

TOWN OF PARADISE

RESOLUTION NO 05-15

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF PARADISE  
ADOPTING THE ONSITE SYSTEMS EVALUATOR HANDBOOK & TRAINING  
MANUAL FOR THE TOWN OF PARADISE ONSITE WASTEWATER  
MANAGEMENT ZONE

WHEREAS, The Town Council of the Town of Paradise adopted Ordinance No. 245 that readopted Chapter 5.14 of the Paradise Municipal Code regarding service of evaluating the performance of onsite wastewater treatment and disposal systems operation; and

WHEREAS, The Town of Paradise Onsite Wastewater Management Zone staff has prepared a handbook and training manual to provide the Town of Paradise Licensed Evaluators with direction, guidance and training to efficiently and consistently evaluate the wastewater systems in the Town of Paradise; and

NOW, THEREFORE BE IT RESOLVED by the Town Council of the Town of Paradise as follows;

The "Onsite Systems Evaluator Handbook & Training Manual" on file in the office of the Town Clerk and incorporated herein by reference and made part hereof this resolution is hereby adopted.

PASSED AND ADOPTED by the Town Council of the Town of Paradise this 12th day of April, 2005, by the following vote:

AYES: Steve "Woody" Culleton, Melvin "Sam" Dresser, Robin  
Huffman, Alan White and Scott Lotter, Mayor  
NOES: None  
ABSENT: None  
NOT VOTING: None



Scott Lotter, Mayor

ATTEST:

BY: Frankie Rutledge  
Frankie Rutledge, CMC, Town Clerk

APPROVED AS TO FORM:

BY: Dwight L. Moore  
Dwight L. Moore, Town Attorney



**TOWN OF PARADISE  
ONSITE WASTEWATER MANAGEMENT ZONE**

**ONSITE SYSTEMS EVALUATOR HANDBOOK  
AND TRAINING MANUAL**



**Adopted by the Town of Paradise  
Town Council  
April 12, 2005**

**Prepared by:  
Lloyd D. Hedenland, Sr.  
Town of Paradise  
Onsite Sanitary Official**

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## INTRODUCTION

The California State Health and Safety Code authorizes the formation of Onsite Wastewater Management Zones to maintain the existing and future use of onsite wastewater treatment and disposal systems. The Town of Paradise Onsite Wastewater Management Zone was originally and formally established by the Town Council as the onsite wastewater treatment and disposal system regulatory authority for the Town of Paradise in August, 1992.

In July, 1992 the Town Council established Chapter 13.04 of the Town of Paradise Municipal Code as the regulatory document under which the Town of Paradise Onsite Wastewater Management Zone operates.

In July, 1995 the Town Council adopted Chapter 5.14 of the Town of Paradise Municipal Code which prescribes a license program and requirements for individuals that evaluate onsite wastewater treatment and disposal systems.

Evaluations of all onsite wastewater treatment and disposal systems within the boundaries of the Town of Paradise Onsite Wastewater Management Zone are required to determine if a system is operating in substantial compliance with adopted wastewater system regulations. The wastewater system operating performance evaluation is designed to assure the long term successful use of wastewater systems within the Town limits for the protection of Public Health and Safety.

While the Onsite Wastewater Management Zone has provided certain instructions, forms and guidelines to the Evaluators, the Zone has not previously provided a Town Council Adopted Evaluator Handbook. It is intended that this adopted Evaluator Handbook will provide the Town of Paradise Licensed Evaluators with direction, guidance and training to efficiently and consistently evaluate wastewater systems in the Town of Paradise.

## EVALUATOR TOOLS

Town of Paradise Onsite Wastewater Management Zone Licensed Evaluators must acquire and maintain the minimum requirement of proper tools to effectively perform Evaluations. The purpose of this requirement is three fold:

1. It assures the resident or onsite system owner that the Evaluator has the capability to perform Evaluations in a technically competent and professional manner.
2. It provides symmetry between the various licensed Evaluators to aid efficiency in job completion.
3. It assures the Town of Paradise Onsite Wastewater Management Zone that the data produced and furnished by all Licensed Evaluators is of consistent quality when performing specific tasks such as “hydraulic load tests” and “solids quantity determinations.”

It is mandatory that every Licensed Evaluator maintain the following list of tools in his/her inventory. **[Note #1: The list does not include various sundry tools such as picks, shovels, and wrenches.]:** \_\_

1. **Portable Water Meter:** This meter can be a standard AWWA ½” water meter with appropriate standard hose fittings. The meter has a totalization and rate indicator. This meter shall be utilized on all hydraulic load test determinations as prescribed later in this manual. A stopwatch and five (5) gallon bucket is not acceptable for determining water input for a hydraulic load test.
2. **150 Lineal feet of ¾” garden hose:** This hose is utilized to convey water from “property supply” and connected to the Portable Water Meter for use in the hydraulic load test. Additionally, potable water hose water is utilized for “job cleanup” to leave the premises clean and non-obtrusive. Utilization of the

“owners” hose is not acceptable due to the potential of “sewage contamination” of their potable water hose.

3. **Sludge Judge:** A two (2) inch diameter, “clear” poly pipe with stopper, is required to assess the sludge depths in the inlet and outlet tanks of a septic tank. The sludge judge can be fabricated or purchased. As an alternate to the “pipe sludge judge”, an electronic sludge judge utilizing an “interrupted light path sensor” is acceptable.
4. **25’ Tape Measure:** A tape measure is needed to measure the length, width and depth of the septic tank. In addition it is utilized to measure the solids zones depicted in the sludge judge.
5. **100’ Tape Measure:** This tape measure is required to measure the distances from the onsite systems to the nearest water channels and/or swales.
6. **One six inch ice pick:** This item is utilized by the Evaluator to probe the interior surfaces of a septic tank to ascertain the depth of corrosion (hydrogen sulfide origin) of the interior septic tank walls to judge the structural integrity and useful life of the tank.
7. **Flashlight:** (explosion proof) A flashlight is utilized to assist the Evaluator during inspection of the interior of a septic tank and determining its corrosion condition. The flashlight must be explosion proof to negate the possibility of ignition inside the septic tank from “methane gas” or other volatile substances that the user may have discharged into the tank.
8. **Soil “T” Probe:** This probe is utilized by the Evaluator in the absorption fields to judge if a field is saturated but has no surfacing effluent that is visually apparent.

**INSTRUCTIONS FOR COMPLETION  
OF  
INITIAL EVALUATION FORM  
WITH EVALUATION PROCEDURES**

The "Initial Evaluation Report Form" is shown in Section 3 in this Handbook. This new form has been developed for use by the Evaluator to more accurately assess the current condition of an onsite system. This Initial Evaluation Report Form is to be utilized on all systems that have not been evaluated in the past. Another form, entitled "Short Form Evaluation" is to be utilized for systems that have previous evaluations. The purpose of the two forms is to preclude redundant information gathering during evaluations. The new initial evaluation form is broken down into two sections for each entity of the onsite system. One section is the "physical" attributes of the system and the second section is for the "operational" attributes of the system.

The following descriptions depict how each line item or function of the evaluation shall be documented on the Initial Evaluation Report Form. Descriptions of how the line items evaluation must be performed are also prescribed. The descriptions are as follows:

**Site Identification:**

- a. Assessor's Parcel No. - This item will be completed by the Onsite Division Staff upon submission to the Division.
- b. Evaluation Date: - The date of the actual performance of the evaluation.
- c. Permit No.: - This data is completed by the Onsite Division staff upon submission of the evaluation form.
- d. Owners Name: - The name of the current owners of the property. In the case of "rental" property, do not list the name of the "renter". If the evaluator does not have access to the owners name, occasionally the renter can furnish the name of the owner. If not, the evaluator should contact the Onsite Division to determine the listed owner.

- e. Phone No. - The same applies to this item as "d" above. The owners phone number is required.
- f. Property Address: - The physical address where the onsite systems is located and where the evaluation was performed.
- g. Mailing Address: - This shall be the mailing address of the property owner.

### **SEPTIC TANK PHYSICAL OBSERVATIONS**

This section of the report form is utilized for the sole purpose of identifying the physical attributes of the septic tank to assure that the tank has the physical capability of performing properly. The actual operation of the tank is judged in the following section of the report.

- (1) **Access Riser(s) in Place:** Identify if there are, or not, access risers in place on the septic tank. Check **Yes** or **NO**.
- (2) **Riser Material:** There are three categories of riser material available. Check the appropriate material. If the material is none of the three categories in the section marked "other", list the material.
- (3) **Riser Condition:** There are three categories for the condition of a riser. The riser is "good" if there are no "cracks", "bows", "separations" or "deterioration" in the riser itself, depending on the material. Inspection of the interface where the riser joins the septic tank should be made. If the joint shows evidence of "cracks" or "separation" the category "Leaks" should be marked. Any of the above listed conditions not marked as "good" should qualify the riser as "failed". The evaluator should understand that a riser that is separated, cracked or has joint failure with the septic tank will flood the septic tank during inclement weather as the riser acts as a "sink collector" of water with its void space in soil.

