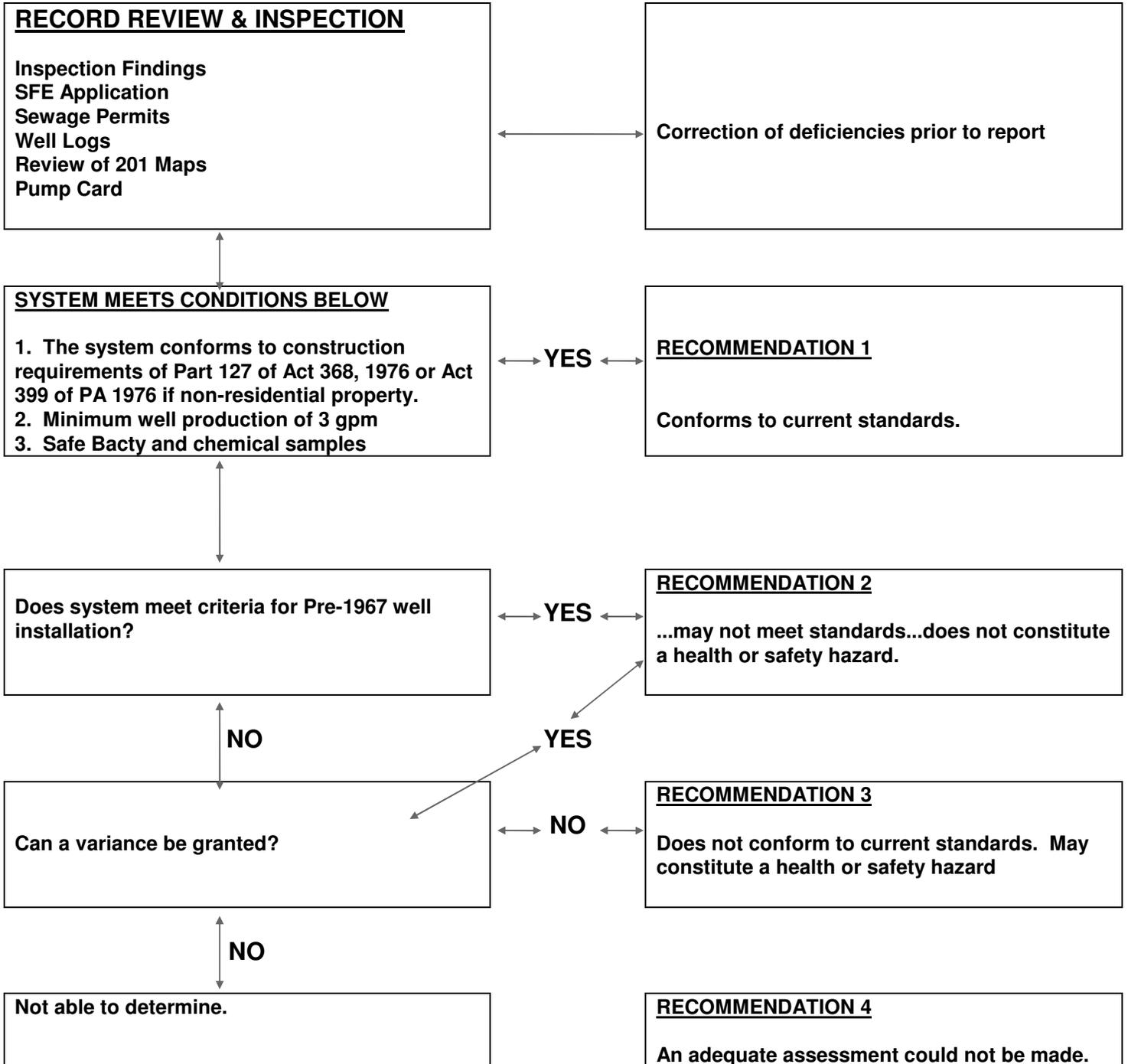
Pump running time = 30 seconds or 0.5 minutes

Usable tank capacity = 6.2 gallons

$$\text{Pump capacity} = \frac{\text{usable tank capacity}}{\text{pump running time}} = \frac{6.2 \text{ gallons}}{0.5 \text{ minutes}} = 12.4 \text{ gpm}$$