- (4) **Depth to Septic Tank Access Opening/Lid:** - A measurement shall be made and recorded of the depth of the access opening from **ground surface** to the top of the septic tank. (access opening). If the tank has access risers and the risers extend above ground level, record the measurement from the ground level to the top of the septic tank.
- (5) **Septic Tank Construction:** - There are four categories for the material construction of a septic tank. Mark or list the appropriate material.
- (6) **Tank Size:** - The evaluator shall measure the interior dimension of the septic tank. In the case of a rectangular tank the dimensions of (length), (width), and (height) shall be made. In the case of a cylindrical or round tank, the dimensions of (height) and (diameter) shall be made. These dimensions shall be recorded as indicated on the Evaluation Form. The Evaluator shall then calculate the volumetric capacity of the septic tank. Enter the tank volume in the space provided as "gallons". Some of the older systems have two small tanks connected in series. When encountered (rectangular or round), calculate the additional volume and record on the form.
- (7) **Sanitary Tee, Inlet** - Inspect the sanitary inlet tee for its presence and condition. If no tee exists, so mark the form. If it does exist but is broken, mark the failed section of the form. If the tee is in good condition, so mark the form.
- (8) **Sanitary Tee, Outlet** - Identical procedure as item (7) above.
- (9) **Tank Baffle** - Inspect the tank for existence of a baffle. Record its material construction. If no baffle exists, mark "other" and write "none" in the line space.
- (10) **Baffle Condition** - The baffle shall be inspected for corrosion and cracks. If the baffle has corroded above the water surface to a point where the top of the baffle is at the water surface the baffle shall be considered to be in a failed condition. If the baffle has breakage or leaks it should also be considered to be in a failed condition.

- (11) **Tank Structural Condition** - The tank shall be inspected internally, from the water surface up, for structural integrity of the tank. Hydrogen Sulfide (Sulfuric Acid) corrosion will dissolve the concrete. It should be noted if "concrete aggregate" is exposed. If exposed aggregate is noted, this means that corrosion is active. If the tank reinforcing steel is exposed the tank is considered "failed". If "rust" or corrosion of the reinforcing steel is evident, the tank is considered "failed". If exposed aggregate is evident, the evaluator, using an ice pick, should force the pick into the concrete. If the ice pick can be driven into the tank surface a distance of between one and one half inches the tank is considered "failed". If the pick can be forced into the tank surface between one half inch and one inch the tank is considered to be in "fair" condition. Anything less than one half inch corrosion and the tank is considered to be in "good" condition. Any structural cracks in the tank require that the tank be considered "failed".
- (12) **Effluent Pump to Gravity Distribution:** If the Septic Tank includes an effluent pump that discharges to a "D" box for gravity distribution, so mark the item.
- (13) **Effluent Pump to Pressure Dose Distribution:** If the Septic tank includes effluent pumps that "pressure dose" the absorption system, so mark the item.

If the Evaluator finds anything that is unusual or non-standard about the septic tank, the Evaluator shall list/explain the item(s) in the "Comments" section of this report. The Town of Paradise Onsite Wastewater Management Zone staff will review the comments and determine any action, if necessary. These items may include, but are not limited to; potable water lines or other utility piping traversing the tank, tilted tanks etc.

## SEPTIC TANK OPERATIONAL OBSERVATIONS

This section of the Initial Evaluation Report Form addresses how the septic tank is functioning and under what conditions. The Evaluator shall perform the observations and measurements with particular awareness of all aspects of the tank's operation. The proper operation of the septic tank is crucial to the successful operation of the entire wastewater treatment and disposal system.

- (14) **Scum Depth, Inlet Compartment:** The Evaluator shall physically measure the depth of the scum blanket on the top of the inlet compartment. The measurement shall be taken from the bottom of the float blanket to the top. The depth, or thickness of the blanket shall be recorded in inches on the report form. **Note:** The Evaluator shall make particular note of the contents of the "scum blanket" in regard to petroleum products such as motor oil and petroleum cleaning fluids. If present, depending on the thickness of the scum blanket, petroleum products will be prevalent at the bottom of the scum blanket. If identified, the Evaluator must enter the presence of petroleum products in the "Comments" Section of the Evaluation Report Form. If petroleum products are identified, the tank **cannot** be pumped and the contents disposed of under normal Septic Tank Practices. The tank must be pumped by a Licensed Hazardous Materials Contractor. Upon receipt of such reporting, the Town of Paradise Onsite Wastewater Management Zone Staff will notify the Owner of the specific requirements.
- (15) **Scum Depth, Outlet Compartment:** The identical procedure listed in item #14 above is utilized for this item.
- (16) **Sludge Depth, Inlet Compartment:** Utilizing a "sludge judge" the Evaluator shall obtain a core sample of the inlet compartment tank contents. Two measurements shall be taken:
- (1) **The depth of the sludge core at the bottom of the sludge judge represents the depth or thickness of the sludge**

**blanket at the bottom of the tank.** This measurement shall be recorded in inches on the Evaluation Report Form.

- (2) **The depth of the “clear zone” above the sludge blanket and below the scum blanket shall be determined.** This is measured in the sludge judge and is the clearer liquid. This measurement shall be recorded in inches on the Evaluation Report Form.

Note: The Evaluator shall exercise care in determining these measurements to assure an accurate representation of what is in the tank. These measurements play an important role in determining if the septic tank should be pumped.

- (17) **Sludge Depth, Outlet Compartment:** Utilizing a “sludge judge” the Evaluator shall obtain a core sample of the outlet compartment tank contents. Two measurements shall be taken;

- (1) **The depth of the sludge core at the bottom of the sludge judge represents the depth or thickness of the sludge blanket at the bottom of the tank.** This measurement shall be recorded in inches on the Evaluation Report Form.

- (2) **The depth of the “clear zone” above the sludge blanket and below the scum blanket shall be determined.** This is measure in the sludge judge and is the clearer liquid. This measurement shall be recorded in inches on the Evaluation Report Form.

Note: The Evaluator shall exercise care in determining these measurements to assure they are representative of what is in the tank. These measurements play an important role in determining if the septic tank should be pumped.

- (18) **Liquid Operating Level:** The Evaluator shall check and observe the Liquid Operating Level of the Septic Tank. The operating level is that level as identified in the horizontal run of the outlet tee. The following observations and ratings shall be determined;

**High Level** - Observation of the static level in the outlet tee reveals effluent depth above the invert of the horizontal run of the outlet tee. If the tank is discharging, the flowing level will naturally be above the invert. If flowing, the Evaluator shall wait until outlet flow is terminated and then determine the static operating level. If the level is higher than the invert of the outlet tee, the recorded level should be marked "high" and the depth above the invert shall be recorded on the Evaluation form. Check bio-tube to see if it is plugged before terminating load test. If the static operating level is greater than one inch above the invert of the outlet tee the level shall be recorded and the Evaluation shall be terminated at this point. If the outlet tee is in a "flooded" (submerged) condition the Evaluation of the system shall be terminated at that point. The flooded condition shall be noted in the "comments" section of the Evaluation Report. A high operating level does not necessarily mean that the absorption fields are failed or saturated. High level can be caused under three other conditions:

- (a) The tight line from the tank to the absorption field could have a high point in the line thus causing a high back water condition from that point back to the tank.
  - (b) The tight line from the tank to the absorption field could have a partial stoppage in the line thus causing a dam in the tight line.
  - (c) The tight line could be crushed or otherwise damaged.
- (2) **Normal Level:** If the static level in the septic tank is at the invert of the horizontal run of the outlet tee, the level is determined to be normal. Mark the "normal" section in the Evaluation Report.

(3) **Low Level:** If the static level in the septic tank is below the invert of the horizontal run of the outlet tee the level is determined to be "low". A low level is indicative of a leaking tank or, lack of usage of facility by residents. If the low level is below the "grout port" of either the inlet or outlet tees, it is a fair assumption that the tank is leaking. If the low level is an inch or so below the pipe inverts, the leak could be through a failed "grout port". Septic tanks that have sealed tank tops should also be noted. All low level findings shall be detailed in the "comments" section of the Evaluation Report. When "low level" is found in the septic tank, the Evaluation shall be terminated at that point.

(19) **Septic Tank Pumping Required:** The decision to pump a septic tank is crucial to the overall successful operation of the tank. Indiscriminant or early pumping of a tank does nothing but remove wastewater from the tank. Early pumping is detrimental to the anaerobic reduction of bio-degradable solids in the tank. The tank system needs a given amount of active solids (organisms) to reduce the solids. The data reported in Items #14, #15, #16, and #17 above, are utilized to determine the necessity of pumping the tank. There are three operating horizons in the septic tank. All three play a role in the decision making process for pumping. The three horizons are described below, starting from the top of the tank:

- (a) **Floating Scum Blanket**
- (b) **Clear Zone**
- (c) **Settled Sludge Blanket**

As indicated, the Clear Zone sets between the scum blanket and the sludge blanket. It is the Clear Zone effluent that is passed to the outlet chamber of the tank and then to the absorption fields. It is imperative that

the least amount of suspended solids pass from the outlet chamber to the absorption fields. High suspended solids will plug the infiltrative surfaces of the absorption trenches. At the same time, it is imperative that the settled sludge blanket have enough mass to continue to bio-chemically reduce the bio-degradable solids entering the tank. The thickness of the floating scum blanket and the depth of the settled sludge blanket determine the depth of the clear zone. This holds true for both the inlet and outlet chambers. The following criteria shall be utilized in determining the need for pumping a septic tank:

- (a) When the settled sludge blanket depth is greater than sixteen inches, the tank shall be recommended for pumping.**
- (b) If the settled sludge blanket is less than sixteen inches but the clear zone is six inches or less, the tank shall be recommended for pumping.** (This generally means that the floating scum blanket extends too far down into the liquid contents of the tank.)
- (c) Floating scum blanket in excess of 13" requires pumping.**

(20) **Was Septic Tank Pumped:** If the septic tank was pumped, mark the Evaluation Form appropriately.

(21) **Owner Specifically Requested that tank be pumped:** If the Evaluator determines that the data produced does not warrant the pumping of the tank but the Owner of the system wants the tank pumped, the Evaluator shall do the following;

- (a) Present the owner with the evidence that pumping of the tank is not necessary.**
- (b) If, after explaining to the Owner the non-necessity for tank pumping, the Owner still wants the tank**

**pumped, the tank may be recommended for pumping. Mark "yes" on the Evaluator Form.**

- (22) **Date Septic Tank(s) previously pumped:** Enter the year that the tank was previously pumped. If data records do not reveal the date, it may be possible that the owner knows when the tank was last pumped. If neither source reveals the data, enter "unknown" on the Evaluation Form.
- (23) **Graywater Discharge:** The Evaluator shall inspect the exterior of the building or residence and determine if there is a separate "graywater" discharge. Enter the result of the inspection on the Evaluation Form.
- (24) **Effluent Pump & Controls Functional:** If Item #12 above was marked "no", place a mark in the N/A box on the Evaluation Report Form. If Item #12 was marked "yes", proceed as follows;
- a. Physically lift the "Pump On" Float and rotate it to a horizontal position. Verify that the pump activates and pumps and shuts down when the float is returned to its position.
  - b. Perform the same function with the "low water" level float and verify its proper operation.

**Note:** If both "a" & "b" above function, mark the "yes" box on the Evaluation Report Form. If one or both functions fail, mark the "no" box and enter a failure description in the "Comments" section of the Evaluation Report Form.

- (25) **Alarms Functional:** If Item #12 above is marked "no", place a mark in the N/A box on the Evaluation Report Form. If Item #12 was marked "yes", proceed as follows;
- a. Physically lift the "High Water Alarm" Float and rotate it to a horizontal position. Verify that

the alarm circuit is activated and the "alarm light" lights. Mark the "yes" box or the "no" box on the Evaluation Report Form.

**NOTE: If Item #13 is marked 'yes' perform the same pump and alarm tests as identified in Items #24 and #25 above. If a "duplex" pump system exists, the tests shall be performed for both pumps.**

### **ABSORPTION FIELD PHYSICAL OBSERVATIONS**

This section of the Evaluation Report Form is devoted to not only the physical attributes of the absorption field(s) system, but also geographical location to wells and watercourses. A close visual inspection of the whole site is required to obtain the data. At the onset of the Evaluation the Evaluator should take note of the weed growth over the absorption field area. If the weed and/or berry growth is greater than two feet high over the absorption field area the Evaluator shall immediately terminate the Evaluation. The Evaluator shall refer to Item #26 (Weed Growth Over Fields) on the Evaluation Report Form and so mark the >2 feet line. The Evaluator shall notify the Owner that the weeds must be cut to allow a proper evaluation. Upon receipt of the submitted Evaluation Form the Town of Paradise Onsite Wastewater Management Zone Staff shall notify the Owner by letter concerning the need for weed removal.

- (26) **Weed Growth Over Field(s):** The Evaluator shall determine the height of weed growth over the absorption field area and mark the appropriate height box on the Evaluation Report Form. Weed height in excess of two feet will preclude a proper evaluation. If weeds/berries are greater than two feet high the Evaluator shall terminate the evaluation and notify the Owner and the Town of Paradise Onsite Wastewater Management Zone staff.
- (27) **Effluent Line Diverter Valve:** The Evaluator shall verify the existence or non-existence of a Diverter Valve and mark the appropriate box on the Evaluation Report Form.

- (28) **Well on Property:** The Evaluator shall perform the following;
- (a) **Determine if a well is on the property and mark the appropriate box on the Evaluation Report Form.**
  - (b) **If a Well is present, determine if it is active or abandoned and capped and mark the appropriate box on the Evaluation Report Form**
  - (c) **If the Well is active, measure the distance from the well to the closest point of the absorption field and note the footage on the Evaluation Report Form.**
- (29) **Common Area Absorption Field:** Mark the Evaluation Report Form "yes" or "no". If the number of connections being service by the common or community absorption fields is known, list the number served on the Evaluation Report Form.
- (30) **Absorption Field Type:** The following types of systems shall be marked in the appropriate boxes on the Evaluation Report Form;
- (a) **Standard Gravity Feed with Equal Distribution**
  - (b) **Standard Gravity Feed with Serial Distribution**
  - (c) **Pump to Gravity Feed with Equal Distribution**
  - (d) **Pump to Gravity Feed with Serial Distribution**
  - (e) **Pressure Dose**
- (31) **Field(s) Distance From Stream or Drainage Swale:** The Evaluator shall measure the distance from the nearest stream or drainage swale and identify the water course on the Evaluation Report Form and mark the distance as either less than 100' or greater than 100'.
- (32) **Trench Piezometers Installed:** If the Evaluator marked Item #13 "yes", the Evaluator shall locate the trench piezometers and mark "yes" on the Evaluation Report Form. If none are found, mark "no".
- (33) **Trench Piezometer Depth (from Ground Surface):** If trench piezometers are located, the Evaluator shall measure the distance from ground surface to the bottom of the piezometer and record the depth in

inches on the Evaluation Report Form. When measuring the depth the Evaluator shall take note of water depth in the piezometer. If water is encountered the Evaluator shall measure the height of the water column from the bottom of the piezometer up. This water depth shall be entered in inches on Item #42 of the Evaluation Report Form for use in a later Evaluation Task (load test rating). In addition, with the use of a "soil probe" the Evaluator shall determine the depth of "total rock" in the system and enter the depth in Item #41 of the Evaluation Report Form for further use in a later Evaluation Task (load test rating)

- (34) **Field Piezometers Installed:** The Evaluator shall locate any field piezometers that have been installed. Field piezometers are generally located in the center of the absorption fields and generally only one is installed. Mark the appropriate box on the Evaluation Report Form. If one is found, the Evaluator shall show it in the prepared sketch of the system on the Evaluation Report Form.
- (35) **Ground Water Monitoring Wells Installed:** The Evaluator shall inspect the absorption field area for location of Ground Water Monitoring Wells installed. Generally there will be one well installed up gradient of the absorption fields and two installed down gradient. Mark the appropriate box on the Evaluation Report Form. If wells are found, the Evaluator shall show their general location in the prepared sketch of the system on the Evaluation Report Form.

### **ABSORPTION FIELD OPERATIONAL OBSERVATIONS**

The Evaluation Procedures of this section addresses the operational conditions of the absorption fields. The need for "accurate" data acquired in these procedures is paramount for two reasons: 1) inaccurate data acquired in this section could cause considerable unnecessary repair expense to the resident or owner of the system; 2)

inaccurate data acquired in this section could allow a failed system to threaten public health and the local environment. The following procedures shall apply:

- (36) **Surfacing Effluent:** The Evaluator shall inspect the entire absorption field area looking for “puddles” or “ponding” of effluent on the surface. Mark the appropriate box on the Evaluation Report Form.
- (37) **Saturated Field:** Utilizing a “soil probe” the Evaluator shall probe the trench areas to determine if soil above the trench rock is saturated. If found, this means that the trenches are full and effluent is being dispersed in the soil above the rock. Mark the appropriate box on the Evaluation Report Form.
- (38) **Down Slope Seepage:** This applies to absorption fields that are constructed on slopes of greater than 5% slope, and, serial distribution. The Evaluator shall visually inspect the area below the last trench on the slope to ascertain if any effluent is seeping to the surface. Mark the appropriate box on the Evaluation Report Form.
- (39) **Standard Hydraulic Load Test:** All Standard Gravity Feed Systems will receive the “standard hydraulic load test” with the exception of the following;

- a. Any system where the residence or discharging entity has been vacated for a period of thirty days or more.

The following procedure and rating criteria shall be utilized by the Evaluator in the performance of a standard hydraulic load test.

- b. Refer back to Item #18 of the Evaluation Report Form and make note of the “static high tank level” if a high level was recorded. This level will be used as the “operating level” when performing the test..
- c. Utilizing the portable water meter and hose, place the discharge well into the horizontal run of the outlet tee.

Apply water at a rate not to exceed ten gallons per minute. Apply one hundred and seventy five gallons of water. **Note: Do not add water to the outlet chamber of the septic tank as the application will stir the contents and force suspended solids into the absorption field.** Upon completion of the application of water the Evaluator shall activate his/her stopwatch. The Evaluator shall observe and measure the results under the following rating criteria:

**RATING**

**MEASUREMENT & OBSERVATIONS**

**EXCELLENT**

No noticeable rise in liquid level of the septic tank while adding water to the system.

**GOOD**

Liquid level in septic tank rises approximately one inch above the operating level. Liquid level continues to decline to the operating level within fifteen minutes.

**SATISFACTORY**

Liquid level in septic tank rises approximately two inches above the operating liquid level. Liquid level continues to decline to the operating level within fifteen minutes.

**MARGINAL**

Liquid level in septic tank rises approximately three inches above the operating liquid level but does not overflow the top of the outlet tee fitting. Liquid level in septic tank declines to operating level within thirty minutes.

**POOR**

Liquid level in septic tank rises above the operating liquid level to the top of the tee fitting but does not overflow the tee fitting. Liquid level in septic tank declines but does not reach the operating level in thirty minutes.

**FAILURE**

Liquid level in septic tank rises above the operating liquid level of the septic tank to the soffit of the septic tank. Liquid level declines slightly or not at all within thirty minutes.

Upon completion of the hydraulic load test, the Evaluator shall record the data as required in Items # 39 (gallons used in test) and (**results of the hydraulic load test**), on the Evaluation Report Form.

**Pressure Dosed Systems Load Tests:** The following procedures shall be utilized in testing pressure dosed systems for proper operation.