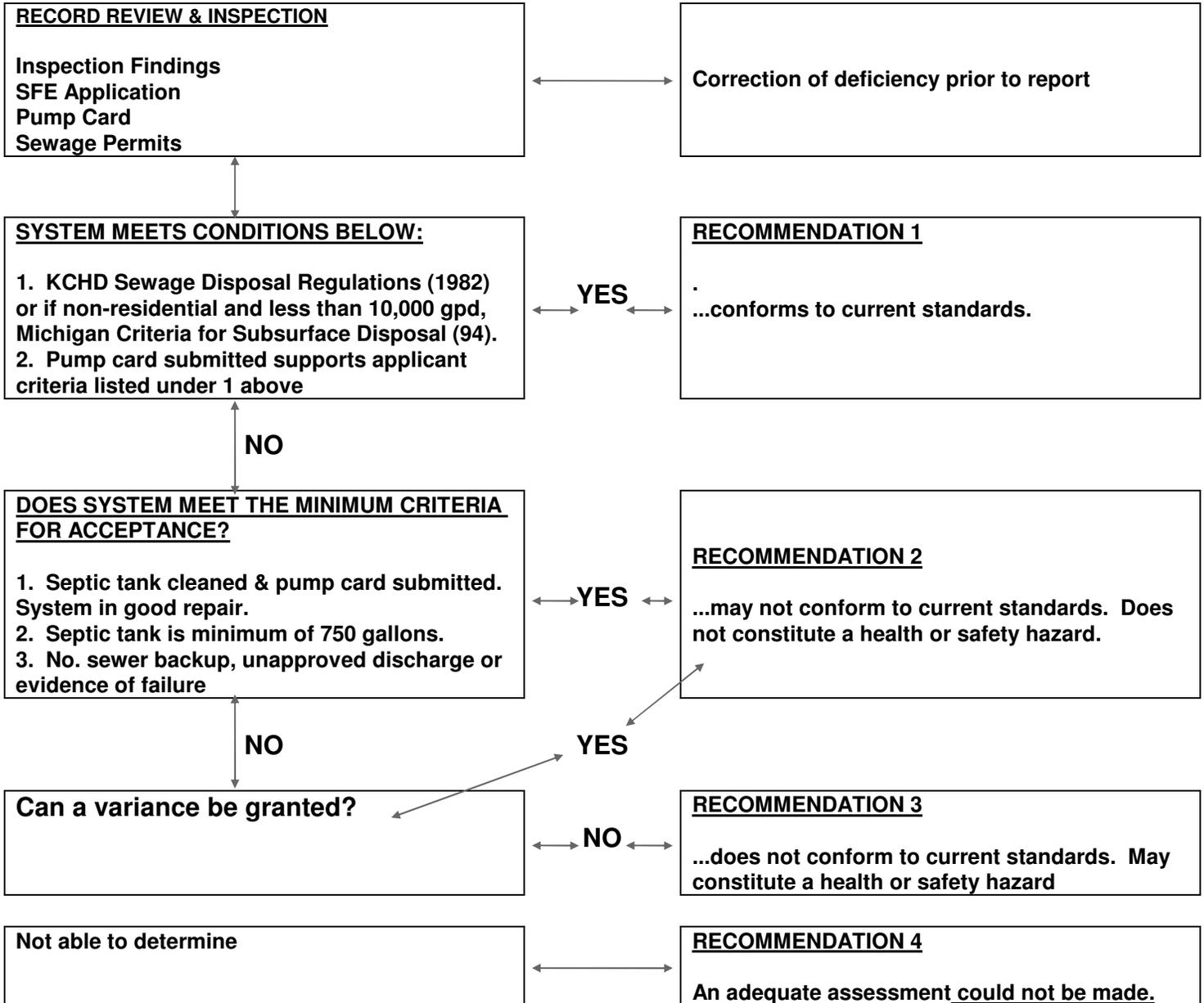
APPENDIX C

WATER SUPPLY DECISION TREE



APPENDIX D

SEWAGE DISPOSAL SYSTEM DECISION TREE



APPENDIX E

**Kent County Health Department
Sanitary Facility Evaluation Program
Service Activity Sequence**

1. The Evaluation Request for On-Site Water Supply System and/or Sewage Disposal System form and appropriate fee is received by the clerical staff. The money is cashed into the cash register, and the receipt given to the client, if the service is received over the counter. The service is logged into the Receipt Book, noting: service address, client name, date, check number and type of service. The Sanitary Facility Evaluation Inspection Record sheet is attached to the Sanitary Facility Evaluation Application and is put into the Incoming General Services box at the front register.
2. The supervising sanitarian takes the application and determines who it is assigned to by referring to the current General Sanitarian Area Assignments sheet. The initials of the assigned sanitarian are placed in the upper right hand corner of the application.
3. The supervising sanitarian enters the service in the S:EH.SHR\Activity.dbf.
4. The supervisor or assigned staff then use the Well Screen program to identify areas of concern as identified in the Well Screen Procedures. The findings are documented on the 'comments' section of the Inspection Record. The screened application is then given to the assigned sanitarian.
5. The sanitarian takes the application and services it as described in the current Sanitary Facility Evaluation Guidelines. When the inspection is completed, the sanitarian uses the Final Report Instructions Sheet to document findings. When completed, the Final Report Instructions sheet and all associated service documents are put in the supervising sanitarians "in" box for review.
6. The supervising sanitarian reviews the service to determine if it conforms to the current Sanitary Evaluation Guidelines. If it does not conform, it is sent back to staff with a note for completion. If it is accepted by the supervising sanitarian, the service document is initialed in the upper right hand corner of the application. The service is then closed out by the supervising sanitarian or assigned staff using the current date for 'date closed' in the S:EH.SHR\Activity.dbf. When completed, the service document is given to the office manager.
7. The office manager assigns the service to clerical staff and records the assignment in the service log maintained in the office managers office. The service document is then provided to the assigned clerical staff.
8. The clerical staff prepare a finished report based on the sanitarians Final Report Instructions. Upon completion, the comments section of the S:EH.SHR\Activity.dbf is updated with the clerical staff's name and date that the service report is mailed. The report is mailed to the client along with water sample result documents. The report may also be faxed to, or picked up by the client.