- (40) **Trench Piezometer Liquid Depth:** Evaluator shall refer back to measurements taken under Item #33 on the Evaluation Report Form and enter liquid depth found in the piezometer. If the static level (prior to test) in the trench piezometer is 95% or greater of the total rock depth in the trench, the system is failed. (Example: Rock Depth = 24", Piezometer static level = 23")
- (41) **Pressure Dosed Load Test:** The Evaluator shall utilize a portable water meter and a hose and apply water inside the screen of the pump chamber at a rate of no greater than 10 gallons per minute. Total application of water shall be one hundred and seventy five gallons. The gallons used shall be entered on the Evaluator Report Form. Upon completion of water application the Evaluator shall observe the water level in the trench piezometer and activate his/her stopwatch.

The following Ratings and Criteria for assignment of ratings shall be utilized for pressure dosed systems:

<b>RATING</b>	<b>OBSERVATIONS</b>
<b>EXCELLENT</b>	No noticeable rise in liquid level greater than one inch in the piezometer above the "static level" with the "static level" in the piezometer being zero, while adding water to the tank.
<b>GOOD</b>	Liquid level in the piezometer rises approximately one inch above the static level but does not, in total, exceed ten per cent of the Rock Depth. Liquid level in the piezometer declines to the static level within fifteen minutes.
<b>SATISFACTORY</b>	Liquid level in the piezometer rises approximately two inches above the static level but, in total, does not exceed twenty five per cent of the Rock Depth. Liquid level in the piezometer declines to the static level within fifteen minutes.
<b>MARGINAL</b>	Liquid level in the piezometer rises approximately three inches above the static level but, in total, does not exceed fifty per cent of the Rock Depth. Liquid level in the

piezometer declines to the static level within thirty minutes.

**POOR**

Liquid level in the piezometer rises four inches above the static level but, in total, does not exceed seventy five per cent of the Rock Depth. Liquid level in the piezometer declines to the static level within thirty minutes.

**FAILURE**

Liquid level in the piezometer rises to a total of ninety five per cent of the rock depth. Liquid level declines slightly or not at all within thirty minutes.

Evaluator shall mark the appropriate rating box in the Evaluation Report Form.

- (43) **Pressure Dose Test w/out Trench Piezometers:** Occasionally the Evaluator may encounter pressure dose system that does not have trench piezometers installed. Without trench piezometers in a pumped system the only method available for checking the system's efficiency or failure is to load test the system and check for saturation or at the very worst, surfacing effluent. The following procedure applies to these type of systems;
- a. Utilizing a "soil probe" the Evaluator shall probe the absorption trenches and determine the trench depths, and the depth of total rock. The Rock Depth shall be recorded on the Evaluation Report Form.
  - b. Utilizing a portable water meter and a hose, the Evaluator shall apply water to the screened vault of the pumping chamber at a rate not to exceed ten gallons per

minute. Total water applied to the system shall be one hundred seventy five gallons.

- c. Upon completion of the total gallons of water the Evaluator shall probe the absorption trenches to ascertain if water is present in the soil above the rock.
- d. If the soil above the rock is wetted or saturated, the Evaluator shall so mark the Evaluation Report Form.

### **COMMENTS SECTION**

The Evaluator shall list comments in this section as required by these instructions. In addition, the Evaluator shall list comments relative to "unusual" circumstances that are not covered under these instructions that relate directly to the physical systems and the operation thereof.

### **LOCATION SKETCH**

Evaluator shall prepare a sketch illustrating the general location of the septic tank(s) and absorption fields as they relate to the building or structure. In addition, if applicable, field piezometers, ground water monitoring wells, potable water wells, streams and drainage swales shall be identified on the sketch. Although the drawing does not need to be to scale, it should contain sufficient measurements to allow the significant parts of the system to be located.

### **EVALUATOR SIGNATURE**

The Evaluator shall sign the Evaluation Form, list his/her Evaluation License Number and date the form in the spaces provided. The date shall be the date of the Evaluation.

### **OWNER REVIEW OF EVALUATION FORM**

It is the Evaluators responsibility to review the data on the Evaluation Form with the Owner of the system, or his/her representative, upon completion of the Evaluation. If the owner is not available, a copy shall be faxed or mailed with the evaluators invoice.

### **SUBMITTAL OF EVALUATION FORM**

It is the Evaluators responsibility to submit the completed and signed Evaluation Form to the Town of Paradise Onsite Wastewater Management Zone within seven days of the date of the Evaluation.

**TOWN OF PARADISE ONSITE WASTEWATER MANAGEMENT ZONE  
INITIAL EVALUATION REPORT**

This onsite wastewater system evaluation report will provide evidence to the Town of Paradise Onsite Wastewater Management Zone that the system has been evaluated for compliance with regulations in Chapter 13.04 of the Paradise Municipal Code and the Town of Paradise Manual for the Onsite Treatment of Wastewater.

Assessor's Parcel No.: \_\_\_\_\_ Evaluation Date: \_\_\_\_\_ Permit No.: \_\_\_\_\_

Owner's Name: \_\_\_\_\_ Phone No.: \_\_\_\_\_

Property Address: \_\_\_\_\_ Mailing Address: \_\_\_\_\_

**SEPTIC TANK PHYSICAL OBSERVATIONS**

- 1) Access Riser(s) in Place .....  No  Yes
- 2) Riser Material .....  Wood  Concrete  Poly/Fiberglass Other \_\_\_\_\_
- 3) Riser Condition .....  Good  Leaks  Failed
- 4) Depth to Septic Tank Access Opening/Lid ..... \_\_\_\_\_ Inches
- 5) Septic Tank Construction .....  Concrete  Poly/Fiberglass  Metal Other \_\_\_\_\_
- 6) Tank Size-- length \_\_\_\_\_ in. width/dia \_\_\_\_\_ in. depth \_\_\_\_\_ in. Rect  Round  Gals \_\_\_\_\_ Addl \_\_\_\_\_
- 7) Sanitary Tee, Inlet .....  No  Yes  Good  Failed
- 8) Sanitary Tee, Outlet .....  No  Yes  Good  Failed
- 9) Tank Baffle .....  Wood  Concrete  Poly/Fiberglass Other \_\_\_\_\_
- 10) Baffle Condition .....  Good  Leaks  Failed
- 11) Tank Structural Condition .....  Good  Leaks  Failed
- 12) Effluent Pump To Gravity Disposal .....  Yes  No
- 13) Effluent Pump to Pressure Dose Disposal .....  Yes  No

**SEPTIC TANK OPERATIONAL OBSERVATIONS**

- 14) Scum Depth, Inlet Compartment ..... \_\_\_\_\_ Inches
- 15) Scum Depth, Outlet Compartment ..... \_\_\_\_\_ Inches
- 16) Sludge Depth, Inlet Compartment ..... \_\_\_\_\_ Inches
- 17) Sludge Depth, Outlet Compartment ..... \_\_\_\_\_ Inches
- 18) Liquid Operating Level .....  High (inches \_\_\_\_\_)  Normal  Low
- 19) Septic Tank Pumping Required .....  Yes  No
- 20) Was Septic Tank Pumped .....  Yes  No
- 21) Owner Specifically Requested that Tank Be Pumped .....  Yes  No
- 22) Date Septic Tank(s) Previously Pumped ..... \_\_\_\_\_ Date
- 23) Graywater Discharge .....  Yes  No
- 24) Effluent Pump & Controls Functional .....  Yes  No
- 25) Alarms Functional .....  Yes  No

**ABSORPTION FIELD PHYSICAL OBSERVATIONS**

- 26) Weed Growth Over Field(s) ..... <1 foot  >1 foot and <2 feet  >2 feet
- 27) Effluent Line Diverter Valve .....  Yes  No
- 28) Well on Property .....  No  Yes Active   Capped  Feet from Field \_\_\_\_\_
- 29) Common Area Absorption Field .....  No  Yes Number of Connections Served \_\_\_\_\_

**INITIAL EVALUATION REPORT**

- 30) Absorption Field Type .....  Standard Gravity Feed  Pump to Gravity Feed  
 Equal Distribution  Serial Distribution  Pressure Dose
- 31) Field(s) Distance from Stream or Drainage Swale ..... Stream  Swale  >100'  <100'
- 32) Trench Piezometers Installed .....  Yes  No
- 33) Trench Piezometer Depth (from ground surface) ..... \_\_\_\_\_ Inches
- 34) Field Piezometers Installed .....  Yes  No
- 35) Ground Water Monitoring Wells Installed .....  Yes  No

**ABSORPTION FIELD OPERATIONAL OBSERVATIONS**

- 36) Surfacing Effluent .....  Yes  No
- 37) Saturated Field .....  Yes  No
- 38) Down Slope Seepage .....  Yes  No
- 39) Standard Hydraulic Load Test ..... Gallons \_\_\_\_\_  
Standard Hydraulic Load Test Results:  Excellent  Good  Satisfactory  
 Marginal  Poor  FAILURE
- 40) Trench Piezometer Liquid Depth (static level) ..... Inches \_\_\_\_\_ % Flooded \_\_\_\_\_
- 41) Pressure Dosed Load Test ..... Gallons \_\_\_\_\_  
Pressure Dosed Load Test Results:  Excellent  Good  Satisfactory  
 Marginal  Poor  FAILURE
- 42) Pressure Dosed Load Test without Piezometers ..... Rock Depth (in.) \_\_\_\_\_  
Pressure Dosed Load Test Resulted in Saturation .....  Yes  No

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Location Sketch:

This Onsite Wastewater Treatment and Disposal System Evaluation Report is a true and complete record of the Onsite system on the date of evaluation. No warranty is given or implied regarding the remaining life of the system. I certify that this Onsite Wastewater Treatment and Disposal System Evaluation Report reflects conditions on the parcel(s) during the routine maintenance of the Onsite Wastewater Treatment and Disposal System.

**Evaluator Signature** \_\_\_\_\_ **License #** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Town of Paradise Use Only**

The Onsite Wastewater Treatment and Disposal System is in substantial compliance with Chapter 13.04 of the Paradise Municipal Code and the Town of Paradise Manual for the Onsite Treatment of Wastewater.

/s/ \_\_\_\_\_  Yes  No

## COMPLETION OF SHORT FORM EVALUATION REPORT

The "Short Form Evaluation Report" is a new form. It is shown in Section 5 in this Handbook. This new form has been developed to enable the Evaluator to more accurately assess the current condition of an onsite system and to preclude the gathering of redundant data that has been documented in the Initial Evaluation Report Form. This Short Form Evaluation Report is to be utilized on all systems that have been evaluated in the past. The new short form is broken down into two sections for each entity of the onsite system. It should be noted that the Short Form Evaluation Report requires very little of the physical attributes of the systems as they have been well covered in the Initial Evaluation Report Form.

The following descriptions depict how each line item or function of the evaluation must be documented on the Short Form Evaluation Report. In addition, if required, a description of how the line item evaluation must be performed is prescribed. The following descriptions are presented:

### **Site Identification:**

- a. Assessor's Parcel No. - This item will be completed by the Onsite Division Staff upon submission to the Division.
- b. Evaluation Date: - The date of the actual performance of the evaluation.
- c. Permit No: - This data is completed by the Onsite Division staff upon submission of the evaluation form.
- d. Owners Name: - The name of the current owners of the property. In the case of "rental" property, do not list the name of the "renter". If the evaluator does not have access to the owners name, occasionally the renter can furnish the name of the owner. If not, the evaluator should contact the Onsite Division to determine the listed owner.

- e. Phone No. - The same applies to this item as “d” above. The owners phone number is required.
- f. Property Address: - The physical address where the onsite systems is located and where the evaluation was performed.
- g. Mailing Address: - This shall be the mailing address of the property owner.

### SEPTIC TANK PHYSICAL OBSERVATIONS

This section of the report form is utilized for the sole purpose of identifying the physical attributes of the septic tank to assure that the key elements of the tank have the physical capability of performing properly. The actual operation of the tank is judged in the following section of the report.

- (1) **Riser Condition:** There are three categories for the condition of a riser. The riser is “good” if there are no “cracks”, “bows”, “separations” or “deterioration” in the riser itself, depending on the material. Inspection of the interface where the riser joins the septic tank should be made. If the joint shows evidence of “cracks” or “separation” the category “Leaks” should be marked. Any of the above listed conditions not marked as “good” should qualify the riser as “failed”. The evaluator should understand that a riser that is separated, cracked or has joint failure with the septic tank will flood the septic tank during inclement weather as the riser acts as a “sink collector” of water with its void space in soil. If no risers are in existence mark N/A on the Evaluation Report Form..
- (2) **Baffle Condition** - The baffle shall be inspected for corrosion and cracks. If the baffle has corroded above the water surface to a point where the top of the baffle is at the water surface it shall be considered to be in a failed condition. If the baffle has breakage or leaks it should also be considered to be in a failed condition.

- (3) **Tank Structural Condition** - The tank shall be inspected internally, from the water surface up, for structural integrity of the tank. Hydrogen Sulfide (Sulfuric Acid) corrosion will dissolve the concrete. It should be noted if "concrete aggregate" is exposed. If exposed aggregate is noted, this means that corrosion is active. If the tank reinforcing steel is showing the tank is considered "failed". If "rust" or corrosion is showing through the concrete where the reinforcing steel is located, then the tank is considered "failed". If exposed aggregate is evident, the evaluator, using an ice pick, should force the pick into the concrete. If the ice pick can be driven into the tank surface a distance of between one and one half inches the tank is considered "failed". If the pick can be forced into the tank surface between one half inch and one inch the tank is considered to be in "fair" condition. Anything less than one half inch corrosion and the tank is considered to be in "good" condition. Any structural cracks in the tank require that the tank be considered "failed".

If the Evaluator finds anything that is unusual or non-standard about the septic tank, the Evaluator must list/explain the item(s) in the "Comments" section of this report. The Town of Paradise Onsite Wastewater Management Zone staff will review the comments and determine any action, if necessary. These items may include, but are not limited to; potable water lines or other utility piping traversing the tank, tilted tanks etc.

### **SEPTIC TANK OPERATIONAL OBSERVATIONS**

This section of the Short Form Evaluation Report addresses how the septic tank is functioning and under what conditions. The Evaluator shall perform the observations and measurements with particular awareness of all aspects of the tank's operation. The

proper operation of the septic tank is crucial to the successful operation of the entire wastewater treatment and disposal system.

- (4) **Scum Depth, Inlet Compartment:** The Evaluator shall physically measure the depth of the scum blanket on the top of the inlet compartment. The measurement shall be taken from the bottom of the float blanket to the top. The depth, or thickness of the blanket shall be recorded in inches on the report form. **Note:** The Evaluator shall make particular note of the contents of the "scum blanket" in regard to petroleum products such as motor oil and petroleum cleaning fluids. If present, depending on the thickness of the scum blanket, petroleum products will be prevalent at the bottom of the scum blanket. If identified, the Evaluator must enter the presence of petroleum products in the "Comments" Section of the Short Form Evaluation Report. If petroleum products are identified, the tank **cannot** be pumped and the contents disposed of under normal Septic Tank Practices. The tank must be pumped by a Licensed Hazardous Materials Contractor. Upon receipt of such reporting, the Town of Paradise Onsite Wastewater Management Zone Staff will notify the Owner of the specific requirements.
- (5) **Scum Depth, Outlet Compartment:** The identical procedure listed in item #4 above is utilized for this item.
- (6) **Sludge Depth, Inlet Compartment:** Utilizing a "sludge judge" the Evaluator shall obtain a core sample of the inlet compartment tank contents. Two measurements shall be taken;
  - (1) **The depth of the sludge core at the bottom of the sludge judge represents the depth or thickness of the sludge blanket at the bottom of the tank.** This measurement shall be recorded in inches on the Short Form Evaluation Report.
  - (2) **The depth of the "clear zone" above the sludge blanket and below the scum blanket shall be determined.** This is

measured in the sludge judge and is the clearer liquid. This measurement shall be recorded in inches on the Short Form Evaluation Report.

**Note:** The Evaluator shall exercise care in determining these measurements to assure that they are representative of what is in the tank. These measurements play an important role in determining if the septic tank should be pumped.

(7) **Sludge Depth, Outlet Compartment:** Utilizing a “sludge judge” the Evaluator shall obtain a core sample of the outlet compartment tank contents. Two measurements shall be taken;

(1) **The depth of the sludge core at the bottom of the sludge judge represents the depth or thickness of the sludge blanket at the bottom of the tank.** This measurement shall be recorded in inches on the Short Form Evaluation Report.

(2) **The depth of the “clear zone” above the sludge blanket and below the scum blanket shall be determined.** This is measure in the sludge judge and is the clearer liquid. This measurement shall be recorded in inches on the Short Form Evaluation Report.

**Note:** The Evaluator shall exercise care in determining these measurements to assure that they are representative of what is in the tank. These measurements play an important role in determining if the septic tank should be pumped.

(8) **Liquid Operating Level:** The Evaluator shall check and observe the Liquid Operating Level of the Septic Tank. The operating level is that level as identified in the horizontal run of the outlet tee. The following observations and ratings shall be determined;

(1) **High Level** - Observation of the static level in the outlet tee reveals effluent depth above the invert of the horizontal run of the outlet tee. If the tank is discharging, the flowing level will naturally be above the invert. If flowing, the Evaluator shall

wait until outlet flow is terminated and then determine the static operating level. If the level is higher than the invert of the outlet tee, the recorded level should be marked "high" and the depth above the invert shall be recorded on the Evaluation form. If the static operating level is greater than one inch above the invert of the outlet tee the level shall be recorded and the Evaluation shall be terminated at this point. If the outlet tee is in a "flooded" (submerged) condition the Evaluation of the system shall be terminated at that point. The flooded condition shall be noted in the "comments" section of the Evaluation Report. A high operating level does not necessarily mean that the absorption fields are failed or saturated. High level can be caused under three other conditions:

- (a) The tight line from the tank to the absorption field could have a high point in the line thus causing a high back water condition from that point back to the tank.
  - (b) The tight line from the tank to the absorption field could have a partial stoppage in the line thus causing a dam in the tight line.
  - (c) The tight line could be crushed or otherwise damaged.
- (2) **Normal Level:** If the static level in the septic tank is at the invert of the horizontal run of the outlet tee, the level is determined to be normal. Mark the "normal" section in the Evaluation Report.
- (3) **Low Level:** If the static level in the septic tank is below the invert of the horizontal run of the outlet tee the level is determined to be "low". A low level is indicative of a leaking tank or lack of usage of facility by residents. If the low level is below the "grout port" of either the inlet or outlet tees, it is a fair assumption that the tank is leaking. If the low level is an

inch or so below the pipe inverts, the leak could be through a failed "grout port". Septic tanks that have sealed tank tops should also be noted. All low level findings shall be detailed on in the "comments" section of the Evaluation Report. When "low level" is found in the septic tank, the Evaluation shall be terminated at that point.

(9) **Septic Tank Pumping Required:** The decision to pump a septic tank is crucial to the overall successful operation of the tank.

Indiscriminant or early pumping of a tank does nothing but remove wastewater from the tank. Early pumping is detrimental to the anaerobic reduction of bio-degradable solids in the tank. The tank system needs a given amount of active solids (organisms) to reduce the solids. The data reported in Items #4, #5, #6, and #7 above, are utilized to determine the necessity of pumping the tank. There are three operating horizons in the septic tank. All three play a role in the decision making process for pumping. The three horizons are described below, starting from the top of the tank:

**(a) Floating Scum Blanket**

**(b) Clear Zone**

**(c) Settled Sludge Blanket**

As indicated, the Clear Zone sets between the scum blanket and the sludge blanket. It is the Clear Zone effluent that is passed to the outlet chamber of the tank and then to the absorption fields. It is imperative that the least amount of suspended solids pass from the outlet chamber to the absorption fields. High suspended solids will plug the infiltrative surfaces of the absorption trenches. At the same time, it is imperative that the settled sludge blanket have enough mass to continue to bio-chemically reduce the bio-degradable solids entering the tank. The thickness of the floating scum blanket and the depth of the settled sludge blanket

determine the depth of the clear zone. This holds true for both the inlet and outlet chambers. The following criteria shall be utilized in determining the need for pumping a septic tank:

- (a) **When the settled sludge blanket depth is greater than sixteen inches, the tank shall be recommended for pumping.**
  - (b) **If the settled sludge blanket is less than sixteen inches but the clear zone is six inches or less, the tank shall be recommended for pumping.** (This generally means that the floating scum blanket extends too far down into the liquid contents of the tank.)
- (10) **Was Septic Tank Pumped:** If the septic tank was pumped, mark the Evaluation Report Form appropriately.
- (11) **Owner Specifically Requested that tank be pumped:** If the Evaluator determines that the data produced does not warrant the pumping of the tank but the Owner of the system wants the tank pumped, the Evaluator shall do the following;
- (a) **Present the owner with the evidence that pumping of the tank is not necessary.**
  - (b) **If, after explaining to the Owner the non-necessity for tank pumping, the Owner still wants the tank pumped, the tank may be recommended for pumping. Mark "yes" on the Evaluator Form.**
- (12) **Date Septic Tank(s) previously pumped:** Enter the year that the tank was previously pumped. If data records do not reveal the date, it may be possible that the owner knows when the tank was last pumped. If neither source reveals the data, enter "unknown" on the Evaluation Form.

- (13) **Effluent Pump & Controls Functional:** If Item #12 above was marked “no”, place a mark in the N/A box on the Evaluator Report Form. If Item #12 was marked “yes”, proceed as follows;
- a. Physically lift the “Pump On” Float and rotate it to a horizontal position. Verify that the pump activates and pumps and shuts down when the float is returned to its position..
  - b. Perform the same function with the “low water” level float and verify its proper operation.

**Note:** If both “a” & “b” above function, mark the “yes” box on the Evaluator Report Form. If one or both functions fail, mark the “no” box and enter a failure description in the “Comments” section of the Short Form Evaluation Report.

- (14) **Alarms Functional:** If Item #12 above is marked “no”, place a mark in the N/A box on the Short Form Evaluation Report. If Item #12 was marked “yes”, proceed as follows;
- a. Physically lift the “High Water Alarm” Float and rotate it to a horizontal position. Verify that the alarm circuit is activated and the “alarm light” lights. Mark the “yes” box or the “no” box on the Short Form Evaluation Report.

**NOTE:** If a “duplex” pump system exists, the tests shall be performed for both pumps.

### ABSORPTION FIELD PHYSICAL OBSERVATIONS

- (15) **Weed Growth Over Field(s):** The Evaluator shall determine the height of weed growth over the absorption field area and mark the appropriate height box on the Short Form Evaluation Report. Weed

height in excess of two feet will preclude a proper evaluation. If weeds/berries are greater than two feet high the Evaluator shall terminate the evaluation and notify the Owner and the Town of Paradise Onsite Wastewater Management Division.

### **ABSORPTION FIELD OPERATIONAL OBSERVATIONS**

The Evaluation Procedures of this section addresses the operational conditions of the absorption fields. The need for “accurate” data acquired in these procedures is paramount for two reasons: 1) inaccurate data acquired in this section could cause considerable unnecessary repair expense to the resident or owner of the system, 2) inaccurate data acquired in this section could allow a failed system to threaten public health and the local environment. The following procedures shall apply:

- (16) **Surfacing Effluent:** The Evaluator shall inspect the entire absorption field area looking for “puddles” or “ponding” of effluent on the surface. Mark the appropriate box on the Short Form Evaluation Report.
- (17) **Saturated Field:** Utilizing a “soil probe” the Evaluator shall probe the trench areas to determine if soil above the trench rock is saturated. If found, this means that the trenches are full and effluent is being dispersed in the soil above the rock. Mark the appropriate box on the Short Form Evaluation Report.
- (18) **Down Slope Seepage:** This applies to absorption fields that are constructed on slopes of greater than 5% slope, and, serial distribution. The Evaluator shall visually inspect the area below the last trench on the slope to ascertain if any effluent is seeping to the surface. Mark the appropriate box on the Short Form Evaluation Report.

(19) **Standard Hydraulic Load Test:** All Standard Gravity Feed Systems will receive the “standard hydraulic load test” with the exception of the following;

- a. Any system where the residence or discharging entity has been vacated for a period of thirty days or more.

The following procedure and rating criteria shall be utilized by the Evaluator in the performance of a standard hydraulic load test.

- b. Refer back to Item #18 of the Short Form Evaluation Report Form and make note of the “static high tank level” if a high level was recorded. This level will be used as the “operating level” when performing the test.
- c. Utilizing the portable water meter and hose, place the discharge well into the horizontal run of the outlet tee. Apply water at a rate not to exceed ten gallons per minute. Apply one hundred and seventy five gallons of water. **Note: Do not add water to the outlet chamber of the septic tank as the application will stir the contents and force suspended solids into the absorption field.** Upon completion of the application of water the Evaluator shall activate his/her stop watch. The Evaluator shall observe and measure the results under the following rating criteria

**RATING**

**MEASUREMENT & OBSERVATIONS**

**EXCELLENT**

No noticeable rise in liquid level of the septic tank while adding water to the system.

**GOOD**

Liquid level in septic tank rises approximately one inch above the operating level. Liquid level continues to decline to the operating level within fifteen minutes.

**SATISFACTORY**

Liquid level in septic tank rises approximately two inches above the operating liquid level . Liquid level continues to decline to the operating level within fifteen minutes.

**MARGINAL**

Liquid level in septic tank rises approximately three inches above the operating liquid level but does not overflow the top of the outlet tee fitting. Liquid level in septic tank declines to operating level within thirty minutes.

**POOR**

Liquid level in septic tank rises above the operating liquid level to the top of the tee fitting but does not overflow the tee fitting. Liquid level in septic tank declines but does not reach the operating level in thirty minutes.

**FAILURE**

Liquid level in septic tank rises above the operating liquid level of the septic tank to the soffit of the septic tank. Liquid level declines slightly or not at all within thirty minutes.

Upon completion of the hydraulic load test, the Evaluator shall record the data as required in Item # 19 (gallons used in test) and **(results of the hydraulic load test)**, on the Short Form Evaluation Report.

**Pressure Dosed Systems Load Tests:** The following procedures shall be utilized in testing pressure dosed systems for proper operation.

- (20) **Trench Piezometer Liquid Depth:** Evaluator shall take measurements of the liquid depth found in the piezometer. If the static level (prior to test) in the trench piezometer is 95% or greater of the total rock depth in the trench, the system is failed. (Example: Rock Depth = 24", Piezometer static level = 23")
- (21) **Pressure Dosed Load Test:** The Evaluator shall utilize a portable water meter and a hose and apply water inside the screen of the pump chamber at a rate of no greater than 10 gallons per minute. Total application of water shall be one hundred and seventy five gallons. The gallons used shall be entered on the Evaluator Report Form. Upon completion of water application the Evaluator shall observe the water level in the trench piezometer and activate his/her stopwatch.

The following Ratings and Criteria for assignment of ratings shall be utilized for pressure dosed systems:

<u>RATING</u>	<u>OBSERVATIONS</u>
<b>EXCELLENT</b>	No noticeable rise in liquid level greater than one inch in the piezometer above the "static level" with the "static level" in the piezometer being zero, while adding water to the tank.

**GOOD**

Liquid level in the piezometer rises approximately one inch above the static level but does not, in total, exceed ten per cent of the Rock Depth. Liquid level in the piezometer declines to the static level within fifteen minutes.

**SATISFACTORY**

Liquid level in the piezometer rises approximately two inches above the static level but, in total, does not exceed twenty five per cent of the Rock Depth. Liquid level in the piezometer declines to the static level within fifteen minutes.

**MARGINAL**

Liquid level in the piezometer rises approximately three inches above the static level but, in total, does not exceed fifty per cent of the Rock Depth. Liquid level in the piezometer declines to the static level within thirty minutes.

**POOR**

Liquid level in the piezometer rises four inches above the static level but, in total, does not exceed seventy five per cent of the Rock Depth. Liquid level in the piezometer declines to the static level within thirty minutes.

**FAILURE**

Liquid level in the piezometer rises to a total of ninety five per cent of the rock depth.

Liquid level declines slightly or not at all within thirty minutes.

Evaluator shall mark the appropriate rating box in the Short Form Evaluation Report.

- (22) **Pressure Dose Test w/out Trench Piezometers:** Occasionally the evaluator may encounter a pressure dose systems that does not have trench piezometers installed. Without trench piezometers in a pumped system the only method available of checking the system's efficiency or failure is to load test the system and check for saturation or at the very worst, surfacing effluent. The following procedure applies to these type of systems;
- a. Utilizing a "soil probe" the Evaluator shall probe the absorption trenches and determine the trench depths, and the depth of total rock. The Rock Depth shall be recorded on the Short Form Evaluation Report.
  - b. Utilizing a portable water meter and a hose, the Evaluator shall apply water to the screened vault of the pumping chamber at a rate not to exceed ten gallons per minute. Total water applied to the system shall be one hundred seventy five gallons.
  - c. Upon completion of the total gallons of water the Evaluator shall probe the absorption trenches to ascertain if water is present in the soil above the rock.
  - d. If the soil above the rock is wetted or saturated, the Evaluator shall so mark the Short Form Evaluation Report.

**COMMENTS SECTION**

The Evaluator shall list comments in this section as required by these instructions. In addition, the Evaluator shall list comments relative to "unusual" circumstances that are not covered under these instructions that relate directly to the physical systems and the operation thereof.

### **EVALUATOR SIGNATURE**

The Evaluator shall sign the Evaluation Form, list his/her Evaluation License Number and date the form in the spaces provided. The date shall be the date of the Evaluation.

### **OWNER REVIEW OF EVALUATION FORM**

It is the Evaluators responsibility to review the data on the Evaluation Form with the Owner of the system, or his/her representative, upon completion of the evaluation. If the owner is not available, a copy shall be faxed or mailed with the evaluators invoice.

### **SUBMITTAL OF EVALUATION FORM**

It is the Evaluators responsibility to submit the completed and signed Evaluation Form to the Town of Paradise Onsite Wastewater Management Zone within seven days of the date of the Evaluation.

**TOWN OF PARADISE ONSITE WASTEWATER MANAGEMENT ZONE  
SHORT FORM EVALUATION REPORT**

The Onsite Wastewater System Evaluation Report will provide evidence to the Town of Paradise Onsite Wastewater Management Zone that the system has been evaluated for compliance with regulations in Chapter 13.04 of the Paradise Municipal Code and the Town of Paradise manual for the Onsite Treatment of Wastewater.

Assessor's Parcel No.: \_\_\_\_\_ Evaluation Date: \_\_\_\_\_ Permit No.: \_\_\_\_\_

Owner's Name: \_\_\_\_\_ Phone No.: \_\_\_\_\_

Property Address: \_\_\_\_\_ Mailing Address: \_\_\_\_\_

**SEPTIC TANK PHYSICAL OBSERVATIONS**

- 1) Riser Condition .....  N/A  Good  Leaks  Failed
- 2) Baffle Condition .....  Good  Leaks  Failed
- 3) Tank Structural Condition .....  Good  Leaks  Failed

**SEPTIC TANK OPERATIONAL OBSERVATIONS**

- 4) Scum Depth, Inlet Compartment ..... \_\_\_\_\_ Inches
- 5) Scum Depth, Outlet Compartment ..... \_\_\_\_\_ Inches
- 6) Sludge Depth, Inlet Compartment ..... \_\_\_\_\_ Inches
- 7) Sludge Depth, Outlet Compartment ..... \_\_\_\_\_ Inches
- 8) Liquid Operating Level .....  High (inches \_\_\_\_\_)  Normal  Low
- 9) Septic Tank Pumping Required .....  No  Yes
- 10) Was Septic Tank Pumped .....  No  Yes
- 11) Owner Specifically Requested That Tank Be Pumped .....  No  Yes
- 12) Date Septic Tank(s) Previously Pumped ..... \_\_\_\_\_ Date
- 13) Effluent Pump & Controls Functional .....  N/A  No  Yes
- 14) Alarms Functional .....  N/A  No  Yes

**ABSORPTION FIELD PHYSICAL OBSERVATIONS**

- 15) Weed Growth Over Field(s) ..... <1 foot  >1 foot and <2feet  >2 feet

**ABSORPTION FIELD OPERATIONAL OBSERVATIONS**

- 16) Surfacing Effluent .....  No  Yes
- 17) Saturated Field .....  No  Yes
- 18) Down Slope Seepage .....  No  Yes
- 19) Standard Hydraulic Load Test ..... Gallons \_\_\_\_\_  
 Standard Hydraulic Load Test Results:  Excellent  Good  Satisfactory  
 Marginal  Poor  FAILURE
- 20) Trench Piezometer Liquid Depth (static level) ..... Inches \_\_\_\_\_ % Flooded \_\_\_\_\_  N/A

**Short Form Evaluation Report**

- 21) Pressure Dosed Load Test ..... Gallons \_\_\_\_\_  N/A  
 Pressure Dosed Load Test Results:  Excellent  Good  Satisfactory  
 Marginal  Poor  FAILURE
- 22) Pressure Dosed Load Test without Piezometers .....Rock Depth (ins.) \_\_\_\_\_  N/A  
 Pressure Dosed Load Test Resulted in Saturation .....  Yes  No  N/A

COMMENTS: \_\_\_\_\_

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This Onsite Wastewater Treatment and Disposal System Evaluation Report is a true and complete record of the Onsite system on the date of evaluation. No warranty is given or implied regarding the remaining life of the system. I certify that this Onsite Wastewater Treatment and Disposal System Evaluation Report reflects conditions on the parcel(s) during the routine maintenance of the Onsite Wastewater Treatment and Disposal System.

**Evaluator Signature** \_\_\_\_\_ **License #** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Town of Paradise Use Only**

The Onsite Wastewater Treatment and Disposal System is in substantial compliance with Chapter 13.04 of the Paradise Municipal Code and the Town of Paradise Manual for the Onsite Treatment of Wastewater:

/s/ \_\_\_\_\_  Yes  No

## WASTEWATER TREATMENT TERMS

**ANAEROBIC TREATMENT** Anaerobic treatment is the prime process utilized in a septic tank. Anaerobic treatment is a treatment process that functions without free or dissolved oxygen. (The opposite of Aerobic Treatment). The bacteria utilized in this process are generally termed "anaerobes". These organisms feed on and reduce the "volatile, bio-degradable" settleable solids that are settled in the tank. This reduction is termed "anaerobic digestion". There are three (3) steps to this digestion process;

1. acid fermentation (reduction of organic material to acid.
2. acid regression (reduction of acid into simpler products for conversion in the 3<sup>rd</sup> step, such as, hydrogen sulfide, mercaptan and indole. (very odorous material)
3. alkaline fermentation and release of energy by final conversion to methane and carbon dioxide.

These three steps, unlike anaerobic treatment in a large wastewater treatment plant take a very long period of time to develop. A good anaerobic culture will take six (6) months to a year to develop. This is primarily due to low temperature. An acceptable rate of reduction of overall volatile solids is about 60%. B.O.D. reduction in the septic tank is accomplished primarily by the gross removal of settleable and floatable solids. Nitrogen compounds are not changed or reduced in this process.

**AEROBIC TREATMENT** Aerobic treatment is the treatment of wastewater utilizing organisms that function in a "free" or "dissolved" oxygen state. In a "standard" absorption field the aerobic process would start at the "bio-mat" in the soil. B.O.D. is reduced significantly by "aerobic organisms" reducing the organic material in the particulate and dissolved state to simply carbon dioxide and water. Nitrogen compounds are changed in aerobic treatment under certain conditions.

**BIO-MAT** A bio-mat is formed where the septic tank effluent enters the soil. This point of entry is generally termed the infiltrative surface. A bio-mat is a living filter in the soil where aerobic organisms will treat the wastewater effectively.

**CLOGGING MAT** A clogging mat is a bio-mat that has failed. Failed from the standpoint that it has gone beyond maturation and is plugged, thus not allowing any wastewater flow through it. Clogging mats are caused prematurely by high B.O.D. strengths and high solids filling the mat pores.

## DEFINITIONS OF PARTIAL WASTEWATER COMPOSITIONS (B.O.D., NITROGEN, COLIFORM ORGANISMS)

### **BIO-CHEMICAL OXYGEN DEMAND**

(BOD)

This term is utilized to express the strength of wastewater, both untreated and treated. It is the amount of oxygen utilized to stabilize organic material through bio-chemical bacterial reaction. The laboratory test utilized for this measurement in the wastewater industry is termed a "5-day B.O.D." The higher the number the higher the strength of the waste. B.O.D. testing is utilized to gauge the efficiency of treatment units. The lowest number possible on treated effluent is desired. The Federal EPA standard for Secondary Biological Treatment is 30 mg/l.

### **TOTAL NITROGEN**

Nitrogen in wastewater appears in several different forms depending on what stage of treatment it is in. In addition, it can change in the natural environment. The nitrogen forms are; organic, ammonia, nitrite and nitrate. Nitrate being the most stable form. The sum of these forms is termed "total nitrogen". The form of nitrogen that we are most concerned about is "nitrate nitrogen". The concern is the presence of nitrates in ground water (drinking water) in excess of 45 mg/l (10 mg/l as nitrogen nitrogen) has significant health affects on infants and unborn babies. It causes "blue babies", as the presences of high nitrogen in the blood stream limits the flow of oxygen. For this reason, the Federal EPA through the State and Regional Water Quality Control Boards has placed stringent standards on the amount and form of nitrogen that can be discharged on a given land sized parcel in Paradise.

### **TOTAL COLIFORM ORGANISMS**

In the Potable Water and Wastewater Industry, Coliform Organisms are used as an "indicator organism" to determine the presence or absence of disease producing bacteria, (pathogenic organisms). Coliform organisms are present in the intestinal tract of all "warm blooded" animals including man. Consequently, they are in exceedingly high concentrations in untreated wastewater, and can be in high concentrations in treated effluents. The reporting unit for coliform organisms is MPN or "most probable number". This is a statistical number derived from the method of testing. For example, the requirement number for drinking water is <2 mpn. The requirement numbers assigned by the Regional Water Quality Control Boards depends on where the treated effluent is going once it is discharged and what the potential exposures are to Public Health and Safety.

## WASTEWATER CHARACTERISTICS DEFINITIONS OF TERMS

### A. Primary Classification

1. **TOTAL SOLIDS:** The term used to describe all solids contained in wastewater regardless of their condition; dissolved, suspended, settleable etc.
2. **SETTLEABLE SOLIDS:** That part of the total solids that will settle under quiescent conditions within a one hour time period.
3. **FLOATING SOLIDS:** That part of the total solids that will rise to the surface and will not settle in a one hour time period.
4. **SUSPENDED SOLIDS:** That part of the total solids that will neither settle nor float, but remains in suspension after a one hour time period.
5. **DISSOLVED SOLIDS:** That part of total solids that are in a dissolved state. Made up primarily of dissolved mineral salts.
6. **COLLOIDAL SOLIDS:** Solids that are between dissolved and suspended classification. Generally less than 10 micron in size and causes water to appear cloudy and opaque.

### B. SECONDARY CLASSIFICATION

1. **FIXED SOLIDS:** That part of all the "primary" classifications of solids that are inorganic and are non-treatable, and, will not breakdown bio-chemically in a wastewater treatment process, nor can be reduced at a temperature of 600 degrees centigrade.
2. **VOLATILE SOLIDS:** That part of all the "primary" classifications of solids that are organic and can be reduced at a temperature of 600 degrees centigrade.

**3. BIO-DEGRADABLE  
VOLATILE SOLIDS:**

That part of volatile solids that are organic and treatable in a wastewater treatment process.

**4. NON BIO-DEGRADABLE  
VOLATILE SOLIDS:**

That part of volatile solids that are organic and not treatable in a wastewater treatment process.

# WASTEWATER SOLIDS TOTAL SOLIDS DIAGRAM

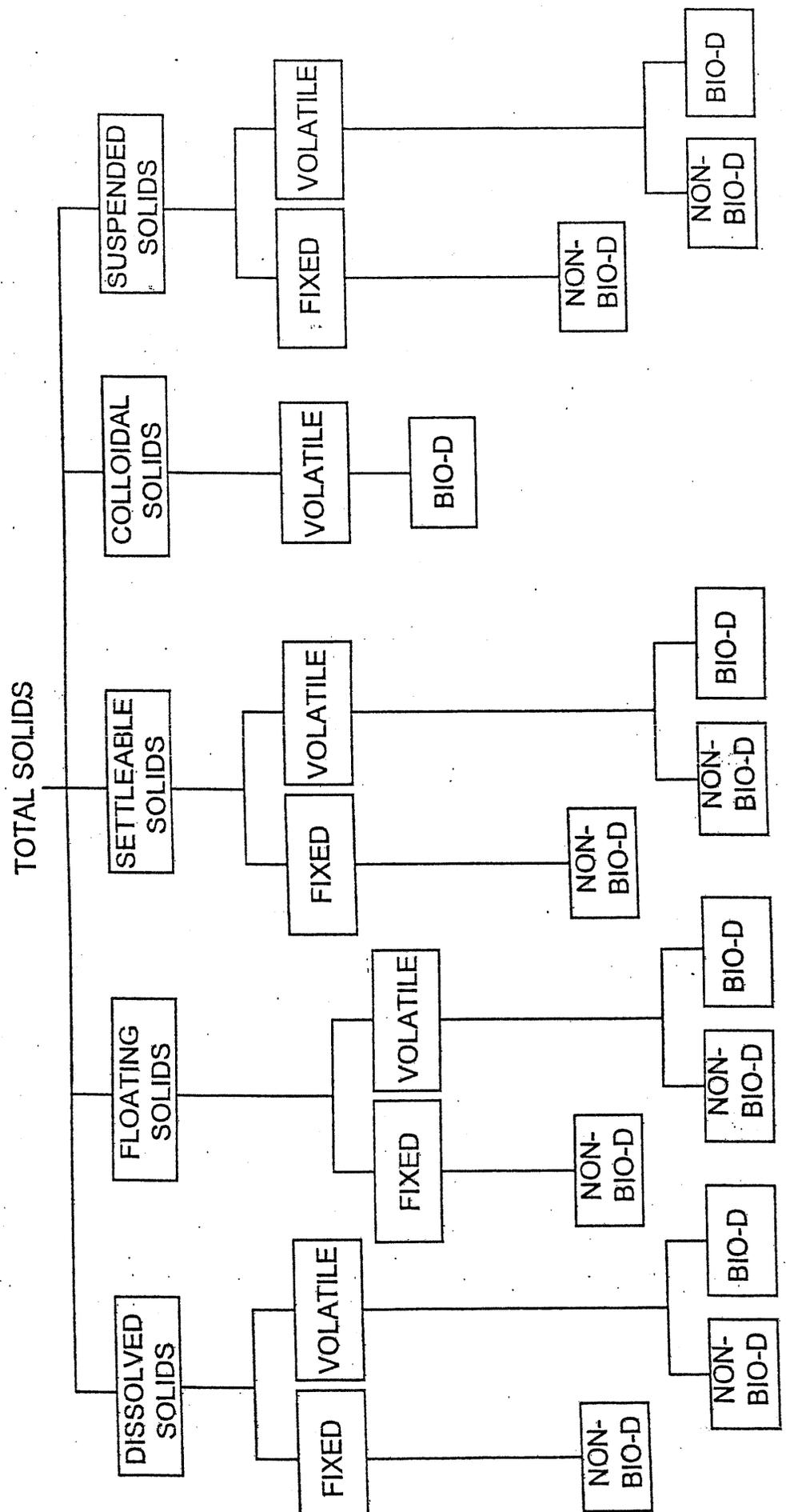


FIGURE 1.1

WASTEWATER SOLIDS

## COMPOSITION OF UNTREATED WASTEWATER

<u>Constituent</u>	<u>Unit</u>	<u>Approximate Value</u>
<b>Total Solids</b>	mg/l (ppm)	1000
<i>Dissolved &amp; Colloidal Solids</i>	mg/l	700
<i>*Suspended Solids</i>	mg/l	75
<i>*Settleable Solids</i>	mg/l	125
<i>*Floating Solids</i>	mg/l	100
<b>Bio-Chemical Oxygen Demand, (B.O.D.)</b>	mg/l	350
<b>Total Nitrogen</b>	mg/l	45
<i>*Organic &amp; Ammonia Nitrogen</i>	mg/l	45
<i>*Nitrite Nitrogen</i>	mg/l	0.0
<i>*Nitrate Nitrogen</i>	mg/l	0.0
<b>Total Coliform Organisms</b>	mpn/100 ml's	1,000,000 plus

*\* The sum of these three (3) make up "Total Suspended Solids", which is a term used for all particulate solids contained in wastewater, and a test procedure to measure them collectively.*

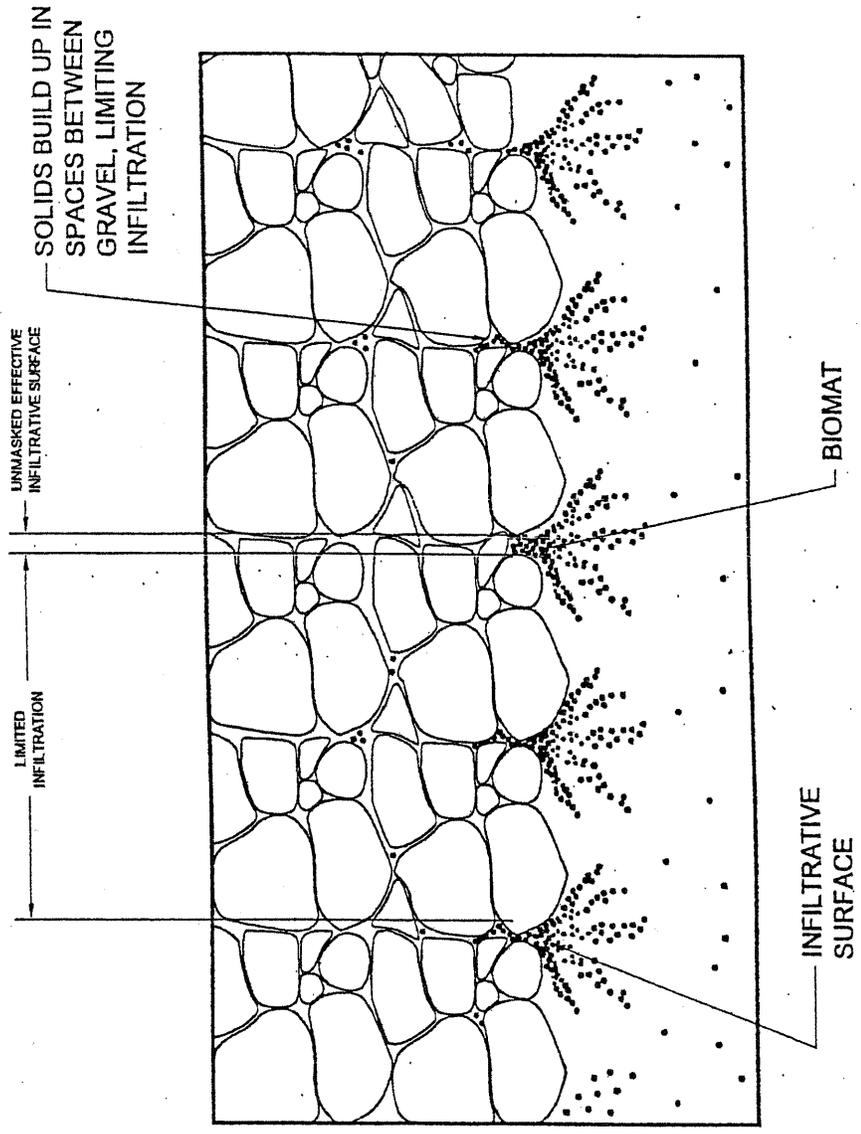


FIGURE 1.1

INFILTRATIVE SURFACE